

# Achieving Fast-Track Growth in Global Markets



Year ended March 31 or as of March 31 Millions of yen

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	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Net sales	665,867	564,286	604,865	655,792	657,853	795,180	862,025	866,285	727,400	808,858	875,737
(Overseas sales)	444,588	399,508	439,381	487,169	473,828	621,522	690,673	714,172	610,944	704,874	764,807
Cost of sales	493,068	463,331	459,552	476,407	484,323	585,780	622,819	635,529	605,943	617,776	657,600
Selling, general, and administrative expenses	119,571	115,696	115,569	122,875	119,886	142,052	159,106	158,921	159,878	160,386	154,295
Transfer to the government of the substitutional portion of the Employees' Pension Fund:											
Subsidy from the government					(33,533)						
Loss on settlement					27,347						
Gain on sale of business to Imation Corp.								(15,340)			
Restructuring cost	_	25,489	5,197	_	_	6,825	510	_	15,884	4,922	_
Operating income (loss)	53,228	(40,230)	24,547	56,510	59,830	60,523	79,590	87,175	(54,305)	25,774	63,842
Income (loss) before income taxes							88,665	91,505	(81,630)	21,907	60,065
Income (loss) from continuing operations before income taxes	61,223	(40,230)	20,552	55,847	60,728	66,103					
Income taxes	18,268	(15,679)	6,193	12,133	23,284	21,057	16,985	19,948	(17,041)	9,025	15,061
Income (loss) from continuing operations	42,214	(23,619)	13,593	43,355	36,965	44,411					
Loss (income) from discontinued operations	(1,769)	2,152	1,574	1,254	3,665	310					
Net income (loss) attributable to TDK	43,983	(25,771)	12,019	42,101	33,300	44,101	70,125	71,461	(63,160)	13,520	45,264
Per common share (Yen):											
Net income (loss) attributable to TDK Basic	330.54	(193.91)	90.56	317.80	251.71	333.50	529.88	551.72	(489.71)	104.82	350.90
Net income (loss) attributable to TDK Diluted	330.54	(193.91)	90.56	317.69	251.56	333.20	529.29	551.19	(489.71)	104.74	350.57
Net cash flow	802.80	264.94	521.05	700.46	650.47	775.50	1,022.45	1,101.11	204.75	753.83	951.54
Net assets	4,794	4,395	4,176	4,352	4,832	5,311	5,759	5,557	4,297	4,215	4,142
Dividends per common share (Yen)	60.00	50.00	50.00	55.00	70.00	90.00	110.00	130.00	130.00	60.00	80.00
Payout ratio (%)	18.1	_	55.2	17.3	27.8	27.0	20.8	23.4	_	57.2	22.8
Total assets	820,177	749,910	747,337	770,319	808,001	923,503	989,304	935,533	1,101,036	1,091,458	1,060,853
Stockholders' equity	637,749	583,927	553,885	576,219	639,067	702,419	762,712	716,577	554,218	543,756	534,273
Working capital	306,771	288,865	315,948	360,555	379,746	397,131	449,830	300,859	281,536	286,370	199,186
Capital expenditures	98,659	58,347	41,026	44,471	61,005	73,911	70,440	84,312	98,425	64,370	78,638
Depreciation and amortization	62,841	60,981	57,132	50,726	52,806	58,540	65,337	71,297	89,567	83,788	77,594
Research and development	34,112	35,530	30,099	32,948	36,348	45,528	50,058	57,387	57,645	53,942	52,973
Ratio of overseas production to net sales (%)	56.5	53.3	55.8	58.6	59.0	61.7	62.2	70.1	74.0	80.6	83.6
Number of employees	37,251	32,249	31,705	36,804	37,115	53,923	51,614	60,212	66,429	80,590	87,809

Notes: TDK has adopted the Emerging Issues Task Force Issue 01-9 ("EITF01-9"), "Accounting for Consideration Given by a Vendor to a Customer (Including a Reseller of the Vendor's Products)," since the fiscal year beginning April 1, 2002. As a result, figures for the fiscal year ended March 31, 2001, and the fiscal year ended March 31, 2002, have been reclassified to conform to the fiscal year ended March 31, 2003 presentation.

# **History of TDK** Profile



In 1935, Tokyo Denki Kagaku Kogyo K.K. (later renamed

TDK) was founded for the commercialization of ferrite, a groundbreaking magnetic material invented in Japan. Ferrite was developed by Drs. Yogoro Kato and Takeshi Takei of the Tokyo Institute of Technology. As a pioneering university-initiated venture company, TDK has contributed to the

materials and the wider field of electronics.

development of various electronic





Dr. Yogoro Kato and Dr. Takeshi Takei

Research and

Development

# **Recognition as IEEE Milestone**

Work by the Tokyo Institute of Technology and TDK to develop ferrite materials and their applications received recognition from the Institute of Electrical and Electronics Engineers as an IEEE Milestone, commemorating historic achievements in electric and electronic technology. The IEEE, an international academic society relating to electricity and electronics, established the award in 1983 and grants it to technologies and products that have contributed to the development of society and industry. This was the 89th IEEE Milestone worldwide and the 10th in Japan.



The IEEE Milestone plaque

1940 1950 1960 1970 1980 2000

# **Development of the** first Japanese-made cassette tape

TDK developed the first Japanese-made cassette tape, greatly transforming music life. The phenomenal success of the tape led to TDK becoming a household name throughout the world.

The Synchro cassette tape, Japan's first domestically made cassette tape



# **Development of the** multilayer chip inductor

The multilayer chip inductor, essential for making smaller, lighter electronic equipment, was born from TDK's original layering technology for threedimensional spiral coils. This landmark product overturned the conventional wisdom that coils were for winding.

The structure of a multilayer chip

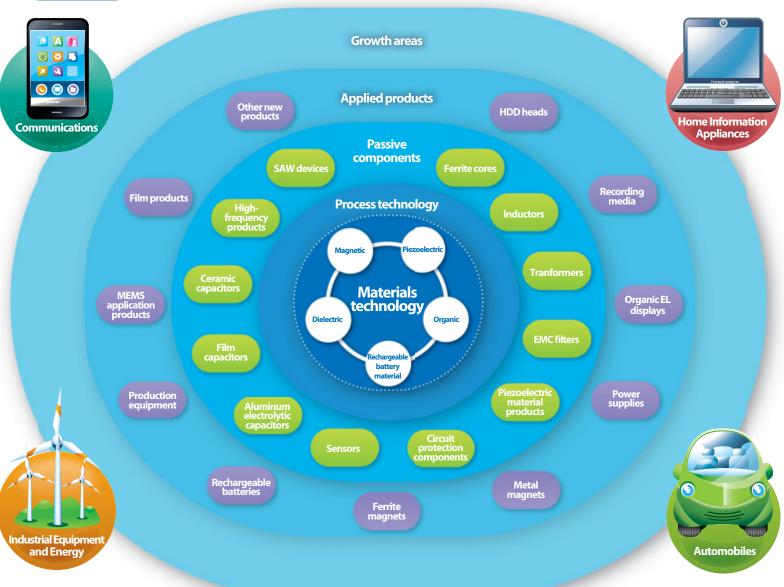


# Launch of high-density recording MR magnetic heads for HDDs

Hard disk drives (HDDs) are used as large-capacity recording media in devices such as personal computers. TDK has world-leading technological strength in the field of magnetic heads for HDDs, which require nano-level, thin-film technology.



# **Business Outline** Profile



# TDK's core materials and process technologies drive the electronics field

TDK has both materials technology, accumulated with ferrite as a starting point, and process technology, used to shape intricate electronic components. By continuing to refine its original, cutting-edge expertise based on these core technologies, TDK has developed a diverse range of electronic components and contributed to the evolution of the electronics industry. TDK components are contained in various electronic products and other familiar daily use items, and are making our lives ever more affluent.

# TDK develops diverse products contributing to the realization of an affluent environment

Electronic components play a major role in advanced fields experiencing progressive technological innovation, such as communications, automobiles, industrial equipment and energy, and home information appliances. Among many other areas, TDK components contribute to the further evolution of mobile equipment and the realization of environment-friendly next-generation automobiles. By sharing problems with final product makers from the development stage and creating highadded-value components that facilitate solutions, TDK contributes to the further development of industrial society.

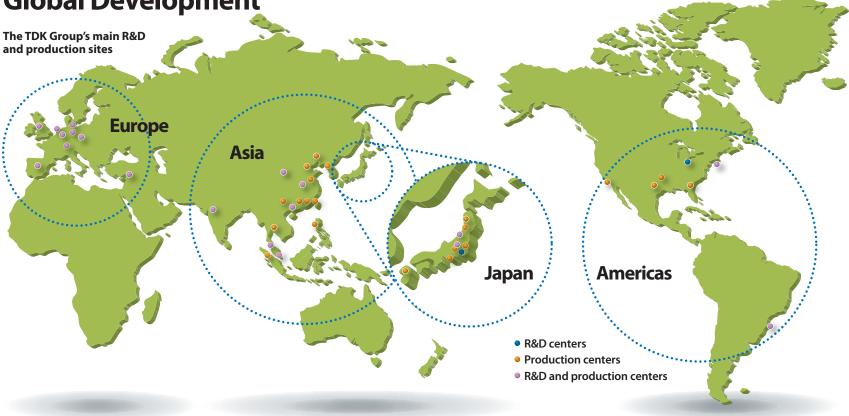
To Our Stakeholders

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# **Corporate overview of TDK Corporation**

Commercial name: **TDK Corporation** 

Registered company name:

**TDK Corporation** 

Headquarters: 1-13-1 Nihonbashi, Chuo-ku, Tokyo

Date of establishment December 7, 1935

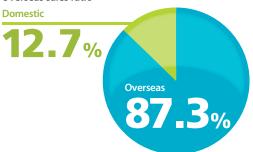
87,809 No. of employees:

(consolidated; as of end of March 2011)

# Overseas production ratio



### Overseas sales ratio



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# Effects of the Great East Japan Earthquake

The Great East Japan Earthquake, occurring on March 11, 2011, caused massive loss of life and damage, mainly in the Tohoku region of Japan. We extend our deepest condolences and sympathy to all those affected by the disaster.

Among our facilities, the TDK-MCC Corporation's plant in Kitakami and TDK Micro Device Corporation's plant in Ibaraki suffered damage, but as a result of tireless efforts by all parties concerned, both plants were able to return to 100% operation by early May. Currently, all TDK Group plants and facilities are operating normally.

# **Both Earnings and Profits Rose in** Fiscal 2011

The economic climate in leading industrial nations continued its gradual recovery, driven by various stimulus measures. In newly emerging markets, led principally by China, high growth was sustained mainly by internal demand. The Japanese domestic economy benefited from the fact that global improvements resulted in stronger

exports, and stimulus measures coupled with an easing of monetary policy also contributed to a gradual recovery that held firm throughout the fiscal year.

In the electronics market, which has a strong bearing on the consolidated operating results of the TDK Group, enormous growth in smartphone and tablet computer production energized the entire sector. Manufacturing figures for the automotive and industrial equipment sectors also remained strong. In contrast, flat-screen TVs, notebook computers, hard disk drives, and some other product categories in the digital home appliance field were subject to fluctuations in demand, requiring adjustments in the number of units produced.

In this business environment, the consolidated net sales of the TDK Group rose 8.3% year on year to ¥875,737 million, while operating income was ¥63,842 million, representing a 147.7% jump over the previous year. Consolidated net income attributable to TDK Corporation was ¥45,264 million, a gain of 234.8% year on

year, continuing the trend toward increased profitability from the previous term.

Consolidated operating results for fiscal 2012 are projected to be ¥890,000 million (1.6% increase year on year), operating income ¥67,000 million (5.0% increase year on year), and current term net income ¥50,000 million (10.4% increase year on year).

# **Profit Sharing Policy and Dividend for** Fiscal 2011

We recognize that achieving growth in corporate value over the long term ultimately translates into higher shareholder value. In line with this, TDK's fundamental policy is to work to consistently increase dividends through growth in earnings per share. We therefore endeavor to reinvest profits into business activities to the greatest degree possible, and then base our dividends on a comprehensive evaluation. This approach takes into account consolidated-base return on equity (ROE) and dividend on equity (DOE) standards, as well as changes to the business

environment, etc.

Based on this policy, we have set the dividend for the end of fiscal 2011 to ¥40 per share. Together with the intermediate dividend paid in December 2010, the yearly dividend for the current term therefore amounts to ¥80 per share.

While the future course of the global economy remains difficult to predict, the TDK Group will actively pursue technological R&D in fields where mediumto long-term growth is expected, such as communications, automobiles, industrial equipment, and energy.

This will allow us to develop and supply proprietary products with high added value, in order to sustain growth. TDK aims to contribute to the industry and society at large through future-oriented innovative technology and products.

President and CFO



Feature

### **President's Interview**



# **Takehiro Kamigama President and CEO**

### Profile

1981 Joined TDK

2001 General Manager, Recording Device Business Group

2002 Corporate Officer

2003 Senior Vice President

2004 Director, Executive Vice President

2006 Representative Director, President and COO

# Please tell us about TDK's response to the Great East Japan Earthquake.

This was a disaster on an unprecedented scale, and it caused severe damage to the manufacturing facilities of many companies in the electronics sector, including TDK. As a result, the supply framework of crucial components for electronics products was disrupted, leading to worldwide uncertainty in the marketplace and reminding us once again of the importance of the electronic component industry.

Within the TDK Group, damage to buildings and manufacturing lines led to instances where production had to be temporarily suspended. Facilities in the Tohoku area were also affected by power outages, likewise necessitating production stops. Learning from this experience, we are currently strengthening our supply framework to ensure an uninterrupted flow of products even in the event of an earthquake hitting a country that is a major production base.

In more concrete terms, we are reviewing the procurement process for crucial parts and materials that are essential for ensuring stable production, and we are reconfiguring our supply chain on a

global scale. We are also bolstering our risk management structure to enable the swift assessment of damage following a disaster, and to improve our ability to analyze the effect this will have on production.

With a view to surviving the power shortages expected this summer, we have put into place further energy saving measures and have prepared our own power generating equipment.



# Please tell us about TDK's growth strategy for the future.

The TDK Group has identified the home information appliances sector which includes products such as TVs, computers, and tablets, the communications sector centered on smartphones, the automotive sector, and the industrial equipment and energy sector as markets where significant growth can be expected. Consequently we have focused on these areas while bringing our proprietary materials technology and process technology to bear. Placing particular emphasis on the communications, automobile, and industrial equipment and energy sectors, total sales in these three areas increased from 306.1 billion yen in fiscal 2009 to 484.2 billion yen

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in fiscal 2011. As a result, the share of these three areas to total consolidated sales rose from 42% in fiscal 2009 to 56% in fiscal 2011.

In the communications field, the market for smartphones continues to grow at a rapid pace. With concern for the global environment intensifying, the industrial equipment and energy sector, as well as the eco car sector, comprising hybrid-electric and electric vehicles. are also medium- to

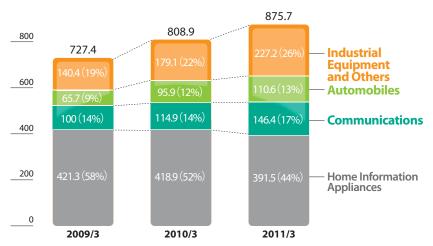
long-term growth markets. The TDK Group will continue to focus on such key areas and develop and market products that offer true added value, to ensure sustained growth.

# Q3

Could you elaborate on concrete strategies for TDK's key growth areas?

In the communications sector centered on smartphones, major demands include

**Net sales** (Billions of yen) 1,000



<sup>\*</sup> Figures in parentheses show the share of each field's sales in total consolidated sales.

higher performance, better functionality, longer operating times, etc. To achieve extended operation times in particular, a sizable chunk of the limited space in a compact device has to be given over to a large-capacity battery. This in turn means electronic components need to be even thinner, smaller, and lighter. One approach that offers a viable solution here is called modularization, which is the grouping of components in modules that require less space while handling multiple functions.

TDK not only offers many types of advanced multilayer ceramic chip capacitors and inductors, we also provide a formidable array of other high-frequency components including SAW filters and duplexers. This allows us to develop products that meet the stringent demands of customers and deliver enormous added value.

In the automotive sector, crude oil prices continue to rise, which is expected to drive up demand for hybrid and electric vehicles on a global scale. Likewise for cars with conventional gasoline engines, the trend toward better fuel economy and improved safety makes electronic control systems ever more important.

The TDK Group already offers a wide



range of electronic components that are essential for the eco car of today and the future. This includes the high-performance magnets required for improving the performance of EV/HEV drive motors, current sensors contributing to reduced energy consumption, DC-DC converters to convert voltages, etc. An important role is also played by our high-reliability chip capacitors, inductors, sensors, and other parts designed specifically for use in the demanding environment of cars with conventional internal combustion engines.

In the industrial equipment and energy sector, we anticipate increased demand in the market for renewable energy sources such as wind and solar power over the medium to long term. This is inevitable as Japan reconsiders its energy policy in the aftermath of the disaster. The

development of the Smart Grid to efficiently link multiple small-scale power generating facilities is also garnering worldwide attention. The TDK Group is targeting such growth markets by actively developing and marketing magnets and sensors for wind power generators, high-frequency components for smartphones, electronic components for inverters used in both wind and solar power installations, as well as a wide range of other passive and power supply related products.

In the HDD sector, while the prices for disks used in home information appliances continue to drop, the demand for highend products required for data centers has been boosted by the trend toward cloud computing. Key issues in the high-end HDD sector include not only cost but also increased access speed, larger capacity, and reduced power consumption.

Innovative TDK developments such as thermal-assist magnetic heads are an impressive demonstration of our leading role at the cutting edge of highperformance HDD technology. We expect to maintain and increase our share of the high-end market in the medium to long term. Our competitiveness in this area is further bolstered by our micro actuator

drive technology applications and other HDD suspension related parts.

Feature



# What is the TDK strategy for research and development?

The business model of the TDK Group is to capitalize on our proprietary materials and process technologies in order to differentiate our products. We realize this through materials, parts, and modularization, delivering the advantages of our technological lead to the customer in various shapes and forms. This of course means we attach particular importance to R&D in our area of core competence, materials science, and we plan to further increase the number of researchers working in this and related fields.

We are also adding new laboratory



facilities with the latest experimental equipment and are establishing a framework for pursuing multiple research topics in parallel. This will serve to enhance efficiency and strengthen our R&D base in a global context.

A major example of the medium- to long-term fundamental research we are pursuing is a discipline called spintronics. Expected to lead to applications that will give birth to electronic components of the future, spintronics utilizes the electrical charge of electrons in solid-state bodies (property that transmits electricity) in combination with the spin of electrons (property that causes magnetic attraction).

While still a new field, spintronics research harks back to a TDK forte from the very beginning, namely magnetics technology. Possible applications include high-speed, high-capacity, nonvolatile magnetic memory. If practical application is successful, we envision this as a potential future key product area for our company.

Another major research topic is the development of high-performance magnets that do not require neodymium, a rare earth material. Such magnets could reduce the cost for electric drive motors and generators in hybrid and electric vehicles,

and applications in the HDD sector are also possible.

Meanwhile, TDK is looking to capitalize on the technological know-how in roll to roll manufacturing processes it has gained over many years of making magnetic tape. This is expected to lead to yet another new product category with definite growth potential: functional films for touch panels, separators for rechargeable batteries, solar panel films, etc.

Making use of our HDD head manufacturing facilities, acceleration sensors, pressure sensors, and other MEMS (micro electronics mechanical systems) devices are also in the product pipeline. In fact. HDD heads that combine mechanical parts with sensors, actuators, electronic circuitry, etc. can be considered a type of MEMS device, We will also be able to produce various kinds of other MEMS devices by modifying our production lines and applying TDK's own process technology.



# Could you tell us about your global strategy and M&A stance?

As is evident from the fact that 87.3 percent of our net sales for fiscal 2011 stem from overseas, the major markets of the TDK

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Group are located outside Japan. In keeping with this trend toward globalization, we operate four main bases, namely Japan, Americas, Europe, and Asia. We have research, production, and marketing facilities in all of these areas, and are covering all aspects of business.

However, each area does have its special strengths. For example, materials-related R&D is centered in Japan, while product and application development is given higher priority in Europe, America, and China, areas that are also the major markets for the resulting products. What is important here is the fact that close mutual cooperation and communication help to optimize synergy, benefiting the entire Group.

As for mergers and acquisitions, if we consider it necessary from a strategic point of view, we will continue to bring companies with distinct technology and product assets into the fold. As I mentioned earlier, TDK differentiates its products through original materials development and process technology that brings out the best in these materials.

The mergers and acquisitions of the past few years have significantly strengthened the Group's technological



resources, and we are always on the lookout for new materials and processes, with a view toward accelerating product development in key areas. Depending on evolving market demands and technological progress, we may decide to add more companies that bring specific and distinctive advantages to our business strategy.

The TDK Group will continue to develop global markets based on a realistic approach that includes M&A when necessary, while also attracting outstanding human resources from all over the world. We believe this is bound to enhance our global competitiveness.



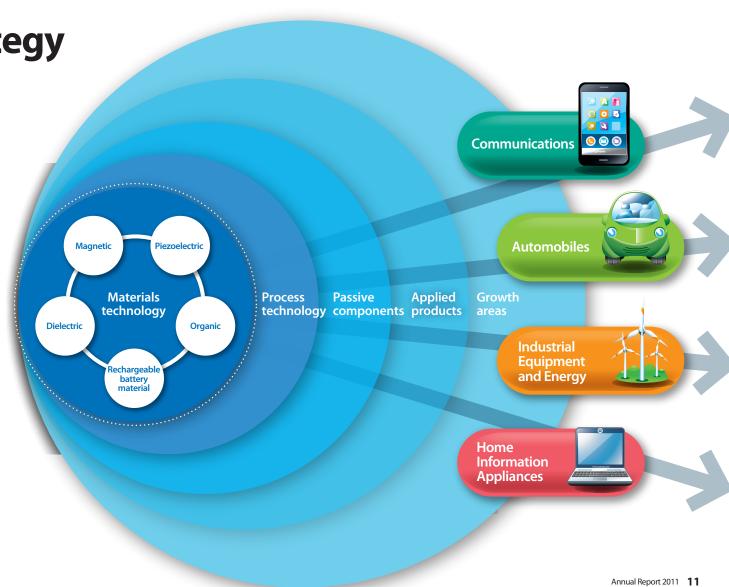
**TDK Growth Strategy** 

——The Role of M&A

Ever since TDK was founded, its product innovation has centered around two key skills, namely materials technology, linked to the development of ferrite, and process technology, enabling high-precision processing of devices on a micro scale. The result is an impressive palette of electronic components for a wide range of applications.

In recent years, the company has focused its technological and development prowess on high-growth sectors including communications, automobiles, industrial equipment and energy, and home information appliances. It is also actively pursuing an expansion of its technology scope through mergers and acquisitions.

As a result, the TDK Group's lineup includes a wide range of high value added parts in areas such as smartphones, hybrid and electric vehicles, and wind and solar power generation. We will continue to push the boundaries of technology while building products that reflect the spirit of true craftsmanship. This is the TDK approach aimed at further growth.



**TDK Corporation** 

Home Information

**Appliances Sector** 

notebooks and tablet

computers

Further increase storage

capacity to meet market needs.

### 2005 2006 2008 Japan China Germany Thailand M&A partners **Lambda Power Group Amperex Technology Magnecomp Precision EPCOS Group** Limited (ATL) Technology Public Co., Ltd. (MPT) **3** 🗱 🔼 Expand activities in RF Intensified development A broader product lineup of Strategy 1 components and similar Development and of power supplies for high-frequency technology, for multi-functionality communications manufacture of components focused on Strengthening and multi-band support in mobile infrastructure (base rechargeable batteries for SAW filters and devices such as smartphones. the Communications stations for mobile mobile phones strengthening of the Enhance flexibility and innovation Sector communications, etc.) customer base P13 capabilities. Foster synergy with TDK Expand business operations Strategy **2** to enhanced electrification of cars, in DC-DC converter by supplying passive mid to long term, intensify sector for components such as relations with car makers to Strengthening injectors for fuel injection next-generation eco cars the Automotive such as HEV, EV, and systems and sensors to car next-generation eco cars to Sector P14 **PHEV** makers maintain long-term growth. Strategy 3 Promote development of Expand lineup of various Supply passive components for high-efficiency, Strengthening capacitors for power natural energy sector including the Industrial high-reliability power facilities and smart meter solar and wind power, develop advanced technology for Smart **Equipment and** supplies and related parts parts; strengthen customer Grid applications. **Energy Sector** for industrial equipment base Strategy 4 Achieve internal Pursue leading-edge HDD Develop and manufacture magnetic head development to manufacturing of Strengthening the rechargeable batteries for realize higher HDD density.

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suspensions as key parts for

improve competitiveness

HDD magnetic heads,



**Strengthening the Communications Sector** 

Developing High Value Added Devices for Advanced Mobility and Portability

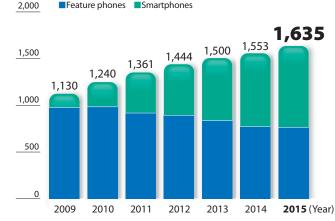


The mobile phone sector is evolving at a rapid pace. Integration of a large number of functions as exemplified by smartphones is becoming ever more prevalent, while multi-band support for different communication standards and frequency ranges is another major industry trend.

As a result, the market for electronic components used in such products has also expanded dramatically. This extends from some developed regions to the newly emerging economies and countries all over the world.

The market potential of the communications sector is believed to be immense.

### Projected market for feature phones and smartphones (Unit: million units)



Source: Future Market Outlook of Key Devices for Mobile Phone of New Generation 2011, Fuji Chimera Research Institute, Inc.



# Contributing to progress in the mobile phone sector through advanced passive components

Currently, about half of all mobile phones worldwide use the GSM communication standard, but this is rapidly changing, with advanced countries moving towards nextgeneration standards such as W-CDMA and LTE that support higher speeds and greater data throughput volumes.

With a view to enabling roaming, and aiming to lower costs through international standardization, mobile phone manufacturers are increasingly adopting multi-band support whereby a single model can work with various communication standards and frequency bands used in different countries. Smartphones and other advanced mobile phones tend to include a range of sophisticated functions including high-quality photo and video shooting, TV viewing capability and more. This means that the electronic components used in such devices must be increasingly compact and lightweight. With a view to this business environment, EPCOS was brought into the TDK Group in 2008, bringing with it valuable expertise in the area of high-frequency components that are crucial for the progress of mobile phones. By combining the

technological power, product innovation potential, and market presence of TDK and EPCOS, the TDK Group further enhanced its competitiveness in the communications sector.

The group is supplying a wide range of components to mobile phone manufacturers worldwide, including SAW filters\*1, multilayer ceramic chip capacitors, common mode filters, antennas, and inductors.



# Module technology boosts competitiveness in the coming multi-band age

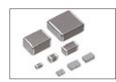
As multi-band support progresses, a single mobile phone requires a great number of parts in order to operate in different frequency bands. To solve this dilemma, TDK is promoting modular technology based on the so-called semiconductor embedded substrate approach.\*2 This technology will allow the grouping of components by function, facilitating the

development of mobile phones with smaller dimensions and higher integration. Integrating components into compact modules also frees up valuable space that can be used to increase battery capacity for longer talk times.

Furthermore, TDK is continuing to develop highly integrated RF components and DC-DC converters. To strengthen the Group's position in the battery sector, various companies have been brought into the fold. They include Amperex Technology Limited, which possesses valuable know-how in the development and manufacturing techniques for rechargeable batteries, and Nitto Denko (Shanghai), a company producing rechargeable battery material separators.

- \*1 SAW filter: Surface Acoustic Wave filter. A filter device that selects an electrical signal using acoustic waves that propagate on the surface of a piezoelectric substrate.
- \*2 Semiconductor embedded substrate: Component integrating ICs and other parts as well as wiring on a ceramic substrate.

# Major products for the communications sector



Multilayer ceramic chip capacitors



Inductors





SAW filters/ High-frequency modules



Frame-integrated antennas



# **Strengthening the Automotive Sector**

Corresponding to enhanced electrification of cars and Supporting the Development of Next-Generation Eco Cars

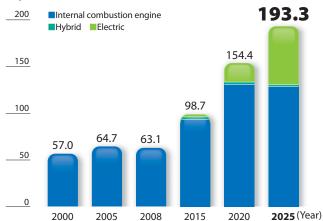


Current automobiles can be likened to "moving electronic devices" in which a wide array of electronic components help to make driving safer, more pleasant, and less of a drain on precious natural resources.

Protection of the environment has become a top concern, as exemplified by hybrid electric vehicles (HEV), electric vehicles (EV), and plug-in hybrids (PHEV). The shift toward the next generation of environment-conscious cars with electric motors is in full swing, requiring the production of a large number of electronic components for the drive and control systems in these vehicles.

The demand for such products in the automotive sector is expected to increase further in the near future.

### Projected market for automobiles (Unit: million units)



Source: "Future Projection Report–The Automobile Industry 2011-2025" (by Sakae Tanaka, Nikkei BP Consulting, December 2010)



# Supporting automotive electrics with a wide product range

The electronic components used in automobiles are critical for safety. Not only must they be highly resistant to vibrations and shocks, their overall reliability must be on a level far surpassing general-application products.

TDK has played a pioneering role in developing such components, thanks to its valuable technological expertise in a number of fields. Chip components guaranteed to withstand high temperatures, noise control components for automotive LANs, ferrite magnets for compact motors, and metallic magnets for drive motors are just some of the many products TDK supplies to the automotive sector, earning the company a reputation for outstanding reliability.

EPCOS joined the Group in 2008, further broadening TDK's automotive lineup. Piezo actuators now control fuel injection with high precision by utilizing the piezoelectric effect, in which changes in voltage and dimensions are linked together. Sensors reliably detect parameters such as exhaust gas or passenger compartment temperatures, contributing to both

better fuel economy and more pleasant driving. Such high-performance electronic components provide car manufacturers with the flexibility to create better products.



# Promoting intensive technological research targeting the next generation of eco cars

In the automotive sector, business cycles tend to be longer than other areas, and a medium- to long-term approach is called for.

While meeting strict requirements for environmental performance, the entire TDK Group is actively applying its expertise and technological know-how towards the development of new solutions in the HEV, EV, and PHEV arena. Together with car manufacturers around the world, we are focusing on development that looks as far as 10 to 20 years into the future.

Neodymium magnets have already

enabled more compact and efficient drive motors while sensors permit highly precise assessment of electric currents for more economic driving. These and other products are expected to contribute to improved performance over many years to come. Another vital area of development is DC-DC converters, which turn the high voltage from the main battery bank into the lower voltage required by the electronic circuitry.

Smaller dimensions and higher efficiency contribute to lower power consumption and weight reduction in electronic components. After Lambda Power joined the TDK Group in 2005, TDK is developing electronic parts to support the further "electrification" of the automobile. The company is concentrating on high-speed battery charger power supply systems for plug-in vehicles, as well as on the development of various other components for the eco car of the future.

# Major products for the automotive sector



Ferrite magnets / Neodymium magnets



HEV DC-DC converter



Power supplies for battery



Current sensors



Inductors





Multilayer ceramic chip capacitors



Strengthening the Industrial Equipment and **Energy Sector** 

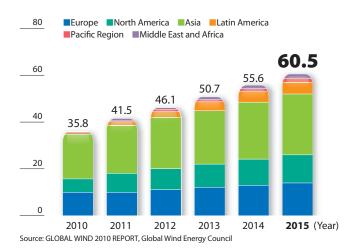
**Contributing to Renewable Energy Utilization and the Smart Grid** 



Solar power, wind power, and other renewable energy sources are becoming ever more important in the fight against global warming and the depletion of natural resources.

However, technology to efficiently store and distribute the generated power is extremely important to make efficient use of these inherently unstable sources. One such approach currently being pursued worldwide is the so-called Smart Grid, designed to optimize the balance between supply and demand. Progress here in turn accelerates the need for electronic components.

### Projected distribution of wind power installations by area (Unit: Gigawatts)





# Promoting the wider use of natural energy

To distribute the power generated by solar or wind power installations, the direct current (DC) from such sources must be converted into alternating current (AC) to be fed into the grid at high voltage. The converter and inverter circuitry that performs this task makes use of a large number of electronic components.

TDK offers a broad product palette in this area, including inductors, multilayer ceramic chip capacitors, transformers, and magnets. Following the acquisition of EPCOS, additions have been made to the lineup including aluminum electrolytic capacitors and film capacitors, which are key components in inverters. The range now covers a broad spectrum, meeting the need for electronic components in the environmental energy field. TDK is one of very few companies worldwide in this position.



# Technology evolves toward the Smart Grid

Smart Grid implementations are currently gaining traction all over the world. Innovative technology is the key factor that will enable its widespread acceptance.

Building upon the synergy between TDK and EPCOS, we plan to meet the expected increase in product demand linked to smart meters, units designed to precisely assess the power consumption of individual households. Advanced highfrequency modules, SAW devices, and other communication components will also be required in this field.

Meanwhile, the group member TDK-Lambda is currently applying its expertise to the development of bidirectional DC-DC converters and related products for the Smart Grid.

# Advancing the TDK presence in the new energy market

The fields of solar and wind power generation have so far been dominated by European countries such as Germany and Sweden, but a trend toward worldwide participation is clearly evident. The TDK Group has identified the next-generation energy sector as an important market segment. While making use of global cooperation among our bases, we will work towards developing new technologies and bolstering our product lineup in this area. We also intend to strengthen the cooperative framework with generator manufacturers.

# Major products for the energy sector



Financial Highlights Profile To Our Stakeholders President's Interview Feature Sales Results Research and Corporate Management CSR Activities



Strengthening the Home Information Appliances Sector

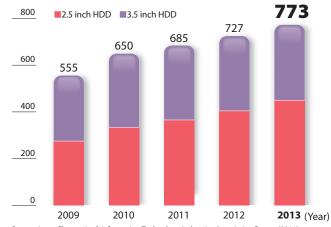
Leading the Revolution in Magnetic Head Technology for Hard Disk Drives (HDDs)



HDDs have grown immensely in storage capacity thanks to various technological breakthroughs, leading to their widespread use for a broad range of applications. Meanwhile, next-generation storage media in the form of NAND type flash memory and SSDs are expected to partially replace HDDs in some areas.

However, data centers are becoming increasingly common, and the globally linked information society must handle steadily rising data volumes. Thanks to their low cost per storage unit, the demand for HDDs can be expected to show further steady growth.

### Projected market for hard disk drives (HDDs) (Unit: million units)



Source: Japan Electronics & Information Technology Industries Association Report (2011)



# Trailblazing the development of smaller HDDs with higher capacities

TDK is a leading manufacturer of magnetic heads for HDDs. The company has close cooperation agreements with HDD manufacturers the world over, and has played a pioneering role in developing today's extremely small, high-capacity HDDs. TDK boasts cutting-edge technology that enables the creation of highly advanced value added products.

To fit more data on an HDD, it is essential to increase the storage density per area unit. This in turn requires higher-performance magnetic disks and miniaturization of the magnetic heads that read and write data. At the same time, sensitivity must also be improved. GMR heads utilizing a magnetic resistance effect and tunnel magnetoresistive (TMR) heads are two examples where TDK's advanced thin film process technology was successfully applied.

In 2006, Magnecomp Precision Technology Public Company Limited became a TDK subsidiary, bringing to bear its expertise in suspensions for magnetic heads. This increased the ratio of key components manufactured in-house and enhanced our competitive advantage. More recently, the combination of Magnecomp's suspension technology and TDK's piezo technology can be seen in newly introduced products for even more precise operational control of magnetic heads.

Development

to allow an increase in storage capacity not possible with conventional perpendicular magnetic recording. Mass production of thermal-assist magnetic heads is slated to begin in the fiscal year starting March 2013.

Financial Review



# Combining high storage capacity with improved storage quality

The demand for higher capacity and higher storage quality is constantly on the rise. However, with current perpendicular magnetic recording, the limit of storage density is considered to be on the order of 1 Tbpsi. To meet these ever increasing needs, TDK is developing so-called thermal-assist magnetic heads.

This type of magnetic head uses laserbased heat irradiation to temporarily reduce coercive force and thereby facilitate the recording process. The principle is expected



# Wide product palette for non-HDD applications

TDK also offers various passive components for use in computers, tablets, audiovisual devices, and other home information appliances.

The acquisition of Amperex
Technology Limited in 2005 broadened the
lineup with the addition of rechargeable
batteries, which are being offered for
notebook computers and tablets.

In future, the product range is to be further expanded to meet the varied requirements of manufacturers of home information appliances.

# Major products for the home information appliance sector

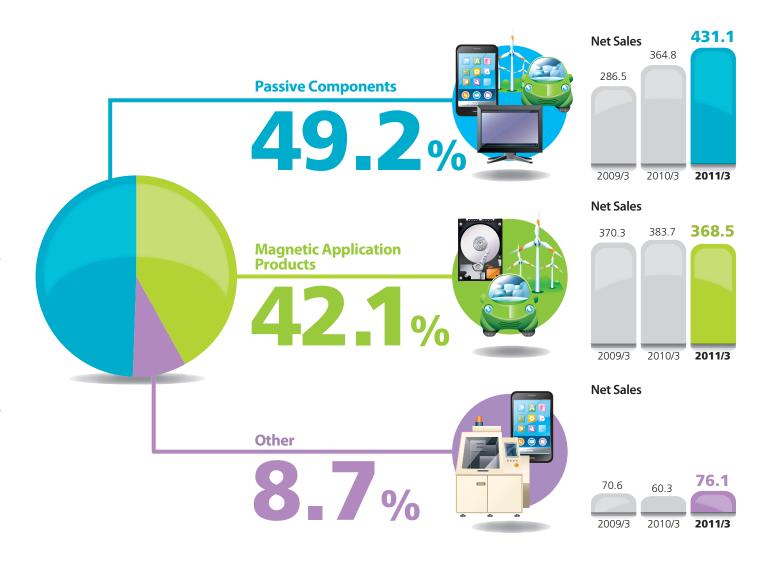


# **Sales Results**

Net sales of the TDK Group for the fiscal year ended March 2011 were 875,737 million yen, up 8.3% year on year, and operating income was 63,842 million yen, up 147.7% year on year. A number of different trends affected performance in the electronics market, depending on the type of end product using TDK components.

In the IT communications sector, the enormous growth in smartphones and tablet computers acted as a stimulus, resulting in considerable production figure gains. The automotive and industrial equipment sectors also continued to perform well. In the field of flat panel TVs, notebook computers, and related products, production volumes underwent an adjustment.

Due to the Great East Japan Earthquake, as well as the rolling blackouts and other events in its aftermath, several manufacturing and development bases in the Tohoku and Kanto areas had to be temporarily shut down. However, thanks to concerted efforts by the entire Group, as well as cooperation and support by suppliers and other related parties, all bases have since resumed operations.



Research and

Development



# **Passive Components**

This business segment is made up of Capacitors, Inductive Devices, and Other Passive Components. The Capacitors category encompasses ceramic capacitors, aluminum electrolytic capacitors, and film capacitors. The Other Passive **Components category comprises** high-frequency components and piezoelectric material components, as well as circuit protection devices and sensors.









**Ceramic Capacitors** 

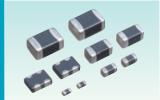
**Aluminum Electrolytic Capacitors** 

**Film Capacitors** 

**Inductive Devices** 









**High-frequency Devices** 

Piezoelectric Material Components Circuit Protection Devices

Sensors



# **Magnetic Application Products**

Devices category encompasses HDD











# Other

This segment includes Energy Devices (Rechargeable Batteries), **Mechatronics (Production** Equipment), and other businesses.







Energy Devices (Rechargeable Batteries) Mechatronics (Production Equipment)

Annual Report 2011 18 **TDK Corporation** 

Profile

To Our Stakeholders

President's Interview





# Thanks to growing demand in the communications device market as well as the automotive and industrial equipment sectors, sales increased by 18.2 percent.

Combined net sales in this business category for the fiscal year ended March 2011 were 431,111 million yen, up 18.2% year on year, and operating income was 24,722 million yen, an increase of 34,973 million over the previous year. The breakdown by product type is given below.

### Capacitors

Sales of ceramic capacitors for communications devices and automotive use increased, as did sales of aluminum electrolytic capacitors and film capacitors for the industrial equipment market.

This resulted in net sales of 145,393

million yen, up 9.2% year on year.

### **Inductive devices**

Sales to the communications device market, particularly for smartphones, showed large gains, while sales to the home information appliance, automotive, and industrial equipment sectors also continued to perform well.

As a result, net sales were 135,762 million yen, up 21.3% year on year.

### Other passive components

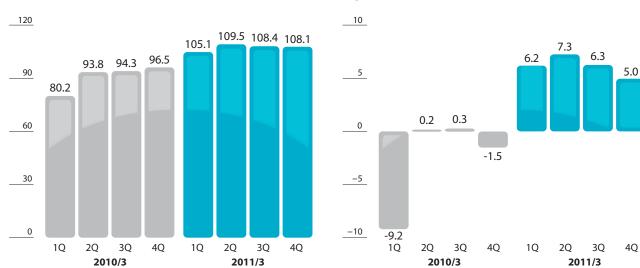
Sales of high-frequency components for smartphones and other communications

devices increased significantly. Piezoelectric material components and circuit protection devices for use in communications devices and industrial equipment also performed well, as did sensors for the automotive market

Overall, the sector showed a healthy upward trend, resulting in net sales of 149,956 million yen, up 25.2% year on year.

# Net Sales (Billions of yen/quarter)

# Segment Profit (Billions of yen/quarter)



# **Topics**

Profile

# Developing the industry's first thin film common mode filter for combined noise suppression and static electricity control

TDK developed the industry's first thin film common mode filter (TCE1210) combining suppression of common mode noise (identical noise in two signal lines occuring during high-speed differential transmission) with electrostatic charge suppression in a single component. Mass production began in April 2010.

This breakthrough was made possible by TDK's proprietary thin film circuit shaping technology and materials technology. While existing products incorporated only EMI (electromagnetic interference) control, the new product features an added ESD (electrostatic discharge) suppressor function.

Previously, a common mode filter for noise suppression had to be combined with separate ESD components such as

Product designation	TCE1210-900-2P-T000					
Common mode impedance [ $\Omega$ ]	90±25					
Cutoff frequency	5.0GHz					
Rated voltage	10V					
Rated current	100mA					
Size [mm]	1.25×1.00×0.60mm³					

a varistor or ESD suppressor, but the new product replaces all of these. This of course has the benefit of reducing parts count and footprint requirements, an especially beneficial point for mobile devices and similar applications where compact dimensions are essential.

The new product is also optimal for EMI and ESD control during high-speed, high-throughput data transfer in consumer equipment, including HDMI, USB 3.0, and serial ATA applications. ESD resistance ratings comply with the requirements of the international surge standard IEC 61000-4-2.



Thin film common mode filter TCE1210 combines common mode noise suppression and electrostatic discharge control in a single component.

# Chip size package technology enables mass production of compact, low-profile duplexer

TDK has launched mass production of the compact, low-profile duplexer model 2016 (case size 20 x 16 mm). Duplexers are vital components for mobile phones. They combine send and receive filters that allow simultaneous transmission and reception in a specific frequency band.

TDK duplexers are noted for their ability to accommodate a wide range of different frequencies. They are the result of close cooperation with carriers and other players in the communications sector, and are developed with the future needs of the industry in mind.

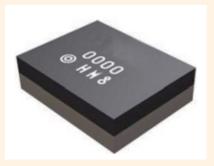
In the field of high-frequency components for mobile phones and similar devices, TDK not only offers duplexers but also has the facilities for mass production of SAW (surface acoustic wave) filters\*1, as well as for BAW (bulk acoustic wave) filters\*2 that are designed for optimum performance in a specific frequency.

In the mobile devices market, from now on also smartphones will become increasingly popular and, with the appearance of 3.9G and 4G data communication standards, frequency range can be expected to increase and communication speeds to accelerate.

While further refining its advanced

know-how in packaging technology, TDK is developing modules that integrate chips and high-frequency components in extremely small and low-profile packages. These packages are carefully designed to meet the ever evolving demands for higher performance in the mobile sector.

- \*1 SAW filter: Surface Acoustic Wave filter. A filter device that selects an electrical signal using acoustic waves that propagate on the surface of a piezoelectric substrate.
- \*2 BAW filter: Bulk Acoustic Wave filter. A filter device that selects an electrical signal using bulk acoustic waves that resonate in the thickness direction of a piezoelectric substrate.



Chip-scale packaging (CSP) technology was introduced to produce this miniaturized 2016 duplexer (20 x 16 mm size), which enables the production of smaller, thinner mobile phones.

Profile

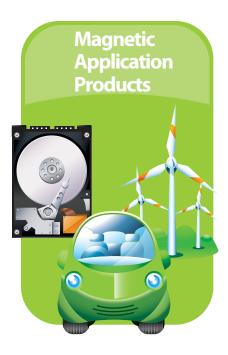
To Our Stakeholders

President's Interview

**Sales Results** 

Research and Development

Segment Profit (Billions of yen/quarter)





Feature

# Although sales volume of HDD heads increased, a drop in prices and appreciation of the yen resulted in a 4.0% contraction over the preceding year

Combined net sales in this category for the fiscal year ended March 2011 were 368,481 million yen, down 4.0% year on year, while operating income was 46,931 million yen, an increase of 0.4% over the previous year. The breakdown by product type is given below.

# **Recording devices**

Sales of HDD heads, the mainstay of this category, rose slightly, but the yen's appreciation against the U.S. dollar, as well as a drop in sales prices resulted in net sales of 257,522 million yen, down 8.0% year on year.

TDK successfully completed development of HDD heads supporting a capacity of 500 GB per 2.5 inch platter, and mass production of the devices has already begun. From now on also, TDK will promote the development of large-capacity, highadded-value products and link them to improved business results from fiscal 2012.

# Other magnetic application products

Sales of power supplies and magnets for both industrial equipment and automotive applications increased, while recording media sales showed a decline.

6.8

4Q

Combined net sales were 110,959 million yen, up 7.0% year on year.



### 120 20 100.3 96.3 16.1 92.2 90.8 15.0 90 15 14.6 86.9 85.2 12.5 11.5 11.3 60 10 5.9 30 0 1Q 2Q 3Q 4Q 1Q 2Q 3Q 4Q 1Q 2Q 3Q 4Q 1Q 2Q 3Q 2010/3 2011/3 2010/3 2011/3

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Research and

Development

**Sales Results** 

# **Topics**

Profile

# EFE300 series switching power supply starts domestic mass production

In June 2010, TDK started full-scale mass production in Japan of the unit type highefficiency EFE300 series switching power supply, which for the first time enables fully digital control in a standard power supply.

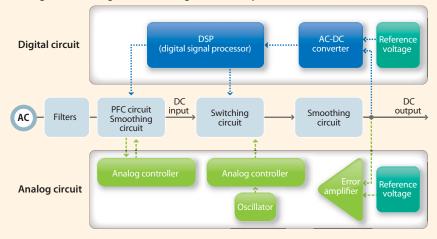
This product reflects TDK's technological expertise in unit type AC-DC switching power supplies. The adoption of digital control results in a 30 percent size reduction and 25 percent parts count reduction, compared to an analog supply of the same output rating.

The series enables precisely controlled power management for distributed power architecture systems in IT communications

and broadcasting equipment, measuring equipment, and other applications. The lineup also includes the EFE300M, specially designed for medical equipment.

TDK is leading the way in bringing the special features and advantages of digital control to the power supply sector. The EFE series combines compact dimensions, low profile, and high performance on a level not attainable with conventional analog products. The fully digital output control realizes high conversion efficiency on the order of 90 percent, while the low profile allows incorporation in a 1 unit rack.

## Analog circuit and digital circuit configuration examples



# Launching full-scale production of HDD heads supporting 750 Gbpsi recording density

TDK has successfully developed HDD heads that support a recording density of 750 Gbpsi\*1, and mass production is already in full swing. Compared to the previous product generation, recording density has jumped by 56 percent in the time of only 18 months, mainly driven by the following breakthroughs.

- 1. Highly advanced semiconductor micromachining technology enables realization of 35 nm\*2 reading element width.
- 2. Low-resistance, high-sensitivity tunnel magnetoresistive (TMR) film head supports 35 nm width reading.
- 3. Three-dimensional shaping of main magnetic pole made possible by micromachining also provides enough power for recording medium writing at 60 nm width.
- 4. Ultra-low flying height of 1 nm accurately controlled by HDI sensor.

Parallel development of the above techniques has allowed TDK to contribute to HDD product development in a timey manner.

TDK is continuing its work to support even higher recording densities, with the goal of developing and producing HDD heads that meet the rapidly increasing market needs for handling high digital data storage volumes.

- \*1: A recording density of 750 Gbpsi realizes a 500 GB storage capacity on a single 2.5 inch HDD platter. This is equivalent to about 125,000 MP3 songs or 63 hours of non-compressed terrestrial digital TV programming.
- \*2: One nm (nanometer) is 1/100,000 mm.



HGA (Head Gimbal Assembly)

Profile

To Our Stakeholders

President's Interview





# Increased sales of rechargeable batteries for tablet computers drive a 26.2% gain in revenue

Combined net sales in this business category for the fiscal year ended March 2011 were 76,145 million yen, up 26.2% year on year, and operating income was 5,492 million yen, an increase of 5.8% over the previous year.

Sales remained strong for rechargeable batteries, which along with mechatronics (production equipment) are the mainstay of this category. Batteries in particular did very well, owing to increased demand for use in small portable devices. The mechatronics

sector provides benefits not only through revenues from external sales but also through use in internal production facilities of the TDK Group, thereby contributing to the maintenance of high quality standards and improved production efficiency.

This sector is also characterized by intensive development and the pursuit of new and innovative technologies with a view toward the creation of new business ventures.

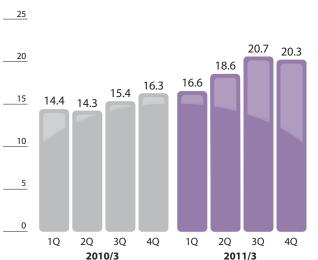
# **Topics**

# TDK supplies highly reliable FA equipment for the semiconductor industry

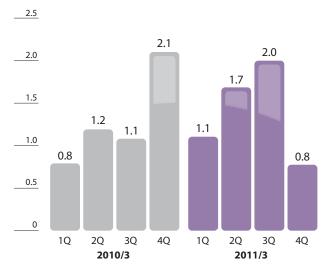
TDK also offers factory automation equipment for use in semiconductor production. These devices are based on its extensive expertise in areas such as factory automation, gained through the manufacture of electronic components, and also clean room technology, which is indispensable for magnetic head production.

One example of this is TDK's load ports for wafer transport in manufacturing lines with partial clean room conditions. TDK products in this area are highly renowned among semiconductor and semiconductor equipment manufacturers.





# Segment Profit (Billions of yen/quarter)



# **Research and Development**

# **Research and Development Activities**

**Concentrating Technology Resources** in Growth Markets and Focusing on the Development of New Products

In its R&D activities, the TDK Group is drawing its resources together to focus on strengthening and expanding new product development to meet the constantly diversifying needs of the electronics market. Specifically, TDK is working on next-generation recording

products and micro-electronic modules for mobile communications applications. The Group also strives to create energy-saving, environmentally friendly devices built upon expertise in materials technology and design technology.

The Group is currently concentrating its technology resources on several growth markets: communications, automobiles, industrial equipment and energy, and home information appliances. This will allow it to further promote efficient research and development in the business areas of passive components and magnetic

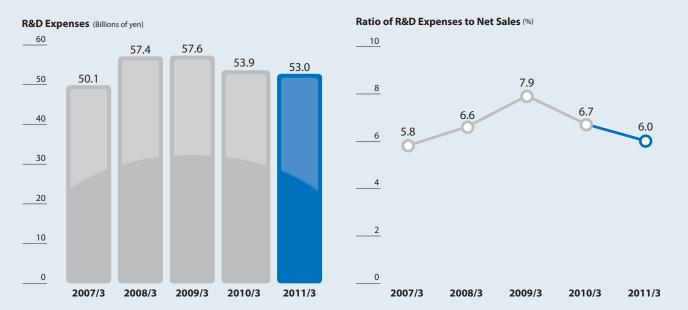
applications. The Group conducts R&D on technologies and products from basic research through to application development, leading to the creation of highly original commercial offerings.

In the field of passive components, TDK has leveraged its core technologies to develop next-generation multilayer ceramic chip capacitors and inductor products. It has also commercialized such EMC components as EMC filters, composite electromagnetic sheets, and electromagnetic absorbers for anechoic chambers, and has greatly enhanced the performance of anechoic

chamber facilities. In addition, TDK is reinforcing its lineup of high-frequency and other module products.

In the field of magnetic applications, TDK creates and markets next-generation ferrite magnet products and develops nextgeneration high recording-density heads and devices for hybrid and electric cars.

R&D expenses in fiscal year 2011 decreased 1.8% year on year to 52,973 million yen, equating to 6.0% of net sales.





SAW filters for mobile phones



DC-DC converter for hybrid electric vehicle

# **Research and Development**

# **R&D Network**

# Worldwide R&D Framework Responds to **Diverse Needs**

TDK has organized an R&D network that spans the globe, with key bases in Japan, Asia, the United States, and Europe.

The Group has acquired the knowledge and technologies to respond to cutting-edge demand by utilizing its predominance in specific business fields in each region. By repeatedly designing prototypes and applications and sharing the results throughout the Group, TDK is able to flexibly meet a wide range of needs and offer solutions tailored to local requirements.

# **Japan**

Japan is the center of the Group's research network. As such, it conducts conventional R&D and also has the facilities to support sites in other countries.

These facilities bring together Japan's unique research accomplishments with the most advanced manufacturing technologies and expertise. Information is quickly collected concerning global market trends, new standards, and so on, and used to develop new products and technologies in anticipation of future needs.

# **Asia**



In response to soaring worldwide demand for the high-performance batteries used in hybrid and electric vehicles and mobile devices, TDK's R&D centers in Asia carry out development focused on electrode materials. Research is also being conducted to develop magnetic and dielectric materials in collaboration with Group bases in Japan.

of many communications standards, R&D centers here are applying their strengths in the design, development, and assessment of wireless antennas to precisely assess and measure communications equipment that uses extremely weak signals.

With the United States being the origin

Magnetic heads, power supplies, and smart grid-related products are also being developed.

# **Europe**



At its R&D centers in Europe, TDK develops cutting-edge electronic components for mobile phones. Research is also being conducted on products used in automobiles and so on. In particular, TDK possesses world-class development technologies for components and modules used in mobile communications devices.

# **United States**





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# **Research and Development**

# **R&D Facilities in Japan**

The TDK Group has five R&D facilities in Japan supporting its growth. Each site conducts R&D on new products and technologies in specific fields.



The SQ Research Center conducts basic research on next-generation recording and magnetic technologies, and their product applications.



Saku, Nagano

Narita, Chiba Ichikawa, Chiba

# **Devices Development Center**

The Devices Development Center pursues and searches for technologies that will be crucial in the future and creates new devices based on TDK core technologies and market trends.



# **Application & Analysis Center**

The Application & Analysis Center strengthens and deploys material analysis technologies company-wide and supports to solve technological issues, leading to the development of new products.



# **Materials & Process Development Center**

The Materials & Process Development Center aims to establish breakthrough component technologies that lead to new commercial products and trends. It both develops new materials technologies and manufacturing processes, and builds advancements into existing ones.



# **Production Engineering Center**

The Production Engineering Center develops technologies and equipment to advance and improve manufacturing processes. The technologies and equipment it creates are deployed worldwide.



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# **Corporate Management**

Profile

# **Corporate Governance**

# Adoption of Company Auditor System and Strengthening the Supervisory Function

TDK has adopted the Company Auditor System pursuant to the Companies Act of Japan and has appointed three independent outside Company Auditors who have no conflicts of interest in order to enhance the supervision of management.

# Strengthening the Function of the Board of Directors and Holding Directors More Accountable

TDK has a small number of Directors (seven) to expedite management decision-making. At the same time, TDK has appointed three independent outside Directors who have no conflict of interest in order to enhance the supervision of management. In addition, the Directors' term of office is set at one year to give shareholders an opportunity to cast votes of confidence regarding Directors' performance every business year.

# Adoption of Corporate Officer System for Expeditious Business Execution

TDK has adopted a Corporate Officer system that separates the management decision-making and Director supervisory functions of the Board of Directors from the execution of business. Corporate Officers are in charge of business execution and carrying out decisions by the Board of Directors, thereby expediting business execution in line with management decisions.

# Establishment of Advisory Bodies to the Board of Directors (Business Ethics & CSR Committee, Disclosure Advisory Committee, Compensation Advisory Committee, and Nomination Advisory Committee)

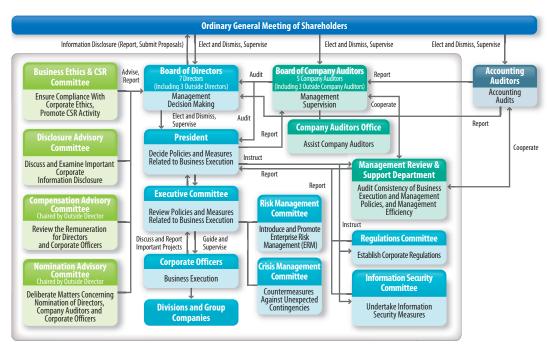
The aim of the Business Ethics & CSR
Committee is to ensure implementation
of the TDK Corporate Motto and improve
awareness of corporate social responsibility
(CSR). To achieve this aim, the Directors,
Company Auditors, Corporate Officers
and all other members of the TDK Group
are made fully conversant with the TDK
Corporate Motto and Corporate Principle
("Vision" "Courage" "Trust") as TDK's
management philosophy, and the TDK
Code of Ethics, which stipulates concrete
standards and guidelines for compliance
with all laws, regulations and social norms.

The Disclosure Advisory Committee reviews and examines important corporate

information and disclosure materials required for investment decisions by shareholders and investors, to ensure that TDK conducts comprehensive, appropriate, timely and impartial disclosure in accordance with various laws and regulations regarding securities transactions and the rules and regulations of the stock exchanges where TDK's shares are listed.

The Compensation Advisory
Committee, which is made up of the
outside Directors (1 of whom chairs
the committee) and outside specialists,
examines the composition of remuneration
and the remuneration system pertaining to
Directors and Corporate Officers, as well as
presidents and qualifying executive officers
of principal TDK subsidiaries. It also verifies
the transparency of the remuneration
decision-making process, as well as the
reasonableness of individual remuneration
levels in light of corporate business results,
individual performance, and the general
standards of other companies.

The Nomination Advisory Committee, which is chaired by an outside Director of TDK, discusses the conditions expected with regard to nominations for the post of Director, Company Auditor or Corporate Officer and makes nominations. In this way it helps ensure the appropriateness of the selection of Directors, Company Auditors and Corporate Officers, and the transparency of the decision-making process.



To Our Stakeholders P

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Research and Development Corporate Management

# **Corporate Management**

Profile

# **Compliance**

# Comprehensive Distribution of Information on the TDK Code of Ethics Raises Awareness Concerning Compliance

Businesses must act as good corporate citizens in compliance with laws, regulations, and other social norms and maintain impartiality and fairness in their dealings with society. This must all be based on an awareness of their social existence supported by customers, shareholders, suppliers, local communities, employees, and other stakeholders.

TDK has organized concepts in the TDK Code of Ethics and calls on all Group personnel to act in strict compliance with the standards in the Code. The Business Ethics & CSR Committee works to make all personnel thoroughly cognizant of the TDK Corporate Motto, Corporate Principles, and Code of Ethics, representing TDK's management philosophy, as well as to put the motto "Contribute to culture and industry through creativity" into full practice.

The Committee also undertakes activities to raise awareness of corporate social responsibility. As part of this program, during the fiscal year ending March 2011, TDK

implemented compliance-related e-learning for all Group employees in Japan. In the fiscal year ending March 2012, it plans to implement awareness education for employees not only in Japan but overseas as well.

# **Risk Management**

Feature

# Companywide Risk Management System Introduced to Reduce Risks and Improve Operations

At TDK, the Risk Management Committee works directly under the Executive Committee to promote companywide enterprise risk management (ERM). It specifies 49 risk items involved in the Group's corporate activities, including risks relating to natural disasters, such as earthquakes and flooding; risks relating to contagious diseases, such as new strains of influenza; risks relating to product quality; and risks relating to the procurement of raw materials, etc.

The Risk Management Committee conducts activities to ensure a proper response to these items. In particular, it promotes cross-sectional and companywide activities aimed at reducing risks that hinder the achievement of business objectives. If a crisis does unexpectedly occur, TDK will adopt countermeasures centered on the

Risk Management Committee.

In addition, regarding individual risks that should be dealt with by the function or Business Group concerned (legal, financial, information technology, environmental risks, etc.), TDK stipulates operational rules in companywide standards, detailed rules, and procedures and Business Group procedures. The Corporate Officers in charge of business execution take responsibility for handling risks relating to daily business under their jurisdiction.

Furthermore, Company Auditors and the Management Review & Support

Department, which is TDK's internal auditing body, monitor the implementation of countermeasures in each Business Group and offer advice and assistance for the reduction of risks. Advice about risks that may affect the Group is also received constantly from TDK's advisory lawyers.

In the fiscal year ended March 2011, TDK promoted the compilation of draft guidelines concerning the sale of products to customers in fields such as medicine and aviation, where risks relating to human life are especially high.

# **Strengthening Responsiveness to Risks**

The Great East Japan Earthquake struck on March 11, 2011, causing immense damage throughout the region. While production has now resumed at all TDK Group facilities, we are proceeding with a review of our Business Continuity Plan (BCP). This will include the rebuilding of TDK's supply chain on a global level, to strengthen responsiveness to various risks that might occur in the future.

### Main Efforts to Review the BCP

- Rebuilding of the global supply chain
- Revision of the crisis management setup and recovery manual
- Reconsideration of facility deployment plans
- Further maintenance of data centers
- Promotion of electricity saving

# **Corporate Management**

**Directors** (As of June 29, 2011)

\*Outside Director



Hajime Sawabe
Director and Chairman of the Board



Takehiro Kamigama Representative Director



Kenichi Mori\*
Director



Shinichi Araya Director



Yukio Yanase\*

Director



Junji Yoneyama Director



Ryoichi Ohno\* Director

# Company Auditors (As of June 29, 2011)

\*\*Outside Company Auditor



Noboru Hara Full-time Company Auditor



Osamu Yotsui Full-time Company Auditor



Osamu Nakamoto\*\* Outside Company Auditor



Koichi Masuda\*\*
Outside Company Auditor



Makoto Sumita\*\* Outside Company Auditor

Feature

# **Corporate Management**

# Corporate Officers (As of June 29, 2011)



Takehiro Kamigama
President and CEO





Research and

Development

**Raymond Leung** *Executive Vice President*General Manager of China Operation Group



Shinichi Araya Senior Vice President General Manager of TDK-EPC Ceramic Capacitors Business Group



Kenichiro Fujihara Senior Vice President General Manager of TDK-EPC Electronic Components Sales & Marketing Group



Atsuo Kobayashi Senior Vice President General Manager of Data Storage & Thin Film Technology Components Business Group



Hiroyuki Uemura Senior Vice President General Manager of Magnetics Business Group



**Takeshi Nomura**Corporate Officer
In charge of Intellectual
Properties, Environment



Takaya Ishigaki
Corporate Officer
In charge of Materials &
Process Development, and
General Manager of Material
& Process Development
Center of Technology Group



Shinya Yoshihara Corporate Officer General Manager of Production Engineering Center



Junji Yoneyama Corporate Officer General Manager of Administration Group, and General Manager of Human Resources Department of Administration Group



**Robin Zeng**Corporate Officer
General Manager of Energy
Devices Business Group



Seiji Osaka Corporate Officer General Manager of Corporate Planning Group, and General Manager of Corporate Planning Department of Corporate Planning Group



Masataka Kajiya Corporate Officer Deputy General Manager of TDK-EPC Electronic Components Sales & Marketing Group



Kaoru Matsuoka
Corporate Officer

General Manager of Technology
Group, General Manager of
Corporate Technology Planning
Department of Technology
Group, and General Manager of
Devices Development Center of
Technology Group



Yoshiaki Hirota Corporate Officer General Manager of Power Systems Business Group



Noboru Saito
Corporate Officer

Deputy General Manager
of TDK-EPC Electronic
Components Sales &
Marketing Group



Gerhard Pegam Corporate Officer TDK-EPC Senior Executive Vice President



**Takakazu Momozuka** *Corporate Officer*General Manager of Finance
& Accounting Department

# **CSR Activities**

Profile

# **CSR Philosophy**

# **Promoting CSR activities through** business activities based on TDK Code of Ethics

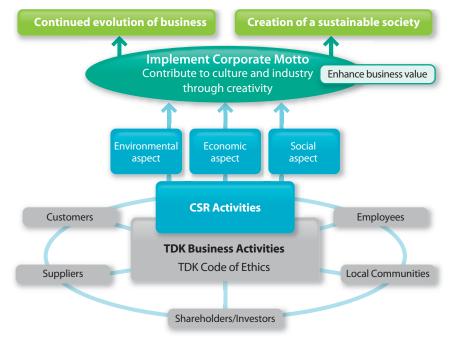
For the TDK Group, CSR efforts take shape through the implementation of our corporate motto and the pursuit of corporate ethics. This means always maintaining proper channels of

communication between customers, suppliers, employees, shareholders/ investors, local communities, and other stakeholders. The TDK Code of Ethics serves as the overall framework guiding our actions as we fulfill our responsibilities.

Feature

By putting these principles into practice, we increase the value of our business, contributing to both the continued evolution of this business and the creation of a sustainable society.

### **CSR and Ethics Framework**



# **Quality Assurance**

# Becoming a quality leader through the pursuit of zero defects

Quality assurance at TDK is based on the pursuit of a zero defects policy throughout the entire lifecycle process. This does not end with the finished product but continues through subsequent stages including shipping, distribution, assembly and processing at end product manufacturers, use by customers, and finally disposal.

We believe that simple inspection "after the fact" is not enough to ensure quality. Rather, forward-oriented thinking begins at the development and design stage and informs the entire process. The pursuit of zero defects and ambition to become the industry's quality leader inspire our day-to-day activities.

# **CSR and Procurement**

# Assessing supplier CSR through a Webbased framework

TDK operates a Supplier Partnership System designed to allow a comprehensive assessment of CSR activities by our suppliers. The system uses 60 carefully designed evaluation questions based on selected items from the Supply Chain CSR Promotion Guidebook, published by the Japan Electronics and Information Technology Industries Association (JEITA).

In creating the system, we have focused on the areas that matter most to TDK, such as human rights and labor relations, the environment, and fair trade and ethics. In the fiscal year ended March 2011, about 1,700 companies in Japan and 1,100 companies overseas cooperated in the management assessment process.

# Cooperating with SRI (Socially Responsible Investment)

TDK stock is included in the Dow Jones Sustainability Indexes (DJSI), launched jointly by SAM Group Holding (Switzerland) and Dow Jones & Company (U.S.A.), as well as in the Morningstar Socially Responsible Investment Index (MS-SRI), which is Japan's SRI indicator. (Current as of April 2011)

Feature

### **CSR Activities**

# Improvement and **Protection of Environment**

# Implementing global business activities focused on a conservation-based environmental vision

TDK believes a long-term vision is essential to achieve sustainable development and a closed-loop economy. The entire Group is guided by the TDK Environment Protection

Charter and implements this philosophy through concerted hands-on action. In 2011, the Group formulated the new TDK Environmental Action 2020 plan, which has the goal of making the corporation carbon neutral.\*

\* Carbon neutral for TDK means the CO<sub>2</sub> emissions caused by our manufacturing activities are lower than the total reduction in CO<sub>2</sub> emissions achieved by society through the use of our products.

TDK has a system in place for certifying the degree of environmental friendliness of its products. The Super Eco Love category identifies products that are outstanding in reducing environmental impact and are exemplary across the entire industry.



**Super Eco Love Products** 

### High-Performance Ferrite Magnets FB 12 Series

Thanks to improved coercive force and other parameters, these ferrite magnets used for motors can be made about 40% lighter and motors can be made 25% smaller in volume. As a result, a 0.1% improvement in fuel economy is achieved.

Application fields include power steering in automobiles, motors in domestic appliances, and industrial motors.



# Thin Film Common Mode Filters with Integrated ESD Suppression TCE Series (1210 Size)

Advanced thin film circuit shaping technology and materials technology enable the integration of two functions that formerly required separate chips in a single unit. The parts and materials count is reduced by 35%, and about 50% less solder is required. Application fields include general consumer equipment (HDMI, USB 3.0, S-ATA, etc.).



# High-Capacitance 3-Terminal Feed-Through Type Multilayer Ceramic Chip Capacitor

As well as reducing the capacitor count, these products decrease materials use by 85%, nickel use by 72%, and solder use by 56%. Significantly more compact dimensions afford a footprint reduction of 63%. Application fields include input/output smoothing in DC-DC converters and decoupling in IC power supply circuits.



# High-Reliability AC-DC Switching Power Supplies HWS Series

An eight percent improvement in conversion efficiency contributes to the conservation of energy. Standby power consumption is reduced by completely stopping the cooling fan when output is cut

Application fields include IT communications equipment, power facilities, industrial control equipment, semiconductor manufacturing equipment, and medical equipment.

For more information on Eco Love products, please visit our Web site: www.global.tdk.com/csr/ecolove/index.htm

# **Social Contributions**

# **Promoting Social Contributions by Staff** through Awards Framework

As a corporate citizen, TDK endeavors to contribute to society in various ways, focusing particularly on the following four



Beech Forest tree planting drive aims to significantly increase greenery in the local environment (TDK Akita región)



Nursery School Volunteer Group helps through weeding, toy painting, and other activities (TDK Ugo)

areas: Academic Research and Education; Sports, Arts, and Culture: Environmental Conservation; and Social Welfare and Local Community Service. In 2004, the company started the TDK Group Social Contribution Award program. For 2010, there were 56 applications, 16 of which were selected for an award.



Fund raising campaign for improving maternal and child health (TDK Components



About 30% of the entire staff participated in a drive to donate clothes to those in need (EPCOS do Brasil Ltda.)

\* In addition to the above examples, 12 other social contribution activities were selected for awards.

# Supporting Areas and People Affected by the Great East Japan Earthquake

The TDK Group has contributed 100 million yen toward a relief fund for victims of the Great East Japan Earthquake, which occurred on March 11, 2011. Fund-raising drives were also conducted among the staff at TDK member companies, with the collected funds being donated to the Red Cross and other involved organizations in the respective countries.

# **Financial Review**

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# **Analysis of Business Results for the Fiscal Year**

# 1. Overview of Operating Results

During the fiscal period under review (the fiscal year ended March 2011), the business environment remained guite adverse because of the high value of the yen and rising prices for resources, but there were continued signs of a moderate recovery in developed countries as a result of fiscal stimulus measures and China and other developing countries continued to grow rapidly, largely due to internal demand. The Japanese economy was supported by stronger exports thanks to the improvement in the global economy, and the effects of economic stimulus measures and monetary easing measures resulted in a modest recovery throughout the year. The Great East Japan Earthquake that occurred on March 11, 2011, however, gave rise to considerable uncertainty concerning the Japanese economy, and there are concerns about the effects on the global economy.

Electronics markets, which directly affect the Company's consolidated financial results, have different production levels according to the set (finished product). Rapidly-increasing production of smart phones and tablet PCs drove the market, and production of automotive and industrial products remained strong.

In contrast, there were adjustments to production in response to changes in demand for certain final products including flat-screen televisions, notebook PCs, and hard disk drives (HDDs).

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The TDK Group's results are closely related to the electronics market. In the passive components segment, while orders for products in the high-priority communications, automotive, industrial equipment fields were strong, orders for magnetic application products, particularly in consumer segments including notebook PCs and HDDs, have been affected by the market downturn. Nonetheless, the market has made a strong recovery since the global recession set off by the financial crisis in the fall of 2008, and thanks to the reinforcement of business in high-priority areas and ongoing structural improvements, the TDK Group has improved income even further.

The Great East Japan Earthquake and the subsequent aftershocks and planned power outages caused a temporary suspension of operations at some of the TDK Group's manufacturing and production bases in the Tohoku and Kanto regions. Thanks to the concerted efforts of all personnel as well as the understanding support of trading partners and others, however. TDK has resumed normal operations at all sites.

In the fiscal year under review, TDK's consolidated net sales were ¥875.737

million, up 8.3% from ¥808,858 million in fiscal 2010. Operating income was ¥63,842 million, up 147.7% from ¥25,774 million in fiscal 2010, and income before income taxes was ¥60.065 million, up 174.2% from ¥21,907 million in fiscal 2010. Also, net income attributable to TDK was ¥45.264 million, up 234.8% from ¥13,520 million in fiscal 2010, and net income attributable to TDK per common share was ¥350.90, compared to ¥104.82 in fiscal 2010.

# 1-1. Overview of Net Sales by Product Segment

The TDK Group has two reporting segments: "Passive Components" and "Magnetic Application Products." Businesses not corresponding to these segments are classified under "Other."

# **Passive Components**

The Passive Components segment is comprised of capacitors, inductive devices, and other passive components. Consolidated results in the passive components segment were as follows: Net sales of ¥431,111 million, up 18.2% from ¥364,805 million in fiscal 2010, and segment income of ¥24,722 million, up by ¥34,973 million from a loss of ¥10,251 million.

An overview of sales results by business for this segment is provided below.

The capacitor business is comprised of ceramic capacitors, aluminum electrolytic capacitors, and film capacitors. Sales in this business were ¥145.393 million.

up 9.2% from ¥133,108 million in fiscal 2010. Sales of ceramic capacitors for use in communications devices such as mobile phones as well as for automotive use increased, and sales of aluminum electrolytic capacitors and film capacitors for the industrial equipment market rose.

Net sales in the inductive devices business were ¥135,762 million, an increase of 21.3% from ¥111.958 million in fiscal 2010. Sales to the communications device market for use mainly in smart phones were up sharply, and sales for use in home information appliances, automobiles, and industrial equipment were strong.

Other passive components are comprised of high-frequency components, piezoelectric material products, circuit protection components, and sensors. Sales were 149,956 million, up 25.2% from ¥119,739 million in fiscal 2010. Sales of high-frequency components for the communications device market were up sharply. In addition, sales of piezoelectric material products and circuit protection components for the communications device and industrial equipment markets increased, as did sales of sensors for the automotive market.

### Magnetic Application Products

The Magnetic Application Products segment comprises recording devices and other magnetic application products. In this

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segment, net sales were ¥368,481 million, down 4.0% from ¥383.740 million in fiscal 2010, and segment income was ¥46,931 million, up 0.4% from ¥46,746 million.

An overview of sales results by business for this segment is provided below.

Sales in the recording devices business, which is comprised mainly of HDD heads and HDD suspension products, decreased by 8.0% from ¥280,001 million in the previous fiscal year to ¥257,522 million. The sales volume of HDD heads increased slightly, but income fell because of falling prices and the high value of the yen against the U.S. dollar.

Other magnetic application products are comprised of power supplies, magnets, and recording media. Sales were ¥110,959 million, an increase of 7.0% from ¥103,739 million in the previous fiscal year. Sales of power supplies and magnets for the industrial equipment and automotive markets increased, but sales of recording media were down

### Other

The other segment, which includes businesses not included in the two reporting segments, comprises energy devices (rechargeable batteries), mechatronics (production equipment), and other products. Sales in the other segment were up 26.2% from ¥60,313 million in the previous fiscal year to ¥76,145 million. Segment income was ¥5,492 million, up 5.8% from ¥5,190 million.

## 1-2. Sales Performance by Region

Feature

With respect to sales by region, net sales in the Passive Components and the other segments increased in all regions.

In the Japan region, sales were up 6.7% from ¥103,984 million in the previous fiscal vear to ¥110.930 million.

In the Americas region, sales increased 9.2% from ¥82.065 million to ¥89.627 million. Sales in the magnetic application product segment were down.

In the Europe region, sales were ¥128,614 million, a 14.7% increase from ¥112,167 million in the previous fiscal year.

In the China region, sales were up 4.7% from ¥263,558 million in the previous fiscal year to ¥275,960 million. As in the Americas, sales in the magnetic application products segment decreased.

In the Asia and others region, sales were ¥270,606 million, up 9.5% from ¥247,084 million in the previous fiscal year.

As a result, total overseas sales increased 8.5% from ¥704.874 million to ¥764,807 million. Overseas sales accounted for 87.3% of consolidated net sales, an increase of 0.2 points from 87.1% in fiscal 2010.

### 1-3. Effect of Foreign Exchange Fluctuations

During the fiscal year under review, overseas sales accounted for 87.3% of consolidated net sales, an increase of 0.2 percentage point

from the previous fiscal year, and the yen increased in value against the U.S. dollar by 7.7% and against the euro by 13.8% based on average exchange rates in markets for the fiscal year. These changes in foreign exchange rates caused decreases in net sales of approximately ¥57,400 million and in operating income of approximately ¥18,000 million.

By geographic area based on the location of TDK entities, foreign exchange fluctuations decreased sales in Japan by approximately ¥9,600 million, in Asia (excluding Japan) and Oceania by approximately ¥48,900 million, in North and South America by approximately ¥6,000 million, and in Europe by approximately ¥33,300 million. The effect of foreign exchange fluctuations on consolidated net sales after the elimination of intersegment transactions between and among TDK and its consolidated subsidiaries was approximately ¥57,400 million.

As one method for reducing the impact of exchange rate fluctuation, the TDK Group is increasing the share of business activities conducted overseas Such overseas activities comprise not only manufacturing and sales but also R&D, design and procurement.

During the current fiscal year, the ratio of in-region production to in-region sales was 105.6% in Asia (excluding Japan) and Oceania, 69.1% in the Americas and 75.8% in Europe. The ratio of overseas production

to net sales rose from 80.6% in fiscal 2010 to 83.6%. The ratio of overseas production to overseas sales rose from 92.4% in fiscal 2010 to 95.7%.

TDK and its certain overseas consolidated subsidiaries hedge exposure to foreign exchange fluctuations by entering into forward foreign exchange contracts and currency swap contracts. Foreign exchange risks arising from operating activities are hedged by using forward foreign exchange contracts. In principle, TDK's policy is to hedge up to 50% of expected foreign currency-denominated accounts receivable for each month for the next six months to follow. Due to the global nature of its operations, the management realizes that currency fluctuations continue to have the potential to exert a material influence on consolidated performance.

### 1-4. Costs and Net Income

The cost of sales during the current fiscal year was ¥657,600 million, up 6.4% from ¥617,776 million in the previous fiscal year due primarily to higher net sales. However, the cost of sales ratio to net sales decreased from 76.4% to 75.1% of net sales. The substantial improvement in the cost of sales ratio is due to streamlining and cost reduction efforts to counter a drop in sales prices and effects from discounts on raw materials costs, as well as an increase in capacity utilization rate following a hike in orders received due to

## **Financial Review**

the economic recovery. As result, gross profit increased to ¥27,055 million (14.2%), and gross profit ratio to net sales became 24.9%.

Selling, general, and administrative expenses during the fiscal year under review were ¥154,295 million, down by ¥6,091 million from ¥160,386 million in the previous fiscal year. This represented a decrease in the ratio to net sales from 19.8% to 17.6%. The main factors behind the change include a ¥9.659 million decrease in foreign currency translation following the appreciation of the yen, a ¥2,429 million decrease of a loss on impairment and disposal of fixed assets and a ¥406 million decrease in amortization cost for intangible assets that were valued at the time EPCOS AG shares were acquired. However, the sales expenses increased due to a hike in production volume. Research and development expenses included in selling, general, and administrative expenses were ¥52,973 million, down by ¥969 million from ¥53,942 million in the previous fiscal year as a result of higher development efficiency achieved through careful selection of development topics, and the ratio to net sales declined from 6.7% in the prior fiscal year to 6.0%.

Other income (deductions) improved by ¥90 million from the prior fiscal year. This is primarily because of a ¥1,250 million improvement in impairment loss on investment securities, a ¥1,768 million

decrease in interest received because of lower cash and cash equivalent balances. a ¥1,161 million decrease in interest paid because of lower loan balances resulting from the repayment of loans, and a ¥1,168 million deterioration in foreign currency translation losses resulting from the rising value of the yen.

Feature

The ratio of income taxes to income before income taxes (effective tax rate) fell from 41.2% in the prior fiscal year to 25.1%.

TDK posted net income attributable to TDK of ¥45,264 million, resulting in diluted net income attributable to TDK per common share of ¥350.57. Return on Equity (ROF) ameliorated from 2.5% to 8.4%.

### 2. Financial Position

### 2-1. Assets, Liabilities, and Equity

Total assets amounted to ¥1,060,853 million as of March 31, 2011, down ¥30,605 million from ¥1.091,458 million at the end of fiscal 2010.

Ready liquidity fell, with cash and cash equivalents down by ¥3,893 million, short-term investments by ¥17,070 million, and marketable securities by ¥4,669 million all of which declined as a result of foreign currency exchange fluctuations and other factors. Also, inventories increased by ¥16,610 million in conjunction with higher production of products for which orders were strong, but intangible assets fell by ¥10.299 million.

Total liabilities decreased by ¥20,702 million from ¥541.789 million in fiscal 2010 to ¥521,087 million.

This was the result mainly of a ¥25,085 million decrease in short-term and longterm debt, due mainly to the repayment of long-term debt.

Total TDK stockholders' equity within equity fell by ¥9,483 million from ¥543,756 million at the end of the previous fiscal year to ¥534,273 million.

Retained earnings increased by ¥36,580 million as a result of higher income. The value of the yen against the U.S. dollar and euro at levels higher than anticipated caused a significant decrease in the value of overseas assets translated into yen, resulting in the deterioration of foreign currency translation adjustments, and consequently, accumulated other comprehensive loss increased by ¥45,887 million.

### 2-2. Cash Flows

Cash flows from operating activities decreased by ¥16,368 million from the previous fiscal year to ¥101,879 million. Net income before minority interests increased by ¥32,122 million to ¥45,004 million, and depreciation and amortization decreased by ¥6,194 million to ¥77,594 million. With respect to changes in assets and liabilities, trade receivables of recording device production subsidiaries located mainly in Asia decreased by ¥40,536 million, trade

payables of recording device production subsidiaries located mainly in Asia and the domestic capacitor manufacturing subsidiaries decreased by ¥26,720 million, and inventories of TDK, energy device (rechargeable battery) manufacturing subsidiaries located mainly in Asia, EPCOS AG, and other subsidiaries increased by ¥20.835 million.

Cash flows from investing activities decreased by ¥44.622 million in the previous fiscal year to ¥61,341 million. Factors contributing to an increase in cash flows included ¥14,268 million for capital expenditures, primarily in the passive components segment, and a ¥6,912 million decrease in repayment of deposits for investments. Factors contributing to a decrease in cash flows included a ¥47,820 million increase in proceeds from the sale and maturity of short-term investments and a ¥7,867 million decrease in payment for purchase of short-term investments.

Cash flows from financing activities decreased by ¥6,509 million in the previous fiscal year to ¥31,860 million. Net repayments after deducting new financing from debt increased by ¥3,461 million and interest-bearing liabilities were reduced. Also, acquisition of noncontrolling interests decreased by ¥7,232 million.

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# 3. Liquidity and Fund Resources

## 3-1. Demand for Operating Funds

The TDK Group's operating funds are primarily used for the purchase of raw materials and parts for use in the manufacture of its products and are recorded as manufacturing expenses. The payment of personnel costs and selling, general, and administrative expenses such as marketing fees and distribution-related expenses incurred in conjunction with sales promotion activities are also significant disbursements from operating funds. In addition, personnel expenses relating to R&D are also significant. The funds necessary for these disbursements were provided mainly from cash generated by operations.

## 3-2. Capital Expenditures

The TDK Group made capital expenditures of ¥78,638 million in the current fiscal year to respond to rapid technological innovations in the electronics markets where the Group is active and to intensifying sales competition.

Of this amount, capital investments of ¥38,219 million were made for passive components. The main objectives were increasing and streamlining production of multilayer inductors and high-frequency module products.

Also, capital investments of ¥27,781 million were made in the magnetic application products segment. SAE Magnetics (H.K.) Ltd. introduced HGA

processing facilities, and Magnecomp Precision Technology Public Co., Ltd. installed HDD suspension manufacturing facilities. This investment was for development and production of highprecision, next-generation HDD heads.

In the other segment, capital investments of ¥8,365 million were made. The primary investments were for increasing and streamlining the production of lithium-polymer batteries by Amperex Technology Limited.

In addition to the above, ¥4,273 million was invested in the R&D divisions at TDK headquarters. Also, investment was made for the development of internal IT infrastructure and for fundamental R&D.

The funds necessary for these capital expenditures were provided from cash generated by operations.

### 3-3. Procurement of Funds

The TDK Group uses cash, cash deposits, and the like (cash, deposits with banks, short-term investments, and marketable securities) as liquid funds and strives to maintain liquidity of at least 2.0 months of consolidated monthly sales over the long term. The balance of liquid funds at the end of the fiscal year after conversion to yen was ¥197,630 million, equal to approximately 2.7 average months of annual sales.

Cash of ¥61,341 million was used in the investing activities of the TDK Group

during the fiscal year under review. At the end of the previous fiscal year, TDK's had total long-term debt of ¥97,770 million, total straight bonds of ¥84,000 million, and total short-term debt of ¥66,500 million, and during the fiscal year under review, ¥42,760 million in long-term debt was repaid. In addition, TDK took out an additional ¥19,500 million in short-term debt. Additional details concerning debt can be found in Note 5. short-term and long-term debt to the consolidated financial statements in the Annual Securities Report.

## 3-4. Funds Management

As a general rule, operating funds and funds for capital expenditures are provided from cash generated by operations. In order to improve capital efficiency, TDK introduced a cash management system (CMS) in Japan, the U.S., and Europe to centrally managed funds from its headquarters to the maximum extent possible. When subsidiaries are unable to independently secure operating funds or funds for capital expenditures, TDK utilizes funds from within the Group to the greatest possible extent. In addition, TDK manages on-hand funds by placing priority on stability and liquidity.

# **4. Basic Policy on Dividends and Dividend Payments during the Current Fiscal Year**Based on a recognition that achieving growth in corporate value over the long

term ultimately translates to higher shareholder value, TDK's basic policy is to strive to consistently increase dividends through growth in earnings per share. By actively investing for growth, mainly in the development of new products and technologies in key fields so as to respond precisely to rapid technological innovation in the electronics industry, TDK aims to increase long-term corporate value. Accordingly, TDK actively reinvests profits in business activities and sets its dividends taking into consideration comprehensive factors such as return on stockholders' equity and the dividends on TDK stockholders equity on a consolidated basis as well as changes in the business environment.

Cash dividends per share paid during the fiscal year under review were ¥70. This dividend was the sum of the year-end dividend of ¥30 paid out in June 2010 and the interim dividend of ¥40 paid out in December 2010. A 40-yen per share dividend will be paid at the end of June 2011 to shareholders of record as of the end of March 2011

### 5. Significant Accounting Policies

Significant accounting policies are those that involve estimation of uncertain matters in their application and require management's most subjective, complex, and high-level judgments.

The following is not intended to be

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an exhaustive list of all of TDK's accounting policies. Significant accounting policies are more fully described in Note 1 to the consolidated financial statements in the securities report. In many cases, the accounting treatment of a particular transaction is specifically dictated by U.S. generally accepted accounting principles without the need for management's judgment in their application. There are also cases in which management's judgment in selecting an available alternative would not produce a materially different result.

The TDK Group has identified the following as key accounting policies: impairment of long-lived assets, valuation of inventories, accounting for business combinations, goodwill and other intangible assets, pension benefit costs, and deferred tax assets

### 5-1. Impairment of Long-Lived Assets

As of March 31, 2010 and March 31, 2011, the aggregate of TDK's property, plant, and equipment and amortized intangible assets was ¥390,097 million and ¥380,186 million, respectively, accounting for 35.7% and 35.8% of total assets, respectively. TDK believes that impairment of long-lived assets is crucial to its financial statements because the recoverability or the lack of recoverability of those amounts could materially affect its business performance.

TDK reviews impairment of tangible

fixed assets and certain identifiable intangibles with specified amortization periods when events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. Reviews are performed using estimates of future cash flows. If impairment of an asset is recognized, an impairment charges recorded for the amount by which the carrying value of the asset exceeds its fair value. Management believes that the estimates of future cash flows and fair values are reasonable, but unforeseeable changes in business assumptions may result in lower future cash flows and fair values, and adverse effects on the value of longlived assets may have a material impact on TDK's financial position and results of operations. TDK makes investments with due prudence, fully taking into consideration the future profitability of products and the recoverability of investments.

# 5-2. Valuation of Inventories

Inventories are stated at the lower of cost or market value. The carrying value of inventory is reduced for estimated obsolescence by the difference between its cost and the estimated market value based on assumptions concerning future demand. TDK evaluates inventory carrying values for potential excess and obsolete inventory exposure based on historical and projections of future demand. In addition, inventories

are evaluated for potential obsolescence resulting from the effect of known and anticipated engineering change orders. Since changes in estimates, which are a basis for recognizing adjustments in the carrying values of inventory resulting from expected obsolescence, have an impact on TDK's business results, valuation of inventories is deemed to be a significant accounting policy. Effectual demand were to be substantially lower than estimated, additional inventory adjustments for excess or obsolete inventory may be required, which could have a material adverse effect on TDK's business, financial condition, and results of operations.

Regarding the appropriateness of estimates used in the past, TDK does not use a method based on various scenarios, but employs a method of quarterly reconsideration by comparing estimates and actual results. For example, in the operational management of a product sector with rapid development in technological innovation such as the recording devices sector, TDK revises estimates of valuation of obsolete inventories arising from the timely response to customer demands for high-efficiency products on a quarterly basis.

### 5-3. Business Combinations

TDK accounts for business combinations using the acquisition method. The acquisition method requires that the assets acquired and liabilities assumed through business combinations be recorded at their fair values as of the date of acquisition or assumption. The judgments made in determining the estimated fair value assigned to each class of assets acquired as well as asset lives can materially impact net income of the periods subsequent to the acquisition through depreciation and amortization, and in certain instances by impairment charges, if the assets become impaired in the future.

When determining the estimated fair value of intangible fixed assets, TDK generally utilizes the income approach. This approach discounts projected future net cash flows using an appropriate discount rate that reflects the risk factors associated with the cash flow streams.

When determining the useful lives of intangible fixed assets, different types of intangible fixed assets have different useful lives, and those assets within indefinite useful lives must be excluded from depreciation. Intangible fixed assets with indefinite useful lives are periodically reassessed based on the factors set forth in FASB Accounting Standards Codification 350 as well as the use of the assets by TDK, legal or contractual provisions that may affect the useful life or renewal or extension of the asset's contractual life without substantial cost, and the effects of demand, competition, and other economic factors.

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# 5-4. Goodwill and Other Intangible Assets

Goodwill and other intangible fixed assets that have indefinite useful lives are not amortized, but are tested for impairment on an annual basis and between tests if an event occurs or circumstances change that would more likely than not reduce the fair value of those assets below their carrying amount. Fair value of these assets is determined using a discounted cash flow analysis based on an authorized business plan. Management believes that the estimates of future cash flow and fair value are reasonable, but unforeseeable changes in business assumptions may result in lower future cash flows and fair values, adversely affecting the valuation of those assets.

### 5-5. Pension Benefit Costs

Employee pension benefit costs and obligations are dependent on assumptions used by actuaries in calculating such amounts. These assumptions include discount rates, retirement rates, mortality rates, salary growth rates, long-term expected returns, and other factors. When actual results differ from the assumptions, the differences are accumulated and amortized over future periods and therefore, generally affect TDK's recognized expense and recorded obligations in future periods. While TDK believes that its assumptions used are appropriate, differences in actual results and changes in assumptions may

affect TDK's benefit obligations and future expenses.

When preparing the financial statements for fiscal 2011, TDK established discount rates of 2.0% and 5.1% for domestic and overseas pension plans, respectively, and set long-term rates of return of 2.5% and 6.3% for domestic and overseas plan assets, respectively. When setting the discount rates, TDK uses available information concerning rates of return on highly-stable longterm corporate bonds currently available and expected to be available during the period to the maturity of the pension benefits. TDK set the expected long-term rates of return on plan assets based on management's expectations concerning the long-term returns of the various plan asset categories in which it invests. When setting those rates, management took into consideration projections of future returns and actual historical returns for each plan asset category.

Decreases in discount rates lead to an increase in pension benefit obligations that could result in an increase in net pension costs through amortization of actuarial gains or losses.

An increase in long-term expected rate of return may decrease pension costs in the current year as a result of higher investment returns. However, a difference between the expected return and the actual return on

those assets could negatively affect income in future years.

### 5-6. Valuation of Deferred Tax Assets

TDK has significant deferred tax assets based on realizability assessments. When assessing the realizability of deferred tax assets, TDK considers whether it is more likely than not that some portion or all of the deferred tax assets will not be realized. The ultimate realization of deferred tax assets is dependent on the generation of future taxable income during the periods in which those temporary differences become deductible. TDK considers the planned reversal of deferred tax liabilities, projected future taxable income, and tax planning strategies in making this assessment. Based on the level of historical taxable income and projections for future taxable income over the periods in which the deferred tax assets are deductible. TDK believes that it is more likely than not that all of the deferred tax assets less a valuation allowance will be realized. However, in the event future projections of income are not realize or are realized in lesser amounts or in cases where TDK revises the assessment of the potential for realization of deferred tax assets based on other factors, deferred tax assets may be determined not to be realizable, which then would require TDK to increase a valuation allowance against the deferred tax assets resulting in additional income tax expenses.

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# **Business Risks**

Listed below are items relating to the review of operations, accounting, and so on stated in the Annual Securities Report that may significantly influence investor decisions. The following includes forward-looking statements determined on the filing date of the Annual Securities Report (June 29, 2011).

# 1. Risks Concerning Changes in Economic **Trends**

The electronics industry, the TDK Group's field operations, is highly susceptible to influence from economic trends in the U.S., Europe, Asia (mainly China), and Japan, which are the main markets for its end products. In addition, markets in these countries and regions are constantly exposed to various risk factors such as international issues and economic fluctuations. If changes beyond our expectations occur in such business environments, those changes could significantly affect the TDK Group's business results.

# 2. Risks Concerning Fluctuations in **Currency Exchange Rates**

The TDK Group conducts business in numerous countries around the world, and a sudden fluctuations in foreign currency exchange rates affect company transactions among regions and the prices of our products and service costs at overseas bases,

which consequently has effects on the TDK Group's business results including net sales and income and losses. In addition, such fluctuations in exchange rates result in conversion differences with respect to overseas investment assets and liabilities, which are converted into Japanese yen in financial statements. TDK implements measures to hedge against changes in exchange rates, but the sudden fluctuations that exceed expectations could have a significant adverse effect on the TDK Group's business results.

# 3. Risks Concerning Overseas Operations

The TDK Group's operations extend to many countries around the world, and overseas sales account for more than 80% of total sales on a consolidated basis

In many of TDK's target markets, the TDK Group may be exposed to international political risks such as war and terrorism. economic risks such as fluctuations in currency exchange rates and trade imbalances, and social risks including labor problems stemming from differences in cultures and customs as well as diseases. Such risks may occur at levels of far greater magnitude than anticipated. In addition, there may be unexpected risks in building relationships with trading partners due to differences in commercial and business practices. If elicited, these risks could result in reduced or a suspension of production

activities or impede sales activities, which could have a significant adverse impact on business results.

The TDK Group has numerous production bases in China, a country in the midst of rapid economic growth, and the Group has established a system for supplying customers and local companies that have established operations in China. Unexpected events in China resulting from political factors (such as changes in laws and regulations), economic factors (such as the continuity of rapid growth and the status of infrastructure development including electric power supplies), or the social environment could have a significant effect on the TDK Group's business results.

# 4. Risks Concerning Price Competition

The TDK Group supplies electronic components in a broad range of fields of the electronics industry, which is experiencing an intensification of competition. These fields include information technology and communications devices such as digital home appliances, PCs, and mobile phones. Price is one of the main competitive factors differentiating us from other companies in the industry in which leading companies in Japan, South Korea, Taiwan, and other Asian countries are fueling intense price competition.

As a downward pressure on prices from the market continues to intensify, if prices fall substantially beyond our

expectations or become protracted, there could be a significant effect on the TDK Group's business results.

# 5. Risks Concerning Technological **Innovation and New Product** Development

The timely launch of new and valuable products contributes to raising the profitability of the TDK Group, and we firmly believe that ongoing new product development is crucial to TDK's survival. We also believe that the ability to increase sales by developing appealing and innovative products plays an important role in our growth, and we place considerable importance on this in our management strategies. However, TDK may not be able to predict future demand in the rapidly-changing electronics industry and to develop and continuously supply in a timely manner appealing new products created through technological innovation to meet that demand. In this case, lost opportunities may result in lower sales and income and current and future markets may be lost, resulting in a significant adverse impact on business results and growth prospects.

# 6. Risks Concerning Product Quality

The TDK Group manufactures various products at domestic and overseas manufacturing bases in accordance with the International Organization for Standardization (ISO) quality management standards (ISO 9001) and the

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strict standards required by customers in the remarkably technologically innovative electronics industry.

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The TDK group cannot be fully certain, however, that all of its products are free from unforeseeable defects (including cases where products contain restricted substances) and immune from recalls at some later date. If a recall of TDK products occurs or a product liability claim is made against TDK, significant recall costs and compensation for damages could be incurred and sales volumes may decline. In addition, quality defects in TDK brand products could result in loss of confidence in the TDK brand and put TDK's survival as an ongoing firm at risk. The occurrence of such a major quality problem could have a substantial effect on the TDK Group's business results.

## 7. Risks Concerning Intellectual Property

The growth of the TDK Group depends to a great extent on patents, licenses, and other intellectual property rights concerning the functions, designs, and manufacturing processes of our products (collectively referred to as "Intellectual Property Rights"), and the Group makes active efforts to acquire and manage Intellectual Property Rights.

There are instances, however, where TDK's Intellectual Property Rights cannot be fully protected in a particular region for reasons unique to that region. TDK may

incur losses resulting from manufacture by a third party of products similar to TDK's through the unauthorized use of our Intellectual Property Rights.

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It is also possible that TDK will be subject to claims of infringement by TDK Group products on the Intellectual Property Rights of third parties that may sue for damages as a result of such alleged infringement. This would require either settlement negotiations or legal processes. If our defenses against such claims are not accepted in such disputes, the Group may incur losses including the payment of compensation for damages and royalties and loss of market.

In this way, major disputes concerning Intellectual Property Rights could have a significant effect on the TDK Group's business development and business results.

# 8. Risks Concerning Recruiting and **Training Personnel**

In order to prevail against the fierce competition in the electronics industry, the TDK Group believes that it is necessary to recruit and develop personnel who possess advanced technical skills at global levels. The TDK Group makes significant efforts to enhance even further the abilities of outstanding human resources with excellent business strategy and organizational management skills.

However, competition to recruit

globally outstanding employees is extremely fierce, and in Japan the employment environment is changing rapidly because of the falling birthrate, the aging population, and the decline of the workforce population. Employment environments are also undergoing rapid changes in overseas bases in China and other countries, and there are no guarantees that TDK will be able to recruit skilled employees on an ongoing basis. The inability to recruit and develop personnel as planned could have a significant effect on the TDK Group's business development, business results, and growth prospects over the long term.

# 9. Risks Concerning Raw Material **Procurement**

The TDK Group's manufacturing system is premised on securing raw materials and other supplies in appropriate volumes in a timely manner from numerous external suppliers. TDK may rely on certain irreplaceable suppliers for key raw materials. Because of this, there may be cases where supplies of raw materials and other products are interrupted by accident or other event at a supplier, supply is suspended because of quality or other problems, or there is instability in or shortage of supply because of a rapid increase in demand for finished products. If any of these situations becomes protracted, there could be an impact on production systems and TDK may not to be able to fulfill its responsibilities to supply products to customers. If the balance between supply and demand in the market breaks down, prices for raw materials may increase drastically and prices for energy including oil may rise, pushing up manufacturing costs and having significant adverse impact on business results.

# 10. Risks Concerning Government Regulations

The TDK Group is subject to various regulations in Japan and other countries where we conduct business concerning approval for conducting business and making investments, laws and regulations governing the safety of electric and electronic products, laws and regulations relating to national security among countries, export/import laws and regulations, and laws and regulations relating to commercial practices, antitrust, patents, product liability, environment, consumers, and taxes.

In the event these laws and regulations are made more stringent in the future, TDK's business development could be affected and may incur various additional expenses. In addition, if we are unable to respond appropriately to these laws and regulations, we may be forced to withdraw in part from certain businesses or take other actions.

The tightening of various laws and regulations by government agencies could have a significant adverse effect on the TDK Group's business results.

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# 11. Risks Concerning Interest Rate Fluctuations

The TDK Group has financial assets and liabilities that are exposed to the risk of interest rate fluctuations. Interest rate fluctuations in excess of expectations could affect interest income, interest expenses, and the value of financial assets, which could have a significant impact on the TDK Group's business results.

# 12. Risks Concerning Business-To-**Business Transactions**

The TDK Group conducts business-to-business transactions on a global scale for the supply of diverse electronic components to numerous electronics manufacturers, personal computer makers, and other customers.

The supply of products to these customers is significantly affected by various factors beyond our control such as changes in individual customer's business results and management strategies. A drop-off in purchasing demand due to poor business results by major customers, changes in customers' purchasing plans and policies, the unexpected termination of contracts and other occurrences could result in TDK process profit margins being reduced due to discounting pressure from customers or excess inventories.

In addition, corporate reorganizations through mergers and acquisitions by customer businesses including acquisition of firms in different industries and

competitors in Japan and other countries could have a substantial effect on TDK's sales. In particular, if a specific customer on which TDK relies for substantial sales is acquired by a competitor, orders may drastically decline or transactions may be entirely terminated.

In this way, customers' business results, changes in management strategies, and other factors could have a significant adverse effect on the TDK Group's business results.

# 13. Risks Concerning Natural Disasters and Pandemics

The TDK group has numerous production plants and research and development facilities in Japan and other countries. These facilities and plants have implemented disasterprotection and infection-control measures in preparation for unexpected natural disasters and infection outbreaks. However, a major earthquake, tsunami, typhoon, flood, volcanic eruption, other unavoidable natural disaster, or outbreak of an unknown infectious disease such as a potent new strain of influenza that substantially exceeds assumed levels in business continuity plans could cause extensive damage or losses. In the event of interruption of manufacturing, disruption of transportation routes, damage to or disconnection of information and communications infrastructure, or significant damage to customers, orders and supplies

may be slowed for an extended period, and this could have a significant effect on the TDK Group's business results.

# 14. Risks Concerning Environmental Regulations

The TDK Group is subject to various environmental laws and regulations in Japan and other countries governing industrial waste, emissions to the atmosphere, and water generated from production processes and a certain hazardous chemical substances contained in products. From the perspective of global environmental preservation, we anticipate that environmental regulations will become more stringent in the future and that the cost of compliance with those regulations will increase.

The TDK Group complies with environmental laws and regulations and conducts a wide range of environmental preservation activities, but if compliance with environmental regulations exceeds our capabilities, we may be forced to withdraw from certain business activities and responses may be delayed, resulting in loss of trust in the TDK group, which could have a significant effect on the TDK Group's business results.

# 15. Risks Concerning M&A

The TDK Group implements mergers and acquisitions (M&A) to create business entities that can pursue higher competitiveness and profitability in a highly-competitive electronics field. However, if higher profitability cannot be obtained through the initially-expected synergy effects because of the Group's management policies or management strategies failing to adequately permeate throughout the target company of such M&A activity or for other reasons, there could be a significant effect on the Group's business results, growth prospects, and business development.

# **16. Risks Concerning Information Security**

In its business operations, the TDK Group holds confidential information and personal information relating to customers and trading partners as well as confidential information of the Group and personal information of employees. The Group has established a group-wide control system to prevent this information from being leaked to outside parties, tampered with, or otherwise manipulated, and we implement comprehensive management and IT security, reinforce facility security, and conduct employee training. However, there is still a risk that such information could be leaked or falsified through negligence or theft.

If such information were leaked or falsified, the TDK Group could suffer a loss of credibility and be liable for substantial

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costs relating to compensation for damages to injured parties, and that this could have a significant effect on the TDK Group's business results.

# 17. Risks Concerning the Great East Japan Earthquake

The March 2011 Great East Japan Earthquake caused direct harm to the TDK Group as a result of the damage to buildings and facilities and reduced operations caused by power outages. At this time, all affected sites have been fully restored, and all domestic business sites are reviewing their business continuity plans and adopting measures in anticipation of power shortages during the summer. Nonetheless, power shortages beyond expectations or large-scale power outages could have a substantial impact on production activities (reduced operations or suspension of operations) and sales activities (delay in the recovery of orders and so on).