

# The Panasonic Report for Sustainability 2005

Matsushita Group



**Panasonic**  
ideas for life

# The Panasonic Report for Sustainability 2005

## Editorial policy

### Aim

*The Panasonic Report for Sustainability 2005* has been published to give a comprehensive and readable account of the initiatives undertaken by the Matsushita Group to help build a sustainable society. The report is intended to provide a platform for interactive communications with all of our stakeholders, which we believe will help to improve our corporate management strategies.

### Content

We remain committed to our management philosophy of contributing to society through our business activities. To enable society to evaluate our performance in implementing our management philosophy, it is essential for us to describe our overall business activities. To this end, this report aims to provide you with a broader profile of the company's business as it really is. We value your frank opinions on the report, so please take a little time to complete and send us the attached questionnaire.

The "Environmental Performance" section focuses on the initiatives that Matsushita is undertaking to address major environmental issues. Detailed environment-related data will be provided in the "Environmental Data Book" (tentatively named), which is scheduled for release in October 2005.

In addition to the information presented in this report and that which will appear in the Environmental Data Book, more details on our social performance and the regional activities we are conducting around the world are available at the following website.

 Sustainability Data File  
[panasonic.co.jp/eco/en/datafile/](http://panasonic.co.jp/eco/en/datafile/)

\* Detailed fiscal 2005 data will become available in October 2005.

### Independent review

Greenhouse gas emission data given in the "Environmental Performance" section and the data in the "Social Performance" section have been reviewed by KPMG AZSA Sustainability Co., Ltd. The independent review report will be included in the Environmental Data Book (Japanese version).

### Reference Guidelines

- The Japanese Ministry of the Environment's *Environmental Reporting Guidelines 2003*
- The Global Reporting Initiative (GRI)'s *Sustainability Reporting Guidelines 2002*



### Front cover

The 2005 World Exposition is being held from March 25 through September 25, 2005 in Aichi Prefecture, Japan under the theme of "Nature's Wisdom." The Matsushita Group has supplied the EXPO Vision, a 840-inch (diagonal) high-definition screen that employs highly energy-efficient LEDs as its light source. Programs featured on the giant screen include our original musical fantasy "A Woodland Story," which dramatizes the subject of global environment protection, and the outstanding "Kid Witness News" videos (page 45).

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# Contributing to society through our business

## Aiming for global excellence with a "super-honest" attitude



**Kunio Nakamura**  
President

*Kunio Nakamura*

### Addressing global challenges with human wisdom

In December last year, the world was shocked by an unprecedented natural disaster: a major earthquake off the coast of Sumatra and the resulting tsunami throughout the Indian Ocean. I would like to express my deepest sorrow for all those who lost their lives in this terrible tragedy. In response to the devastating damage, governments, non-governmental organizations, and individuals around the world scrambled to offer emergency aid and launch relief operations in the tsunami-ravaged areas. Watching these encouraging actions through media reports, I felt acutely the importance of helping one another in a spirit of cooperation and of joining forces in mobilizing immediate relief assistance beyond national or organizational borders. At Matsushita, our subsidiaries located nearby the disaster-stricken areas took immediate action to deliver daily necessities. Additionally, our company made monetary donations through an employee matching gift campaign in response to my call on all employees around the world for continued support of recovery operations. The Matsushita Group of companies and its employees sincerely hope that the affected nations and their people will soon be able to cope with their suffering and achieve a swift recovery from the disaster.

According to a certain report, damage in the Maldives from the tsunami was minimized by a breakwater that had been built around the capital of Male, while a lack of knowledge about what a tsunami could do resulted in excessive damage in other areas. Obviously, natural calamities cannot be avoided. However, we have learned from this disaster that with awareness and proper action we can protect lives. The Japanese Government has pledged to make a contribution to the international community by establishing a tsunami early warning system for countries in the Indian Ocean area, based on Japan's frequent experience with earthquakes and tsunamis. Matsushita will use its electronics technology, the result of knowledge and

experience gained over the years, to improve people's lives and ultimately contribute to the development of a peaceful and affluent society.

### "ideas for life": Our mission and commitment to society

Since its founding, Matsushita has consistently maintained its commitment to contributing to society through its business, based on the belief that "a company is a public entity of society." Specifically, our mission is to develop products and services that contribute to the progress and development of society. Our corporate brand slogan, "Panasonic ideas for life," represents the commitment of all our employees, from R&D and manufacturing to marketing and services to supplying products and services based on valuable ideas which can enrich people's lives and bring progress to society. No matter how technology may advance in the future, we will strive to create products and services that offer value to our customers while staying closely linked to their lifestyles.

### Our initiatives for global excellence

With the rapid development of information networks, we are about to enter a borderless era, when people, goods, money and information will move freely across national borders. Globalization of economic activities has brought benefits to many people. On the other hand, various concerns are emerging, such as worsening environmental conditions and an increase in social problems stemming from economic disparities. We must apply our wisdom to overcome these difficulties, having as our ultimate goal the realization of a sustainable society.

Matsushita presents a twin business vision for the 21st century: "Realizing a Ubiquitous Network Society" and "Coexistence with the Global Environment" using our cutting-edge technologies. We aim to transform

## Matsushita's twin business vision

**Realizing a ubiquitous network society**

**Coexistence with the global environment**



ourselves into a company that can win the trust of all "stakeholders," including our customers, shareholders and business partners, allowing Matsushita to become a globally excellent company by the year 2010, by accomplishing the goals of our business vision. Matsushita formulated a mid-term "Leap Ahead 21" plan as an interim milestone, aiming to achieve an operating profit ratio of 5% or more and a positive CCM\* index on a consolidated group basis by fiscal year 2007. The entire company is committed to creating new value in order to attain these goals.

\*CCM (Capital Cost Management) is a management benchmark created by Matsushita that emphasizes return on capital, and is obtained by subtracting the cost of capital from the profits earned from business.

## Message from the President

The world's first commercial household fuel cell cogeneration system was installed in the new official residence of the Japanese Prime Minister in April 2005.



### ■ Fulfilling our responsibility to future generations through environmental sustainability management

All of us living in the 21st century have the vital mission of finding the best balance between economic growth and environmental conservation. Since "Coexistence with the Global Environment" is part of the company's twin business vision, Matsushita must take the initiative in meeting the major challenge of maintaining current standards of living and even improving the quality of life, while reducing the consumption of resources and energy. Therefore, we will work to create excellent energy and resource-saving products and services, thus offering "Value for a New Lifestyle" to improve the quality of life while minimizing the impact on the environment.

In February 2005, Matsushita supplied Tokyo Gas Co., Ltd. with our household fuel cell cogeneration system, which marked the world's first commercial launch of such a system. The fuel cells adopted in this system capitalize on technology we accumulated over the past forty years. We have opened the way to making the system commercially viable, having a firm resolve to contribute to society through this future-looking technology. Since its release, our solution has received much greater feedback from the public than originally anticipated. This cogeneration system generates electricity using hydrogen, which has long been considered an "ideal energy source," and it utilizes the heat produced as it generates electricity to heat water. I myself have great expectations for fuel cells since this advanced cogeneration system can achieve higher energy efficiency and contribute to the prevention of global warming. We will concentrate our efforts on

offering highly durable systems at lower cost for full-scale market expansion, to become a new pillar of our business and create value for future lifestyles.

Our focus is not confined to making contributions to the global environment through products and services. Beyond this, we are incorporating environmental initiatives in all aspects of our business activities. The measures we have taken against global warming include energy conservation programs conducted at all of our factories worldwide and the proactive introduction of environment-conscious vehicles for logistics operations. In addition, by taking advantage of our experience in recycling home appliances in Japan, we have begun to develop recycling systems in Europe. Matsushita has also set a policy of banning the use of certain chemical substances in all of its products manufactured around the world and did this more than one year earlier than legally required. As a result of this group-wide commitment, we have eliminated these substances from some 25,000 items as of the end of March 2005. We are stepping up our efforts to completely eliminate these specific chemical substances from all of our products as early as possible.

### ■ Developing universal design that makes technology more friendly to users

With the advent of a rapidly aging society together with the digital era, products are increasingly required to provide people of all ages and abilities with safety and a sense of security, as well as ease-of-use and convenience. Our tilted drum washer/dryer, developed under the concept of "easy to use for everyone," has been well received by customers since its release on the Japanese market in fiscal 2004. In fiscal 2005

Matsushita has established Katano Matsushita Co., Ltd., a joint public-private company to develop a better working environment for the physically challenged.



which ended in March 2005, we made intense efforts to incorporate an advanced universal design concept in our other products and services and to make their features easy to understand. The universal design concept serves as a cornerstone for Matsushita's businesses and products. We will further improve our product user-friendliness by adopting voice guidance and other advanced functions.

#### ■ An organization rich in social diversity

Each employee must identify lifestyle needs from a customer's point of view, drawing on experience in daily life, to provide products and services that will satisfy our customers. To this end, we would like to foster a vigorous and open work environment where employees will have a diverse sense of value and respect the way of thinking of others. The most important task is to build a corporate organization in which each individual can perform to his or her fullest, irrespective of gender, nationality or age, receiving a fair assessment based on performance and ability. As one of our priorities, we will accelerate our initiatives for gender equality and the development of global executives, aiming to build an organization rich in social diversity.

#### ■ Acting in a "super-honest" manner

To win the trust of society, we must increase the transparency of our corporate management and continually fulfill our corporate accountability. In the Matsushita group of companies, some 330,000 employees are making innumerable decisions and taking action on a global basis every day, and all that we do should be open and accountable to all. Furthermore, in the event that something goes wrong, we must promptly

make public our response in a "super-honest" manner. I myself will take the initiative in carrying out this practice, ultimately developing a highly ethical corporate culture through the combined efforts of all employees.

This report aims to honestly present our corporate activities as they really are. We value receiving your frank opinions regarding this report. In closing, I would like to take this opportunity to thank you for your interest in Matsushita and for your continued understanding and support.



Matsushita's universal design concept is typified by the tilted drum washer/dryer which is exhibited in the corporate showroom.



# Management system

## Basic Business Philosophy

### Basic Management Objective

Recognizing our responsibilities as industrialists, we will devote ourselves to the progress and development of society and the well-being of people through our business activities, thereby enhancing the quality of life throughout the world.

### Company Creed

Progress and development can be realized only through the combined efforts and cooperation of each employee of our company. United in spirit, we pledge to perform our corporate duties with dedication, diligence and integrity.

### Seven Principles

Contribution to Society  
Fairness and Honesty  
Cooperation and Team Spirit  
Untiring Effort for Improvement  
Courtesy and Humility  
Adaptability  
Gratitude

### Code of Conduct



### Company Regulations

Matsushita's corporate mission is based on the concept of corporate management established by its founder, Kono-suke Matsushita, "A company is a public entity of society." More precisely, a company belongs not only to specific individuals or shareholders but also to all of its stakeholders, including customers; in other words, a company belongs to the whole society. As the basis of our corporate activities, we have inherited an unchanging management philosophy stipulating that the company must contribute to society through its business as a public entity. Implementing this management philosophy, which is focused on customers, involves what we now call corporate social responsibility, or CSR.

## Code of Conduct

In 1992, Matsushita formulated its Code of Conduct, a set of guidelines explaining the company's business philosophy in an easy-to-understand manner. A second major revision was made in January 2005 in response to the growing social interest in CSR and changes in the business environment, including the rapid rise of globalization. The Code is applied globally to group-wide operations.

### Matsushita Group Code of Conduct: table of contents

Scope of Application and Observance

Chapter 1: Our Core Values

Chapter 2: Implementing the Code in Business Operations

- I. 1. Research and Development
2. Procurement
3. Manufacturing
4. Marketing & Sales
5. Public Relations and Advertising
- II. 1. Coexistence with the Global Environment
2. Product Safety
3. Compliance with Laws, Regulations and Business Ethics
4. Use and Control of Information
5. Information Disclosure
6. Social Contribution Activities
7. Enhancing Our Brand Value

Chapter 3: Employee Relations

**Scope of application:** This Code of Conduct applies to all Directors, Executive Officers, and employees of Matsushita Electric Industrial Co., Ltd. and all of its operating divisions and controlled subsidiaries (the "Matsushita Group").

**Violation of the Code of Conduct:** Violations will be dealt with very seriously by appropriate laws and regulations. (Board of Directors and Executive Officers: the Commercial Code, or by company regulations, etc. Employees: employee regulations).

The full text of the Code of Conduct is available online at: [panasonic.co.jp/company/en/conduct/](http://panasonic.co.jp/company/en/conduct/)



## Corporate governance

### ■ The Board of Directors and Executive Officer System

Matsushita was one of the first Japanese companies to invite Outside Directors to serve on its Board of Directors, and also established an Advisory Board comprised of distinguished outside leaders. In fiscal 2004, ended March 2004, Matsushita implemented reforms to establish an optimum management and governance structure tailored to the group's new business domain-based organizational structure. Under the new structure, Matsushita has empowered each of its business domain companies through delegation of authority. At the same time, the company set up an Executive Officer System to provide for the execution of business at its various domestic and overseas group companies.

This facilitates the development of optimum corporate strategies that integrate the group's comprehensive strengths. In addition, Matsushita realigned the role and structure of the Board of Directors to ensure swift and strategic decision-making, as well as the optimum monitoring of group-wide matters. Specifically, the Board of Directors

can now concentrate on corporate strategies and the supervision of business domain companies, while Executive Officers handle responsibilities relating to day-to-day operations. Taking into consideration the diversified scope of its business operations, Matsushita has opted to maintain a system where Executive Officers, who are most familiar with the specifics of their respective operations, take an active part in the Board of Directors. To clarify the responsibilities of Directors and create a more dynamic organization, the company has limited the term of each Director to one year.

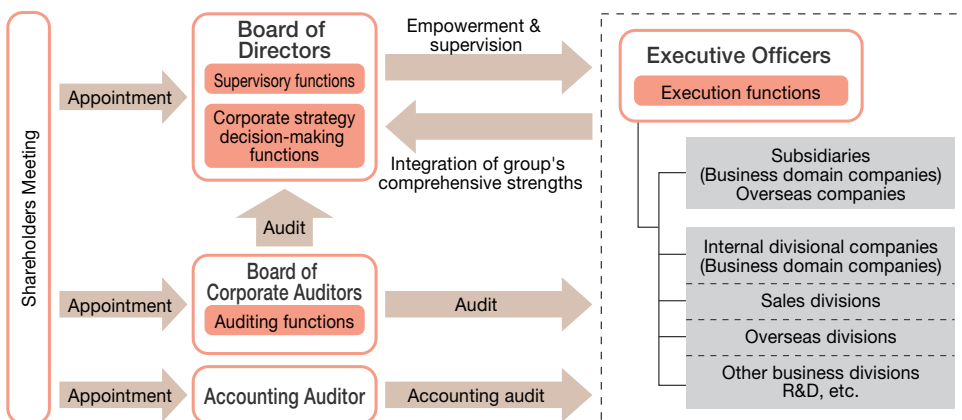
### ■ Corporate Auditors and the Board of Corporate Auditors

Pursuant to the Commercial Code of Japan and the relevant laws and ordinances, Matsushita has established a Board of Corporate Auditors, which monitors the status of corporate governance and keeps abreast of the day-to-day activities of management, including the Board of Directors. Corporate Auditors participate in shareholder meetings and Board of Directors meetings, and have legal authority to receive reports from directors, employees and accounting

auditors. Full-time Senior Auditors also attend important management meetings and conduct checks in order to ensure effective monitoring. To augment the internal auditing functions in business domain companies, Matsushita has assigned full-time Auditors at each internal divisional company. It also inaugurated regular Group Auditor Meetings to enhance their collaboration with the Corporate Auditors at Matsushita subsidiaries.

### Corporate governance structure

#### ■ Functions of Board of Directors, Executive Officers, and Board of Corporate Auditors



Note: Certain Directors concurrently serve as Executive Officers

## Compliance

As a global enterprise doing business around the world, Matsushita is committed to ensuring compliance in such a way that the members of the group understand the different social customs of various countries and regions and perform their duties in good faith.

In February 2004, Matsushita established a Code of Ethics for Directors and Executive Officers, requiring that management executives take the initiative in conducting transparent business activities and fulfilling their responsibilities in an accountable way. In-house hotlines have been put in place to enable employees to report directly to management on any situation that might be considered questionable while protecting them from suffering any disadvantage from contacting a hotline. In addition to the

Business Ethics Hotline, Fair Trade Hotline, and Women's Hotline, the company established a Fair Business Hotline for our business partners in December 2004. These lines received approximately 100 contacts in fiscal 2005.

Matsushita is making continuous efforts to increase the awareness of compliance among all employees and to develop the necessary systems by promoting systematic education and training as well as a Business Ethics Monitoring program. To assist employees in making decisions on the job, we have also formulated "Five Aspects of Our Business Ethics," which are listed on posters located at workplaces—compliance, the Basic Business Philosophy, common sense, the customer's viewpoint, and your own conscience.

## Management system

### Risk management

Matsushita faces a wide variety of risks and thus continues to reinforce its risk management capabilities. In this regard, we aim to ensure the safety and security of all stakeholders, ranging from customers, local residents, and shareholders to employees while promoting stable business growth.

Each company and division of the Matsushita Group has developed its own systematic programs from an early stage, thereby putting risk management in practice in day-to-day operations. In response to the enforcement of the Sarbanes-Oxley Act of 2002 in the U.S. and the increasingly important profile of CSR, the company established the Global and Group (G&G) Risk Management Committee in April 2005, thus reforming the framework for implementing comprehensive programs across the group on a global basis. One of the committee's missions is to identify potential risks related to our business. This will be achieved through risk assessment aimed at properly collecting and evaluating risk-related information. Our assessment covers risks specific to business interests and common risks such as disasters and accidents as well as risks related to customers' lifestyles and local communities with respect to quality, marketing, information security, environmental impact, and financial issues. Matsushita will thus continue strengthening risk management to consistently provide swift and appropriate responses to perceived risks and disclosure of risk-related information.

#### ■ Matsushita's response to Indian Ocean earthquake and tsunami

Matsushita has an emergency communication network that enables it to contact its 231 sites outside Japan around the clock. When the powerful earthquake and tsunami hit South and Southeast Asia on December 26, 2004, the system worked effectively. Although it was a Sunday, Matsushita was able to confirm the extent of damage to its employees and facilities in the stricken areas within eight hours of the disaster. (For details of Matsushita's contribution to the tsunami relief, see page 52).

### Environmental sustainability management

We use resources and energy to produce and transport our products, which also consume energy during operation. Therefore, Matsushita regards its approach to environmental consciousness throughout its business activities as one of its most important management challenges.

In fiscal 2002, Matsushita devised an Environmental Vision and an action plan, the Green Plan 2010, which specify the goals of its environmental initiatives on a global consolidated basis. Each business division is making steady efforts to achieve the group-wide goals. In fiscal 1999, we completed the establishment of environmental management systems at each of our manufacturing sites

Regional Environment  
Conference for Asia and  
Oceania held in October  
2004 in Singapore



Photo 1

around the world, and we are currently introducing these systems at non-manufacturing sites. As of April 2005, 265 sites have acquired ISO14001 certification worldwide. To properly respond to changes in the business climate and in global environmental legislation, we established the Domain Environment Conferences tailored to business domains and the Regional Environment Conferences for each region; both of these conferences perform their work in coordination with the Corporate Environment Conference. This framework is designed to ensure that environmental sustainability management is based on the actual situations at operational fronts. In addition, we discuss relevant issues and formulate strategies at our group-wide management conferences, and implement measures based on swift decision-making, aiming to incorporate environmental sustainability management more fully into business activities.

### Enhancing customer value

In July 2003, a Customer Value Enhancement Committee was established to review the company's business activities from the customer's point of view. The committee meets four times a year and is attended by the President and some 40 management executives. Committee members discuss a wide range of issues, including quality, customer services, compliance, information security, corporate culture, and environmental affairs. These meetings foster a common awareness of various insights gained by employees through actual contacts with customers and give the committee members a chance to scrutinize the challenges facing Matsushita through open discussions. The committee's activities have resulted not only in preventing the recurrence of problems but also in implementing management activities beneficial to customers in a true sense. Best practices that will increase customer satisfaction are also presented during committee meetings so that they can be shared across the group.

#### Regular subjects

- Overview of quality issues and the results of market quality benchmarking
- Customer Care Center's operation summary

#### Specific issues and key points of discussion (excerpt)

- The causes of customer complaints about products and services were investigated and solutions were shared.
- Software quality problems, which have been increasing with further digitization of products (mainly audiovisual equipment), were discussed, and the measures taken by related business domains were shared.
- Caution and administrative guidance by the Fair Trade Commission regarding public bidding (page 42) reflected the need for greater awareness of compliance with legislation, thereby leading to the establishment of preventive measures.

## Demonstrating our commitment to CSR

The essence of Matsushita's CSR concept lies in implementing its management philosophy. All companies and divisions of the group have made their own efforts to fulfill CSR. Today, the competition among companies is becoming increasingly intense amid the globalization of the economy. Meanwhile, various problems have surfaced in the global environment and the entire society. Matsushita remains committed to stepping up CSR initiatives by reviewing our business activities from the different perspectives of economy, environment, and society.

### ■ CSR Promotion Committee

In October 2003, the CSR Office was established to reinforce the group-wide initiatives to respond to growing global interest in CSR. In fiscal 2005, the CSR Promotion Committee, chaired by the Executive Officer in charge of CSR, met seven times. Some 30 staff members from corporate functions and overseas divisions monitored eight major constituents of the company's CSR performance from eight perspectives, particularly the environmental and social aspects.

#### Common perspectives

1. Corporate governance
2. Global & group
3. Compliance
4. Risk management
5. Supply chain
6. Brand management
7. Disclosure
8. Contribution to public welfare

#### Major constituents

1. Environment
2. Fair business practices
3. Labor, human rights, safety
4. Information security
5. Corporate citizenship activities
6. Quality administration
7. Customer satisfaction
8. Usability

### ■ Matsushita CSR Board

Based on the discussions held by the CSR Promotion Committee, in July 2004 the Matsushita CSR Board determined major immediate CSR tasks. The Board is presided over by the President, with the participation of some 20 management executives.

#### Major CSR tasks to be tackled

1. Enhancement of a global and group-wide communications system  
→ Improve our risk management system
2. Fostering the development of each employee's mindset  
→ Ensure thorough implementation of the management philosophy and the Code of Conduct
3. Promotion of advanced programs linked with business activities  
→ Integrate the CSR concept and programs with marketing

### ■ Dialog with stakeholders

In the Matsushita Group, individual divisions, including environmental affairs and customer service divisions, have independently received feedback from external parties. In March 2005, Matsushita hosted a meeting with our stakeholders, as an opportunity to exchange opinions mainly on social issues (Photo 2).

During the meeting, Matsushita's CSR concept and the CSR Promotion Committee's initiatives were presented to attendees, who then provided their comments and opinions. The results of these discussions have been communicated to the Matsushita CSR Board and other committees, and widely shared. We will capitalize on the outcome of the meeting with stakeholders to initiate projects and set targets for each function and business domain.



Photo 2

#### Participants

**One Akiyama**, President, Integrex Inc.  
**Michelle Tan, Ph.D.**, Professor of the Faculty of Law & Policy, Tezukayama University  
**Makoto Teranaka**, Secretary General, Amnesty International Japan  
**Chisato Murakami**, Chief Coordinator, Japan Council on the UN Decade of Education for Sustainable Development  
**Other distinguished participants**

### ■ Strategies for the future

Matsushita has defined its goal of becoming a globally excellent company by 2010. To make this a solid reality, we believe it is essential to roll out strategic products and services in each business area and to conduct business in a way that gives consideration to the global environment and society. Since fulfilling CSR is the essence of our management, we will launch specific initiatives focusing on the following issues.

#### Specific CSR implementation

##### Scope

1. All stakeholders
2. Customers
3. Global environment
4. Communities
5. Business partners
6. Employees

##### Initiatives

1. Ensure commitment to fairness and honesty
2. Create products of high social value
3. Pursue ecological intelligence
4. Promote global citizenship activities
5. Enhance responsible partnership
6. Achieve excellent workplaces

# Plasma TVs maximizing both picture quality and energy efficiency



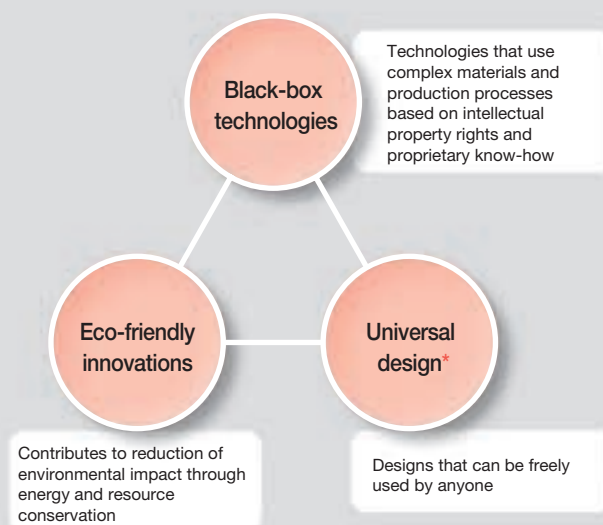
VIERA TH-50PX500

The world of television is progressing rapidly. As the age of digital broadcasting gains momentum, televisions' possibilities continue to expand. Picture quality is better than ever, and TVs can now connect to the internet. With all these capabilities as well as an environmentally conscious, universal design,\* the VIERA plasma TV epitomizes Matsushita's business. In this section, three engineers who helped develop this TV introduce some of its features.



## Product development strategy

Matsushita develops, manufactures, and distributes a variety of products, from electrical components to home appliances and equipment. Among these, the company's "V Products" are those which drive business growth while helping to create the type of society and lifestyle the company envisions for the world. V Products' criteria include eco-friendly innovations, universal design, and black-box technologies—the revenue source. Matsushita will continue producing new value through its products and services, with a constant focus on improving people's lifestyles.



**Tsuyoshi Orita**

PDP TV Business Unit  
Visual Products &  
Display Devices Business Group  
Panasonic AVC Networks Company

### "I want people to enjoy an image that's just as good as a movie theater, right in their living rooms."

I wanted to make the world's best TV for reproduction of cinematic material. To do that you need a large screen and image quality that exceeds the limitations associated with CRT TVs. That's why plasma TVs are the star of the home theater. This goal drove all of our development work.

#### **Q Why were movies your goal?**

Movies are the highest peak of visual expression. If a TV screen reproduces movies beautifully, it will be able to provide excellent results with any type of visual material. Of course, movies use film and have a much richer color gradation compared to a regular television signal. When played through the television signal processing circuit it is possible to adjust for annoyances, such as the image being too dark or fuzzy. However, that could ruin the work if the intentional expressions of the film creator and the cinematographer are lost. Recent Hollywood movies have made heavy use of computer graphics and digital processing. But films from the early days of color photography, such as old westerns, use a different technique to produce colors than what is used now. So, there is quite a variety of content in movies, and that is why our success at developing image quality will show up in the reproducibility of movies.

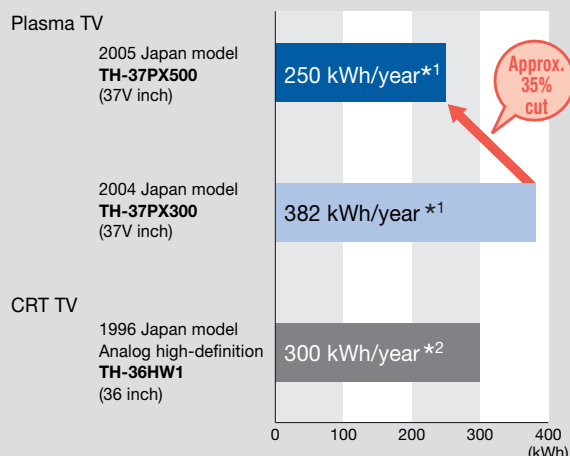
#### **Q What issues gave you trouble?**

Compared to regular TV programs, movies that use darker tones have been on the rise recently. Doesn't it seem like a lot of scenes that are important to the overall story are dark? It is no fun to watch a movie if you miss the actors' facial expressions or cannot see movements during important scenes, right? The technology used to get around this problem is the control of brightness. The new PX500 series, Japan model, finely controls the dark and bright areas in a single frame, making both whites and blacks more prominent.

It is easy to increase brightness by using more power. But how do you achieve that while keeping power consumption down? Also, increasing the gradation means the LSI needs enormous signal processing power. These challenges were overcome one by one through the close collaboration of each of the teams in charge of the plasma panel, drive circuit, and signal processing from our earliest TV days. Matsushita has passed down a tradition of high expectations and good taste when it comes to image quality. I will be happy if people are so moved by the image quality that they forget they are watching a TV in their own living room.

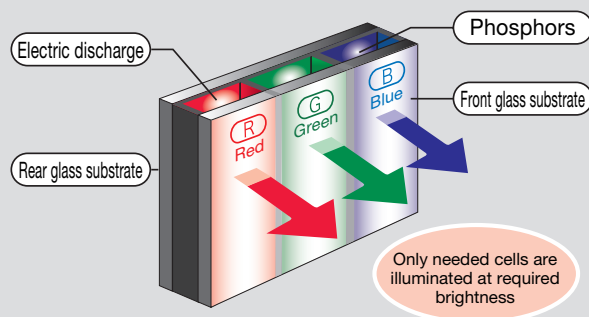
\* Please refer to page 38 (Figure 1) for Matsushita's basic policy of universal design.

## Savings on annual energy consumption



- \*1 Measured in standard mode according to the standards set by the Japan Electronic and Information Technology Industries Association (JEITA)
- \*2 Measured by the annual energy consumption measurement method for CRT televisions in compliance with the Japanese Energy Conservation Law.

## Plasma TV technology and energy efficiency



The principle behind light emission in a plasma TV is the same principle as for fluorescent light. Gas is sealed between two glass substrates, in which electrodes are mounted. Through the electrodes, voltage charges the gas to generate "plasma," which releases ultraviolet light. When the ultraviolet light hits phosphors coated inside a cell, they release visible light. The key feature is self-luminescence. Only some of the cells are illuminated at required brightness for the image being displayed, making for an energy efficient system.

## Highlights 2004



**Tatsuo Mifune**  
PDP Device Business Unit  
Visual Products &  
Display Devices Business Group  
Panasonic AVC Networks Company

### "I improved energy efficiency in Matsushita's plasma TVs."

Until now, plasma TVs haven't received very good environmental ratings. A typical remark was "Plasma TVs consume a lot of energy!" That always frustrated me as a person involved in the development of plasma TVs. I wanted to someday make a plasma TV that would outperform liquid crystal in terms of energy efficiency. And, I wanted to do it without compromising the high image quality that is plasma's strength.

#### Q How much energy were you able to save?

In the PX500 series, Japan model, released in May 2005, we've cut annual energy consumption\*3 by nearly 35% at a maximum\*4 compared to last year's models, the PX300 series. This translates into an annual savings of approximately ¥3,000 (US\$28) on a home electricity bill. People may not be familiar with the term "annual energy consumption." This refers to an energy consumption level close to that actually consumed by an average household when they watch television. As such, it can be used as a standard to calculate an electricity bill—something important to customers. Using annual energy consumption as the basis of comparison, the PX500 series plasma TV outperformed an equivalent size traditional CRT TV\*5 in terms of energy efficiency. Larger screen size means increased energy consumption, regardless of technology. But plasma, with its self-luminescence characteristics, offers greater energy conservation potential. I don't want to be satisfied with this success. I want to make a display panel that is even more energy efficient and that produces a much better image.

#### Q How did you achieve the energy conservation?

Frankly, energy conservation is easy to achieve if you can only think of reducing energy consumption. Simply reducing energy consumption, however, results in less brightness and contrast. This deteriorates overall image quality. At the end, the product loses its appeal. Our challenge was to realize a high-quality image and increase energy efficiency at the same time. In other words, we had to develop advanced technology to make a panel that illuminates more efficiently with less energy.

\*3 According to JEITA standards. Measured in standard mode.

\*4 Approx. 35% in the 37V inch model, approx. 30% in the 42V inch model, and approx. 25% in the 50V inch model.

\*5 Based on a comparison with the roughly nine-year-old 36 inch analog high-definition TV TH-36W1.

Improving the layer on the front glass substrate—which is what I am in charge of—was what greatly contributed to the advancement this time. The more transparent the layer becomes, the easier for light to pass through. This in turn brings energy consumption down. Specifically, we adopted highly transparent material for the layer on glass substrate. With the new film, we succeeded in increasing light transmission by nearly 10%. However, it took three years to reach this point. To find the right new material, we had to understand material properties, and then mix and match various types of material. We couldn't get the characteristics we were hoping for, if compatibility or balance of the material was slightly off. Thickness of the layer was another big challenge. A difference of just a few micrometers completely changes the plasma's discharge characteristics. Day after day, over and over, we mixed and matched materials, coated the glass, baked it, and then ran evaluation tests looking for a cause of failures.

With the PX500 series, we were able to raise the luminous efficiency by roughly 15%. This was possible due to our development work and collaboration with a drive circuit team, which is responsible for image processing. In terms of plasma TV development, our efforts to develop the panel are a starting point. Through our hard work, I want to build a device that will blow the competition away.

## "With digitalization, TVs will change from passive entertainment tool to active life style tool."

Isn't the idea that your TV connects to the Internet exciting? Even people who are not familiar with a keyboard are used to TV remote controls. They can connect to the Internet with a touch of a button. If that is all it takes, everyone should be able to experience the convenience and fun of easy access to the Internet. I believe it's Matsushita's job to make such TVs.

### **Q** How will TVs evolve in the future?

Matsushita pioneered the development of the TV internet service called "Tnavi," ahead of other companies. To do this, we first had to develop internal components for a TV. The heart of Matsushita's digital TVs is the system an LSI called the PEAKS processor. Actually, it's a tiny chip about the size of your little fingernail. PEAKS has processing power comparable to recent computers. But if a TV freezes up, even momentarily, it's not acceptable for consumers. That is, it is absolutely necessary to maintain high capability and reliability. Ten years ago, computer engineers including myself were summoned to develop this LSI. Since then, we have remained focused on developing the possibilities of digital television. We were among the first to participate in standardization of digital broadcasting technologies, and we intended Internet connectivity right from the beginning. That allowed us to turn Tnavi into a reality along with the reception of digital high-definition broadcasts, smooth channel tuning and screen control for electronic program guides.

As for future developments, we will continue to think of the benefits we can provide to customers as they switch from analog to digital. The vision of a ubiquitous network society is our soon to be realized dream. Digital television breaks the mold of traditional TV. I think the TV will evolve into a device that serves as the nucleus of the home network. I want to make digital TVs that connect to a variety of devices around the world, allowing people to feel connected to anyone, anywhere, anytime. Personally, I feel that digital TV technology will blossom as the future unfolds, and I am proud to be a part of it.



**Hirotoshi Uehara**  
Development Promotion Group  
Visual Products &  
Display Device Business Group  
Panasonic AVC Networks Company



This TV remote incorporates our universal design. The buttons have been made about 1.5 times larger than our legacy models, and their number reduced. It also incorporates a rounded ergonomic design for comfort. A second IR transmitter is added so that the remote will work even when not aimed directly at the set.

Menu screen for the "Tnavi" television internet service



This service allows you to access useful information for daily life, with just a touch of a button on your TV remote. It connects to the Internet, with 130 services in 17 categories, from shopping to news, traffic information to dining. It's easy to use, convenient and fun. For details, go to <http://tnavi.net>. (service available in Japanese only)



## Private AV room Dad's getaway for enjoying movies and reading



Highlights 2004

CUBIOS Premier Class Modular Furniture

Recreating the power of the movie theater experience with premium designs and sophisticated materials, for people who want a serious AV system

Photo 1

# Total home solutions for comfortable living

In April 2004, after many years in different lines of business, two companies with the same Matsushita name—Matsushita Electric Industrial Co., Ltd. (MEI) and Matsushita Electric Works, Ltd. (MEW)—kicked off a new beginning with a single corporate vision for the new Matsushita Group. Through collaboration that combines MEI's strengths in electronics technology with MEW's proficiency in creating living spaces, the Matsushita Group is committed to offering new value for customers' lives.



**Susumu Kobayashi**  
Showroom Strategy Promotion Center  
Marketing Division  
Matsushita Electric Works, Ltd.

### "I want to tell customers about the new ideas that came out of the collaboration between MEI and MEW."

Right now in the showroom, which I am in charge of, we are using a variety of lifestyle scenarios to introduce customers to the new value that has been created by the collaboration between MEI and MEW. We offer ten new proposals for modern living. Take for instance the modern home exhibit (Photos 2 and 3), or the home theater that combines sound, lighting, and a TV into modular furniture (Photo 1). Until now, we always tended to focus on kitchen and storage units and had not fully caught onto the idea of creating a sense of unity with home appliances. At the same time, since MEI was only developing standalone home appliances, we were a bit hesitant to make suggestions to customers about their entire living space. In that sense, it is quite meaningful that the new Matsushita Group can offer space suggestions for the whole home that give customers a real-life vision of a new way to live. I plan to continue working to transform our showrooms into places where customers can see their dream lifestyles appear before their very eyes.

National Center Tokyo ([national.jp/center/tokyo/en/](http://national.jp/center/tokyo/en/)) National Center Osaka ([national.jp/center/osaka/en/](http://national.jp/center/osaka/en/))



## "The integration of system furniture with AV devices makes for the kind of home theater that can be your pride and joy."

I led the design project for the CUBIOS Premier Class Modular Furniture (Photo 1), which incorporates a flat screen TV. Personally, the first time I saw a plasma TV in my home, I was astonished by its dominating presence. In this product we emphasized balancing the power of the TV with the surrounding space, aiming for a design that is both simple but that can serve as the centerpiece of a room. We collaborated with MEI to develop special built-in speakers and paid particular attention to the acoustic environment. Recently, a man came into the showroom and started excitedly measuring the product's size. I was so excited to realize that we had made his dream come true. With other companies' products as well, it seems like women usually play the central role when it comes to selecting kitchen, bath, and other home equipment. Now we can offer premium living environments that generate excitement for the guys, as well.



**Yoji Takamiya**

Building Products Design Group  
Design Development Center  
Matsushita Electric Works, Ltd.

### Unique wave design reduces fatigue

#### Modular kitchen WAVEi

With universal design in mind, the lower cabinet doors are curved inward. Your knees fit into this space, making it easier to lean in. This free play for your knees cuts down on fatigue. Counter space was also increased, with the greater than normal depth.



Photo 2

### Warm yourself in oxygenated microbubbles

#### Modular bathroom iU

Oxygenated microbubbles turn the bathwater milk white. As the bubbles envelop your body, you slowly and naturally warm to the core, as the oxygen bath gently refreshes you.



Photo 3

### Water and energy conservation

#### Tank-less toilet Eschel Seo

MEW's proprietary turn-trap cleansing technology, featuring electrical drain rotation, results in water savings of nearly 60%.\* The Eschel Seo also utilizes MEI's energy-conservation technology that instantly heats water only when the bidet is used.

\* Compared to MEW's siphon jet toilet.

**Clean Style Modern  
Home design that integrates  
appliances into the interior**

# Environmental Performance

Envisioning a world where humanity coexists with the global environment, Matsushita has a mission to "Create Value for a New Lifestyle." We strive to realize this vision by continuing to minimize the environmental impact of all our business operations and offering products and services that further improve the quality of life.



Photo (top): Newspaper advertisement that ran on May 8, 2005, publicizing "Symbiotic earth~the new challenge for the human race, with Yoshio Tsukio." This TV Tokyo special documentary series presented by Matsushita examines humanity's search for a way to coexist with the global environment. This program is a year-long series that reports how industry is confronting environmental issues—humanity's greatest challenge in the 21st century.

Photo (bottom): Matsushita's Wind/Solar Hybrid Power "Kaze-Kamome" installed at the 2005 World Exposition, Aichi, Japan, which had "Nature's Wisdom" as its theme.



Basic policy for the environment

## Aiming to coexist with the global environment

Website ■ [panasonic.co.jp/eco/en/datafile/](http://panasonic.co.jp/eco/en/datafile/)

Also in Matsushita's Sustainability Data File:  
[panasonic.co.jp/eco/en/datafile/](http://panasonic.co.jp/eco/en/datafile/)

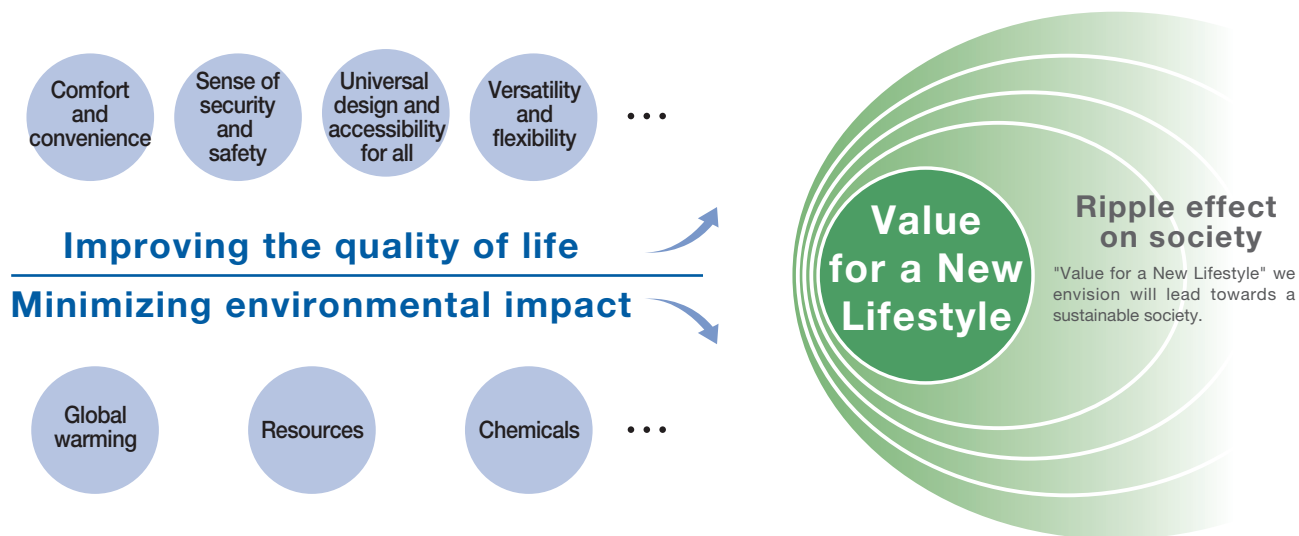
**Basic policy for the environment**  
**Green Plan 2010**

**Factor X**  
[panasonic.co.jp/eco/en/factor\\_x/](http://panasonic.co.jp/eco/en/factor_x/)

In 1991, Matsushita established a Basic Environmental Management Policy. Subsequently, we expressed our commitment in our Environmental Statement pledging to preserve the delicate balance of nature while enhancing prosperity for all living things. In 2001, we further strengthened our initiatives by formulating the Environmental Vision which specifies the directions of seven environmental areas, as well as our action plan, the Green Plan 2010.

Matsushita's corporate mission for building a world where humanity can coexist with the global environment has two aspects: continuously minimizing the environmental impact of our products throughout their life cycles and of all our business activities, and improving the quality of life of customers around the world. Matsushita calls this two-fold objective "Creating Value for a New Lifestyle." We independently developed "Factor X" as an indicator to assess this objective and then made it our corporate target to raise Factor X throughout the household.

### Basic philosophy on simultaneous pursuit of environmental conservation and business activities



### Factor X, our indicator of "Value for a New Lifestyle," and new targets

New corporate target for fiscal 2011  
(Relative to fiscal 1991)

<b>Factor 4 for the household</b> Quality of life doubled Environmental impact halved (Approximately 90 items)	<b>GHG factor</b>	$\frac{\text{Improvement in "product life x product function"}}{\text{Reduction in "GHG emissions over the life cycle"}}$	<b>5</b>
	<b>Resource factor</b>	$\frac{\text{Improvement in "product life x product function"}}{\text{Reduction in "non-circulating resources over the life cycle"}}$	<b>3</b>
	<b>Specific chemicals</b>	Non-use of specific chemicals (lead, cadmium, mercury, hexavalent chromium, specified bromine-based flame retardants), and restrictive use of PVC (polyvinyl chloride) resin	



Prevention of global warming

## The Kyoto Protocol and pursuit of our corporate responsibility and potential

Website ■ [panasonic.co.jp/eco/en/datafile/](http://panasonic.co.jp/eco/en/datafile/)

Global warming has become a critical world issue. Matsushita will continue to make every possible effort to help prevent global warming so that more people around the world can enjoy prosperous lives with a sense of security and safety. These efforts include energy-conserving operations at factories and the manufacturing of energy-efficient products that utilize state-of-the-art electronics technology.

### Also in Matsushita's Sustainability Data File:

[panasonic.co.jp/eco/en/datafile/](http://panasonic.co.jp/eco/en/datafile/)

#### Green Plan 2010

Product life cycle and environmental impact

The Natural Step  
"Benchmark on Matsushita's Strategy  
for Global Climate Change against  
Euro-American Enterprises"

The Natural Step  
[www.naturalstep.org/](http://www.naturalstep.org/)

### Progress in Japan and around the world

Greenhouse gases (GHG) are rapidly increasing as a result of human activity. In fiscal 2001, 23 billion tons\*<sup>1</sup> of CO<sub>2</sub>, a typical GHG, were released worldwide. The IPCC\*<sup>2</sup> predicts that during the 21st century average temperatures will rise by 1.4 to 5.8 °C and ocean levels will rise by 9 to 88 cm. The Kyoto Protocol, which was adopted in 1997 to prevent such climate changes, finally entered into force in February 2005. Under the Protocol, the GHG emissions of industrialized nations are regulated by law.

Japan's goal is to reduce GHG emissions by 6% from 1990 levels over the five-year period from 2008 to 2012. Toward that end, in April 2005 Japan's Cabinet approved the Kyoto Protocol Target Attainment Plan and set reduction targets for each sector. At present, industrial sector CO<sub>2</sub> emissions account for the largest, 36% of the national total. The commercial, residential, and transportation sectors are all showing a high rate of increase. These sectors therefore require emissions-reduction efforts.

\*<sup>1</sup> Source: Oak Ridge National Laboratory, U.S.A., as quoted by the Ministry of the Environment, Japan

\*<sup>2</sup> IPCC: Intergovernmental Panel on Climate Change

### Response to structural change in the electrical and electronics industry

The CO<sub>2</sub> emissions of the electrical and electronics industry account for only 3.8% of those of Japan's industrial sector, but the industry has been voluntarily working toward a target of reducing CO<sub>2</sub> emissions per unit of nominal production by 25% by fiscal 2011, compared to fiscal 1991. However, the industry structure has changed significantly since the targets were set. The market has seen the appearance of digital home appliances such as plasma TVs, as well as the expansion of the device business including semiconductors, which are at the heart of these appliances. Moreover, the price of the appliances declined dramatically. Thus, CO<sub>2</sub> emissions per unit of nominal production now understate the industry's reduction efforts. Therefore, in March 2005 the industry adopted CO<sub>2</sub> emissions per unit of actual production\*<sup>3</sup> as its reduction indicator. The indicator corrects the effects of price fluctuations, and is close to CO<sub>2</sub> emissions per unit of produced quantity, which reflects the industry's efforts.

\*<sup>3</sup> Actual production = nominal production ÷ Bank of Japan's corporate goods price index (electrical equipment)

#### ■ Thinking with stakeholders

In order to further strengthen our measures for the prevention of global warming, we are pursuing a long-term stewardship role and examining potential contributions through discussion with environmental NPOs and other experts. From February to March 2005, we held dialogues with the Natural Step (Sweden, U.K., and Japan) and three U.K. environmental organizations. Following the discussions, we received a written statement, Third Party Opinions for Matsushita about Climate Change Measures (page 27). We plan to continue holding such dialogues, and will reflect the opinions of stakeholders in company policies.

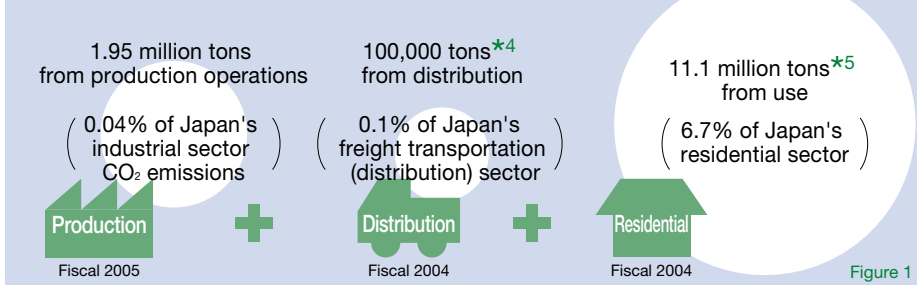
\*More detailed information will be included in the Environmental Data Book scheduled for publication in October.



Dialogue with stakeholders  
(London, England, February 28, 2005)  
Photo 1



## Matsushita's CO<sub>2</sub> emissions in Japan



\*<sup>4</sup> Excluding Matsushita Electric Works and PanaHome.

\*<sup>5</sup> An in-house calculation, estimated from the annual number of units sold of 16 leading products in fiscal 2004, the usage time (based on industry standards or Matsushita's independent standards), and product life. The 16 products are TVs, plasma TVs, VCRs, DVD recorders, laptop PCs, fax machines, phones, mobile phones, air conditioners, refrigerators, washing machines, microwave ovens, dish washer & dryers, vacuum cleaners, rice cookers, and air purifiers.

## What is Matsushita's approach?

### ■ Factory energy conservation: A top global priority

In Green Plan 2010 (page 18), we set global and Japanese targets (Table 1) for the reduction of factory CO<sub>2</sub> emissions, and we have continued with thorough efforts to meet them.

Over the last several years, we underwent structural changes along with the electrical and electronics industry. The development and manufacture of digital home appliances requires advanced technical capacity, as well as a lot of energy. We are growing these businesses in Japan, which has advanced technical capabilities and the highest level of energy efficiency in the world. We strongly feel the importance of contributing to the global reduction of CO<sub>2</sub> emissions, while keeping manufacturing in Japan.

In response to the situation, as a global company, we have unified our factory CO<sub>2</sub> emissions reduction targets worldwide. In Japan, we aim to achieve the target set by the four electrical and electronics-related industrial associations in the Japan Business Federation: a 25% reduction in CO<sub>2</sub> emissions per unit of actual production by fiscal 2011 compared to fiscal 1991.

### Fiscal 2011 targets for reduction of CO<sub>2</sub> emissions

	Old	New
Global	10% reduction per basic unit (compared to fiscal 2001)	10% reduction per basic unit* (compared to fiscal 2001)
Japan	7% reduction overall (compared to fiscal 1991)	Japan: 25% reduction per unit of actual production (compared to fiscal 1991)

\*Basic unit = CO<sub>2</sub> emissions / (consolidated sales + Bank of Japan's corporate goods price index (electrical equipment))

Table 1

We have revised our standard for calculating CO<sub>2</sub> emissions. GHG Protocol\*<sup>6</sup> is a substantive world standard for calculating CO<sub>2</sub> emissions. We have adopted the Protocol for CO<sub>2</sub> emission factors (factors for calculating CO<sub>2</sub> emissions from energy use) and for reflection of structural changes (adjusting the past organizational boundaries to the current boundaries to allow year-by-year comparisons). Accordingly, we discontinued co-generation correction,\*<sup>7</sup> which had been used to promote the adoption of co-generation systems (page 21).

Matsushita uses other GHGs besides CO<sub>2</sub>, such as PFCs for semiconductors. We are aiming to achieve a 10% absolute emission reduction of GHGs other than CO<sub>2</sub> from

a fiscal 1996 baseline, by fiscal 2011. This is the common target established by the World Semiconductor Council (WSC) (pages 21 and 22).

\*<sup>6</sup> GHG Protocol: standards published by the World Resources Institute (WRI) and the World Business Council for Sustainable Development (WBCSD) for calculating GHG emissions. [www.ghgprotocol.org/](http://www.ghgprotocol.org/)

\*<sup>7</sup> Co-generation correction: a method for adjusting overall CO<sub>2</sub> emissions by considering the idea of calculating the reduced amount of CO<sub>2</sub> emissions due to the use of a co-generation system by using a CO<sub>2</sub> emission factor for thermal power generation of purchased electricity.

### ■ Contributions through product innovation

The energy-conserving capabilities of electronic products have advanced rapidly. Nevertheless, with the rapid popularization of electronic equipment and the increasing number of households, residential CO<sub>2</sub> emissions in Japan are rising dramatically, up 28.8% in fiscal 2003 compared to fiscal 1991.\*<sup>8</sup> We estimate that the CO<sub>2</sub> emissions generated by the household-use of our products are nearly six times that generated by our factories (Figure 1). In response, we are working to achieve a GHG factor of 5 for prevention of global warming by fiscal 2011 (pages 18 and 23). We intend to accomplish this by enhancing both the functionality and energy efficiency of product lines throughout the household, from home appliances to AV equipment, building materials, and energy generation products.

\*<sup>8</sup> Source: Ministry of the Environment, Japan

### ■ Ensuring that all of our activities contribute to the prevention of global warming

We are working actively to reduce CO<sub>2</sub> emissions from product distribution. We are aiming to increase use of rail freight, which generates fewer CO<sub>2</sub> emissions than trucks, to 30,000 containers in fiscal 2011, roughly 2.5 times that of fiscal 2005.

In addition to product distribution, CO<sub>2</sub> emissions also occur with the use of vehicles for the transportation of people. Through the proactive adoption of fuel-efficient cars such as hybrids, we are targeting a 15% reduction of CO<sub>2</sub> emissions from corporate cars by fiscal 2011 compared to fiscal 2004.

We also promote the planting of trees, which helps increase the absorption of CO<sub>2</sub>, and have conducted a Love the Earth Citizens' Campaign. Matsushita is endeavoring to contribute to the prevention of global warming from every angle (page 26).

Prevention of global warming

## Steady advances in energy conservation at factories

Website ■ [panasonic.co.jp/eco/en/datafile/](http://panasonic.co.jp/eco/en/datafile/)

We are making steady progress on our Three-year Energy Conservation Plan toward achieving our global CO<sub>2</sub> reduction targets. We will continue to strengthen our efforts, with a special focus on implementing energy conservation in regions and business areas that are showing rising CO<sub>2</sub> emissions.

Also in Matsushita's Sustainability Data File:  
[panasonic.co.jp/eco/en/datafile/](http://panasonic.co.jp/eco/en/datafile/)

### Prevention of global warming

Four electrical and electronic-related industrial associations' Voluntary Action Plan for the Prevention of Global Warming  
[www.meti.go.jp/committee/materials/downloadfiles/g50223b14\\_3j.pdf](http://www.meti.go.jp/committee/materials/downloadfiles/g50223b14_3j.pdf) (in Japanese only)

### How is Matsushita addressing energy conservation at factories?

We are working hard to reduce CO<sub>2</sub> emissions, aiming to achieve our targets by 2010. We have instituted a Three-year Energy Conservation Plan, which is composed of specific energy-conservation measures and investment plans, covering all manufacturing sites worldwide. We use an energy-conservation rate<sup>\*1</sup> as an index for our annual energy-conservation targets, and incorporate the progress in achieving this rate into our internal environmental performance evaluations. The target energy-conservation rates have been set at 3.5% for the product assembly segment and 7% for the device segment, which consumes large amounts of energy.

As a result of these ongoing efforts, we raised power

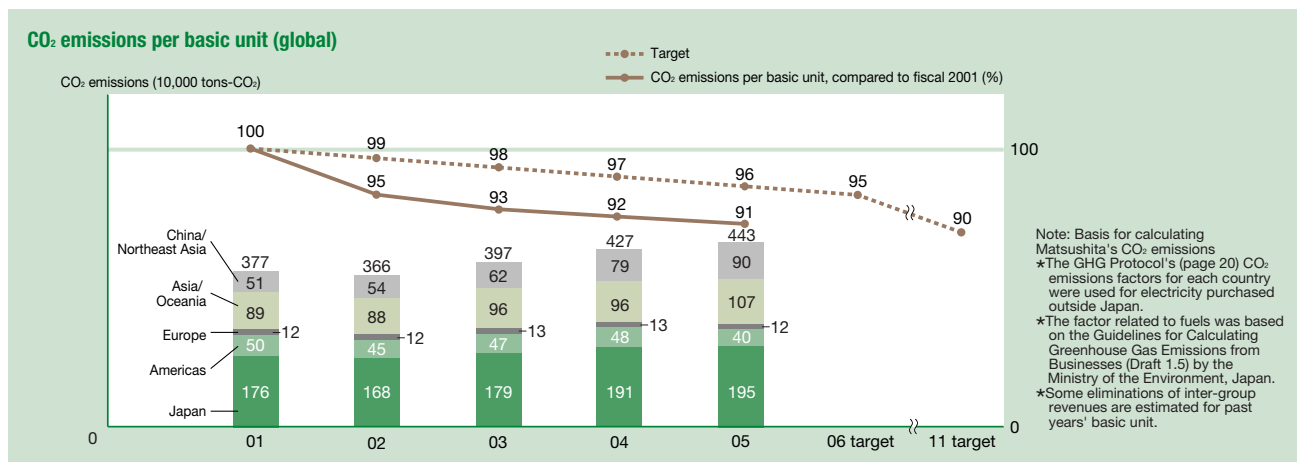
generation from co-generation systems, which provide on-site generation of electricity and also utilize the exhaust heat, to nearly 18% of our total power usage in Japan.

<sup>\*1</sup> Energy-conservation rate = Amount of energy consumption reduced through the current fiscal year's measures (converted to CO<sub>2</sub>) / Amount of energy consumed in the previous fiscal year (converted to CO<sub>2</sub>). (Including some prospective values. Excluding Matsushita Electric Works and PanaHome.)

### Fiscal 2005 results

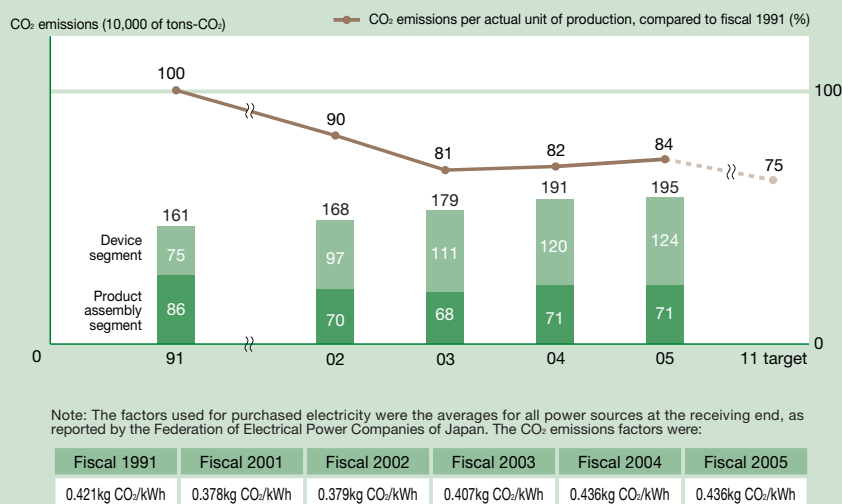
Our energy-conservation measures implemented in fiscal 2005 resulted in a global reduction of 240,000 tons of CO<sub>2</sub>, (150,000 tons in fiscal 2004). A 7.0% energy-conservation rate was attained in the assembly segment, a 6.4% rate in the device segment, and a 6.7% rate on average.

Through these efforts we cut fiscal 2005 CO<sub>2</sub> emissions per basic unit<sup>\*2</sup> by 9.1% compared to fiscal 2001,



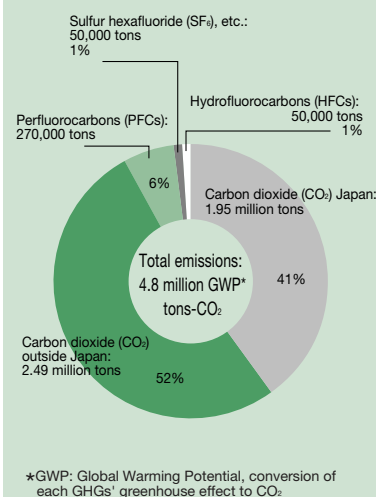
Graph 1

## CO<sub>2</sub> emissions per actual unit of production (Japan)



Graph 2

## Composition of GHG emissions (fiscal 2005)



Graph 3

achieving our fiscal 2005 target of a 4% reduction per basic unit compared to fiscal 2001. However, with 4.43 million tons of CO<sub>2</sub> emissions, total emissions increased by 160,000 tons compared to fiscal 2004 (Graph 1).

★2 CO<sub>2</sub> emissions per basic unit = CO<sub>2</sub> emissions / (consolidated net sales ÷ Bank of Japan's corporate goods price index (electrical equipment))

## Why CO<sub>2</sub> emissions increased, and countermeasures

Production expansion in China and other parts of Asia was the main driver of increased CO<sub>2</sub> emissions. Specifically, China's large CO<sub>2</sub> emissions factor (page 20) is attributable to a high percentage of coal used as a power source.

In fiscal 2005, we held Factory Energy Conservation Seminars that provided coaching in energy-conservation technologies and human resources development in China and four Southeast Asian nations (pages 48 and 52). A CO<sub>2</sub> emissions reduction project was launched in China at Beijing Matsushita Color CRT Co., Ltd., which manufactures cathode-ray tubes for televisions, resulting in a reduction of 34,500 tons of CO<sub>2</sub>.

In Japan, fiscal 2005 CO<sub>2</sub> emissions per actual unit of production (page 19) improved by 16% compared to fiscal 1991. Even so, CO<sub>2</sub> emissions in Japan increased by 330,000 tons compared to fiscal 1991, to 1.95 million tons. This increase is attributable to expanded production volume in the device division, including semiconductors and plasma display panels (PDPs). Demand is exploding for digital home appliances, and the heart of these appliances is PDPs and semiconductors such as system LSIs. The microfabrication process for semiconductor wafers and the manufacture of panels for PDPs require large amounts of energy. Future CO<sub>2</sub> emissions can therefore be expected to increase along with the continuing expansion of these businesses.

A number of efforts have been implemented to check this upward trend and improve CO<sub>2</sub> emissions per basic unit. The Uozu Plant of Matsushita's Semiconductor Company cut CO<sub>2</sub> emissions by about 16,000 tons, with

improvement of energy efficiency accompanied by the introduction of an ice thermal storage system.

To achieve our global targets (page 20), we will continue working actively to reduce CO<sub>2</sub> emissions, mainly in our semiconductor and PDP divisions. We will also transfer energy-conserving technology to China and other parts of Asia, develop human resources, and raise energy-conservation targets there.

## Reduction of GHG emissions other than CO<sub>2</sub>

The production process for semiconductors uses GHGs other than CO<sub>2</sub> such as perfluorocarbons (PFCs) and sulfur hexafluoride (SF<sub>6</sub>). Aiming to achieve our fiscal 2011 targets (page 20), we are moving forward with the minimization of gas consumption, the adoption of alternative gases, and the installation of gas scrubbers. In fiscal 2005, these measures resulted in a reduction of 12,000 GWP tons-CO<sub>2</sub>\*<sup>3</sup>, a 4% reduction over the previous fiscal year (Graph 3).

★3 Performance for January to December.

## Contributing to developing countries through the Clean Development Mechanism

The Clean Development Mechanism (CDM) is a method authorized by the Kyoto Protocol whereby industrialized nations and developing countries cooperate to reduce GHG emissions in developing countries. Through CDM projects, industrialized nations acquire emissions credits towards their CO<sub>2</sub> reduction targets while helping to achieve sustainable development in developing countries.

In order to accelerate our prevention of global warming measures and to contribute to the development of developing countries, we are exploring the feasibility of CDM projects. Two possibilities are efforts to promote the dissemination of energy-conserving products and the implementation of additionally energy-conservation measures at factories in developing countries. Matsushita plans to acquire approximately 100,000 tons of CO<sub>2</sub> emissions credits annually from each project.

Prevention of global warming

## Reducing household greenhouse gas emissions

Website ■ [panasonic.co.jp/eco/en/datafile/](http://panasonic.co.jp/eco/en/datafile/)

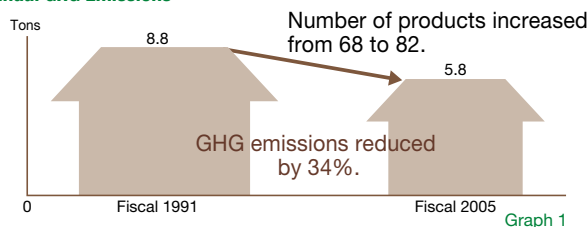
To reduce household greenhouse gas (GHG) emissions and further contribute to the prevention of global warming, we are working to enhance the energy efficiency of our products. Toward that end, we are aiming to achieve a household GHG factor 5 by fiscal 2011. To promote the development of Green Products, we have established an independent accrediting system and are working to achieve our targets.

### Reducing household GHG emissions while maintaining a comfortable lifestyle

Based on the results of a simulation<sup>\*1</sup> run on Matsushita products used throughout the household, the fiscal 2005 household GHG factor was 1.8, compared to fiscal 1991. This indicates that annual household GHG emissions can be reduced by 34% in a household that is equipped with advanced products containing Matsushita's latest energy-conservation capabilities, despite an increase in the number of products used in the household from 68 to 82.

In the future, we will strive to achieve our targets by working to enable all households to acquire our advanced, energy-efficient products, and also raising the effect of household insulation.

#### Annual GHG Emissions



<sup>\*1</sup> Calculated based on the "Creating Value for a New Lifestyle" simulation. Conditions for the simulation were as follows:

#### Lifestyle model

##### Family and home

Four-member, three-generation household with grandmother (70), father (40), mother (37), and daughter (10). The father was assumed to work at home one day a week. The family was assumed to live in a two-story, single-family home with three bedrooms, a living room, dining room, kitchen, and Japanese-style room with a total floor space of 136.9m<sup>2</sup> (average for Japan).

##### Home appliances

For fiscal 1991, the home appliances were assumed to be the latest models of products with a high market penetration level. For fiscal 2005, to reflect lifestyle changes, the household products were assumed to be the latest products recommended by Matsushita regardless of their market penetration level. Additionally, the simulation reflects the increasing number and size of products in use.

Also in Matsushita's Sustainability Data File:  
[panasonic.co.jp/eco/en/datafile/](http://panasonic.co.jp/eco/en/datafile/)

Environment-conscious design

Product energy conservation

Superior GPs

N's Eco Project

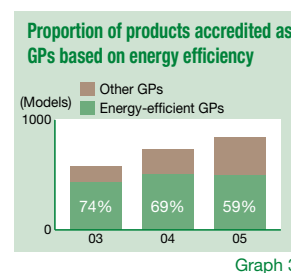
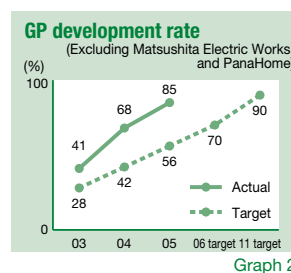
[national.jp/2eco/](http://national.jp/2eco/) (in Japanese only)

### Enhancing product energy efficiency

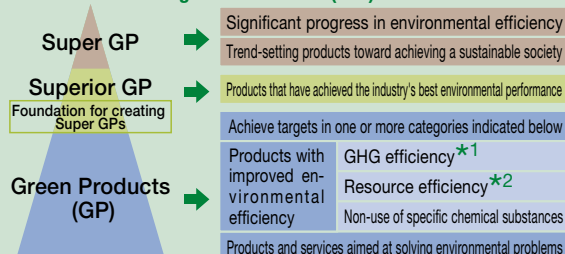
The energy efficiency of each product must be enhanced in order to achieve a GHG factor 5. Matsushita refers to products that are based on environment-conscious design as Green Products (GPs), and accredits them based on the system shown in Figure 1. We are aiming to have nearly all of our product development target GPs (90% by fiscal 2011). In fiscal 2005, we accredited 837 models as GPs, and greatly exceeded our GP development rate<sup>\*2</sup> target of 56% by achieving 85% (Graph 2). Among these, products accredited as GPs based on energy efficiency account for 59% of models (Graph 3). Every year, we raise the bar on GHG efficiency (Figure 1)—one standard of energy efficiency. (Our fiscal 2006 target is a 30% or greater GHG reduction, compared to a 24% or greater reduction for fiscal 2005, both against 2000 levels.) As above, we are continuously striving to improve the energy-conservation capabilities of Matsushita products.

Matsushita informs customers that a product incorporates environment-conscious design by the Environmental Label type II (self-declaration claims).

<sup>\*2</sup> GP development rate: sales ratio of Green Products versus products developed in the current fiscal year.



#### Criteria for accrediting Green Products (GPs)

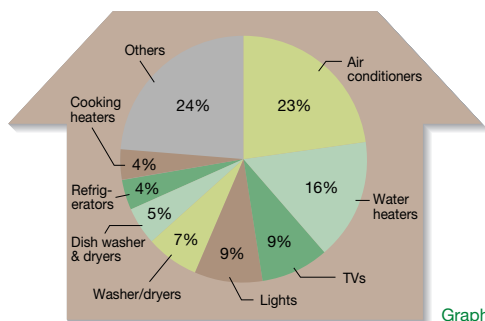


<sup>\*1</sup> GHG efficiency: product life x product functions / GHG emissions over the entire life cycle

<sup>\*2</sup> Resource efficiency: product life x product functions / non-circulating resources over the entire life cycle

Figure 1





Fiscal 2005

Graph 4

### Breakdown of GHG emissions over the life cycle for Matsushita products used in a single household (fiscal 2005)

Graph 4 shows the percentage weight of GHG emissions from home appliances used in a single household. Below, we introduce the energy-conservation capabilities of typical products from each of the product categories.

## Typical energy-efficient products in each category

### Air conditioners

#### Air conditioner



The industry's first a.c. with a built-in automatic filter cleaning system.

**GHG factor:** 2.5

Reference product: 1990-model inverter air conditioner  
Product functions: 1.2 times Product life: 1.0 times

### Water heaters

#### CO<sub>2</sub> heat pump water heater: National's "ECO CUTE™"



Supplies about 4.2 times the amount of heat for the energy consumption by utilizing atmospheric heat.

**GHG factor:** 3.2

Ref. product: 1994-model heat pump water heater Product functions: 1.4 times Product life: 1.0 times

### TVs

#### Digital high-vision plasma TV



Combines energy efficiency with a clear picture image. Standby power consumption is about 0.2 W.

Ref. product: 2000-model plasma TV  
Product functions: 1.8 times  
Product life: 1.0 times

**GHG factor:** 2.7

### Lighting

#### Twin Pa lighting equipment



Brightness adjustable from 10 to 100%. Conserves energy with a LED night light.

Ref. product: 1990-model chandelier, using magnetic ballast for circular fluorescent lamp 30W x 4  
Product functions: 1.0 times  
Product life: 1.0 times

**GHG factor:** 1.7

### Washer/dryers

#### Tilted-drum washer/dryer



Foam and spray washing system in a tilted drum combines powerful cleaning ability with water conservation.

Ref. product: 1997-model drum washer & dryer  
Product functions: 1.4 times  
Product life: 1.0 times

**GHG factor:** 1.2

### Dish washer & dryers

#### Dish washer & dryer



Uses about 1/14 the water compared to washing by hand.

**GHG factor:** 1.9

Ref. product: Washing dishes by hand  
Product functions: 1.0 times  
Product life: 1.0 times

### Cooking heaters

#### IH cooking heater



Works with pans made of aluminum and copper as well as steel.

**GHG factor:** 2.0

Ref. product: 2000-model IH cooking heater  
Product functions: 1.9 times  
Product life: 1.0 times

### Refrigerators

#### Hydrofluorocarbon (HFC)-free refrigerator



Uses HFC-free refrigerants and foam insulation. Completely encased in highly efficient vacuum insulation. Annual energy-consumption reduced by 67%, compared to 1993. Achieved nearly four times the insulation efficiency of regular vacuum insulation (silica vacua). Achieved switch-over of all models produced in Japan to HFC-free models.

**GHG factor:** 2.9

Ref. product: 1993-model refrigerator/freezer  
Product functions: 1.0 times  
Product life: 1.0 times

Prevention of global warming

## Trailblazing the energy generation business

Website ■ [panasonic.co.jp/eco/en/datafile/](http://panasonic.co.jp/eco/en/datafile/)

Matsushita is striving to develop energy generation products, which contribute greatly to the reduction of CO<sub>2</sub> emissions. Below, we introduce Matsushita's "Household Fuel Cell Cogeneration System" and Wind/Solar Hybrid Power "Kaze-Kamome."

### Envisioning a future with fuel cells

The principle of fuel cells is something akin to bringing a power plant to one's home. Fuel cells synthesize water from hydrogen and oxygen and use the electricity generated in this process as a household energy source. Since the power is generated where it is used, there is minimal loss of electric power, unlike long-distance line transmission. With the utilization of generated heat, the energy efficiency of fuel cells reaches approximately 78%, compared to approximately 37% for thermal power generation.

Matsushita has envisaged fuel cell technology for the past 45 years. We regard fuel cells as a core technology for supporting "coexistence with the global environment," and have made every possible effort under a special "president's project." In February 2005, we delivered the first Household Fuel Cell Cogeneration System (Photo 1) to the new official residence of the prime minister (Photo 2). In April, an installation ceremony was held in the presence of Prime Minister Junichiro Koizumi.

We envision a new age where people utilize energy in

a new way such as using fuel cells to create electricity and also hot water through home power generation. Fuel cells can provide hot water for use in clothes dryers, dish washer & dryers, and floor heating systems. Moreover, trial calculations show that the energy-conserving effect of fuel cells can cut annual energy costs by about 50,000 yen (US\$467). We trust that fuel cells will play a key role in the future as we aim to help protect the environment while contributing to people's new lifestyles. In addition to installing fuel cells, using equipment that utilizes natural energy sources, such as solar batteries, will enable people to enjoy lifestyles that generate even less CO<sub>2</sub>.

We will push forward with the development of technologies that reduce CO<sub>2</sub> emissions while improving durability and reducing costs.

### Kaze-Kamome (Wind Seagull) in action

The Kaze-Kamome (Photo 3), which Matsushita released in 2001, is a standalone hybrid outdoor lighting system. Electricity generated from wind and solar power runs the lights at night. The Kaze-Kamome is unobtrusive, because it uses a low-noise Savonius Windmill. Fluctuations in wind power are overcome with the combination of solar power generation, giving the lights steady brightness.

We believe true energy conservation starts with a conscious choice to use the limited power generated by the Kaze-Kamome. In the future, we will continue to propose diverse applications for how the Kaze-Kamome can be utilized to strike a balance in society between peace of mind and energy conservation, including use as a power source during disasters or use in areas without power generation facilities, such as mountainous regions.



Household Fuel Cell Cogeneration System Photo 1



Shipping ceremony (February 2005) Photo 2



27 Kaze-Kamome units installed at 2005 World Exposition, Aichi, Japan

Photo 3

Also at our website:

**Household Fuel Cell Cogeneration System**  
[panasonic.co.jp/appliance/global/FC/](http://panasonic.co.jp/appliance/global/FC/)

Prevention of global warming

## Ensuring that all of our activities contribute to the prevention of global warming

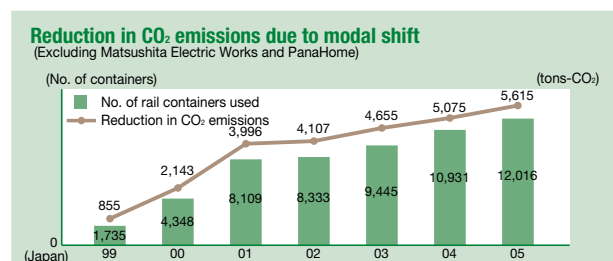
Website ■ [panasonic.co.jp/eco/en/datafile/](http://panasonic.co.jp/eco/en/datafile/)

In addition to our efforts at factories and in our products, we are also working to reduce CO<sub>2</sub> emissions from the transport of goods and people. Moreover, Matsushita will continue to actively contribute to the prevention of global warming in all of our initiatives, including the promotion of eco-lifestyles among employees and their families and tree planting campaigns.

### During the transport of goods and people

The distribution of goods accounts for 40% of the CO<sub>2</sub> emitted by Japan's transportation sector. Our distribution of goods emits about 100,000 tons (fiscal 2004) of CO<sub>2</sub>, which is 0.1% of distribution CO<sub>2</sub> in Japan. In addition, the use of our company vehicles emits about 49,000 tons (fiscal 2005, partial estimate) of CO<sub>2</sub>, which is about 0.1% of the 54 million tons emitted by Japan's corporate vehicle fleet.

We are focusing on modal shift, or the shift of transportation modes from trucks to railroads and ships. We increased the number of rail freight containers (calculated on the basis of five-ton containers) from 1,735 in fiscal 1999 to 12,016 in fiscal 2005, a nearly seven-fold increase. This shift reduced CO<sub>2</sub> emissions by 5,615 tons compared to what emissions would have been with continued truck distribution (Graph 1). Moreover, when Matsushita Logistics Co., Ltd., replaces trucks, it will replace them with highly fuel-efficient hybrid trucks. It is aiming to switchover its entire fleet of 353 trucks (as of the end of fiscal 2005) to environmentally conscious trucks, such as hybrids, by the end of fiscal 2007 (30% of the fleet in fiscal 2005). We have



Graph 1

Also in Matsushita's Sustainability Data File:  
[panasonic.co.jp/eco/en/datafile/](http://panasonic.co.jp/eco/en/datafile/)

Shift to green marketing and logistics

Social contributions and awareness  
in the environmental field

Love the Earth Citizens' Campaign

[panasonic.co.jp/eco/le/](http://panasonic.co.jp/eco/le/) (in Japanese only)

only just begun to understand the level of CO<sub>2</sub> emissions generated by our distribution of goods outside of Japan and between countries. In the future, we will improve the precision of the data and on formulating reduction measures.

In Japan, we own about 12,000 vehicles (as of the end of fiscal 2005). We are moving forward with the Panasonic Leap Ahead Eco Car Plan, a plan to replace all our vehicles with eco cars<sup>\*1</sup> which are environment-conscious in terms of fuel efficiency and exhaust. We aim to reduce CO<sub>2</sub> emissions from our vehicles by 7% by fiscal 2007 and 15% by fiscal 2011, compared to fiscal 2004, respectively.

<sup>\*1</sup> Eco car: The same type of environment-conscious vehicles adopted by the Japanese government and that are designated by the government as low-emission vehicles or vehicles that comply with the green tax plan.

### Reducing CO<sub>2</sub> by fostering human growth

As part of the Love the Earth Citizens' Campaign—a program launched by Matsushita in 1998 that promotes eco-lifestyles among employees and their families—Matsushita employees have been participating in activities under the Household Eco-account Book initiative since 1998. In fiscal 2004, families that had used the environmental household budget ledger for two consecutive years were able to reduce their annual CO<sub>2</sub> emissions by an average of 2% over the previous year. If the households of all 84,000 Matsushita employees in Japan were to put this initiative into practice, it would add up to an annual reduction of 13,000 tons of CO<sub>2</sub>. We will continue increasing the number of households that use the book.

We are also engaged in tree planting campaigns around the world, an activity that translates into more absorption of CO<sub>2</sub>. Since 2000, we have planted a total of 2,600 trees in the Philippines with the aim of enough water supply. Starting in 2002, the eight Matsushita Group companies in Singapore, with their executives, have planted a total of 180 trees (Photo 1).



Tree planting in Singapore  
Photo 1

## Third Party Opinions for Matsushita about Climate Change Measures

- 1) Your strategy should be linked to the vital environmental issues and matters that lie outside the company, such as increasing natural disasters caused by climate change, demands from customers, the scientific consensus on climate change and so forth. The ideal strategy for Matsushita to adopt against climate change is a clear, long-term vision that "Matsushita will not contribute to climate change." The strategy must therefore involve ceaseless efforts to conserve energy and a step-by-step switch to renewable energy. Even if there is no political imperative placed on business enterprises to achieve targets set by the Kyoto Protocol, Matsushita should not just focus on achieving the targets set by the government, but should still be able to set much higher targets, by taking economic, business and sustainability factors into account.
- 2) Matsushita should not consider climate change only, but should take a much broader perspective, including other sustainability issues, when formulating your strategies. By so doing, Matsushita will be able to prevent new issues arising as an unforeseen consequence of issues and focus measures at root causes.
- 3) It is necessary that after taking customers' demands, laws and regulations, and profit rates into account, you keep the balance between a long-term vision and short-term targets. If you create a mid-term vision, you may run the risk of spending unnecessary time and energy, as there is always the possibility that markets and technologies might change in the meantime. We think you should focus on a long-term vision and the short-term targets which you can introduce or achieve in a short time.
- 4) Although measurement is difficult, in targets for products, Matsushita should include the reduced energy consumption during their operation. You will be able to win customers' understanding and cooperation by advocating energy conservation to customers and by communicating with them effectively. However, if you fail to communicate transparently with customers, you will command less respect from society in case of the increase in energy consumed by factories or the increase in volume of products sold in the future, despite the fact that the products themselves consume less energy during their operation.
- 5) It is important that Matsushita promotes an intelligent dialogue with consumers, reviews overall market strategies and develops marketing approaches that help promote sustainability. We hope that by formulating more aggressive targets to help prevent climate change, Matsushita can demonstrate its own position clearly and play a leadership role in the fight against climate change worldwide.

### Comments

**Make it an issue for everyone:** It is a real challenge for Matsushita to make consumers realize that taking measures against climate change is an issue for everyone in their daily life. We suggest that Matsushita makes Factor X more meaningful for consumers.

**Partnership:** We strongly recommend that Matsushita incorporates partnerships with NGOs and expert organizations into its strategies. You can work to influence government agencies so that the opinions of business enterprises with a positive contribution to make to environmental protection are reflected in administrative policies. Then, you can set higher goals and seek to achieve them.

**Cost efficiency:** It is important that Matsushita links its climate change objectives with quantified cost reductions in order to show that implementation of farsighted measures against climate change can be converted into value to the shareholder.

**China:** China is a noteworthy market from an environmental viewpoint. Matsushita can introduce new environmental technologies there; you will be able to develop technologies that will make environmental investments more cost efficient than in Japan at present.

**Switch to up-stream thinking:** You can avoid the risk of making a wrong decision by focusing on solving the issue of using fossil fuels at the most fundamental level, instead of taking measures after CO<sub>2</sub> is emitted. Thus, you will be able to move on to find sustainable solutions. It is vital that you always stick to up-stream thinking and see whether the results of your measures are bringing about favorable effects for both customers and manufacturers.

**Product development and business:** You should focus more on the perspective, "What kinds of products are really needed for a sustainable society from now on?" instead of constantly focusing on improving the existing products. We do hope Matsushita will make further efforts to develop products providing renewable and sustainable energy such as fuel cells.

As Matsushita has a firm commitment to the achievement of a sustainable society, we are confident that Matsushita will play a leading role in the electronics industry in the creation of a sustainable society.

**"Think globally, act locally":** We have concluded from the recent dialogue with your company that this old slogan provides an important perspective regarding your company's strategy against climate change.

Matsushita is a global enterprise that markets its products worldwide and relocates manufacturing overseas. However, when it comes to measures for global issues such as climate change, you cannot just apply what you are required to do in Japan to the rest of the world. The visions and the strategies of a global enterprise to prevent climate change demand, in the first place, a long-term lofty vision based on gaining a clear picture of the overall world situation, and to share this information with your manufacturing sites and suppliers on a global basis.

Furthermore, the best strategy is to establish short-term action plans that meet the conditions of each state, and then integrate them into your daily business activities. This is precisely what is meant by the expression "Think globally, act locally." We expect that Matsushita will create a global strategy that will be a model for Japanese enterprises.



Chairman of U.K. Branch  
The Natural Step International

Jonathon Porritt

*Jonathon Porritt*



Analyst, Sweden Branch  
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Head of Japan Branch  
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Sachiko Takami

*Sachiko Takami*



## Product recycling

# Creating, expanding, and making the most of recycling systems

Website ■ [panasonic.co.jp/eco/en/datafile/](http://panasonic.co.jp/eco/en/datafile/)

Today, the capacity of landfills everywhere is being strained and there is concern that our living environment will be ruined if society as a whole does not reduce the amount of waste. Greater resource productivity is needed to avoid resource depletion and destruction of ecosystems due to resource extraction. Recycling makes it possible to change used products into resources again. Matsushita is committed to actively fulfilling its responsibility to this social system.

## Contribution to the collection and recycling of used products

Recycling cannot be accomplished by manufacturers alone. Recycling is a system that comes together only with the cooperation of society as a whole, including consumers, retailers, transportation companies, manufacturers, recycling facilities, and municipalities. While recycling methods and responsibilities vary by country and locality, we see two major points on which we can contribute in Japan. One is establishing a collection system that manages the transport of used products from the manufacturer's collection sites to recycling facilities. The other is the recycling of each material that has been separated out after used products are dismantled.

With the entry into effect of the Law for Recycling of Specified Home Appliances in Japan in April 2001, Matsushita began recycling four types of home appliances: TVs, refrigerators, air conditioners, and washing machines. This section introduces the collection system and discusses the recycling of used products.

## Efficient transportation of used products

Imagine moving to a new home. Moving large, heavy appliances such as a refrigerator is difficult, and paying a mover is not cheap. In the same way, used products must be moved to be recycled. Every day in Japan, used products are moved from consumers to retailers, from retailers to designated collection sites, and from there to recycling



Dismantling used TVs at the Matsushita Eco Technology Center  
Photo 1

### Matsushita's home appliance recycling system in Japan

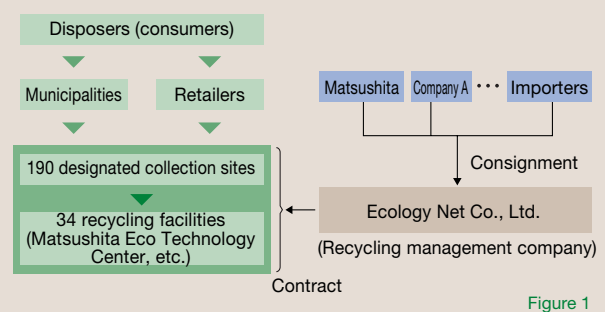


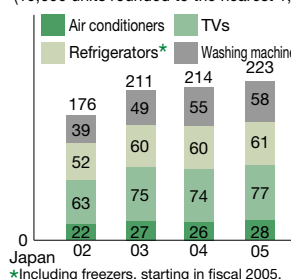
Figure 1

facilities. The shorter the distance of the move is, the more efficient the move is and the less CO<sub>2</sub> is emitted by the trucks.

Retailers collect used products from consumers. Verifying on a map the locations of all our retailers and recycling facilities throughout Japan, we carefully selected and designated an optimal number of collection sites in the most suitable locations. At present, we have a network of 190 designated collection sites and 34 recycling facilities. In 2000, we established Ecology Net Co., Ltd., to oversee the management and operation of the whole network. Ecology Net Co., Ltd., which also performs contract work for other manufacturers, smoothly manages the recycling system, adjusting its operations to the volume of used products collected (Figure 1).

In fiscal 2005, Matsushita recycled 2.23 million of its products, an increase of 4% over the previous year (Graphs 1 and 2). We attribute this achievement to the spread of recycling awareness.

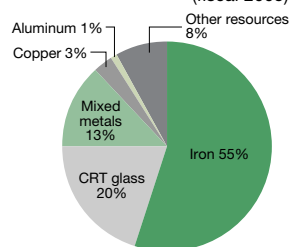
Number of products recycled  
(10,000 units rounded to the nearest 1,000)



\*Including freezers, starting in fiscal 2005.

Graph 1

Recovered materials, by weight  
(fiscal 2005)



Graph 2

## Product recycling

## Preparing for the day when products will be recycled

Currently, the Matsushita Eco Technology Center (METEC), our own recycling facility, is amassing a wealth of recycling know-how and ideas from its daily processing of used products. METEC is providing feedback to product designers. Developing products that will be easier to dismantle and sort when they are recycled is an important way that Matsushita can help build a recycling society. This also lowers the cost of recycling, which is an important factor when it comes to maintaining and expanding the recycling system.

## Test dismantling of products

Designing products that can be easily recycled is essential to achieving a high recycling rate,<sup>\*1</sup> quickly and at a low cost. Toward this end, it is important to identify how products should be improved. Matsushita product designers are currently working on that issue. Individual products are made up of a variety of components. The designers themselves are performing dismantling tests on existing products and prototypes to investigate how long it takes to dismantle each component, as well as the quality and weight of the components. Matsushita has developed software that easily calculates the recycling rate and cost based on these data, and is utilizing this information to improve the recycling rate, starting from the design phase.

The test dismantling of products has already been completed on about 40 models, and we are accumulating data on recycling technology and know-how. We will continue these tests and make a complete database for use in the design of products that can one day be easily recycled.

<sup>\*1</sup> Recycling rate: The Law for Recycling of Specified Kinds of Home Appliances defines this as "weight of components and materials that can be sold or are transferable without charge / product weight."

## Making recycling smoother

Recycling costs money. In Japan, consumers bear the cost. It is important for manufacturers to minimize these recycling costs while maximizing the recycling rate. Matsushita is continuing to work with the relevant parties in an effort to reduce collection and recycling costs.

Moreover, Matsushita is contributing to the development of recycling by expanding into new businesses that make the most of the know-how and networks gained through its product recycling business in Japan. In 2003, we established Environmental Technology Solutions Co., Ltd., whose businesses include making use of our product recycling network to recycle computers and two-wheeled vehicles, selling recycled plastics internally and externally, and operating an electronic manifest system that allows companies which discard industrial waste to use GPS and digital imaging to verify that it is transported properly.

Product recycling has just begun in society. Matsushita is committed to making the recycling system continue to run more and more effectively.

### □ Stakeholder opinion

How many employees have visited the Matsushita Eco Technology Center (METEC)? I think it is a suitable place for environmental education.  
(Member of the Ecological Society of Japan)

### □ Matsushita reply

About 6,900 people affiliated with Matsushita from in and outside Japan have visited METEC since it began operations. Tours are continuously being held during new employee trainings, technology courses for mid-career employees, and promotion trainings. Matsushita expects these visits to METEC will provide useful input for various business operations.

## Topics

### Example of improved air conditioner design

The air conditioner provides one example of our success in improving design through dismantling tests. In usual air conditioners, the foam polystyrene insulators are so firmly glued to the indoor units for insulation (Photo 1), that these two parts are inseparable. The insulators are made of a different material than the plastic main unit frames, so now, the whole frame is discarded, because the different types of plastic cannot be recycled together. By changing the design so that the foam polystyrene can be easily removed (Photo 2), we enabled the frame to be recycled, improving the recycling rate that can be achieved when this air conditioner is recycled in the future. Normally, increasing the recycling rate requires longer labor time and higher costs on site; however, this improvement reduced those potential costs from the start. Moreover, the assembly time and materials costs during the manufacturing stage were also reduced. This example shows that taking a recycling perspective can also lead to improved productivity in the manufacturing process.



Foam polystyrene glued along the entire surface in the 2003-model

Photo 1



Polystyrene spot fused in the 2004-model (○: fused spots)

Photo 2

## Product recycling around the world

### Europe

European Union (EU) member states are continuing to write legislation based on the Directive on Waste Electrical and Electronic Equipment (WEEE),\*<sup>2</sup> which came into effect in February 2003. The recycling of over 90 types of used products will gradually commence across Europe in August 2005. The WEEE directive will require manufacturers to recycle a certain percentage by weight of used products. The percentage will be derived from their share of sales, and they must recycle that amount regardless of whether the used products are their own or not.

In advance of the new legislation coming into force, in June 2004 Thomson Corporation, Victor Company of Japan (JVC), and Matsushita agreed to form a comprehensive partnership in the collection and recycling field. Furthermore, in April 2005 Matsushita established Ecology Net Europe GmbH as a wholly-owned subsidiary in Germany. We hope to achieve low-cost collection and recycling by creating an efficient network of manufactures, recyclers, and transporters through this company. As part of our efforts, we are sending employees with the recycling technology for each product category from Japan to recycling companies in Germany. These employees check the state of compliance and resolve issues relating to the actual recycling of used products, as well as conduct demonstration tests. In fiscal 2005, we sent these employees more than 10 times to a total of six sites. Matsushita is also aiming to improve the abundant know-how and technologies of recycling companies in Europe and Japan by creating opportunities for the two groups to exchange views.

\*<sup>2</sup> The Directive on Waste Electrical and Electronic Equipment (WEEE) requires manufacturers, municipalities, and retailers to collect and recycle used electrical and electronic equipment.

### Japan

Under the concept "from products to products," the Matsushita Eco Technology Center, our own recycling facility, researches design techniques and the reusability of recycled materials in order to improve the recyclability of products. The facility is open to the public, and a total of about 38,500 people from around the world have visited the facility since it opened in 2001.



A visit to the Matsushita Eco Technology Center Photo 3

### China

In China, the amount of waste generated by electrical home appliances in particular, which have seen rapid market penetration since the 1980s, is expected to increase in the future. Along with the introduction of legislation such as the Management Regulation on the Recycling of Used Household Electronic Products and Electronics Products, four provinces and cities are implementing pilot trials with model home appliance recycling businesses.

In coordination with other companies, Matsushita is actively making proposals for legislation to facilitate sharing of responsibilities among stakeholders and the building of a sustainable social system for the recycling of home appliances.

### United States of America

In the United States, California and Maine have already passed laws requiring the recycling of TVs and computers, and many other states are debating whether to introduce similar legislation to address the issue of disposal of electronic devices.

Matsushita is fulfilling its responsibility as a manufacturer by improving designs and developing new products that will be easy to recycle—in other words, environment-conscious design. We also support the idea that consumers should be made aware of the costs of collection and recycling at the point of sale of new products and be asked to bear those costs. Matsushita participates in the Electronic Manufacturers Coalition for Responsible Recycling, through which it actively makes policy recommendations for states considering adoption of new electronics recycling requirements. In the U.S., where Matsushita mainly sells AV equipment, we are focusing on the recycling of this type of electronics equipment. By working cooperatively with states to advocate an equitable approach to recycling, we are helping to facilitate the building of a sustainable recycling infrastructure and to heighten society's awareness of the importance of recycling electronic devices.

Matsushita is participating in the U.S. Environmental Protection Agency's Plug-In To eCycling program, which promotes the recycling of used electronic products through shared responsibility among consumers, local municipalities, retailers, and manufacturers. During the four years ending in March 2005, we supported a total of 841 used product collection events in 26 states, resulting in the collection and recycling of about 9,437 tons of equipment. In 2002 and 2003, we received the EPA's Waste Wise Partner of the Year Award for our waste reduction activities, and in 2004, we won the overall Grand Prize. In addition to our support of eCycling activities, in October 2004 we independently sponsored a used electronic product collection campaign in New Jersey, where our North American operations are based. We organized the campaign, which included the participation of local community residents, with the aim of contributing to the community and raising employees' awareness of recycling.



Used products prepared for recycling at Matsushita-sponsored collection event Photo 4

**Also in Matsushita's Sustainability Data File:**  
[panasonic.co.jp/eco/en/datafile/](http://panasonic.co.jp/eco/en/datafile/)

#### Product recycling

**Matsushita Eco Technology Center**  
[panasonic.co.jp/eco/en/metec/](http://panasonic.co.jp/eco/en/metec/)

**Ecology Net Europe GmbH**  
[www.ecologynet-europe.com](http://www.ecologynet-europe.com)

**Matsushita's environmental activities in North America**  
[www.panasonic.com/environmental/](http://www.panasonic.com/environmental/)

## Management of chemical substances

## How is Matsushita managing the environmental risk of chemical substances?

Website ■ [panasonic.co.jp/eco/en/datafile/](http://panasonic.co.jp/eco/en/datafile/)

Some chemical substances may affect human health and ecosystems, and must therefore be appropriately managed. Matsushita is proceeding with the prohibition, reduction, and adequate management of specific chemical substances from two perspectives—the substances included in products, and the substances used in manufacturing at its factories and other sites around the world.

## Concern for the effects of chemicals in products after their disposal

There is concern that when used products are disposed of inappropriately, the chemicals in those products will seep into the soil and groundwater and affect the ecosystem in the future.

The European Union (EU) has issued the Directive on the Restriction of the use of certain Hazardous Substances in electrical and electronic equipments (RoHS Directive). The RoHS Directive will ban the sales of electrical and electronic equipments which contain six specific chemical substances (lead, mercury, cadmium, hexavalent chromium, and two specific brominated flame retardants [PBB and PBDE]) in the EU market from July 2006.

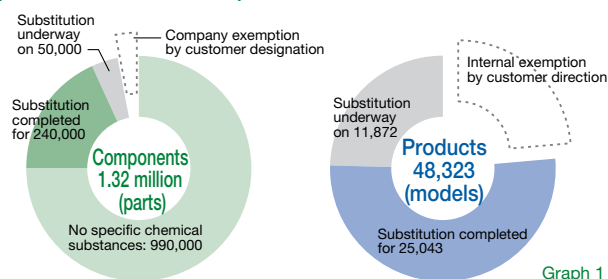
Ahead of the world, we completed the switchover to lead-free solder in all of our products in March 2003. Moreover, we have been working since June 2003 on a group-wide project for non-use of specific chemical substances from all products shipped worldwide from April 2005.

## Specific chemical substances eliminated from 96% of components

This project requires us to ensure that all the parts and materials used in all our products—about 1.32 million components—contain no specific chemical substances, and to replace them with alternatives if necessary. The cooperation of suppliers is essential to achieving this goal. We have therefore strengthened our green procurement activities (page 43) by gaining the understanding and cooperation of

## Efforts for non-use of specific chemical substances in products (as of the end of March 2005)

(Excluding PanaHome)



Graph 1

Also in Matsushita's Sustainability Data File:  
[panasonic.co.jp/eco/en/datafile/](http://panasonic.co.jp/eco/en/datafile/)

Reduction of chemical substances in products  
 Management of chemical substances  
 Prevention of air and water pollution  
 Environmental risk management  
 Regulatory compliance

about 11,000 resource suppliers around the world in an effort to organize the data of the substances contained in all these components. At the end of March 2005, Matsushita completed the substitution of about 240,000 components that contained the substances, thereby achieving non-use of the substances in 96% of all components (Graph 1). As a result, action on about 25,000 product models has been completed. Most of the rest of the 50,000 or so components, such as semiconductors and thermal fuses, is commonly used in about 25% of all product models. Quality evaluations for these components need time, and they have safety standards that need to be met, which also takes time. We will eliminate the specific chemical substances from all required product models\*<sup>1</sup> by the end of October 2005.

\*<sup>1</sup> Excluding models with components and materials with no feasible alternatives or suppliers, for example those commonly used in other industries, or those with components and materials specified by customers.

## Building a system that does not input, use, nor output specific chemical substances

In addition to auditing suppliers' environmental quality systems and strengthening their analysis systems (page 44), we have devised a set of internal guidelines to prevent entry of the substances at each stage of the production process, from design and development to the shipping inspection. The guidelines have been adopted by all business units. Moreover, we produced a basic textbook and analysis manuals. We also held Techno-School courses 57





Techno-School  
course held in  
Europe

Photo 1

times in 17 countries around the world to foster human resources through the sharing of information and practical instruction (Photo 1). Approximately 4,000 employees have taken these courses in the past year and a half.

Through these initiatives, we have established the system and know-how to manage each and every product part we handle. Moreover, we are building up data on chemical substances that are not regulated at present, and we think this will also help us to respond rapidly to new substances of concern over environmental impact. We regard this data as useful also in the development of easily recycled products.

### Managing with the "33/50 Reduction Plan"

Next, this section reports on efforts to manage chemical substances at sites. Matsushita considers this very important because chemical substances can easily and invisibly transfer from the sites where they are used into the air and soil.

In Japan, the need to prevent air and water pollution was recognized in the 1960s due to pollution issues, after which appropriate legislation was introduced.

Since that time, we have regularly ascertained the state of emission from each site and continuously managed chemical substances as part of our environmental management system. Moreover, we set up the Matsushita Electric Group Chemical Substances Management Rank Guidelines (for Factories), which are based on regulations and hazard assessments. In the guidelines, controlled chemical substances are categorized into three ranks: Prohibition, Reduction, and Adequate Management. Based on these guidelines, we are implementing the 33/50 Reduction Plan with the aim of reducing the use of Reduction substances and the release and transfer of Adequate Management substances by 33% over three years from a base year and by 50% in six years.\*2

\*2 More detailed information will be reported in the Environmental Data Book scheduled for publication in October.

### Placing soil and groundwater pollution risks under management

In June 1998, municipalities made public disclosures based on the details of Matsushita's voluntary reports concerning the soil and groundwater pollution by volatile organic compounds that occurred at some company sites. In

follow-up, we issued the Manual for Preventing Pollution of Soil and Groundwater and have put forth a group-wide effort to survey and remediate polluted sites. We are committed to moving forward based on a policy that places all soil and groundwater pollution risks under management as the basis for maintaining the sense of security and safety of the residents of the communities where we do business. We are also working to purify all polluted soil and groundwater.

During fiscal 2004, we have placed all sites in Japan under management, and currently 38 sites have completed their countermeasures. We are now aiming to place all sites outside Japan under management during fiscal 2006.

#### Soil and Groundwater Risk Management Policy

Policy: To maintain the safety and sense of security of the residents of the communities where we do business, all soil and groundwater risks shall be placed under management.

Conditions for "placed under management":

1. Surveys have been completed.
2. Countermeasures have been launched.
3. Inspection wells have been established.
4. Preventive measures have been taken for leakage.
5. Operational management is thorough.

### Minimizing the pollution risk of PCB waste

After polychlorinated biphenyl (PCB) pollution became a great public concern in Japan, Matsushita banned the production of PCB-containing equipment as well as any new use of PCBs. For more than 30 years, companies have been required to store PCB-containing equipment because of the difficulties in establishing a method to treat the PCBs. Later, once apprehensions arose that PCBs were leaking from stored equipment, the Law Concerning Special Measures for Promotion of Proper Treatment of PCB Waste came into effect in 2001. In December 2004, Japan's first PCB waste treatment facility started operations, and is gradually carrying treatment of PCBs ahead.

In the past, we manufactured some equipment in Japan that used PCBs. However, with the law in 1972, we stopped that production and have strictly managed PCBs ever since. In April 2002, the former Toyama Matsushita Electric Co., Ltd. confirmed the burial of PCB-containing capacitors and made a public disclosure. Thereafter, surveys revealed more such burials at four factories and one former factory site, all of which we voluntarily disclosed publicly in January 2003. We appropriately stored them, made reports to municipalities, and prevented off-site migration. We have promised the public to make all-out efforts to excavate buried equipment, treat the PCBs, and purify the polluted soil.

As of June 2005, all excavations have been completed except for those at the former Matsue Matsushita Electric Co., Ltd., and we are planning to complete excavations there by 2008. After confirming the safety, reliability, and economical efficiency of purification of PCB-polluted soil with a test, implemented at the Kitakyushu Eco-Town beginning in May 2005, we will put plans in place for the full-scale soil treatment.

# Social Performance

Matsushita's business is supported by a variety of stakeholders including employees, customers, and local communities. Below, we introduce our efforts to fulfill our corporate social responsibility and build a healthy and fulfilling society.



Photo (top): Participants in the Panasonic Scholarship Program (a program that provides scholarships to students from Asian countries to study at science and engineering graduate schools in Japan), at a summer seminar.

Photo (bottom): Students participating in the Kid Witness News program at the Huber Street School in New Jersey, United States (page 45).



Improving quality and customer satisfaction

## Does Matsushita really follow the "customer-comes-first" ideal?

Website ■ [panasonic.co.jp/eco/en/datafile/](http://panasonic.co.jp/eco/en/datafile/)

At Matsushita, we continuously strive to ensure our customers are more than satisfied with our products and services. Since Matsushita's founding, we have thoroughly managed quality in all our operations—from product planning and design to manufacture, marketing, and after-sale service—from the "customer-comes-first" perspective. Moreover, we respond as sincerely as we can to customer questions and dissatisfaction, and endeavor to make the most of feedback from customers in guiding our business operations, including manufacturing.

### Responding to quality problems, and efforts to resolve them

Matsushita has established a Quality Policy Meeting, the Group's highest body for setting quality policy. The Meeting responds promptly to product safety and other quality problems, with emphasis on disclosing information to the customer based on the customer-comes-first ideal. At Matsushita, we are committed to safe products. When problems do happen to occur, we review our internal standards to ensure that the same problem does not happen again.

### Quality checking period for new products

We spare no pains to ensure that Matsushita does not send inferior goods to the market. In addition to our usual inspection of goods, we have established a "quality maturation period," a period before the shipment of new products during which we test various uses from the perspective of the customer, assessing and checking quality.

### Double checking quality, from the customer's perspective

In November 2004, we established the Product Evaluation Center to double check before shipping new products that Matsushita has developed that the products meet the quality standards expected by customers. In addition to the product inspections performed by each business domain

**Also in Matsushita's Sustainability Data File:**  
[panasonic.co.jp/eco/en/datafile/](http://panasonic.co.jp/eco/en/datafile/)

#### Quality policy/organization

Offering safe products and services

1st place in a quality management survey

Incorporating customer feedback

Customer care system

Repair service cases

company and business unit, the head office conducts product inspections of leading products.

### Strengthening quality in China, a country of expanding production

Matsushita has established a quality committee in every region of the world, the quality managers of which regularly share issues and initiatives, to strengthen quality assurance outside of Japan. In particular, to further strengthen manufacturing capabilities and quality in China, which is expanding its production as a global manufacturing base, the local quality department is monitoring market quality and has established a Chinese quality committee. In addition, the Corporate Quality Administration Division and each business domain company conduct quality audits and train local employees in quality management.

### Example of quality problem response: Broken joint on a titanium frame bicycle

In 2004, a joint on a titanium frame bicycle marketed by a Group company in Japan broke when subjected to stress beyond what it was designed to bear, causing the rider to fall. Matsushita held a press conference and informed customers of the issue via newspapers and our website, and also provided free inspections and repairs.

Moreover, we strengthened our control system to ensure greater safety. Controls for the acceptance of parts



## Improving quality and customer satisfaction

## System for incorporating customer feedback into products and services

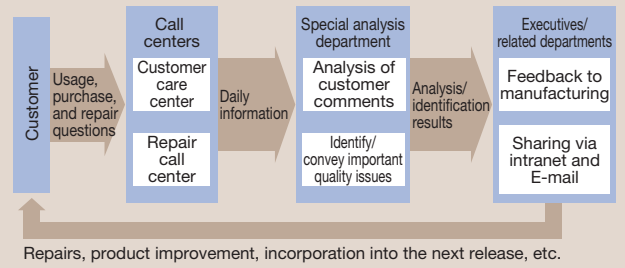


Figure 1

## Efforts to shorten repair times by using a database of repair information

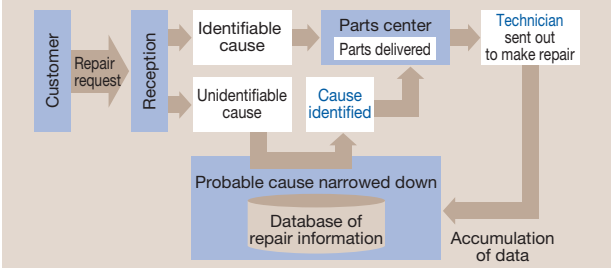


Figure 2

have been tightened, and the current product now undergoes a breakdown test with a greater load than would be applied during normal use. We are also working to raise the awareness of managers and all employees that safety must be given the highest priority.

For questions about this case:

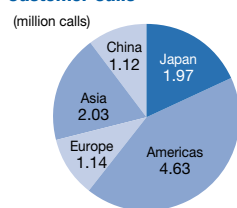
**Toll-free number in Japan: 0120-781-603**  
(in Japanese only)

URL: [www.panabyc.co.jp/info/titan/default.htm](http://www.panabyc.co.jp/info/titan/default.htm)

## Responding to customer inquiries

In fiscal 2004, Matsushita received 10.88 million complaints and questions worldwide (Graph 1). In fiscal 2005, we responded to 2.22 million complaints and questions in Japan (Graph 2). The breakdown shows that the percentage of usage-related questions is increasing with the spread of new digital AV equipment such as DVD recorders.

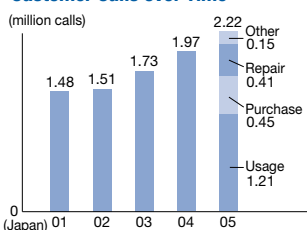
## Customer Calls



Note: Number of calls in fiscal 2004  
Excludes calls to service center hotlines.

Graph 1

## Customer Calls over Time



Note: Excludes Matsushita Electric Works, PanaHome, and Victor Company of Japan.

Graph 2

In response, we have set up a system (Figure 1) to quickly respond by having a special department daily analyze maintenance information and customer complaints and questions to understand the signs of quality problems. When important signs of quality problems are discovered—particularly for information, telecommunications, and AV equipment—that information is immediately E-mailed to the appropriate person. It is also flagged in the system with a yellow card (i.e., a warning label) to encourage rapid quality responses by sharing information related to the state of a response in a visible manner.

Here are two examples of the how we have incorporated customer feedback into Matsushita products and

services. Software for our SD multi-cameras used to be sold separately. Now we include it in the same package. We received many usage questions about our DVD recorders. We responded promptly by launching a website with an easily understood video explanation of the connection process and included a simple guide in the product package. In fiscal 2006, we will continue to expand these initiatives.

## Improving repair services

It is vital to make available quick, inexpensive, and reliable repair services to resolve the inconvenience caused to customers by product malfunction.

Accordingly, Matsushita has been working to build a system that is meant to ensure repairs are completed with only one visit (Figure 2). A database of past repairs and information obtained from the customer is used to narrow down the probable cause, and the situation is quickly communicated to the repairperson and any needed parts delivered.

Of course, the most important thing is to develop products that can be easily used without malfunction. At Matsushita, we are enhancing our system for incorporating customer feedback into products.

## Stakeholder opinion

I want Matsushita to work on providing information in a broad sense (i.e., consumer education), not just product advertising. In addition to traditional manuals, how about using new means such as websites?  
(Michelle Tan, Ph.D.)

\*See page 10 for an overview of our dialogue with stakeholders.

## Matsushita reply

Proper understanding of products translates into customers being able to make full use of a product's features and use the product safely for a long time. We will continue to use websites and other means to provide easily understood explanations of product construction, good handling, and answers to frequently asked questions.



## Enhancing the customer's trust

Website ■ [panasonic.co.jp/eco/en/datafile/](http://panasonic.co.jp/eco/en/datafile/)

Matsushita stores a great deal of information, including information entrusted to us by customers, as well as our own corporate information. We understand that great care must be taken to prevent the leakage of information, including personal information.

\*Also see the Information Security Policy in Matsushita's Sustainability Data File.

### Types of information

Matsushita manages two main types of information: trade secrets and personal information (Figure 1). Trade secrets include R&D, production, and marketing information as well as client information and system and network information. Personal information refers to customers' personal information including customer inquiry and repair information, as well as internal human resources information. At Matsushita, we consider the protection of customer information a top priority.

#### ■ Protection of personal information

In fiscal 2005, Matsushita focused on implementing safety management measures to prevent the leakage of personal information. Specifically, we strengthened the management of computers and personal information that are brought outside the company, implemented voluntary inspections, examined the state of information management at external subcontractors, examined the databases of personal information held by each group company and inspected the state of their management, and established and implemented a personal information registration system and management guidelines. Moreover, as of April 2005 we are required to disclose or correct personal information upon the request of the owner of the information. Matsushita responded by establishing a contact point to handle such requests.

#### ■ Product security

Product security is an initiative that enables customers to use products with peace of mind by protecting against the leakage of or tampering with customer information via the internet.



Figure 1

In fiscal 2005, we established group-wide security guidelines for products, systems, and network services, and are applying them across the life cycle of products.

### Thorough information management and increasing management levels

To be thorough in Matsushita's internal management of information, in August 2004 we classified information at business units and group companies in Japan into different levels of confidentiality and appointed management officers. We implemented management measures for each level and are fully enforcing the need-to-know principle, whereby only those who need to know certain information can have access to it. Furthermore, we are expanding this initiative globally based on our experience in Japan.

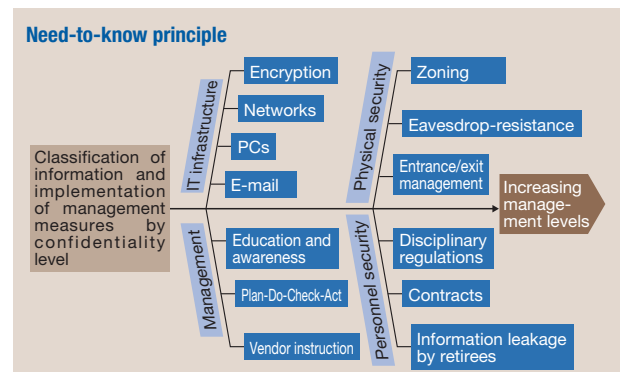


Figure 2

### Toward further strengthening of information security

At Matsushita, we view information security as the core of risk management. Through the management and utilization of information we are trying to raise Matsushita's corporate value, ensure Matsushita's status as a reliable corporation, and reform Matsushita's corporate culture. To that end, in fiscal 2006 we will focus on strengthening the following three points:

1. Globally establishing the Plan-Do-Check-Act cycle for information security;
2. Enhancing the protection and management of technical information to maintain product competitiveness; and
3. Developing a program for certifying personal information security compliance.

## Universal design

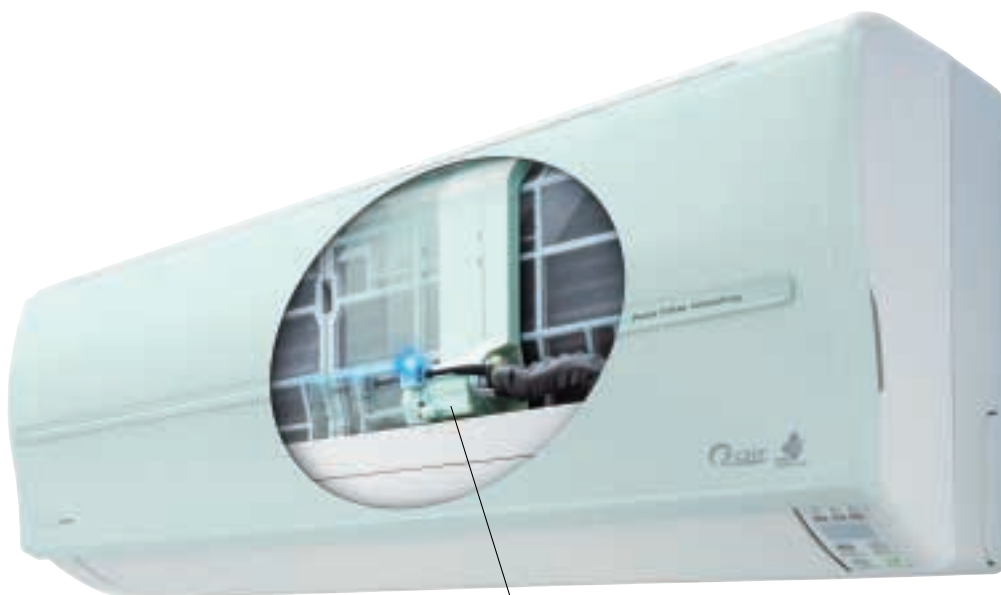
# Making more customers' lives convenient and comfortable

Website ■ [panasonic.co.jp/eco/en/datafile/](http://panasonic.co.jp/eco/en/datafile/)

Matsushita provides goods and services that make people's lives convenient and comfortable. Universal design is essential to satisfying more customers, including the elderly and people with disabilities.

The announcement in November 2004 of Matsushita's innovative new X Series split-type air conditioners (Photo 1) received a big response from the market. These air conditioners feature a built-in automatic air filter cleaning system. This function frees users from the hassle of cleaning the air filter themselves.

Cleaning an air filter is not merely troublesome; it can be a significant burden for the elderly, pregnant women, and people with disabilities. Air conditioners are usually installed near the ceiling in Japan. People therefore need to stand on a footstool when cleaning the filter, which poses the danger of an unexpected accident.



X Series split-type air conditioner Photo 1 The industry's first<sup>\*1</sup> automatic air filter cleaning system

<sup>\*1</sup> As of November 11, 2004. In a filter cleaning, dust exhaust unit built into a room air conditioner.

Also in Matsushita's Sustainability Data File:  
[panasonic.co.jp/eco/en/datafile/](http://panasonic.co.jp/eco/en/datafile/)

Universal design promotion framework  
UD is corporate social responsibility

UD product development story in "isM"  
[panasonic.co.jp/ism/ud/](http://panasonic.co.jp/ism/ud/) (in Japanese only)

UD in National products  
[national.jp/ud/](http://national.jp/ud/) (in Japanese only)

The development of a built-in automatic air filter cleaning system was the answer to how to build an air conditioner with universal design (UD) so that anyone can easily use it. This section explains Matsushita's UD initiatives, telling the story of the creation of the built-in automatic air filter cleaning system.

Washer-dryer panel designed with coloration and text display that can even be seen by people with cataracts. Photo 2



## Sensitivity: The first step toward UD

Alarm sounds and easy-to-see displays are designed based on thorough data collection where products are used. For instance, to make a display that can be easily seen even by people with cataracts, Matsushita enlisted the cooperation of university researchers, hospitals, and people with cataracts to research and develop goggles that make it easy to see for these people. This initiative proved useful in improving the visibility of catalogues and instruction manuals in addition to the products themselves.

When selecting alarm sounds, Matsushita looks for frequencies that can be heard easily in the actual locations where products are used. To collect data, we had 163 people fill out questionnaires and visited 16 households to take detailed measurements of the ambient sounds around products.

## Listening to customers: the starting point of manufacturing

Customers' opinions are indispensable to making user-friendly products. Matsushita established the Pana-monitor system to obtain valuable opinions directly from customers who actually use Matsushita products. About 350 people—mainly housewives aged from their 20s to 70s—are currently registered as participants.

Participants in this system perform a wide range of activities, evaluating products and functions from the idea stage, through development to prototypes and after market launch. During the development of the new air conditioners, company employees conducted on-the-spot investigations of participants' homes, examining the usage conditions, installation locations, the temperature variations in the rooms when the air conditioners were running, and the state of maintenance. This fieldwork revealed customers' dissatisfaction with the cleaning of filters.

## Multifunctionality causes a new inconvenience

The rekindling of Matsushita's awareness of user-friendliness occurred around 1985, when electrical appliances started to become multifunctional along with the development of new technologies such as the home computer. At that time, customers started to complain that, though products had a variety of functions, they were difficult to use. It seemed meaningless to have all these functions if customers could not make use of them. A number of employees who were concerned about this situation voluntarily gathered together and started an investigative committee.

In 1989, these employees brought the concept of user-friendly product manufacturing to the board meeting, where they reported the importance of researching user-friendliness and the lifestyles of the elderly and people with disabilities. This idea was well received and company-wide initiatives were started. By 1999, Matsushita had devised its UD Policy (Figure 1) as the basic philosophy underlying UD initiatives.

The founder of Matsushita, Konosuke Matsushita, believed that products should invoke "kindness." He impressed upon all his employees the importance of thoughtful manufacturing. Current Matsushita employees feel a sense of responsibility about carrying on the founder's spirit, which has become part of our "DNA."

## Developing user-friendliness beyond the individual corporation

Confusion arises when products from different companies have different displays and announcement sounds (sounds that inform the user about the state of the product), which may lead to malfunction. Standardization of displays and alarm sounds is therefore essential.

Accordingly, Matsushita first devised internal standards and rules on how to standardize displays and alarm sounds across different types of equipment. Next, we called on other Japanese companies in the same industries and together contributed to standardization in Japan. Today, we are aiming for standardization on a global level.

## Toward an age when UD is the norm

Matsushita does not regard UD as something extraordinary. Our ultimate goal is to see the concept of UD become such a basic part of manufacturing that the term itself drops out of the vernacular. Currently, the incorporation of UD concepts is an indispensable requisite for V Products, our flagship products. Matsushita will continue to expand the application of UD to all of its products.

### Matsushita's UD Policy (Six basic elements of universal design)

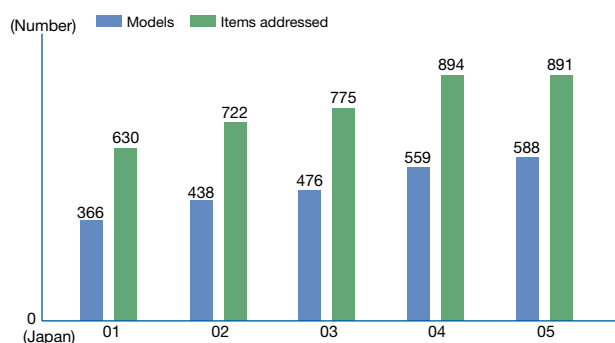
Good universal design gives consideration to:

1. Making operations easily understandable
2. Using easy-to-understand indications and expressions
3. Providing users with stress-free postures and movements
4. Users' movements and space
5. Users' safety and sense of security
6. Operating environment

Note: The original 1999 policy had five items. Item 4 was added in fiscal 2005.

Figure 1

### Number of universal design products and items addressed



Note: Excludes Matsushita Electric Works, PanaHome, and Victor Company of Japan.

Graph 1

### □ Stakeholder opinion

In order to continue to be thorough about universal design, I think it would be effective for the employees who work on product development on site to be a diverse group. It would be wonderful for Matsushita to be successful with a two-pronged approach—endeavoring to improve universal design by diversifying its employment system, for instance, by promoting women who are raising children.  
(Chisato Murakami)

\*See page 10 for an overview of our dialogue with stakeholders.

### □ Matsushita reply

Matsushita agrees with you that a company must itself be diverse, if it is to be able to meet the needs of diverse customers who differ in gender, age, nationality, and lifestyle. When Matsushita developed its tilted drum washer/dryer and vending machines, for example, Matsushita employees who use wheelchairs assessed the user-friendliness of the machines. They contributed to the research, and their comments were reflected in the product designs.

## Relationship with employees

## Empowering people to realize their individuality

Website ■ [panasonic.co.jp/eco/en/datafile/](http://panasonic.co.jp/eco/en/datafile/)

Matsushita maintains its relationships with employees consistent with its belief that people are the foundation of business and with the idea of "developing people before making products." Specifically, we are working on the following two objectives: (1) to improve productivity by strengthening front line operations with a combination of strong individuals and a strong organization; and (2) to build a win-win relationship between the company and employees.

★ The Global Highlights section (pages 47 to 52) introduces human resources and safety and health initiatives taking place around the world.

## Basic stance on human resources

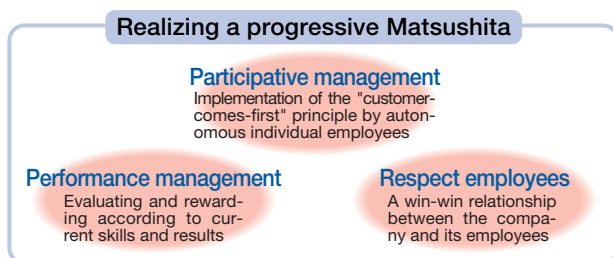


Figure 1

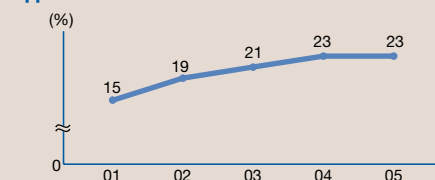
## Initiatives to develop our human resources

## ■ Human resources development: Realizing global excellence

To become a company recognized as outstanding by people worldwide—that is, to achieve global excellence—it is essential to recruit excellent human resources from around the world, regardless of race, nationality, age, or gender, and to properly train and position them. In April 2004, we introduced the Panasonic Global Executive System. We are also conducting new development courses for employees outside of Japan.

Some training courses for executives, leaders and future executives from group companies outside Japan are held in each region, while others are held in Japan, where trainees from around the world gather. For instance, we are implementing training programs for executives designed to develop human resources who can be assigned to the future management positions of the group. The program emphasizes the improvement of executives' abilities to carry out reforms in the areas they oversee while maintaining

Percentage of presidents of companies outside Japan appointed from local staff



Note: Excluding group companies outside Japan that belong to Matsushita Electric Works, PanaHome, and Victor Company of Japan.

Graph 1

Also in Matsushita's Sustainability Data File:  
[panasonic.co.jp/eco/en/datafile/](http://panasonic.co.jp/eco/en/datafile/)

Percentage of presidents of companies outside Japan appointed from local staff (by location)

Work & family support programs

The Charter for Matsushita Electric's Occupational Safety and Health

Other data related to occupational safety

group-wide optimization. Participants in this program deepen their understanding of management philosophy and group business strategy while honing their abilities.

## ■ Developing production employees into technologists

With various changes in the business environment has come the demand for improved quality of production employees. For example, they are now expected to have the following types of abilities: the ability to design sustainable manufacturing processes and select eco-friendly materials in order to respond to the need for environmental consciousness in products, the ability to support the expansion of factories outside Japan to respond to globalization, and the ability to implement production innovations through identifying problems in terms of quality, cost, and delivery in response to the development of cell production and the spread of IT. We have started new human resources development programs designed to foster these capacities in production employees, or in other words, to develop true "technologists."

## ■ Recruiting and training human resources in China

To strengthen the recruitment and training of human resources in China, where Matsushita is looking to expand its businesses, we have established recruiting centers in five cities, including Beijing and Shanghai.

To create a workplace environment where employees can realize their full potential and find self-fulfillment, Matsushita is improving its human resources system to better meet the needs of local employees. We are also collaborating with local universities to implement systematic education in order to accelerate the localization of management.

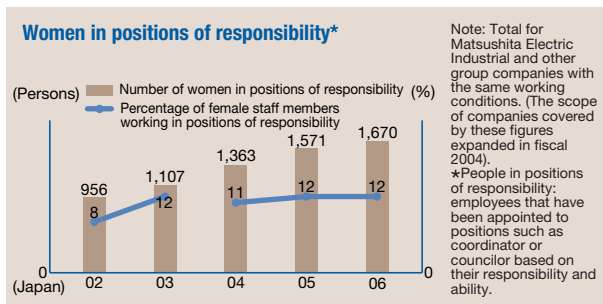
Meanwhile, at Matsushita Group training centers in China, we are concentrating on developing technical skills by providing over 60 training courses per year.





President Nakamura  
in a discussion with  
employees of an  
internal divisional  
company

Photo 1



Graph 2

## Building a free and open corporate culture

### ■ Holding exciting work discussions with the president

To promote an open culture, in fiscal 2001 Matsushita started the "Exciting Work Program," which provides a forum for the president and young employees to have free and open discussions. In fiscal 2005, these discussions were held at three locations, including manufacturing units and a research center. The lively discussions range from the strengthening of manufacturing to modalities of a flat organization and the selection of advanced technology subjects (Photo 1).

### ■ Improving corporate culture in Asia and Oceania

In Asia and Oceania, where employees are very diverse in terms of race, religion, and language, Matsushita is working to create an open corporate culture, where employees can work effectively, united by the management philosophy. To achieve this goal, we have established human resources development centers in five countries, including Malaysia, and conduct trainings in management philosophy, managerial skills, technology, and quality. Every month, business results are shared with all employees. We are also building a system that allows employees to make suggestions directly to top management.

### ■ Promoting participative management in Europe to maximize collective wisdom

In 1994, the European Union (EU) adopted a directive that requires all companies that employ 1,000 or more people in two or more EU states to form a pan-European employee management council. In response to this directive, the Matsushita Group companies in ten European states quickly entered into a voluntary arrangement between employees and management and established the Panasonic European Congress (PEC) to negotiate labor-management disputes.

Beginning in 1996, employee and management representatives have met once a year in the congress to share management information and consult on pan-European issues that may arise. In 2004, with the enlargement of the EU, four eastern European states, the Czech Republic, Poland, Slovakia, and Hungary, joined the PEC. At the 10th anniversary meeting, 33 employee representatives held a discussion with executives.

## Achieving diversity

### ■ Building a company where men and women are equally active participants

In Japan, Matsushita's Corporate Equal Partnership Division is taking the lead in creating a culture with abundant diversity, where various values are accepted. We are steadily moving forward with the active promotion of motivated women to positions of responsibility (Graph 2). In fiscal 2005, Matsushita was awarded by Ministry of Health, Labor and Welfare's Top Commendation.

At Matsushita, we are striving to create a dynamic culture, where the realization of each autonomous individual's creativity and individuality translates into growth for the company.

### ■ Kansai Women's Networking Forum

To support women who aspire to achieve self-fulfillment through business, 21 companies based in the Kansai region (middle-east area of Japan) established the Kansai Women's Networking Society. Matsushita is promoting the forum as one of its administrative agents.

### ■ Encouraging diversity in North America

Panasonic North America (PNA), the company that oversees Matsushita's operations in North America, is aiming to foster diverse human resources. To do so, PNA has implemented an initiative in which executives serve as mentors for one year.

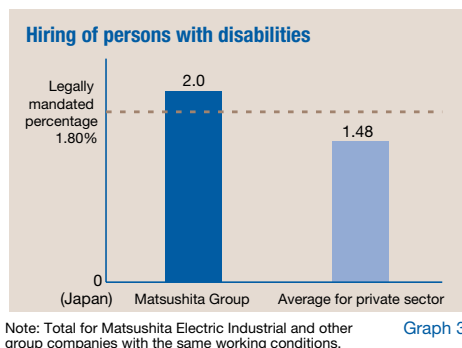
With the "Fabric of Inclusion"<sup>★1</sup> program, PNA is building a strong organization composed of diverse, high-caliber human resources by teaching leaders that diversity is a part of Matsushita's management strategy.

<sup>★1</sup> An initiative that teaches the importance of accepting different cultures, symbolized by the fact that weaving different colored threads together produces beautiful cloth.

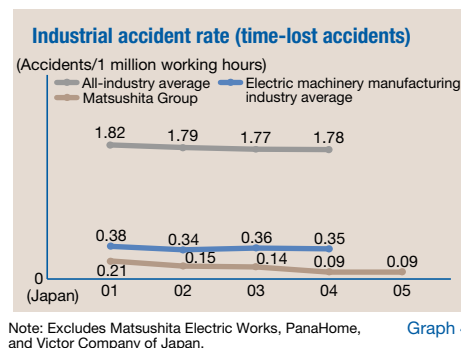
### ■ Hiring of persons with disabilities

Matsushita strives to be a company where employees can make the most of their abilities and aptitudes and realize their expertise, regardless of ability. In Japan, at 2%, we hire a higher percentage of persons with disabilities (Graph 3) than is legally mandated or achieved by the private sector on average. Matsushita also runs four special affiliate companies that provide places for persons with severe disabilities to work.

## Relationship with employees



Graph 3



Graph 4

## Building safer and more comfortable working environments

### ■ Matsushita's occupational safety and health philosophy

With our management of safety and health rooted in the Matsushita ideal of "respect employees," we are working hard to ensure their safety and health, in anticipation of changes in the workplace.

In fiscal 2005, in addition to building an Occupational Safety and Health Management System, we worked on developing built-in safety<sup>★1</sup> for our machinery and risk assessments as well as raising employees' risk awareness through hazard prediction activities. We also took steps to improve working environments in terms of noise, dust, and chemicals, and implemented measures to prevent work-related health problems and protect mental health.

<sup>★1</sup> Striving to achieve inherent safety by eliminating or reducing the causes of risk in work or equipment without relying on workers' attentiveness.

### ■ Implementing equipment and risk assessments

In terms of safety management, since fiscal 2004 we have focused our efforts to preventing accidents that involve workers becoming pinched by or caught in equipment. As a result, in fiscal 2005 we achieved Matsushita's lowest number of such accidents and overall occupational accidents. Nevertheless, we still take the occurrence of time-lost accidents very seriously. We have implemented risk assessments, analyzed past accidents, and are working to raise all employees' sensitivity to risk (Graph 4).

As for working environments, measured results have been achieved at 26 of the 50 sites that needed to be improved. We are continuing to improve conditions at the remaining 24 sites.

On the health management front, we have implemented mental health education and appointments with industrial physicians for employees who work a lot of overtime. We also devised a Five-year Plan to Control Lifestyle-related Diseases (fiscal 2005-2009), and are reinforcing practices for early prevention, including preventive education. In these ways, Matsushita is committed to creating comfortable workplaces.

### ■ Strengthening emergency responses

In preparation for possible industrial accidents or natural disasters such as earthquakes, Matsushita has developed

an emergency response system and implemented practice drills. Specifically, we have performed inspections of points that caused industrial accidents recently at other companies and have made necessary improvements and taken appropriate measures.

Matsushita has established a Domestic Risk Management Committee made up of representatives for each job function and chaired by a company director. The committee meets regularly to consider accident prevention and emergency response measures. In response to a major disaster, Matsushita will set up an emergency response headquarters. In September 2004, the Osaka Head Office and Tokyo branch office jointly ran a disaster exercise to test the emergency response procedures. The exercise presumed the occurrence of an inland earthquake of magnitude 7 in the Tokyo area. The Overseas Risk Management Committee responds to problems that occur outside Japan.



Simulation of setting up an emergency response headquarters.

Photo 2

### □ Stakeholder opinion

Perhaps there is a need for you to create workplaces where employees can work in line with Matsushita's management philosophy without experiencing dilemmas. I think the key to this is creating open workplaces (One Akiyama)

<sup>★</sup>See page 10 for an overview of our dialogue with stakeholders.

### □ Matsushita reply

Consistent with our fundamental ideal of a "super honest" attitude, Matsushita conducts highly transparent business operations while adhering thoroughly to business ethics. We are striving to build more open workplaces by promoting a flat, network-style organization with a major overhaul of our organization and managerial positions.

## An organization capable of sincerely governing itself

Website ■ [panasonic.co.jp/eco/en/datafile/](http://panasonic.co.jp/eco/en/datafile/)

Adherence to legal and ethical standards in all business activities is a major prerequisite for the continued existence of a company. In particular, promoting fair business practices by complying with antitrust laws and other related laws and regulations is an essential part of running a business. With a group-wide management system that is capable of sincerely governing itself, Matsushita is working to build a sound corporate culture that prevents violations of the law.

### Compliance Committee

In fiscal 2004, Matsushita established the Compliance Committee, which is headed by the President and made up of associated Directors, Executive Officers, and a corporate auditor. The committee meets twice a year to plan and verify the implementation of compliance by each business division and each job function, as well as to discuss group-wide policy initiatives. Since its inception, the committee has particularly focused on promoting fair trade practices and has monitored the efforts of divisions that carry related risks.

### Promoting fair trade practices at business units

All sales and marketing divisions, regional divisions outside Japan, and business domain divisions have appointed a fair trade officer to promote the use of a fair trade management cycle in daily operations, primarily at on-site locations. The role of a fair trade officer is to examine business practices in each division, promote improvements in the corporate culture, and take necessary actions in cooperation with the Legal Division when a problem is discovered in any division.

#### ■ Efforts by our resale divisions in Japan

Our resale divisions in Japan are working to prevent the recurrence of antitrust violations such as vertical price-fixing and refusal to deal with reduced-price distributors. Recognizing that the underlying causes of past violations were

problems with Matsushita's internal sales ethics and business posture, we are now taking a painstaking approach to the conduct of proper sales practices that comply with the law and corporate ethics. Specifically, each of the associated divisions and marketing companies are obtaining written pledges from every member of the sales staff, holding training courses, and investigating trade practices.

#### ■ Efforts by our public sales divisions in Japan

In December 2004, the Japan Fair Trade Commission issued a caution to Matsushita over the suspicion of an unreasonably low bid made for a trial parking violation system ordered by the National Police Agency. Our public sales divisions in Japan, in particular, have continuously made efforts to ensure thorough compliance based on a Sales Activities Program designed to stamp out bid-rigging incidents. In response to the above caution, these divisions are making further efforts to prevent such recurrences by revising their bid management standards, reviewing their system and structure of prior consultations, and further clarifying their cost basis when bidding for system development projects.

### Global legal affairs promotion system

Under the control of the Corporate Legal Affairs Division, each of our business domain companies and companies overseeing business operations in regions outside Japan has appointed legal affairs officers and is working to observe thorough compliance with all laws and ethical codes, including the Matsushita Group Code of Conduct. For instance, to prevent competition law violations in Europe, such as actions that obstruct parallel trade, we are repeatedly and continuously training employees and working to check internal documents. Matsushita is implementing measures that focus on the challenges of each region.

### Fair Trade Hotline

Matsushita has also established a Fair Trade Hotline in the Corporate Legal Affairs Division for employees to use when they are unsure whether the daily business practices of people or workplaces, such as sales locations, are lawful or not.

## Material procurement

# Fulfilling our corporate social responsibility with suppliers

Website ■ [panasonic.co.jp/eco/en/datafile/](http://panasonic.co.jp/eco/en/datafile/)

Matsushita procures the components and parts needed for its manufacturing activities from suppliers around the world. We strive to attain the best possible procurement conditions, taking quality, price, delivery time, and location of manufacture into account. We emphasize the procurement of safe materials that have little impact on the global environment and give consumers a sense of security, and are implementing various efforts toward that end.

## Also at our website:

**Fair and appropriate procurement activities**  
[panasonic.co.jp/csr/en/procurement.html](http://panasonic.co.jp/csr/en/procurement.html)

**Green Procurement Standards manuals and guidelines**  
[panasonic.co.jp/eco/en/suppliers/](http://panasonic.co.jp/eco/en/suppliers/)

## Material procurement

Matsushita procures electric, electronic, and other manufactured parts as well as raw materials from nearly 11,000 companies worldwide, for total purchases of about ¥3.4 trillion (US\$31.8 billion). We are therefore making efforts to achieve more efficient procurement by continuing to centralize information on components, reducing costs through central contracting and reverse auctions,<sup>\*1</sup> reducing material stocks, and promoting green procurement.

<sup>\*1</sup> Reverse auction: a procurement method whereby the specifications for desired parts are presented to suppliers and the suppliers propose possible delivery times and prices.

## Green procurement efforts

On page 31, we indicated that Matsushita is building a system that does not incorporate, use, or emit six specific chemical substances. However, this is not possible to

achieve alone; the cooperation of all our suppliers is essential. To that end, since 2003 we have held explanatory meetings for our suppliers around the world (Figure 1) to request their cooperation in providing non-use warranty certificates for the specific chemical substances and Content Survey Sheets for Managed Substances as well as obtaining ISO14001 certification.

Moreover, we have built a database—the GP-Web system (Figure 2)—to consolidate the management of the huge amount of Chemical Substance Content Survey data. As of fiscal 2005, the majority of our suppliers inside and outside Japan are using this system (Photo 1).

Furthermore, we held a Green Supplier Exhibition (Photo 2) in January 2005 to accelerate green procurement efforts in China, which occupies an important position as a Matsushita production base. Approximately 2,000 people from about 100 suppliers participated. In this way, by obtaining the cooperation of suppliers to get a handle on



A GP-Web system explanatory meeting in the United States. About 3,000 companies attended these meetings worldwide.

Photo 1



The Green Supplier Exhibition in China.

Photo 2





Green procurement explanatory meetings were held at 16 sites worldwide.

Figure 1

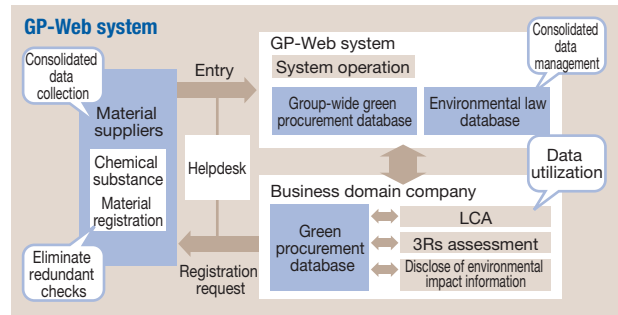


Figure 2

component information and replacing them where necessary, our efforts to discontinue the use of specific chemical substances have been achieved for 96% of all components as of the end of fiscal 2005.

### Auditing suppliers' environmental quality assurance systems

In order for Matsushita to obtain environment-conscious materials and components from suppliers, we must verify whether suppliers have integrated a chemical substance management system into their operational structure. To that end, we have globally implemented environmental quality assurance system audits (Figure 3). Moreover, we are working to help suppliers make improvements based on audit results.

項目	項目	確認内容	確認項目
1-1	環境方針の策定状況	環境方針が、経営戦略の総論・各論（環境方針）に盛り込まれていること、経営方針・目標を踏まえて策定されていること。	① 環境方針が経営戦略の総論・各論（環境方針）に盛り込まれていること。 ② 環境方針が経営方針・目標を踏まえて策定されていること。
1-2	環境方針の策定状況	環境方針が、経営戦略の総論・各論（環境方針）に盛り込まれていること、経営方針・目標を踏まえて策定されていること。	③ 環境方針が経営方針・目標を踏まえて策定されていること。 ④ 環境方針が経営戦略の総論・各論（環境方針）に盛り込まれていること。
1-3	環境方針の策定状況	環境方針が、経営戦略の総論・各論（環境方針）に盛り込まれていること、経営方針・目標を踏まえて策定されていること。	⑤ 環境方針が経営方針・目標を踏まえて策定されていること。 ⑥ 環境方針が経営戦略の総論・各論（環境方針）に盛り込まれていること。

Sample checklist in an environmental quality assurance system audit.

Figure 3

### Process audits at origin suppliers

To prevent specific chemical substances from being included in products, they must not be allowed into materials and components before the products are assembled. Toward the total elimination of hexavalent chromium, Matsushita has implemented process audits (Photo 3) at plated screw makers (34 inside and outside Japan) and cadmium-free brass material makers (10 inside Japan), and is demanding improvements where necessary.



Audit at a plated screw maker.

Photo 3

In addition, we are carefully selecting suppliers and components for procurement when it comes to inks, coatings, and plastics, and are sharing relevant information group-wide.

### Strengthened analysis system

To strengthen the system for monitoring to ensure there are no specific chemical substances in procured components and materials, Matsushita has installed fluorescent X-ray machines and more precise analysis equipment at all business units inside and outside Japan. We are also recommending external analysis companies that have analysis sites around the world so that suppliers can make use of their services as well.

### Ensuring fair and appropriate procurement

To ensure thorough compliance in its material procurement transactions, Matsushita has issued a Clean Procurement Declaration which applies to all its nearly 5,000 suppliers in Japan. In addition to establishing an employee code of conduct and compliance specifics, we have strengthened our linkage with suppliers by establishing a Fair Business Hotline for them to contact Matsushita with concerns or questions. Specifically, the Clean Procurement Declaration includes compliance items such as, "Except for specific events indicated by Matsushita, individuals shall not accept any supplier invitations to dinners, golf tours, or sight-seeing trips, or any gifts."

#### Stakeholder opinion

Does Matsushita choose suppliers based on the perspective of CSR?  
(Socially responsible investor)

#### Matsushita reply

Matsushita's standard purchasing agreement requires suppliers to have an environmental policy, to have prohibited all forms of discrimination as well as child and forced labor, and to hold dialogues with employees. If by any chance a violation is discovered, Matsushita demands that the supplier immediately take remedial action and report back to us.

## Corporate citizenship

## Building a healthy and fulfilling society

Website ■ [panasonic.co.jp/eco/en/datafile/](http://panasonic.co.jp/eco/en/datafile/)

Matsushita is making broad efforts to contribute to society as a good corporate citizen, helping to build a healthy and fulfilling society. We are concentrating especially on enriching people's lives, supporting education, supporting the arts and culture, supporting social welfare, and promoting coexistence with the global environment. We are expanding our activities worldwide, winning the understanding of the public by meeting the specific local needs of each area.

### Enriching people's lives and supporting education

#### ■ Kid Witness News program (KWN)

Started in the United States in 1988, KWN is a video production program supported by Matsushita. We lend out video production equipment—a full set of filming and editing devices—to elementary and junior high school students, with the aim of boosting creativity and communication skills and fostering teamwork and an interest in society through video production projects. In fiscal 2004, we took the program global. In fiscal 2005, 372 schools were participating in 15 countries around the world. Regional winners' videos are being screened at the 2005 World Expo Aichi, Japan.

#### ■ Virtual hand-made battery classes

Using an exclusive battery making kit, Matsushita holds hand-made battery classes (Photo 1) to teach elementary and junior high school students how batteries work, their proper use, and the fun of building things. In fiscal 2004, we started virtual hand-made battery classes using video conferencing systems and cell phones to enable more children to participate in the class.

### Supporting the arts and culture

#### ■ Shakespeare for Children Series

Since fiscal 1996, Matsushita has supported the Shakespeare for Children Series, a series of Shakespearean plays that have been adapted for the enjoyment of both young and adult audiences. Since 2000, Matsushita business units around Japan have collaborated with the theater company to hold the Panasonic Tour.

Also in Matsushita's Sustainability Data File:  
[panasonic.co.jp/eco/en/datafile/](http://panasonic.co.jp/eco/en/datafile/)

**Interacting with citizens**  
**Contributing to enhanced public interest**

★Our Corporate Communications web page provides more detail on Matsushita's global corporate citizenship activities.  
[http://panasonic.co.jp/ccd/index\\_eng.html](http://panasonic.co.jp/ccd/index_eng.html)



In fiscal 2005, the Association for Corporate Support of the Arts awarded Matsushita the Mecenat Award for Promoting Culture among Children for the well-received effort of Matsushita employees, who have volunteered to hold workshops for elementary and junior high school students.

#### ■ Ryozen Institution

The founder of Matsushita, Konosuke Matsushita, co-founded the Ryozen Institution with the aim of preserving and promoting Japanese traditional spirit and culture and passing on their good points into the 21st century. In 1970, the Ryozen Museum of History, built in Higashiyama, Kyoto, opened to the public, with exhibits that display the personal effects of the Meiji Restoration royalists. In 2005, on the occasion of its 35th anniversary, the museum was reborn with the subtitle of the Meiji Restoration Museum, newly outfitted with barrier-free access and IT equipment for the enjoyment of both children and adults (Photos 2 and 3).

## Supporting social welfare

### ■ Fureai Festa

The *Fureai Festa*, a program that Matsushita co-sponsors with the Information and Culture Center for the Deaf, is designed to enable people with disabilities to enjoy art and cultural events along with everyone else. At the second *Fureai Festa*, 2,300 participants enjoyed interacting with each other over a three day period (Photo 4).

### ■ Supporting the Special Olympics

Matsushita co-sponsored the 2005 Special Olympics World Winter Games in Nagano, Japan—the first to be held in Asia. In addition, we provided a full set of filming and editing equipment to make the movie "Believe," the third such movie made with the aim of deepening mutual understanding with people with mental retardation (Photo 5).

## Volunteering, and supporting and collaborating with NPOs and NGOs

### ■ Volunteer activity financial support program

Established in 1998 to encourage employees in Japan, their families, and retirees to take an active part in volunteer

activities, this program provides financial support to NPOs in which these people are involved. Up to fiscal 2005, the program has supported 482 activities with a total of ¥106.63 million in grants.

#### Groups supported in fiscal 2005

Kyoyohin-Kansai (a study group for developing universal design in commodities)  
Amnesty International Japan  
Mt. Fuji National Trust  
Association for Sending Child Wheelchairs Overseas  
Hachiman kyodo sagyosho (a job facility for people with mental retardation)  
Katano Bamboo Charcoal Making Volunteers

### ■ Panasonic Supporters Matching Funds

Through the "Panasonic & JIYD Supporters Matching Fund for Children" and the "Panasonic & EFF Supporters Matching Fund for the Environment", Matsushita supports the capacity-building of youth and environmental-related NPOs as well as the cultivation of a "giving culture." The funds were established and are jointly managed with Japan Initiative for Youth Development (JIYD) and Eco Future Fund (EFF). Public meetings are held at each time the provision of aid is decided and again the conclusion of projects, with the aim of having dialogues with the supported groups.

Total aid given in fiscal 2005: ¥10.897 million among 12 groups  
Total aid given since 2001: ¥41.133 million among 43 groups

### ■ Citizenship Collaboration College

This series of participatory educational programs enables people to learn about and contemplate various issues we all face, including the environment, human rights, globalization, multicultural understanding, and other topics. Together with NPOs, Matsushita develops and co-hosts programs for the general public two or three times per year. Between fiscal 1999 and fiscal 2005, we held 22 programs with a total of about 1,200 participants (Photo 6).

#### □ Stakeholder opinion

For Matsushita to behave as a global corporate citizen, I want you to think globally while investing in local communities and citizens' activities. (Makoto Teranaka)

\*See page 10 for an overview of our dialogue with stakeholders.

#### □ Matsushita reply

Matsushita has thus far striven to act as a good corporate citizen in all of the communities where we do business. From here on we must think more globally, together with all of our stakeholders, about the types of initiatives Matsushita should undertake. In addition to providing financial support, we will continue to make contributions that take advantage of Matsushita's technology, including supporting our employees' volunteer activities.







# Global Highlights

Matsushita conducts its global business operations in accordance with principles such as: "we will operate our business in such a way that we are welcomed by the host country, and carry out business activities with respect for local customs," "we will manufacture products and provide services that are competitive in international markets, so that we can provide customers with added value," and "we will make every effort to develop the skills of our local employees and promote their advancement."

★ More information on company efforts in each region is also available in Matsushita's Sustainability Data Files.

Photo (top): Shuji Yasuda, Managing Director, with employees of Panasonic HA Air-Conditioning (M) Sdn. Bhd. (PHAAM) (p.47)

Photo (bottom): Staff at the Panasonic Customer Call Center Company in the U.S.A.



## Asia

### Contributing to Malaysia's exports

It was 1972 when Matsushita established a local air-conditioning corporation in Malaysia. This development was catalyzed by then-Prime Minister Tun Abdul Razak's request to the founder of Matsushita, Konosuke Matsushita, to establish a company that could contribute to Malaysia's exports.

Since then, we have established components and consumer electronics companies, among others, in Malaysia. The Matsushita Group now has 24 companies in Malaysia that employ almost 30,000 people. Nearly 80% of the roughly ¥300 billion of gross output generated by the Matsushita Group in Malaysia in fiscal 2005 was slotted for export. With this figure accounting for roughly 2% of Malaysia's total exports, we are keenly aware that we hold great social responsibility in Malaysia.

Just as many other Matsushita Group companies have done, Matsushita Industrial Corporation Sdn. Bhd. (MAICO), which started business with the production of window type air conditioners and compressors, has from the beginning put emphasis on fostering the development of local employees. Each year MAICO has sent a few dozen people to Japan to learn new technologies and skills. These efforts were rewarded in 1991 with the opening of an R&D center in Malaysia. Product development is now taking place locally. We have also actively pushed ahead with local procurement, a move that was essential for improving export competitiveness.

Thanks to the global popularization of air conditioners, Matsushita's sales of air conditioners grew steadily along with Matsushita Air-Conditioning Corporation Sdn. Bhd. (MACC), which was established in 1991 as a production base for split type air conditioners.

### The challenge of global competition

Since the time of the 1997 Asian currency crisis, the business environment has become more and more difficult due to the struggling Asian economy and the appearance of competitive low-cost Korean and Chinese products. Sales at two Matsushita companies dropped to 60% of their



# A local company that contributes to the local community

Matsushita traces its serious overseas business development back to the 1950s. In Southeast Asia, where business development occurred early on, we have pursued community-based operations emphasizing the development of local employees and the use of local procurement. This section introduces one of our air-conditioning companies in Malaysia as an example of our efforts to protect and expand Southeast Asian-based companies amid economic globalization.



Inside a plant at Panasonic HA Air-Conditioning (M) Sdn. Bhd.

Photo 1

A sports center established jointly by the Matsushita Group in Malaysia. Local residents may use the center, which includes a gymnasium, tennis courts, and swimming pool.



Photo 2

peak values, and management reforms were needed in order to maintain competitiveness.

Some very difficult decisions needed to be made to facilitate continued business operations in Malaysia. In fiscal 2003, MAICO merged with MACC. The window air-conditioning plant was closed and a voluntary retirement program was implemented. As much consideration as possible was given to the retirees.

## **Innovation: The path to becoming a strong company**

Following the merger, in fiscal 2005 the new company was named Panasonic HA Air-Conditioning (M) Sdn. Bhd. (PHAAM) (Photo 1). PHAAM is moving ahead with various innovations aimed at overcoming the global competition.

First off, PHAAM strengthened cost competitiveness and built a flexible production system that is able to meet the drastic swings in demand induced by the changing seasons, increasing the overall strength of the air-conditioning plant. In the Manufacturing Innovations Project implemented since fiscal 2004, local managers acted as project leaders, and all employees, from executives on down, contributed their ideas. These initiatives have resulted in a substantial decrease in downtime from switching products on the line, smaller parts inventories, and fewer defects occurring during manufacture and storage. The company is also working to foster the development of its human resources in order to improve technical manufacturing skills such as plastic molding.

PHAAM is also designing a business model that will maximize Malaysia's strengths to the utmost. Malaysia is a multiethnic, multilingual country; many employees speak English and some also speak Chinese. The country also has strong network of distribution channels thanks to its longstanding encouragement of export.

To capitalize on these strengths, in fiscal 2005 the Matsushita Group established a Global Customer Satisfaction Center (GCSC) in Malaysia. The Center handles customer satisfaction (CS) for all air conditioners sold outside Japan. The company is implementing IT-based information

sharing to facilitate the provision of rapid service to sales territories in over 120 countries.

In addition, Matsushita adopted CS Design Reviews that take into account market challenges and requests during the initial stage of product development.

Matsushita is moving forward with the localization of management at all overseas factories. PHAAM is working to reform the workplace culture to promote management mainly by local employees. In fiscal 2005, the traditional seniority system was abolished and replaced with a performance-based system that more fairly recognizes people of ability. PHAAM is striving to enhance employees' sense of participation in management. At the monthly general meeting, financial conditions including production, sales, and profits figures, and challenges regarding quality, safety and health are shared with all employees.

Always true to its basic philosophy of contributing to the prosperity of the local people, Matsushita will continue its efforts to contribute to local communities through its business operations.

## **Environmental activities in Asia**

We are installing the advanced energy-conserving technologies used in our Japanese factories at plants outside Japan. In order to train human resources in these technologies, we are also continuing to conduct Energy Conservation Diagnoses. During an Energy Conservation Diagnosis, energy utilization in a facility is examined and conservation measures are formulated. From February to March 2005, we conducted on-site examinations and training at 46 companies in four countries with the participation of 139 people.

In addition, in September 2004 the Asian Productivity Organization, the Federation of Malaysian Manufacturers, and the National Productivity Corporation of Malaysia jointly organized the Eco-Products International Fair 2004 in Kuala Lumpur, Malaysia, the first of its kind in Southeast Asia. At the Fair, we presented our environmental vision, the environmental initiatives we have undertaken in Malaysia, and the role of our Green Products.

# Americas

## Committed to diversity

In North America, Matsushita is making various efforts to build a strong corporate organization that makes the most of the diversity of employees, in terms of race, ethnicity, and gender. We are also working actively to popularize environment-conscious products. In Latin America, we are working to support employee education.



Employees at Panasonic Corporation of North America (PNA)

Photo 1

### Building an organization rich in diversity

Panasonic Corporation of North America (PNA) (Photo 1), which oversees Matsushita's operations in North America, implements various efforts to make the most of employee diversity, so as to maximize the organization's competitiveness.

For example, PNA has a variety of employee time-off policies that are designed to achieve an optimum work/life balance. These policies grant time off for childbirth and childrearing, caring for sick family members, volunteer work, and job-related development activities, as well as for activities that further the company's commitment to community development. In addition, PNA supports its employees' educational endeavors by offering tuition reimbursement through its Educational Assistance Program. PNA's efforts to support employees in and out of work are appreciated by all. PNA has had a number of male employees take advantage of the time-off policy for family reasons. In fiscal 2005, 21 men took an average of 15 days off, with the longest leave lasting 60 days.

In fiscal 2002, PNA instituted the "Fabric of Inclusion" program (page 40). By the end of fiscal 2005, a total of more than 1,500 employees had utilized the program. Participants in the program have come away with comments such as, "I was reminded of the importance of mutual respect between different cultures, and felt renewed enthusiasm for the job," and "I recommend it to other employees."

Moreover, since fiscal 1998 PNA has implemented a training program in a seminar format, which was designed to highlight the contributions that women and various ethnic groups have made to U.S. history and culture. A salient feature of this program is that it attempts to include the ideas of all employees. Program designs are created by employee volunteers and sponsored by the Equal Employment Opportunity and Diversity Department.

In another initiative, a one-year mentoring program for top performing employees offers a unique development experience for both mentors and mentees. The program has a range of objectives, from creating a

"mentoring culture" throughout the organization to further developing the talents of a diverse group of managerial and professional-level employees.

### Efforts to promote diversity in procurement

PNA's Supplier Diversity strategy seeks to identify and utilize small businesses owned by minorities, women, and veterans. The procurement department encourages Supplier Diversity practices throughout the organization, to ensure the inclusion of small businesses that are principally owned by members of these groups. This not only promotes diversity in all aspects of PNA's business dealings, but also helps secure competitive pricing, products, and services.

### Support for employee education

In Mexico, some young people, who for economic reasons have not been able to receive an adequate school education, join Matsushita. In February 2004, Panasonic de Mexico, S.A. de C.V. (PANAMEX) opened a school on company premises that offers after-hours instruction at the middle school level for these employees. Instruction is open to all employees, 15 of whom are currently enrolled. All those who complete the program obtain a graduation certificate from Mexico's Ministry of Public Education. PANAMEX will continue offering this school program as long as there are employees desiring to attend.

### ENERGY STAR award winner for seven consecutive years

Matsushita won the ENERGY STAR<sup>\*1</sup> award for excellence in product labeling in 2005, the seventh consecutive year it was recognized by the program in the United States. All Panasonic brand ENERGY STAR qualifying products carry the label, which helps consumers identify products with advanced energy efficiency. In 2004, there were more than 400 ENERGY STAR-certified Panasonic models in 14 product categories such as TVs and other AV equipment.

<sup>\*1</sup> ENERGY STAR: a program jointly sponsored by the U.S. Environmental Protection Agency and Department of Energy to protect the environment through superior energy efficiency. ([www.energystar.gov/](http://www.energystar.gov/))



# Africa

## Europe leads the way in CSR promotion

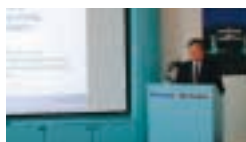
For many years, Matsushita has been carefully exercising corporate social responsibility (CSR) in Europe, where there is keen public interest in this topic. In addition to introducing Matsushita's CSR endeavors in Europe, this page reports on the situation in Ethiopia after the installation there of a remote education system, as highlighted in the 2004 report.

### CSR in Europe

Europe has been keenly interested in CSR for many years. Matsushita Group companies in Europe have received all manner of CSR-related inquiries from consumer groups, NPOs, and NGOs. To address these requests from the public and to achieve full accountability, in July 2004 Panasonic Europe Ltd. (PE), which is in charge of Matsushita's operations in Europe, held a CSR Kick Off Meeting (Photos 1 and 2). Representatives from the European Group companies gathered at the meeting to discuss basic information and Matsushita's policy on CSR, and to share progressive examples of CSR activities. With this meeting, Matsushita commenced a fully-fledged CSR program.

First, in order to get a baseline on each company's strengths and weaknesses in terms of CSR, in fiscal 2005 Matsushita had each group company perform a self audit using a self auditing sheet covering about 100 items.

Audit items were wide ranging, from ethics and compliance with laws and regulations to the environment, prohibition of child and forced labor, dialogue between management and labor, prohibition of discrimination, equality of opportunity, occupational health and safety, and relations with diverse stakeholders. In fiscal 2006, Matsushita will set targets based on the results of the self audits, and each company will implement activities aimed at attaining those targets.



Hitoshi Otsuki, Chairman & CEO, Panasonic Europe, (left) explaining company policies at the CSR Kick Off Meeting to attendees (right). Photo 1, 2



### Participation in the European Commission's Integrated Product Policy (IPP) trial

Many CSR issues must be tackled beyond individual corporate and national frameworks. At the invitation of the European Commission—the administrative body of the European Union (EU)—Matsushita is participating in an Integrated Product Policy (IPP) pilot project. IPP seeks to develop new tools and procedures to reduce environmental impact over the entire life cycle of products. Within the IPP pilot project, Matsushita is working on analyzing the environmental impact of mobile phones throughout their life cycles and devising measures to mitigate that impact. Matsushita will continue to participate actively in efforts to address environmental issues beyond individual corporate framework.

### Remote education system in Ethiopia

*The Panasonic Report for Sustainability 2004* reported on the delivery of 7,000 plasma display panels (PDPs) and broadcasting equipment for a remote education system that the Ethiopian Ministry of Education was setting up. Matsushita regards the company's involvement in raising Ethiopia's educational level with Matsushita products and technology as part of its corporate social responsibility. Installation of all the equipment was completed in fiscal 2005. English, mathematics, history, and other classes are now being broadcast around the country. A further 1,800 PDPs were ordered and delivered, and the new panels are being installed now.



Photo 3

# Doing business with consideration for human rights, safety and health, compliance, and the environment

## China

The Chinese economy is continuing to grow, bolstered by a huge market and labor force. Matsushita regards China as a key area in terms of the company's global business strategy and is heavily investing managerial resources in the country. To be successful in business in China, Matsushita considers it critical to give the utmost attention to the human rights of employees, safety and health, the local community, the environment, and other important issues.

### Creating workplaces where individuals are respected and empowered to enjoy their work

The history of Matsushita's business operations in China dates back to 1978, when then-Deputy Prime Minister Deng Xiaoping was visiting Japan to exchange instruments of ratification on the Treaty of Peace and Friendship between Japan and the People's Republic of China. While in Japan, Deputy Prime Minister Deng asked the founder of Matsushita, Konosuke Matsushita, to assist with developing China's electronics industry. During the 18 years since the company's first joint venture in China was established in fiscal 1988, Matsushita has established about 60 group companies across the country. The Matsushita Group now employs about 70,000 people in China.

Initially, because many companies were set up as joint ventures, each individual company determined and then applied employment conditions, specifying them in workplace regulations and employment contracts that were written in compliance with local laws. Since fiscal 2004, Panasonic Corporation of China (PC) has been consolidating its control of regional operations and promoting employment management that respects the human rights of employees in all Matsushita Group companies in China.

Since October 2004, each company has been evaluating its own human resources management practices using self audit sheets. The audit sheets contain items regarding the employment conditions of temporary workers from agencies, an area that until now has not received adequate attention. HR managers are adding to the controls of the auditing system by making trips themselves to ensure that conditions at company housing for temporary workers are appropriate.

In fiscal 2005, PC began to scrutinize the details of the workplace regulations and employment contracts that each company had established to date. From here forward, PC will set guidelines for important items that should be

standardized across the Group, such as the provisions concerning the protection of human rights and confidentiality.

From December 2004, Matsushita has implemented extra checks on information about new hires, including temporary workers, in order to prevent any chance of problems such as child labor from inadvertently arising.

Starting in fiscal 2006, PC will make a full-fledged start on conducting internal audits of group companies in addition to the self audits that each company performs. Right now, ten companies are slotted for internal audits, primarily those companies that have recently begun operations and those whose business is expanding rapidly.

Group companies in China have been actively addressing the management of occupational safety and health for a long time. Seven companies have already received external certification for their occupational safety and health management systems. In addition, as of fiscal 2005, group-wide rules require all plants to conduct monthly occupational safety and health checks. Further, a system has been put in place to ensure that any accidents that do occur will be reported quickly to PC.

In another group-wide effort, the Matsushita Group companies in China have established an overall Occupational Safety and Health Management Committee.

Starting in fiscal 2006, PC will also begin internal audits of safety and health. Right now, about ten plants are slotted for safety and health audits, mainly those with matters requiring special attention, such as usage of large quantities of specified chemical substances (Photo 1).

### Efforts in ethical and legal compliance

As China continues to develop, it is preparing new laws and revising others one after the other. The development of legislation accelerated especially following China's accession to the World Trade Organization (WTO) in 2001. It is important that Matsushita accurately understand and



Occupational safety and health audit of Group companies by PC

Photo 1



Hydrofluorocarbon (HFC)-free refrigerator sold in China

Photo 2



Tilted-Drum Washer/dryer

Photo 3



comply with these laws. For that reason, PC established a legal division in fiscal 1998. Moreover, because provincial and other local governments are establishing numerous laws in addition to the central government, PC established another legal division in Shanghai in fiscal 2002 and is planning to set one up in Guangzhou in fiscal 2006. In this way, Matsushita is strengthening its system for compliance with regional laws and ordinances.

To improve legal knowledge and awareness of ethical and legal compliance issues at all Group companies, Matsushita has appointed one Chinese and one Japanese legal coordinator at each company. With the PC Legal Division serving as the hub, Matsushita is also working to enable the rapid sharing of legal information, and is holding seminars to promote compliance awareness at each site. In fiscal 2005, seminars for managers, salespeople, purchasing staff, and others whose functions are intimately related to compliance were held at eleven sites.

### Efforts in environmental consciousness

In China, with continued rapid economic growth, energy problems are a top priority issue. Matsushita is implementing a Three-year Energy Conservation Plan based on the environmental management system in place for all company plants around the world. In fiscal 2005 alone, energy conservation measures put into practice at 45 plants achieved a reduction of 65,000 tons of CO<sub>2</sub> emissions.

In particular, Matsushita conducted Energy Conservation Diagnoses to identify energy-conservation challenges at the four Group companies that together account for half of its energy usage in China. As a result, efforts to reduce

air consumption at production facilities at Matsushita-Wanbao (Guangzhou) Compressor Co., Ltd. cut CO<sub>2</sub> emissions by about 5,000 tons in one year. Matsushita will continue to conduct Energy Conservation Diagnoses at other business sites and work to spread energy conservation know-how among group companies.

As a challenge for "Clean Factories," Beijing-Matsushita Color CRT Co., Ltd. (BMCC), a cathode-ray tube plant with heavy water usage, is planning to start operating a facility to purify waste water in fiscal 2006 to tackle Beijing's chronic water shortage. BMCC expects to be able to recycle nearly a third of its waste water with the new facility. In addition, China Hualu Panasonic AVC Networks Co., Ltd. (CHPAVC), which produces DVDs, has received accolades for greatly reducing its waste. Liaoning Province commended CHPAVC as an "Exemplar of Corporate Environmental Protection."

When it comes to Green Products (Photos 2 and 3), Matsushita has attained top-level status in the industry for the labeling of energy efficiency on air conditioners and refrigerators, which has been mandatory from March 2005. We have also started to aggressively sell our Tilted-Drum Washer/dryer, which has outstanding water-conserving features. As of fiscal 2004, we are also working with Chinese suppliers on excluding specific chemical substances from all of our products.

In fiscal 2005, PC started environmental communication, for example giving environmental presentations at expositions and publishing a Chinese version of *The Panasonic Report for Sustainability 2004* and leaflets on its environmental activities for the first time.

## Topics

### Disaster assistance following the Sumatra earthquake and Indian Ocean tsunami

Immediately following the tragic Sumatra earthquake and tsunami in the Indian Ocean in December 2004, Matsushita Group companies from around Asia provided various kinds of assistance, including 210,000 dry-cell batteries, 26,500 flashlights, and 10,000 emergency rations. In January, monetary donations were collected from about 300,000 Matsushita Group employees around the world, and a total of ¥117.85 million was donated in February. Relief aid and supplies donated thus far have reached a total value of ¥181.15 million.

Delivering US\$450,000 of the collected donations to UNICEF East Asia and Pacific Region Office in Thailand. (Ms. Anupama Rao Singh of UNICEF (right), with Matsushita employees.)



## Corporate profile

(As of March 31, 2005)

### Matsushita Electric Industrial Co., Ltd.

**Head office:** 1006 Kadoma, Kadoma City, Osaka 571-8501, Japan  
**Tel:** +81-6-6908-1121  
**Date of incorporation:** December 15, 1935  
**Date of foundation:** March 7, 1918  
**Representative:** Kunio Nakamura, President  
**Capital:** ¥258.7 billion  
**Number of employees:** 334,752

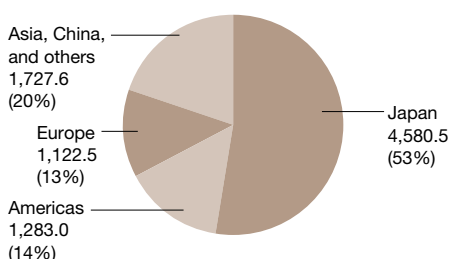
### Fiscal 2005 consolidated performance

**Net sales:** ¥8,713.6 billion  
**Operating profit:** ¥308.5 billion  
**Net income:** ¥58.5 billion  
**Stock exchange listings:** Tokyo, Osaka, Nagoya, New York, Euronext Amsterdam, and Frankfurt  
**Business segments:** Components & Devices / Production Systems; Digital Networks; Home Appliances & Environmental Systems; Services & Solutions

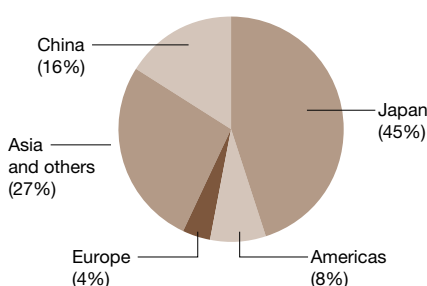
**Matsushita website:** [panasonic.co.jp/global](http://panasonic.co.jp/global)

More information on financial performance is available at our IR info website at:  
[ir-site.panasonic.com/](http://ir-site.panasonic.com/)

Net sales by region (billion yen, fiscal 2005)



Number of employees by region (fiscal 2005)



## Scope of this report

**Reporting period:** The performance data are principally from fiscal 2005 (April 1, 2004 - March 31, 2005). Some fiscal 2006 activities are also included. The abbreviated year indication in graphs (e.g., "01" for fiscal 2001) means the fiscal year (April 1 - March 31).

**Organizations covered:** Matsushita Electric Industrial Co., Ltd., and affiliated companies inside and outside Japan (Matsushita Group).

**Target data:** Data are mainly from the consolidated group of companies. Environmental performance data are from all sites that have established an environmental management system.

\*Dollar amounts in this report have been translated for convenience at the rate of U.S. \$1.00 = 107 yen.

## Inquiries

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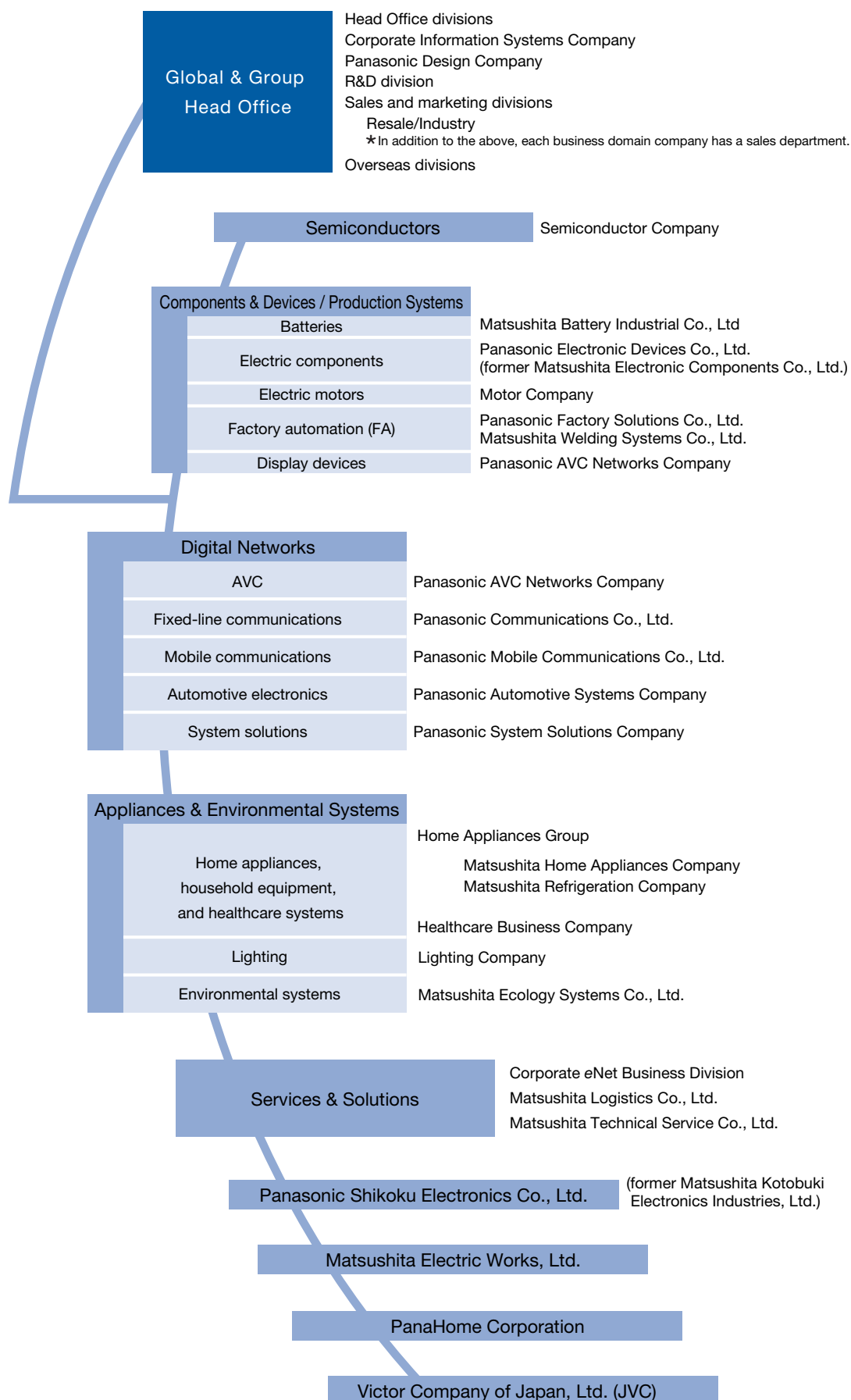
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# Matsushita Group business structure

(As of April 1, 2005)



**Panasonic**  
ideas for life



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