



# UNLEASHING THE POWER OF TECHNOLOGY

ANNUAL REPORT 2020

– English Version –

Founding Spirit

社是  
創造に  
よって  
文化産業に  
貢献する

Corporate Motto  
Contribute to culture and industry  
through creativity

TDK's four great innovations brought enormous value to society

Value

Bringing Electric Products to as Many People as Possible

In 1935, Dr. Yogoro Kato at the Tokyo Institute of Technology received a visit from Kenzo Saito, who later founded TDK (initially Tokyo Denki Kagaku Kogyo K.K.). Dr. Kato expressed the opinion that "All of Japanese industry so far relies on borrowing from the West. Unless we use our own brain power, it cannot really be called Japanese industry. We need to apply Japanese creativity to develop our own industry." During the visit, Dr. Kato showed Saito a magnetic material called ferrite that he had invented together with Dr. Takeshi Takei. At that point, the potential of this material was totally unknown. TDK, established by Saito with the purpose of commercializing this original Japanese invention, was one of the original

venture enterprises stemming from university research. In 1937, the Company was the first worldwide to successfully market ferrite cores for use as components in communication equipment. Following the turbulent times of World War II and its aftermath, Japan's reconstruction entered a phase of high economic growth. TDK's products played an important role in improving the sound quality of radios and telephones and popularizing televisions.

What is ferrite?

Ferrite is a magnetic body sintered with metal oxide as the main component. The birth of this new material marked the beginning of a dramatic evolution in electric and electronic technology on a worldwide scale. In 2009, the Institute of Electrical and Electronics Engineers (IEEE) designated ferrite as an IEEE Milestone, recognizing it as a development with significant impact on the advancement of industry and society.



IEEE Milestone plaque



TDK's founder Kenzo Saito



The world's first coils with ferrite cores



Dr. Yogoro Kato (left) and Dr. Takeshi Takei (right)

Value

Carrying Music Around

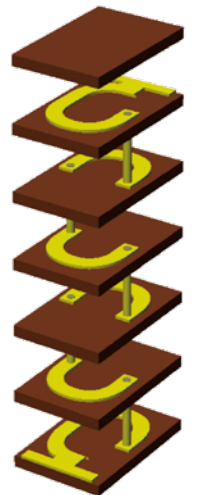
The 1960s saw the birth of a standard for encapsulating magnetic recording tape in a cassette shell. TDK played its part by developing the world's first cassette tape designed specifically for music. Cassette tape led to a lifestyle in which music could be enjoyed anywhere and anytime and brought about a revolutionary change in the musical life of young people. TDK came to be recognized around the world as a synonym for cassette tape.



Value

Miniaturization of High-Performance Components

In 1980, TDK became the first company worldwide to successfully realize a fine multilayering process for printing internal electrodes on a sheet of ferrite or similar with metal paste and stacking them in an alternating left/right pattern to create a multilayer chip inductor. This technology enabled inductors, an essential component in circuits, to be made tinier and led to the appearance of smaller electronic devices, such as notebook computers, video cameras, and mobile phones.



Value

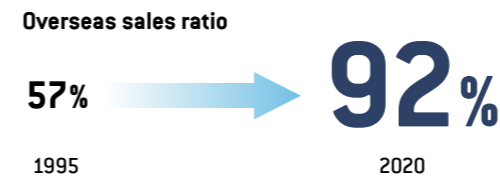
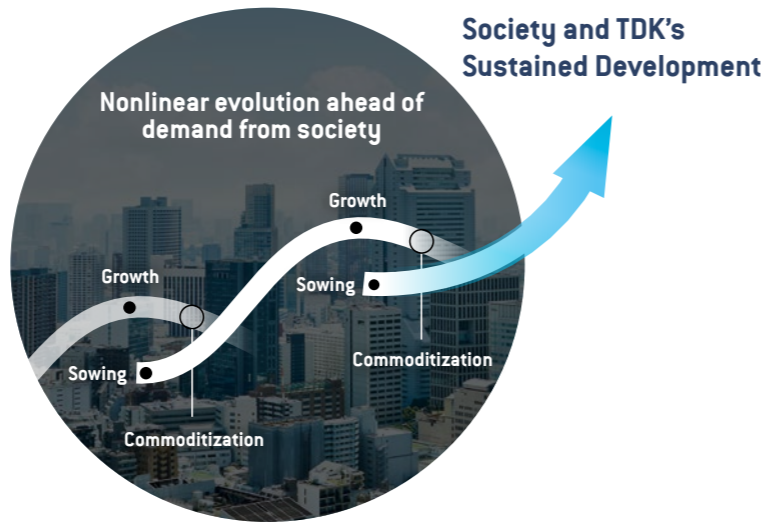
Recording More and More Information

TDK's technology has enabled the expansion of hard-disk-drive (HDD) capacity over the past couple of decades from megabytes to gigabytes (1,024 MB) and then terabytes (1,024 GB). The thin-film magnetic heads that allow extremely high recording densities were developed by applying thin-film process technology at the nanometer level. As a result, the capacity of notebook computers increased tremendously, and it became possible for people to easily record detailed high-definition images on their HDD recorder at home and view them whenever they liked. Even now, this technology is supporting the cloud-age society through, among other things, the nearline HDDs of data centers.



# Self-Transformation toward the Creation of Social Value

TDK has realized sustained development by harnessing "linear evolution," such as passive components, and "nonlinear evolution," by which, while our main products are doing well, we have boldly reformed our business structure by looking ahead to the needs of society in the immediate future and giving shape to those needs utilizing our core technologies.

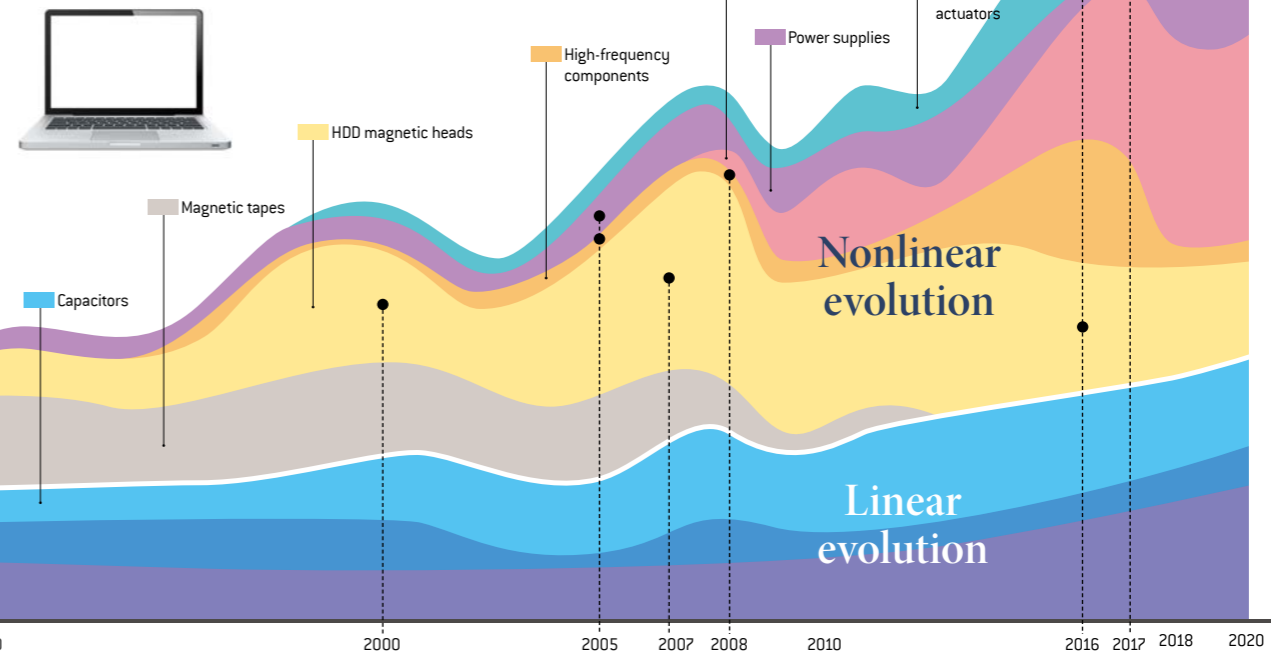


*Social Needs*  
Accelerated electrification of automobiles

*Social Needs*  
Diffusion of cloud computing

*Social Needs*  
Diffusion of smartphones and continuous improvement of performance

*Social Needs*  
Diffusion of personal computers and continuous expansion of storage capacity



*Social Needs*  
Diffusion of electric appliances



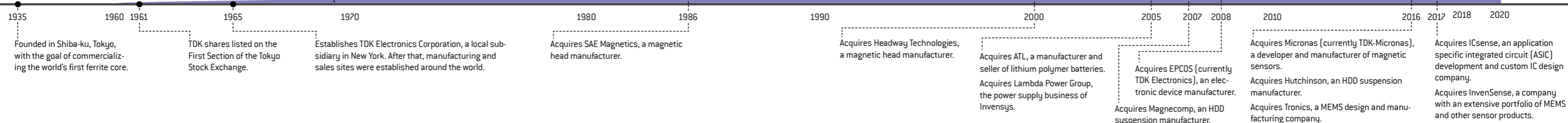
Superheterodyne-type radio

Black-and-white TV set

*Social Needs*  
Diffusion of cassette tape



**Corporate history**

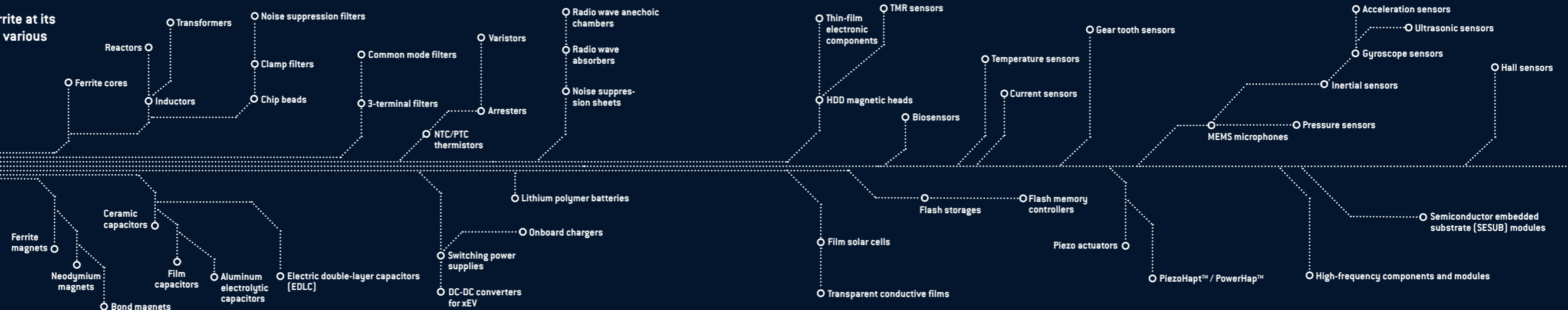


## FERRITE TREE

TDK, which positions ferrite at its foundation, has created various kinds of products.



Ferrite



# Dual Strengths of Refinement and Introduction

While continuously fortifying our strengths in *Monozukuri* (manufacturing excellence) through linear evolution, in the process of nonlinear evolution TDK has brought a variety of new strengths onboard.

## Refined Strengths to Realize Linear Evolution

### Strength Materials and Process Technologies

Materials technology elicits raw materials suitable for the targeted properties in a product through advanced expertise in complex composition processes and control of additives. Process technology maximizes the properties of these materials while also expanding the scope of their application in products. Creating “black boxes” for techniques of controlling crystal particles at the atomic level, intellectual property, and other know-how makes them difficult to imitate overnight.



Honjo Factory East Site, Akita Prefecture

### Strength Integrated Production

Integrated production, where everything from materials development to the final product is handled in-house, allows TDK to improve its *Monozukuri* and increase productivity through the introduction of the Internet of Things (IoT) and robots. Our ability to control quality entirely in-house as well gives us a competitive advantage in areas where quality requirements are particularly high, including the automotive market.

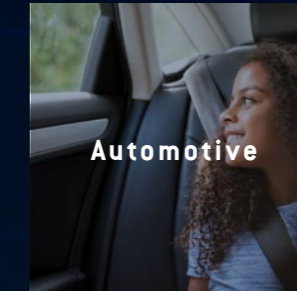


ability to control quality entirely in-house as well gives us a competitive advantage in areas where quality requirements are particularly high, including the automotive market.

## Strengths Introduced through Nonlinear Evolution

### Strength Customer Base

TDK has built strong relationships with its customers in the automotive, Information and Communication Technology (ICT), industrial and energy, and other markets. This allows us to forecast future changes in technology trends more accurately and reduces the risks involved in making aggressive R&D and capital expenditures.

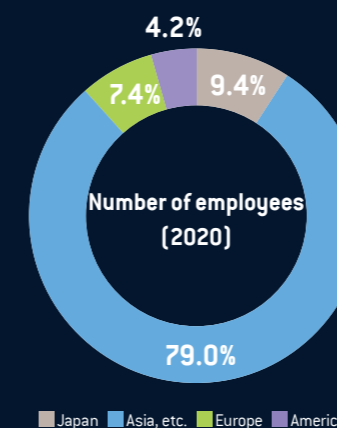


### Strength Strength of Diversity

TDK has built relationships with acquired companies based not on controlling them but on positioning them as equal partners and drawing out their strengths to the greatest degree possible. This strength of diversity raises the business portfolio shift success

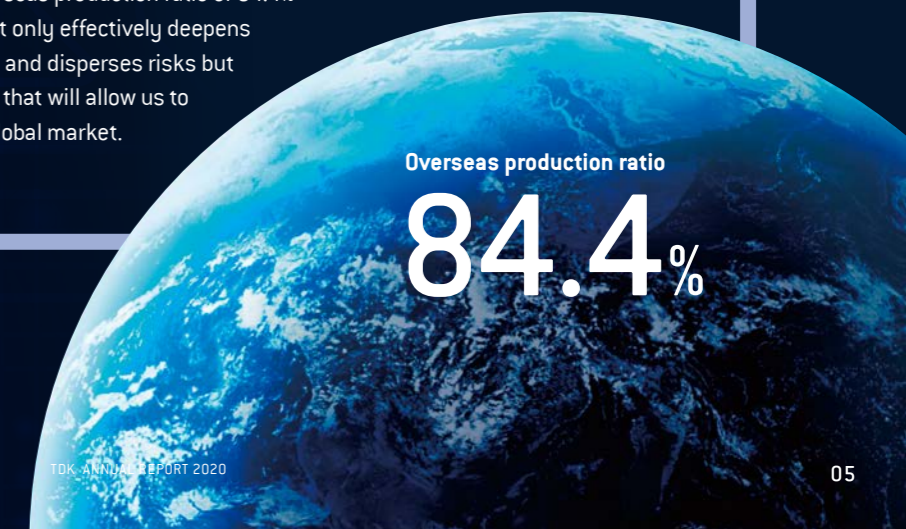


rate, promotes the creation of innovation, and serves as a basis for enhancing resiliency against business fluctuations.



### Strength Global Business Base

TDK's global business base, with an overseas production ratio of 84.4% and an overseas sales ratio of 91.9%, not only effectively deepens relationships with customers worldwide and disperses risks but also serves as a competitive advantage that will allow us to capture business opportunities in the global market.



Overseas production ratio  
**84.4%**

# TDK's Unswerving Vision

While generating three types of "value" aimed at enhancing its corporate value (Social Value, Commercial Value, and Asset Value), TDK will contribute to society and, as a result, realize the sustained improvement of its corporate value.



To execute growth strategies and promote the improvement of our financial condition, we aim to achieve positive free cash flow while executing well-balanced capital allocation to investments, shareholder returns, and the reduction of interest-bearing debts.

- Aiming for the steady recovery of previous investments
- Pursuing the enhancement of companywide asset efficiency

Based on materials and process technologies and electronic components, we provide solutions stemming from the concept of *Kotazukuri* (integrated solutions) and respond in a timely manner to the needs of society.

- Three priority markets
- Automotive market
  - ICT market
  - Industrial and energy market

## Toward Eco-TDK

Through the improvement of productivity, thorough promotion of energy-saving measures, shift to renewable energy, and so on, TDK will transform itself into Eco-TDK. At the same time, we will contribute to EX by means of products that facilitate the change to an energy-saving and decarbonized society.

# Contribute to Culture and Industry through Creativity

## Toward Digi-TDK

Through the digitization of production and the supply chain (Industry 4.0 + Zero Defect), TDK will transform itself into Digi-TDK. At the same time, we will contribute to DX in the new post-COVID-19 society by means of sensors and actuators facilitating analog-digital conversion, products relating to communication networks, and products enabling miniaturization and energy saving.

# Overview of TDK (Fiscal 2020)

Net sales  
**¥1,363.0 billion**

Operating income  
**¥97.9 billion**

	Passive Components	Sensor Application Products	Magnetic Application Products	Energy Application Products	Other
	<p>Share of net sales  <b>29.0%</b>                      (¥395.5 billion)</p>	<p>Share of net sales  <b>5.7%</b>                      (¥77.9 billion)</p>	<p>Share of net sales  <b>16.1%</b>                      (¥219.7 billion)</p>	<p>Share of net sales  <b>43.9%</b>                      (¥597.7 billion)</p>	<p>Share of net sales  <b>5.3%</b>                      (¥72.3 billion)</p>
 <p><b>Automotive</b></p>	<p><b>Capacitors</b>                      Soft-termination multilayer ceramic chip capacitors, aluminum electrolytic capacitors, etc.</p> <p><b>Inductive devices</b>                      SMD inductors with guaranteed high-temperature ratings, common mode filters for automotive-use LAN, etc.</p> <p><b>Other passive components</b>                      Piezo actuators, etc.</p>	<p><b>Sensors</b>                      Sensors (gear tooth, pressure, angle, current, temperature, etc.)</p>	<p><b>Magnets</b>                      Magnets for motors (cooling fan, door lock, etc.), magnets for xEV drive motors, etc.</p>	<p><b>Power supplies</b>                      DC-DC converters, onboard chargers, etc.</p>	
 <p><b>ICT</b></p>	<p><b>Capacitors</b>                      3-terminal feed-through capacitors, etc.</p> <p><b>Inductive devices</b>                      SMD inductors, thin-film common-mode filters, etc.</p> <p><b>Other passive components</b>                      Ceramic high-frequency components, multilayer chip varistors, etc.</p>	<p><b>Sensors</b>                      Sensors (barometric pressure, gyroscope, acceleration, MEMS microphones, etc.)</p>	<p><b>Recording devices</b>                      HDD magnetic heads, HDD suspensions, etc.</p> <p><b>Magnets</b>                      HDD magnets, etc.</p>	<p><b>Energy devices</b>                      Lithium polymer batteries (for smartphones, tablet devices, notebook computers, wearable devices, game consoles, etc.)</p> <p><b>Power supplies</b>                      POL converters, etc.</p>	Camera module actuators (VCM/OIS), etc.
 <p><b>Industrial &amp; Energy</b></p>	<p><b>Capacitors</b>                      Film capacitors, aluminum electrolytic capacitors, etc.</p> <p><b>Inductive devices</b>                      Transformers, EMC filters, etc.</p> <p><b>Other passive components</b>                      Varistors, arresters, etc.</p>	<p><b>Sensors</b>                      Sensors (pressure, gyroscope, acceleration, current, etc.)</p>	<p><b>Magnets</b>                      Magnets for industrial equipment motors, etc.</p>	<p><b>Energy devices</b>                      Lithium polymer batteries (for drones, residential energy storage systems, etc.)</p> <p><b>Power supplies</b>                      Switching power supplies (AC-DC, DC-DC), bidirectional DC-DC converters, wireless power transfer systems, etc.</p>	Load ports, flip-chip bonders, flash memory application devices, anechoic chambers, etc.
 <p><b>Competitors</b></p>	<p><b>Capacitors</b>                      Murata Manufacturing, TAIYO YUDEN, SEMCO (Korea), Yageo (Taiwan), etc.</p> <p><b>Inductive devices</b>                      Murata Manufacturing, TAIYO YUDEN, SEMCO (Korea), Cynotec (Taiwan), etc.</p> <p><b>Other passive components</b>                      Murata Manufacturing, ALPS ALPINE, Panasonic, AMOTEC (Korea), etc.</p>	<p><b>Sensors</b>                      Murata Manufacturing, ALPS ALPINE, TAIYO YUDEN, Bosch Sensortec (Germany), STMicroelectronics (Switzerland), Infineon (Germany), Asahi Kasei Microdevices, Allegro (USA), Shibaura Electronics, etc.</p>	<p><b>HDD magnetic heads*</b>                      Seagate Technology (USA), Western Digital Technologies (USA)</p> <p><b>HDD suspensions</b>                      NHK SPRING, etc.</p> <p><b>Magnets</b>                      Shin-Etsu Chemical, Hitachi Metals, ZHONG KE SAN HUAN (China), etc.</p>	<p><b>Energy devices</b>                      Samsung SDI (Korea), LG Chemical (Korea), Murata Manufacturing, Panasonic, BYD (China), etc.</p> <p><b>Power supplies</b>                      Delta Electronics (Taiwan), Artesyn Embedded Power (USA), MEAN WELL (Taiwan), XP Power (Singapore), Cosel, etc.</p>	

\* TDK is the world's only specialized manufacturer of HDD magnetic heads. HDD magnetic head production is currently concentrated at three companies: TDK, Seagate Technology, and Western Digital Technologies.

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TDK Annual Report 2020

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### Cautionary Statements with Respect to Forward-Looking Statements

Annual Report 2020 contains forward-looking statements, including projections, plans, policies, management strategies, targets, schedules, understandings, and evaluations about TDK and/or its Group companies ("the TDK Group"). These forward-looking statements are based on the current forecasts, estimates, assumptions, plans, understandings, and evaluations of the TDK Group in light of currently available information and contain known and unknown risks, uncertainties, and other factors. The TDK Group therefore wishes to caution readers that, being subject to risks, uncertainties, and other factors, the Group's actual results, performance, achievements, or financial positions could be materially different from any future results, performance, achievements, or financial positions expressed or implied by these forward-looking statements. The TDK Group undertakes no obligation to publicly update or revise any forward-looking statements after the issue of Annual Report 2020 except as provided for in applicable laws and ordinances.

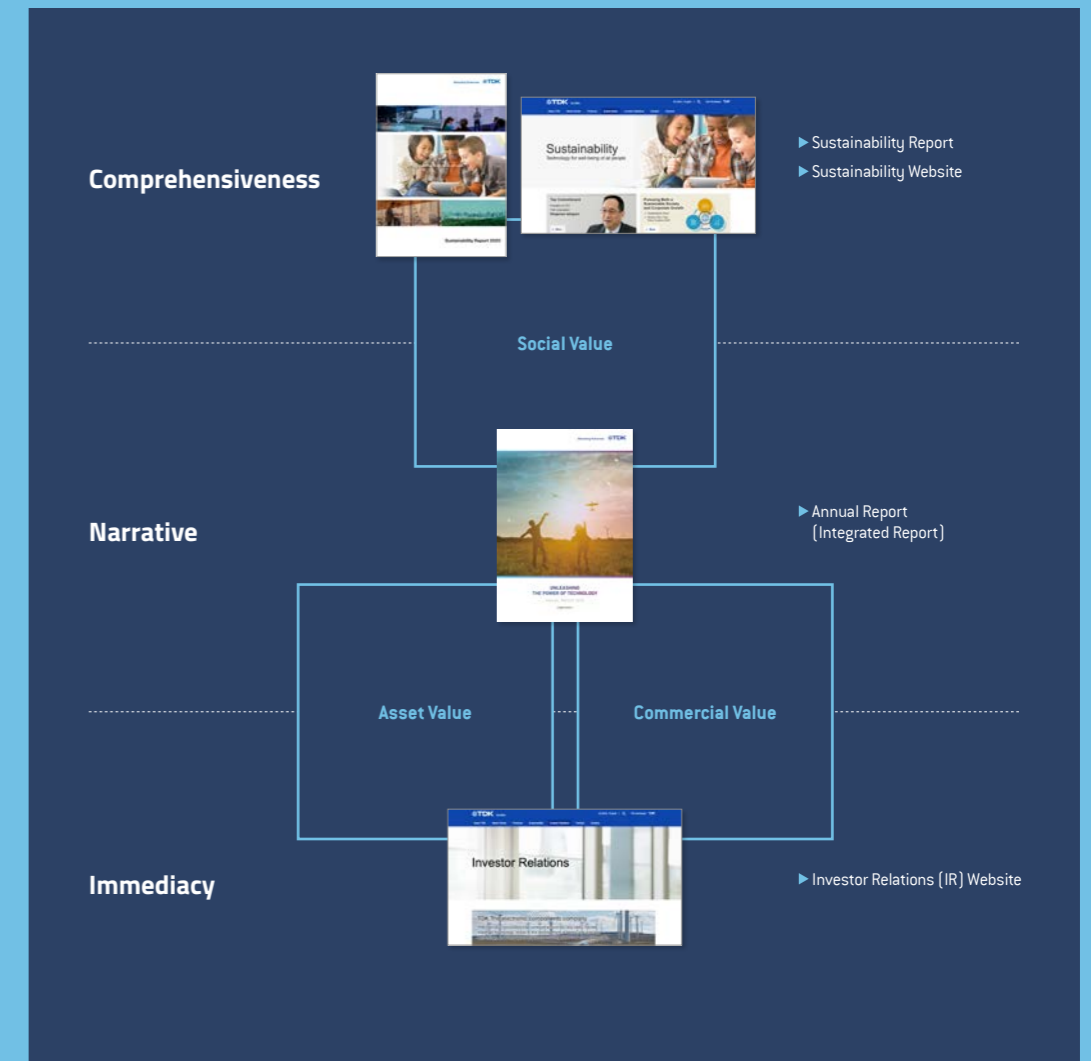
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## CORPORATE INFORMATION



## Editorial Policy

TDK emphasizes proactive and appropriate information disclosure and bilateral communications with various stakeholders for the sustainable enhancement of corporate value. Annual Report 2020 focuses on stories centered on the cycle of corporate value creation from Social Value, Commercial Value, and Asset Value while attempting to provide optimal information disclosure according to the information needs of each stakeholder, including enhancement of online sustainability pages and other information in response to the need for comprehensive disclosure of environment, social, and governance (ESG) information.



## How the Public Sees Us

- TDK was named a Derwent Top 100 Global Innovator 2020.
- The TDK Asama Techno Factory received the Energy Conservation Center, Japan [ECCJ] Chairman's Award in the Energy Conservation Best Practice Category of 2019.
- TDK's "InWheelSense™" won the CEATEC AWARD 2020 Grand Prix for Digital City Planning of the New Normal Age category, and our ultra-small full color laser module for augmented reality (AR) glasses won the Semi Grand Prix for Elemental Technologies/Devices of the New Normal Society category.

## Accelerating Transformation by Exploring the Potential of Technology for a New Era

Shigenao Ishiguro

President & CEO

I would first like to offer our heartfelt sympathy to those individuals and their families who have been affected by COVID-19, and our sincerest thoughts and prayers for those who have died in this pandemic. I would also like to express my deep appreciation for the dedication of the many individuals working on the front lines of medicine and to everyone engaged in the work of sustaining the infrastructure of our everyday lives.

### Technological Evolution Accelerates

A tiny virus, less than 0.1 microns in size, has mankind at its mercy. At the same time, it has brought enormous changes in our values and our daily lives. Those of us who once spent long hours commuting on packed trains each day have learned that our work goes on even when conducted remotely. I, too, used to spend time traveling to meetings with suppliers and partners in various locations, but now have no trouble communicating with them online. At some point, treatments and vaccines will be developed, and COVID-19 will no longer represent a major threat to mankind. And yet, I do not see us returning to our previous lives. Ironically, COVID-19—man's enemy—has created a “new normal” life for us, and has accelerated the evolution of technology. While the pandemic has had a vast impact on society, we see this as an opportunity to move toward a new era, and TDK has already begun its own transformation based on this “new steady state.”

### TDK's Proven Resilience

As the pandemic has brought turmoil to society and the economy, TDK has been able to prove its resilience.

TDK is a comprehensive manufacturer of electronic components with a wide-ranging portfolio of products, including passive components and sensors, HDD magnetic heads, magnets, batteries, and power supplies. The diversity of this portfolio demonstrated its worth during the current global crisis. Worsening relations between the U.S. and China and the spread of COVID-19 have had a direct impact on the automotive and industrial equipment markets, resulting in a significant shrinking in demand, primarily for passive components. Meanwhile, the ICT market remains strong, driven mainly by demand for

### TDK Is Accelerating Its Reforms, Seeing an Opportunity to Move Toward a New Era



fifth-generation mobile communications system (5G), with lithium polymer batteries, high-frequency components, and other products shoring up results for the Company as a whole. We were particularly successful in capturing demand for lithium polymer batteries for notebook computers and tablets, driven by the global growth in telework.

TDK is moving forward to build a global governance structure based on a policy of “Empowerment and Transparency,” the goal of which is to motivate our employees by trusting and delegating authority to them. Our primary focus is on creating an autonomous, decentralized organization, rather than one where authority is centralized. The effectiveness of this kind of organizational structure became clear in the course of our response to the spread of COVID-19. When China was still in the early stages of the infection, we went through our local offices to understand the scope of the

situation; by early January 2020 we had set up Corporate Crisis Management Headquarters. As the infection spread to other countries, we continued to keep tabs on the situation as it changed from moment to moment. Meanwhile, in 2019, we set up new Regional Headquarters in China, the U.S., and Europe as well as key Business Companies (BCs) to serve as pillars in the creation of an autonomous, decentralized organization. Their ability to come up with concrete countermeasures according to their respective circumstances led to our quickly getting the situation under control. And given the significant differences in systems and conditions from one country to the next, those countermeasures might have fallen behind if we had tried to orchestrate everything from Tokyo.

The response of our offices in China, which had experienced the severe acute respiratory syndrome (SARS) outbreak of 2003 and used those



lessons to craft its pandemic countermeasures, was particularly swift and precise. Amperex Technology Limited (ATL), our core company in lithium polymer batteries, was able to minimize production slowdowns, resuming production at an early stage. Because our sites in China were quick to normalize operations, TDK was able to hang on even as the pandemic spread globally. Our management teams and employees in each region have my heartfelt gratitude.

Since the time I was appointed president, I have considered it my personal responsibility to our stakeholders to turn TDK into a company that responds flexibly to changes in both external and

## An Autonomous, Decentralized Organization and the Strength of Diversity Demonstrate Their True Value



internal environments and continues to develop sustainably; to that end, we have pushed forward with a variety of reforms. My confidence in those efforts has deepened as we confirmed the solid resilience of the global and diverse, autonomous and decentralized organization that was created as part of those reforms.

### Value Creation 2020

TDK continues to follow a path tied in a direct line to the aspiration of our founder, Kenzo Saito, to contribute to the development of society, an aspiration embraced by our corporate motto: “Contribute to culture and industry through creativity.” In that spirit, we have contributed to society’s development by continually delivering on the requirements of each era. Today, our objective is to implement a cycle that makes the pursuit of Social Value a goal for all of our businesses and that, as a result, increases both Commercial Value and Asset Value and further creates Social Value.

Value Creation 2020, our Medium-Term Plan for fiscal 2019 through fiscal 2021, was launched once we had clarified this path to creating value. The plan sets forth targets for Commercial Value, at net sales of ¥1,650 billion and Asset Value, with an operating income ratio of 10% or more and a return on equity (ROE) of 14% or greater. The second year of the plan, ended March 2020, saw a decline in both sales and income due not only to external factors, such as worsening the U.S.–China relations and a global economic slowdown due to the spreading COVID-19 pandemic, but also internal factors such as a delay in profitability improvements in the sensor business which we had expanded through proactive investments in recent years and the magnet business.

P. 24: Message from the Corporate Officer of  
Finance & Accounting

## A Strong Sense of Expanded Possibilities for Contributing to Solutions to Social Issues

Fiscal 2021 will see growing demand associated with the spread of telework as well as increased demand related to 5G. At the same time, we have been forced to estimate the outlook for other markets—primarily the automotive sector—more severely, and do not expect to meet the targets set out under the current Medium-Term Plan.

While we assume a difficult business environment in the short term, in the medium to long term we also have a strong sense that the possibilities for TDK have expanded. In the past, corporate management was seen as a trade-off between economic rationality and social rationality. However, with the U.N.’s adoption of its Sustainable Development Goals (SDGs) and the deepening discussion around sustainability, those two vectors have begun to point in the same direction. In 2019, the TDK Group formulated its Sustainability Vision, which pledges “Through its innovative core technologies and solutions, the Group advances the development of a sustainable society and champions well-being for all people.” In addition to economic and social rationalities, the spreading COVID-19 pandemic also brought into line the interests of investors, employees, society, and a variety of other stakeholders. This is more than just a shift to a “new normal” way of life. There is a call for solutions to the problems that threaten the very sustainability of mankind, whether shrinking and aging populations and growing urbanization in advanced countries, or the depletion of fossil fuels and food and water shortages elsewhere. Reforms are advancing in every industry through the use of 5G, AI, renewable energy, and other solutions, and the potential roles for electronic components, which support the evolution of technology, must be limitless.

### Leveraging Our Strengths to Solve Social Issues

Magnetic technology has consistently remained TDK’s core competence, and we have continued to refine components useful in the efficient use of electric power, demonstrating our strength in the energy sector. Going forward, demands will intensify for solutions to environmental problems, and for realizing an energy-saving, decarbonized society. We believe we can contribute to an energy transformation (EX) [P. 36: TDK Products and Technologies That Support EX](#) through the use of lithium polymer batteries, high-efficiency power supplies, electronic components that reduce noise and heat, and sensors in the electric power generation, transmission, conversion, and storage sectors. Such components are not only essential for delivering power savings in electric vehicles (EVs), but can also be useful in wireless power transfer systems. They can also contribute to power savings and improved efficiency in power generation devices used in renewable energy. In lithium polymer batteries, where TDK is competitive, we are working to develop our mini cell applications for compact electronics and wearable devices, while expanding applications for power cells to drones, e-drives, and other devices. As the development of smart cities advances, we expect to see an increased demand for rechargeable batteries designed for use in residential energy storage systems that makes “time-shift use” of stored power possible. We are already working to develop demand among developers of energy storage systems.

In the society of the future, all types of data will be processed in cyberspace. Incorporated back into people’s lives, that data will help form a more efficient society. Such a system can only be achieved through the use of a set of technologies consisting of integrated circuits (ICs), responsible for data analysis and other algorithms; a vast number of sensors for capturing analog data; and actuators that serve to translate the data that comes back into physical motion. TDK, which has

## TDK Will Contribute to Solving Energy and Environmental Problems, and to a More Efficient Society through the Use of Data

a world-leading portfolio of sensors, can leverage its strengths as a comprehensive manufacturer of electronic components to deepen its relationships with IC manufacturers, and in society's digital transformation (DX) [P. 32: TDK Products and Technologies That Support DX](#), play the role of a “transducer,” connecting the physical work and algorithms. We believe our competitiveness can be demonstrated particularly in the area of advanced driving assistance systems (ADAS) and autonomous driving, which require the ability to sense and rapidly process vast amounts of data. We also expect to contribute to advancements in robotics and DX in the healthcare field, with efforts aimed at solving social issues such as shrinking and aging populations and associated workforce shortages and problems with medical and nursing care.

5G will be an important part of that future infrastructure. In the near future, small cell base stations are expected to represent a majority of the overall demand for base stations. TDK will contribute by providing low-temperature cofired ceramic (LTCC) devices that support the multi-antennas used in small cell base stations; high-frequency components; high-frequency compatible inductors; and compact, low-profile electronic components that utilize semiconductor embedded substrate (SESUB) technology.

I believe that to leverage TDK's strengths toward “advancing the development of a sustainable society and championing well-being for all people” will also require us to transform ourselves.

### A Transformation That Contributes to Creating the Future

Constant improvements in *Monozukuri* (manufacturing excellence) centered around materials technology and process technology will continue to serve as the foundation for TDK's sustained development, regardless of how times may change. In addition to our efforts over the past four years or so with Industry 4.0, the use of digital technology to visualize the manufacturing process, we have also pushed ahead with *Monozukuri* innovation in pursuit of zero-defect product quality. At the same time, by promoting rigorous energy-saving measures and a conversion to renewable energy, TDK will transform itself into an energy eco-friendly company.

An important point in our growth strategy is how quickly and precisely we can sense society's emerging demands and respond to them by delivering value in a timely fashion. To do that, we need to strengthen the antennas we have trained on detecting the needs of society and our customers. We have captured a large share of the global markets for HDD magnetic heads and lithium polymer batteries.

## Strengthening the Antennas We Have Trained on Quickly and Precisely Sensing Society's Needs

As we can gain opportunities to develop cutting-edge products, our extremely sensitive antennas are focused on keeping us ahead in our understanding of trends in technology and customer needs. This in turn leads to our ability to achieve the time to market, quality, and volume needed to respond more quickly to customer requests. To ensure these strengths are expanded to encompass all of our businesses, we are working across the entire TDK Group to strengthen our digital-driven global marketing and global R&D functions as we thoroughly enhance management efficiency.

In addition to building a global governance structure, we will also continue to further enhance our strengths in diversity, discovering and cultivating talent across the world, and promoting a global human resource strategy that works toward optimal allocation of talent across nationalities and business units.

### In Conclusion

The other day, the question of what would have happened if this pandemic had occurred 20 years ago became a topic of discussion at TDK. Twenty years ago was right around the time I was posted to our factory in Europe. I heard from someone at the time that in the future, the age of internet shopping would arrive. This was when internet service for the home was just becoming more available, and I remember thinking, “Why would I have to do my shopping on the internet?” And yet here we are, 20 years later, with broadband connectivity, widespread use of smartphones, vast amounts of data being processed in the cloud, and AI performance evolving at an accelerated pace. I myself hold meetings online, purchase daily necessities on the internet, and order meals via smartphone apps. If the pandemic had occurred 20 years ago, I think we all would have been at a loss for what to do. I am amazed at the evolution of technology over the past two decades, and at its power.

## TDK, Pursuing Technology's Unlimited Possibilities

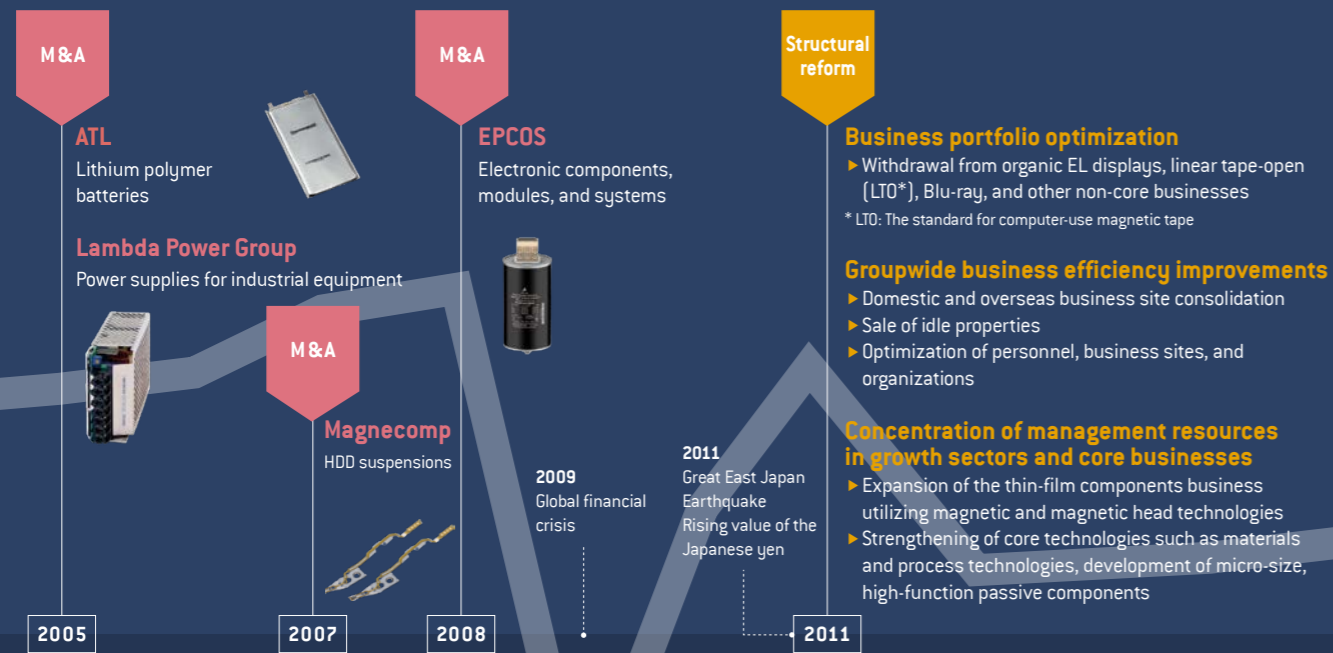
TDK has also transformed itself significantly over the past 20 years. Neglecting that self-transformation, however, there may be risks that we completely lose competitive advantage just as convention-defying technologies appear. That is why the TDK Group will continue moving forward as one, maintaining a sense of crisis, pursuing technology's possibilities, and working toward a sustainable society and TDK's own enduring growth.

October 2020

**Shigenao Ishiguro**  
President & CEO



## History of Self-Reform with a View to the Future



### Sowing seeds to grow with the expanding smartphone market

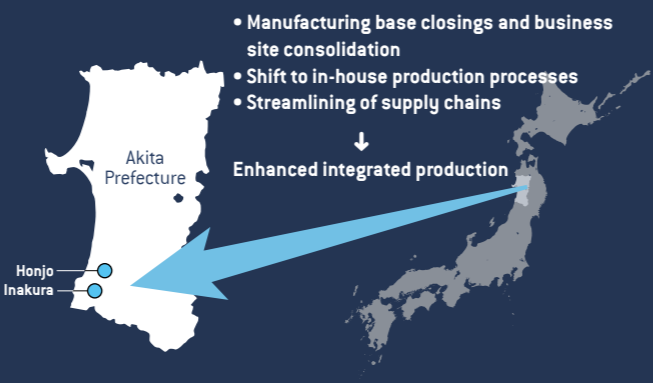
In 2005, TDK acquired ATL of Hong Kong, an entity possessing original technology in lithium polymer batteries. Purchased in 2008 was EPCOS AG (currently TDK Electronics AG, referred to as "EPCOS" and "TDK Electronics," respectively), which used its competency in high-frequency components and module technologies to forge a powerful presence in European automobile and industrial equipment markets. Combining their technologies with our own expertise in components and production technologies, we strategically moved to tap into the expanding market for smartphones.

### Structural reforms for overcoming difficulties

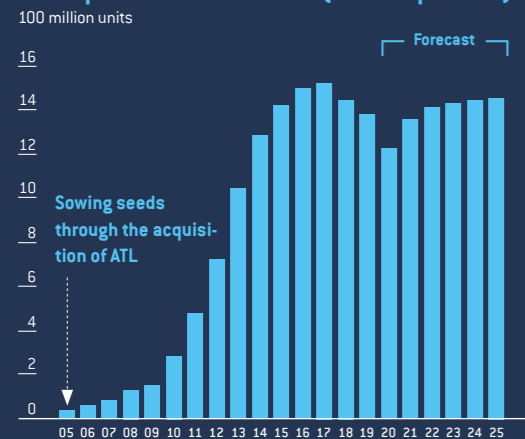
TDK was able to overcome difficulties including the swift decline in demand that occurred in conjunction with the global financial crisis starting in 2008, the Great East Japan Earthquake of 2011, flooding in Thailand, and appreciation of the Japanese yen to peak at ¥75 to the U.S. dollar. TDK implemented sweeping structural reforms to shore up its earnings framework. As a result of decisive measures, such as withdrawing from the recording media and other non-core businesses, concentrating management resources in core businesses, consolidating domestic and overseas business sites, optimizing personnel and business sites, and other strategies, performance figures rapidly recovered starting in fiscal 2013.

### Structural reforms to bolster integrated production

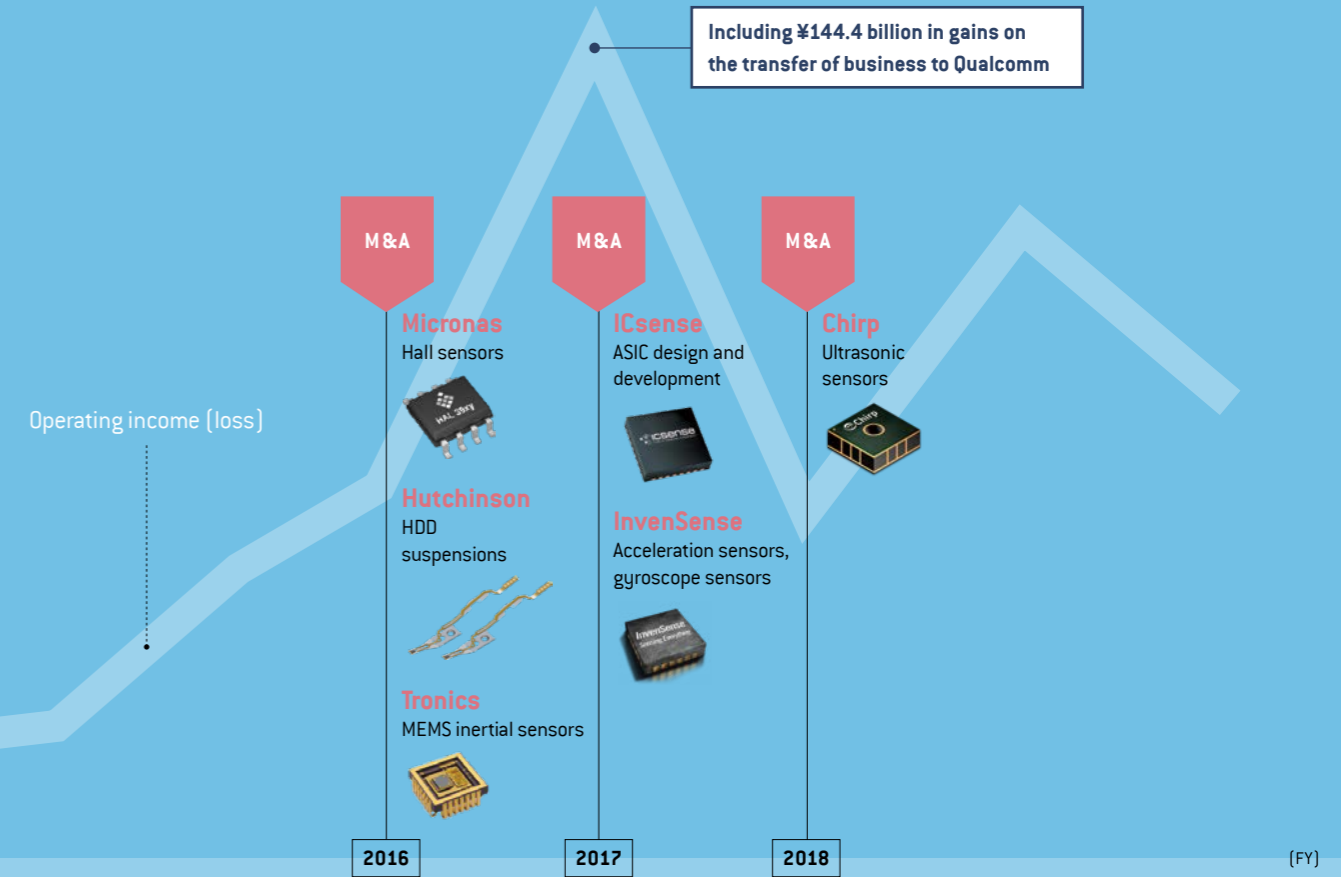
In Japan, we closed aging passive component manufacturing bases and consolidated business sites while adopting in-house production processes previously outsourced to collaborating plants. These initiatives focused on restoring *Monozukuri* power through integrated production. Overseas, we acted to simplify complex supply chains.



### Smartphone market trends (unit shipments)



Data provided by Techno Systems Research Co., Ltd.



### Fruits of structural reforms

Reviewing the results of the previous Medium-Term Plan (fiscal 2016 to fiscal 2018), sales set record highs each year, with structural reforms proving effective in strengthening the earnings structure and operating income also gaining ground. TDK cultivated ATL's lithium polymer batteries and EPCOS's high-frequency components, riding the tailwind of the global expansion of the smartphone market. This stance was accompanied by solid efforts to address demand for component miniaturization and modularization to keep pace with the steady move to higher smartphone functionality, honing our underlying technologies to be ready for the next stage of evolution.

### New strategic positioning to meet the next stage of social needs

Against the backdrop of redoubled demand for customization and modularization in the smartphone market, needs have grown for coordination of the various electronic components mounted in those products. To constantly supply customers with optimum solutions, TDK moved from traditional in-house self-sufficiency to cooperation with IC manufacturers, transferring one portion of our high-frequency component business to Qualcomm Incorporated (Qualcomm). Similarly, in gearing up to meet the next stage of social needs, we pursued sensor-focused M&As as a means to field a wide-ranging arsenal of technologies, while solid growth investments expanded sales to the automotive market.

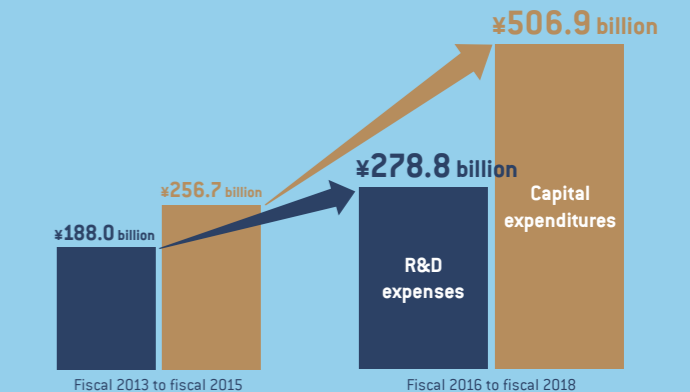
### Operating income ratio



### Sales to the automotive market



### Future growth investments



**TDK**  
 Medium-Term Plan Basic Policy  
**“Value Creation 2020”**  
 Leap to new heights by providing market-needed solutions based on our electronic components business

Using the growth foundations established through self-reforms implemented until now, TDK seeks to carry out a cycle linking Commercial Value with Asset Value centered on Social Value under the “Value Creation 2020” three-year Medium-Term Plan that started in fiscal 2019 and ends in fiscal 2021.



## Social Value

Starting point of value creation

### Aiming for a sustainable society and enterprise

- TDK will realize greater happiness and well-being in society through cutting-edge technologies.
- TDK will effectively utilize finite resources.
- TDK will be a global and diversified enterprise.

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## Commercial Value

Financial returns created from Social Value

### Management targets in the medium term

#### Net sales

- ▶ Results (fiscal 2018): **¥1,271.7 billion**
- ▶ Target (fiscal 2021): **¥1,650.0 billion**
- ▶ CAGR: **9%**

#### CAGR by segment

- ▶ Passive Components: **7%**
- ▶ Sensor Application Products: **35%**
- ▶ Magnetic Application Products: **2%**
- ▶ Energy Application Products: **8%**

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## Asset Value

Pursuit of capital efficiency to create additional Social Value

### Medium-term financial strategy

- To execute growth strategies and promote the improvement of our financial condition, we aim to achieve positive free cash flow while executing well-balanced capital allocation to investments, shareholder returns, and the reduction of interest-bearing debt.
- We aim to steadily recover previous investments.
- We will enhance companywide asset efficiency.

- Steadily recover growth investments executed toward transforming business earnings structure
- Execute further growth investments based on well-balanced capital allocation

#### Well-balanced capital allocation

- Growth investments
- Shareholder returns
- Repayment of interest-bearing debt



Negative free cash flow

Positive free cash flow

#### Medium-term financial targets

##### Capital efficiency

- Operating income ratio: over 10%
- ROE: over 14%

##### Shareholder returns

- Increase dividends stably through growth of income per share
- Target a 30% dividend payout ratio

##### Financial soundness

- TDK stockholders' equity ratio: over 50%
- Net cash

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## Progress of Value Creation 2020

### Consolidated results for fiscal 2020

The economic deceleration in China and the rest of the world due to worsening ties between the U.S. and China became clear in the third quarter. Effects from the spread of COVID-19 in the fourth quarter resulted in lower sales and income for the year.

The automotive and industrial equipment markets were significantly impacted by trade friction between the U.S. and China, and demand declined to a level substantially below expectations, and as a result, sales of passive components and conventional sensors were down. Despite the adverse demand environment throughout the year, sales were up in the ICT market, which has exhibited solid demand, and sales of lithium polymer batteries, high-frequency components, and other products for smartphones and base stations in particular increased, supported by growing 5G demand, and as a result, sales and profits were up and drove companywide earnings.

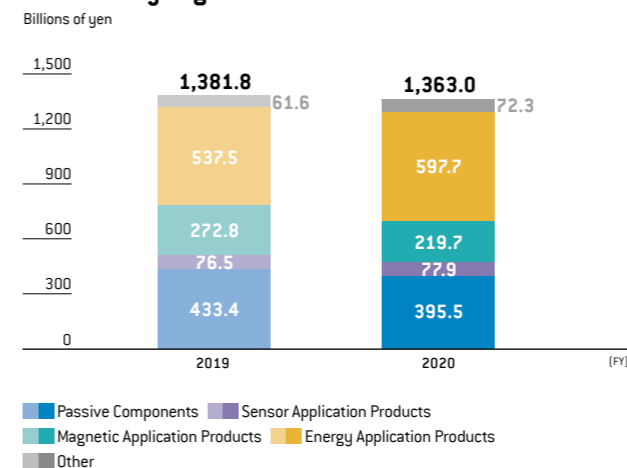
In conjunction with the protracted slump in demand in the automotive and industrial equipment markets, a determination has been made that a significant recovery in earnings in the short term will be difficult, and consequently, impairment losses of approximately ¥16.5 billion were reported on magnet and aluminum electrolytic capacitor manufacturing and related facilities. In addition, impairment losses of approximately ¥1.8 billion were reported on surplus facilities in conjunction with a review of development systems.

As a result of the above developments, operating income was down 9.2% year on year and the operating income ratio fell by 0.6 point to 7.2%. Net income attributable to TDK declined 29.7% year on year and earnings per share were ¥457.47, compared to ¥651.02 in the previous fiscal year.

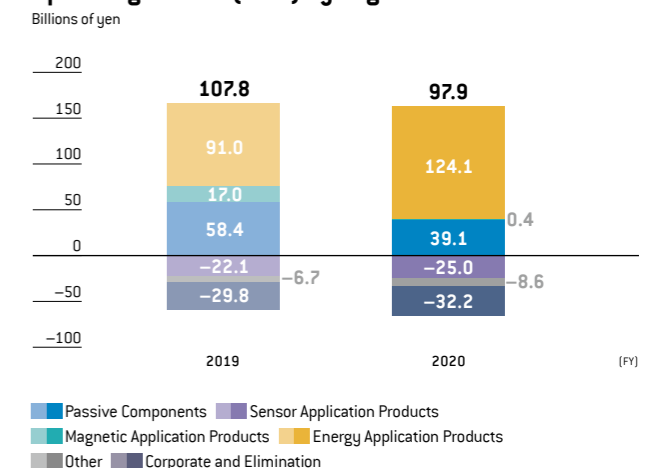
### Consolidated results for fiscal 2020

	Billions of yen	Fiscal 2019 full-year results	Fiscal 2020 full-year results	Year-on-year change	
				Billions of yen	%
Net sales		1,381.8	<b>1,363.0</b>	-18.8	-1.4
Operating income		107.8	<b>97.9</b>	-9.9	-9.2
Operating income ratio		7.8%	<b>7.2%</b>	-0.6 pt.	—
Income before income taxes		115.6	<b>95.9</b>	-19.7	-17.0
Net income attributable to TDK		82.2	<b>57.8</b>	-24.4	-29.7
Earnings per share (Yen)		651.02	<b>457.47</b>	—	—
Ex-rate	U.S.\$ (Yen)	110.94	<b>108.82</b>	Appreciated by 1.9%	
	Euro (Yen)	128.48	<b>120.92</b>	Appreciated by 5.9%	
Ex-rate impact on net sales and operating income		Net sales: Decreased by approx. ¥40.7 billion Operating income: Decreased by approx. ¥3.1 billion			

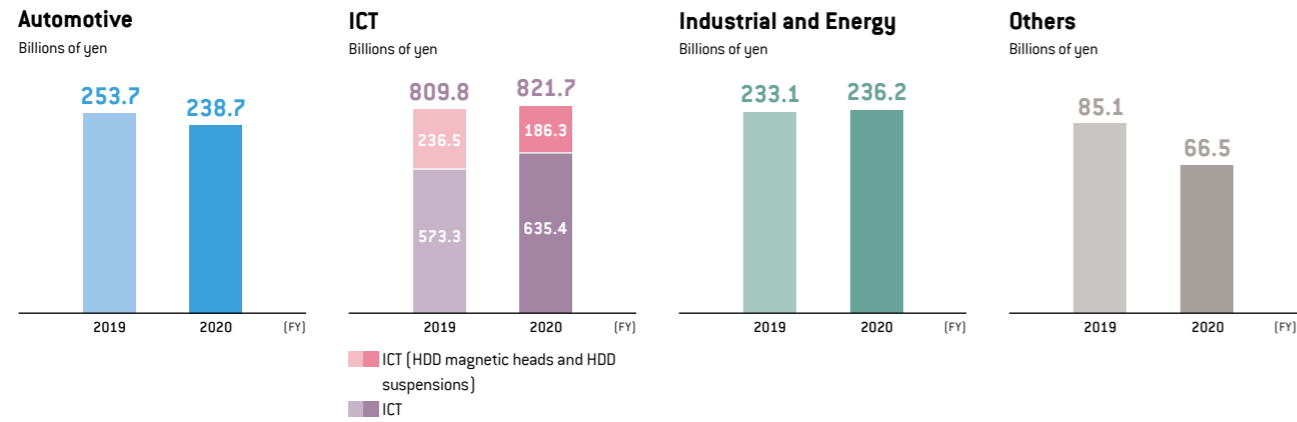
### Net sales by segment



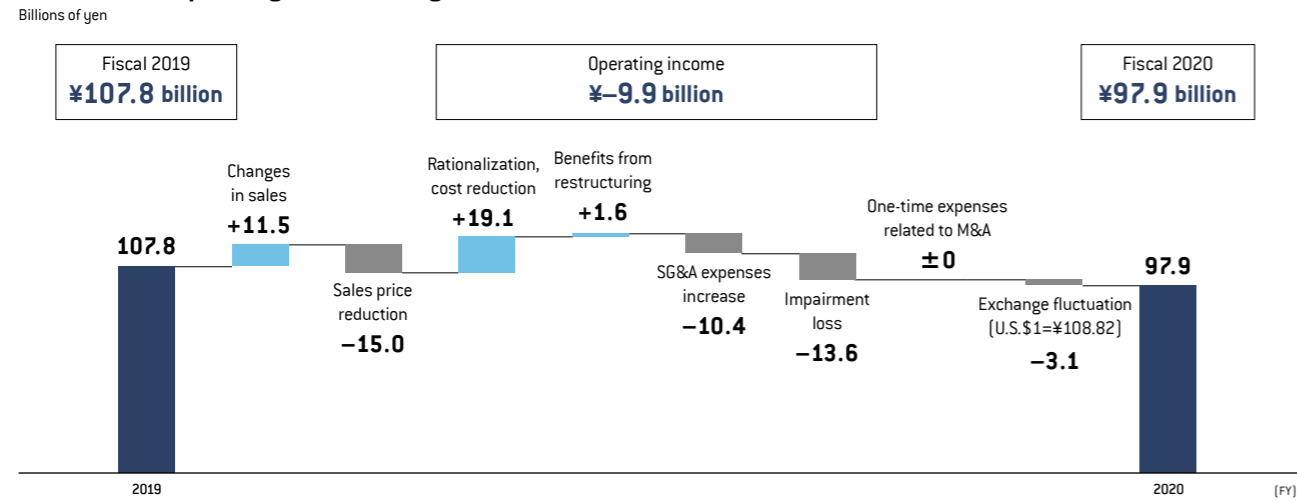
### Operating income (loss) by segment



### Net sales by market



### Breakdown of operating income changes



### Market forecasts for fiscal 2021

On a global basis, the GDP growth rate is forecast to decline 4% year on year. Although sales of xEVs (HEVs, PHEVs, EVs, etc.) are expected to increase, automobiles overall are forecast to decline by 14%. Demand for 5G smartphones is expected to grow, but the forecast was revised downward, and smartphones, which are representative of the ICT market, are forecast to decline by 9% as a whole. It is assumed that nearline HDDs, which are used in data centers, will grow, although the overall HDD market will contract. It is also projected that notebook computers and tablets, which are widely used for telework and telelearning, will be flat or show modest growth.

In individual segments, demand for passive components and magnetic application products is expected to decline.

Production trend	(Millions of units)	Fiscal 2020	Fiscal 2021	Year-on-year change
Automobiles*		87	75	-14%
Therein xEVs		4.4	4.9	+11%
Smartphones		1,365	1,240	-9%
Therein 5G smartphones		43	376	x9
HDDs		309	265	-14%
Therein nearline HDDs		56	62	+10%
Notebook computers		162	163	+1%
Tablets		122	127	+5%

\* The number of automobiles includes commercial vehicles.

### Consolidated results forecasts for fiscal 2021 (as of May 2020)

Net sales are forecast to decrease by 5% year on year in fiscal 2021. Of this decrease, it is estimated that the effects of the spread of COVID-19 will result in a decrease of approximately ¥180 billion annually compared to net sales calculated on the basis of the demand environment before the spread of COVID-19. Operating income is expected to fall by 28.5%.

P. 24: Message from the Corporate Officer of Finance & Accounting

### Consolidated results and dividends forecasts for fiscal 2021

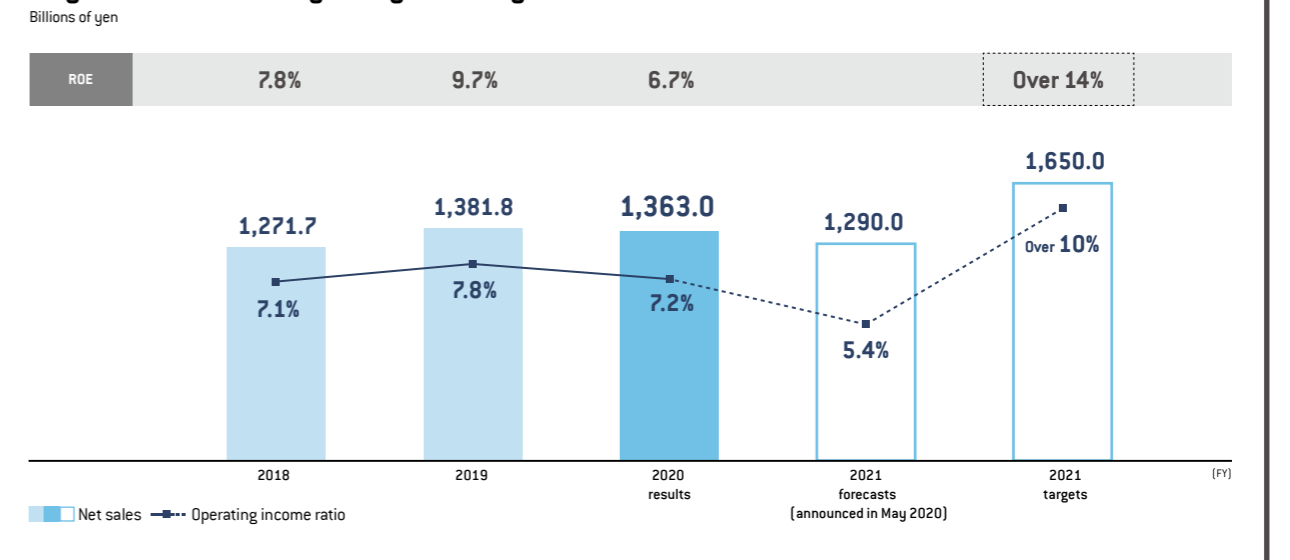
	Billions of yen	Fiscal 2020 consolidated results	Fiscal 2021 consolidated results forecasts (as of May 2020)	Year-on-year change	
				Billions of yen	%
Net sales		1,363.0	1,290.0	-73.0	-5.4
Operating income		97.9	70.0	-27.9	-28.5
Operating income ratio		7.2%	5.4%	-1.8 pt.	-
Income before income taxes		95.9	70.0	-25.9	-27.0
Net income attributable to TDK		57.8	48.0	-9.8	-17.0
Earnings per share (Yen)		457.47	379.99	-	-
Dividends per share (Yen)		Interim: 90 Year-end: 90 Annual: 180	Interim: 80 Year-end: 80 Annual: 160	-	-
Ex-rate	U.S.\$ (Yen)	108.82	105.00	-	-
	Euro (Yen)	120.92	117.00	-	-
Capital expenditures		173.4	180.0	6.6	3.8
Depreciation and amortization		125.0	140.0	15.0	12.0
Research and development expenses		117.5	120.0	2.5	2.1

\* TDK made upward revisions of its forecasts of consolidated financial results for fiscal 2021, interim dividends, and year-end dividends at the end of October 2020.

### Progress toward achieving the Value Creation 2020 targets

Both net sales and operating income in fiscal 2021 are expected to decline compared to fiscal 2020 due to effects of the spread of COVID-19, and as a result, it will be difficult to achieve the financial targets set for the final year of the Medium-Term Plan announced in 2018.

### Progress toward achieving management targets





We will implement steady measures to increase Asset Value while focusing on the next Medium-Term Plan.

**Tetsuji Yamanishi**

General Manager of Finance & Accounting HQ  
Executive Vice President  
Representative Director

### Fiscal 2020 review

In fiscal 2020, which is the second year of the Medium-Term Plan “Value Creation 2020” (covering fiscal 2019 to fiscal 2021), net sales declined 1.4% year on year and operating income was down 9.2%.

Sales, particularly of products for automotive and industrial equipment, were significantly impacted by the deterioration of the U.S.–China relations starting in the early part of the year, and demand was substantially below expectations. In addition, the spread of COVID-19 had an additional adverse impact in the fourth quarter. We estimate that COVID-19 reduced net sales by approximately ¥28 billion and operating income by approximately ¥12 billion. We determined that it would be difficult to improve the profitability of magnets and aluminum electrolytic capacitors in the short term due to the prolonged slump in demand in the automotive and industrial equipment markets, and we reported impairment losses of approximately ¥16.5 billion.

The ICT market, meanwhile, has remained firm and supported the Company’s overall financial results. We responded the demand in the growing ICT market would remain solid, particularly for lithium polymer batteries, in conjunction with the growth of telework and telelearning, and expanded applications in the Energy Application Products segment. As a result, the segment reached new record highs for both net sales and operating income. In addition, sales and income of high-frequency components were up as sales for smartphones and base stations increased in conjunction with growing 5G demand. There was some impact on demand as customers moved orders up in anticipation of disruption of supply chains, but manufacturing sites in the China region resumed operations at an early stage and we successfully diversified markets and our product and customer portfolios, enabling us to minimize the impacts of COVID-19.

We were able to minimize the impacts of COVID-19.

### Forecasts for fiscal 2021

In the plan for fiscal 2021 announced at the beginning of the year, we projected a 5.4% decrease in net sales and a 28.5% decline in operating income, premised on the continuation of the adverse management environment during the fiscal year. We estimate that the impact on net sales from the spread of COVID-19 will be approximately ¥180 billion. Our understanding of the management environment that serves as the premise for the plan is that in the automotive market, although xEV sales will increase, some time will be required for overall production volume to recover, and we revised our initial estimate from flat compared to the previous fiscal year to a decrease of 14%. In the ICT market, we project that the smartphone production volume will decline by 9% year on year, but demand for notebook computers and tablets will remain firm throughout the fiscal year as a result of increased telework and telelearning.

Results in the first quarter exceeded our initial projections, but we project that demand in the automotive market will decline even further from the initial projected level and that sales of passive components for 5G base stations will fall following a strong performance in the first quarter due to demand being pushed forward, and there are concerns regarding a decline in consumer sentiment. As a result, we expect the extremely uncertain business environment to continue in the second quarter and later, and we have adopted a conservative stance, leaving the initial forecast unchanged. We have been able to secure adequate fundraising capacity including the establishment of commitment lines, and by increasing ready liquidity, we have established a financial foundation that will be able to support business activities even in the face of sudden changes in the management environment.

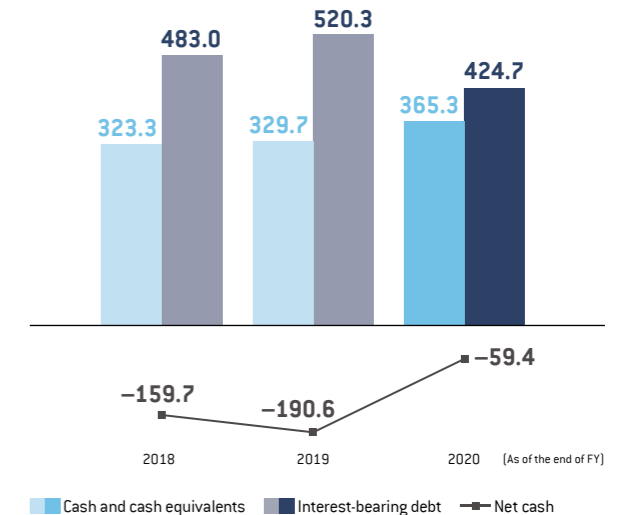
\* TDK made upward revisions of its forecasts of consolidated financial results for fiscal 2021 at the end of October 2020.

### Progress in Asset Value

TDK has transformed its business structures by making investments exceeding operating cash flows, and the Medium-Term Plan “Value Creation 2020” focuses on recovering investments that have previously been made. With enhancing Asset Value as one of our strategic pillars, we have set financial targets for an operating income ratio of over 10% and ROE of over 14%, and we are working to achieve stable positive free cash flow by improving

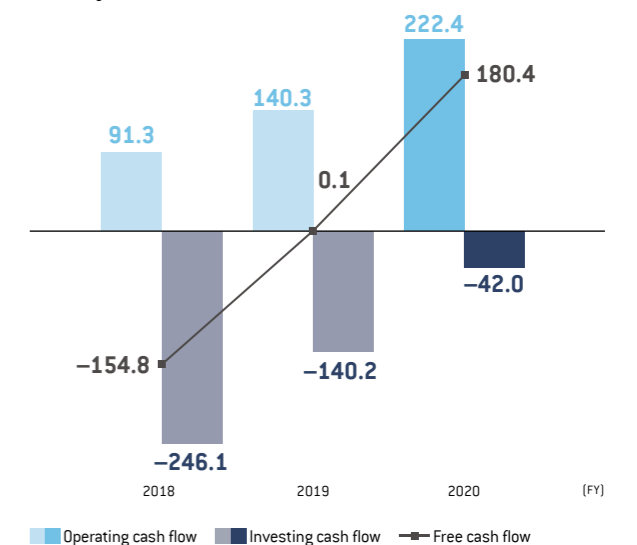
### Financial position

Billions of yen



### Cash flows

Billions of yen



profitability and allocating capital with a good balance between growth investments, shareholder returns, and repayment of interest-bearing debts. In fiscal 2021, however, we project that sales and income will be down, and it will be difficult to achieve our financial targets. Cumulative operating cash flows over the three years covered by the Medium-Term Plan ending in fiscal 2021 will be as much as ¥100 billion below the initial projection in the plan due to the declines in sales and income, but we still expect that free cash flows will be in the black for all three years of the plan. Meanwhile, debts have increased so that capital expenditures and research and

### Medium-term financial strategy (announced in 2018)

- ▶ Steadily recover growth investments executed toward transforming business earnings structure
- ▶ Execute further growth investments based on well-balanced capital allocation

**Well-balanced capital allocation**

- Growth investments
- Shareholder returns
- Repayment of interest-bearing debt

Negative free cash flow

Positive free cash flow

Financial Targets for Fiscal 2021, the Final Year of the Medium-Term Plan (announced in 2018)

**Capital efficiency**

- Operating income ratio: over 10%
- ROE: over 14%

**Shareholder returns**

- Increase dividends stably through growth of income per share
- Target a 30% dividend payout ratio

**Financial soundness**

- TDK stockholders' equity ratio: over 50%
- Net cash

- ▶ The spread of COVID-19 infections has had an impact and improvements of the financial structure will be delayed.
- ▶ During fiscal 2021 we will maintain positive free cash flow while preparing for future growth.
  - Make growth investments expected to expand future earnings on a priority basis
  - Maintain fundraising capacity while strengthening financial foundations
  - Implement shareholder returns with a target dividend payout ratio of 30% for the cumulative period of the Medium-Term Plan

development expenses can take place as planned, and as a result, the stockholders' equity ratio will fall below the target of 50% and the reinforcement of financial soundness has been delayed. Consequently, we also expect net cash flow will not achieve the target.

In fiscal 2021, we will prioritize growth investment for the future while securing reliable returns on prior growth investment to increase free cash flow. With regard to shareholder returns, in fiscal 2020, we increased the dividend by ¥20 per share compared to fiscal 2019 for an annual dividend of ¥180 per share. In light of the expected substantial decreases in sales and income in fiscal 2021, we plan to reduce the dividend by ¥20 per share for an annual dividend of ¥160 per share, but we will aim to achieve a three-year cumulative dividend payout ratio of 30%, the target set in the Medium-Term Plan, based on the level of free cash flow, and we hope to achieve a shareholder return in fiscal 2021 substantially in excess of dividend payout ratio of 30%.

\* TDK made upward revisions of its forecasts of consolidated financial results for fiscal 2021, interim dividends, and year-end dividends at the end of October 2020.

We will expand free cash flow through steady returns on growth investment.

### Issues relating to increasing Asset Value

We are identifying issues and formulating measures so that under the next Medium-Term Plan we can achieve those financial targets that have not been achieved.

We are aware that the low level of ROI is an important issue for increasing Asset Value. In fiscal 2020, company-wide ROI decreased by 1.9 points year on year to 5.6%. As the management environment undergoes rapid changes, it has become clear that the capital efficiency of a business can make a substantial difference in the degree to which it is affected by economic fluctuations as seen in the rising profits of businesses with high ROI and the substantial declines in profit by businesses with low ROI. In light of this, we are reinforcing our measures to raise ROI including implementation of stricter efficiency control in relation to investment. Specifically, we have positioned the diverse allocation of capital to individual businesses as a major management issue. The fundamental policy of TDK's Medium-Term Plan is to allocate after-tax income equally among reinvestment, shareholder returns, and repayment of debts so that we can create the financial structures that we seek. Lithium polymer batteries have exhibited steady growth with reinvestment of approximately 50% of EBITDA. If this level could be achieved companywide, we would be able to secure ample capital for both shareholder returns and ensuring financial soundness. Because we have allocated appropriate capital to

businesses with low ROI that continue to generate losses, however, the result has been that approximately 80% of EBITDA is allocated to reinvestment companywide. This highlights the low level of companywide ROI and the total asset turnover rate, and debts have increased as a result of maintaining shareholder returns with a dividend payout ratio of 30%, the target level.

Going forward, our policy will be to engage in diverse capital allocation according to capital profitability and business life stage based on a business portfolio categorized by a multifaceted assessment including future investment recoverability and business potential in addition to by an assessment by TDK Value Added (TVA) in comparison to returns on capital cost (weighted average capital costs multiplied by cost of invested capital) for each cash flow business unit (CBU), the smallest unit for which investment decisions are made, and finally to enhance overall portfolio investment profitability. Based on this approach to capital allocation, in fiscal 2021 we plan to give priority to prior investment in the lithium polymer battery business, investing approximately 50% of the ¥180 billion planned for capital investment, with emphasis placed on investment to increase production of mini cells and power cells, which are positioned as growth areas. We will implement a diverse allocation of capital including increased allocation to high-frequency components, which are expected to exhibit substantial growth in conjunction with growing 5G-related demand, and xEV and

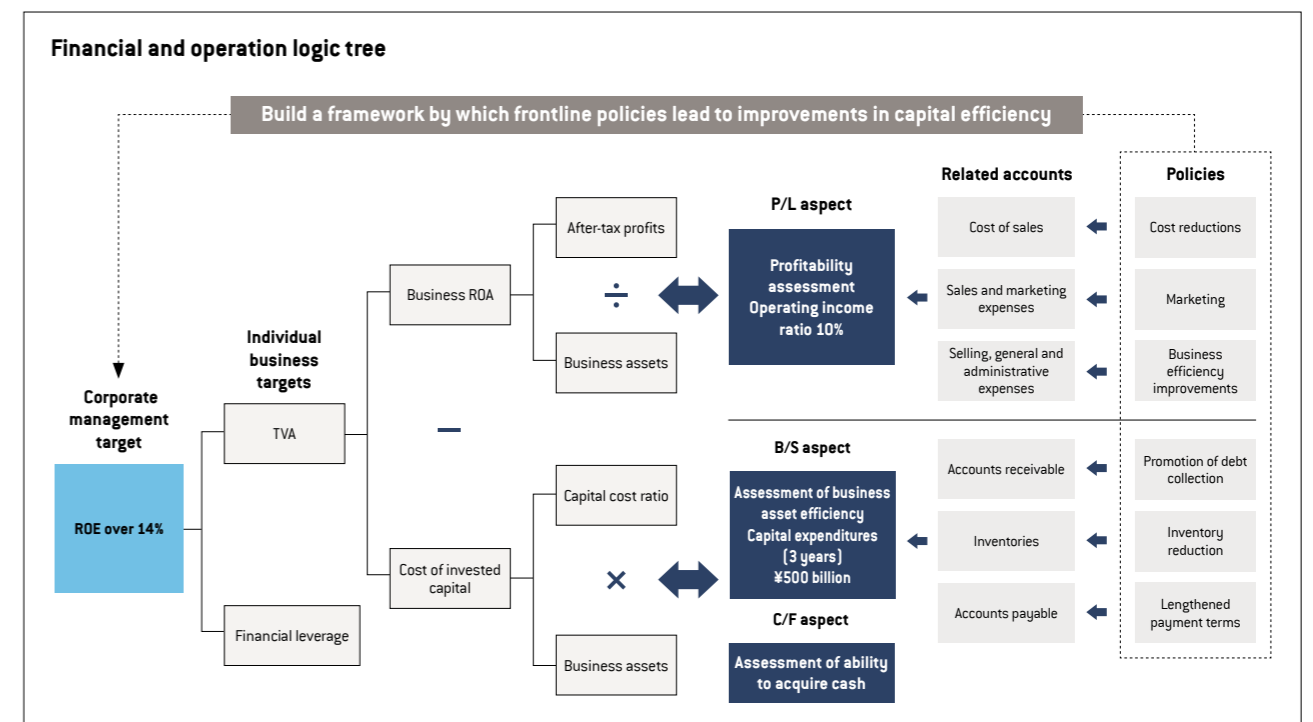
We will reinforce weighted allocation to businesses with high ROI and increase the efficiency of the portfolio as a whole.

ADAS-related business, which is expected to grow despite the sluggish overall automotive market.

TVA, which serves as an investment management assessment indicator, is linked to the operational key performance indicator (KPI) of each business, and we are comprehensively operating logic trees that incorporate measures into business sites in order to achieve those KPI. We will raise efficiency in terms of both the portfolio and operations.

We are also working to raise efficiency from the perspective of the balance sheet. TDK issued ¥100 billion of straight bonds in July 2020. The objective was to maintain the financial foundations that support growth while achieving leverage through the diversification of capital procurement.

Our policy is to solve the problems that businesses are facing in fiscal 2021 and to focus on the next Medium-Term Plan while creating and operating multifaceted structures to raise asset value.



Based on the recognition that our contribution to a sustainable society itself will lead to the continuous enhancement of our corporate value, TDK has identified social issues that we can solve by supplying unique value.

## Decarbonized society

As global warming becomes increasingly serious, developed countries and others are pressing ahead with various efforts, including a switch to renewable energy and a shift from existing energy systems to dispersed power sources, toward the realization of a society that is not dependent on fossil fuels.

## Low birthrate and aging

In 2018, the world's population aged 65 or over exceeded the number of children aged 5 or younger for the first time. The decline of the working-age population resulting from this rapid advance of aging accompanied by a low birthrate is an issue facing countries around the world, especially the developed nations.

## Smart cities

Projects are being promoted in countries around the world toward the establishment of smart cities, which upgrade the functions and services of cities and regions through utilization of the IoT and other cutting-edge technologies, help to solve various social issues, and realize more affluent lives for people.



## Information-utilizing society

New services and new businesses transcending industrial boundaries are expected to be created from the analysis of big data collected from actual situations through the utilization of 5G communications, the IoT, and AI.

## Mobility revolution

Against the background of the evolution of digital technology, communications infrastructure, and so on, a revolutionary change is dawning on mobility. New services are forecast to appear, including the rapid diffusion of xEVs, which will contribute toward reducing the environmental load, the upgrading of autonomous driving, and Mobility-as-a-Service (MaaS).

## Advanced medical care

The evolution of technology is also bringing about a revolution in the field of medical care, including the introduction of online consultations, changes in medical equipment, such as robotic surgery, and the provision of optimum methods of treatment for each individual.

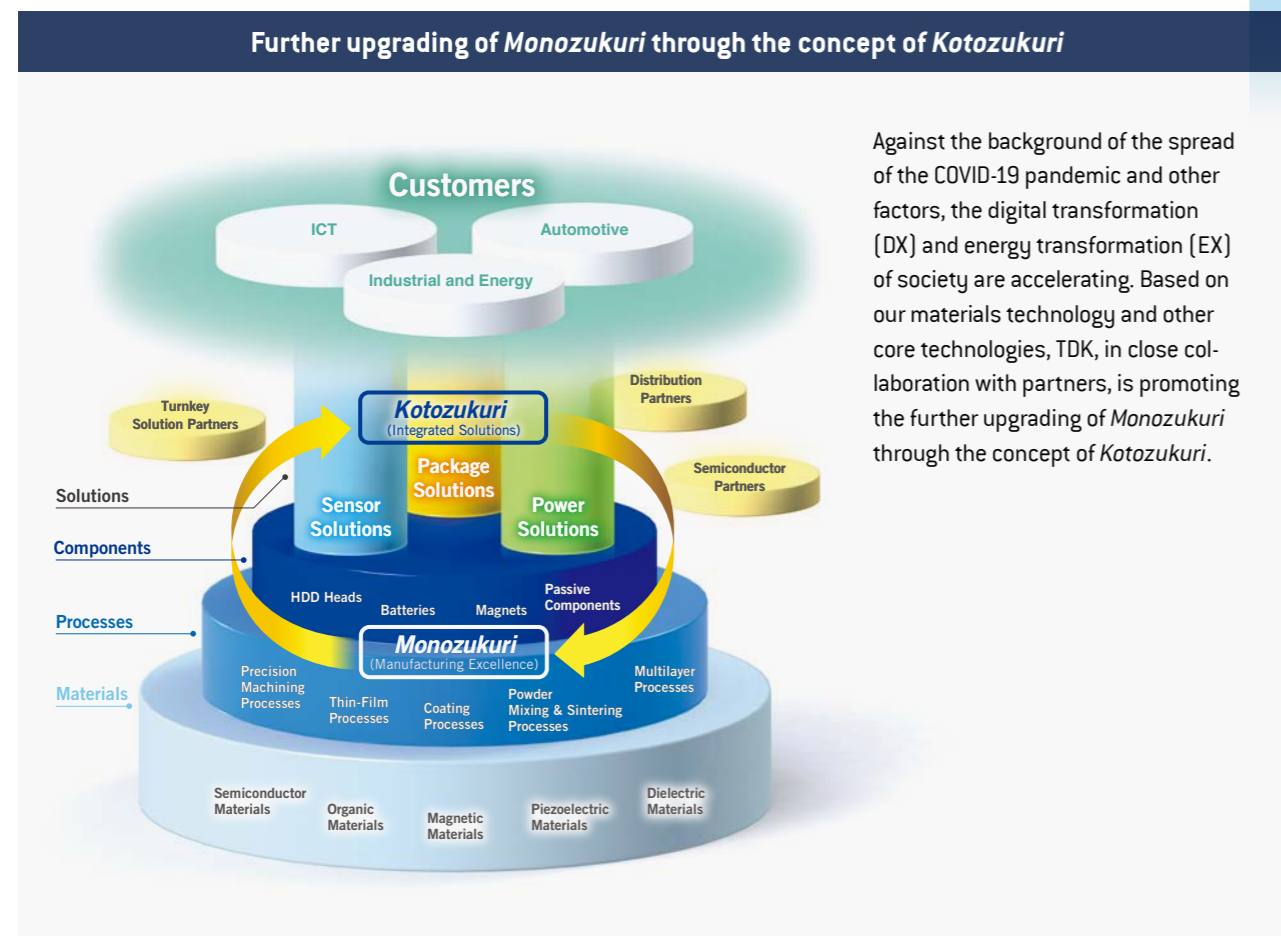


Lifestyles, business styles, and the form of *Monozukuri* are changing enormously as a result of the rapid development of digital transformation (DX) and energy transformation (EX), such as 5G communications, the IoT, AI, autonomous driving, and the expanded use of renewable energy. TDK will contribute to the DX and EX required by society through its state-of-the-art electronic components and original technologies.

## TDK's Fields of Activity



## How do we supply value?



## What kind of value will we supply?

**Values supplied by TDK**

- Contribution to improved efficiency of society through data utilization**
  - Communication networks, and improvement of miniaturization and convenience** (P. 32)
    - 5G-compatible high-frequency components
    - Compact and low-profile electronic components
    - Advanced mounting technologies
    - Reduced energy consumption
  - Analog-digital conversion through sensing and actuation** (P. 33)
    - Various sensor ICs
    - Various actuators
  - Dealing with labor shortages through automation, etc.** (P. 34)
    - Automation and robotics components
    - Development of healthcare and lifecare applications
  - Digitization of TDK** (P. 40)
    - Digitization of production activities
    - Digital marketing
    - Digital communication platform integration
- Contribution to energy and environmental issues**
  - Contribution to energy saving in society** (P. 36)
    - High-efficiency power supply equipment and power supply components
    - Products dealing with noise and heat
    - Advanced utilization of sensors
  - Contribution to the realization of a decarbonized society** (P. 38)
    - EV-related products
    - Products for renewable energy-generating equipment
    - Batteries for residential energy storage systems
  - TDK itself becomes an energy eco-friendly company** (P. 46)
    - Improvement of productivity
    - Promotion of thorough energy-saving measures
    - Switch to renewable energy

## For Sustained Value Creation

Sensitive antenna for detecting needs (P. 40)

Capability of creating solutions (P. 42)

Shortening of time to market/quality/volume (P. 40)

Respect for diversity and Group governance (P. 49, P. 53)

Global HR system project (P. 50)

Decision-making system with focus on speed (P. 56)

# TDK Products and Technologies That Support DX

5G communications, which are characterized by ultra-high-speed, high-capacity, multiple simultaneous connections, and ultra-low latency, will become new-generation ICT infrastructure that promotes DX in such areas as smartphones, high-definition live streaming, augmented reality (AR) and virtual reality (VR), and remote operation.

# DX

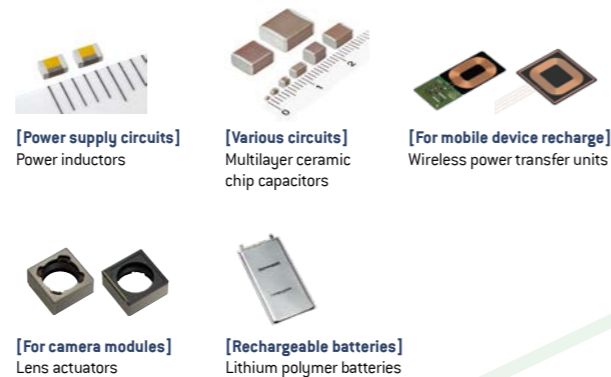
## 01 DX TECHNOLOGY Communication networks and improvement of miniaturization and convenience

What makes 5G communications possible are the characteristics of radio waves in frequency bands referred to as the Sub6 band (3.6–6 GHz) and the millimeter band (30–300 GHz). To support higher frequencies than 4G communications, more compact and lower loss electronic components and devices are needed. TDK products, which fuse materials technologies with high-frequency technologies, support communication networks in the 5G era.



**Technologies that make multiple simultaneous connections and ultra-low latency possible**

5G communications enable multiple simultaneous connections with as many as one million devices per square kilometer. This will expand methods of enjoying technology never seen before, such as watching sports events in a stadium on a 5G compatible smartphone from multiple angles or watching real-time AR on a head-mounted display. A key feature of 5G is ultra-low latency that reduces communications lag to effectively zero, making it possible to operate automobiles or machinery remotely without any sense of time lag.



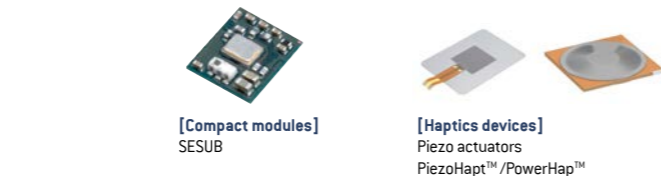
### Components for 5G communication base stations

5G communications will require the installation of numerous small cell base stations, and super multi-element antennas are key devices of those base stations. As a result, low-temperature cofired ceramic (LTCC) processing techniques used in the manufacture of high-frequency components such as band-pass filters (BPFs) have become a focus of attention. TDK has developed LTCC chip antennas with Antenna in Package (AiP) structures that integrate multiple antenna elements, BPF, and other components on an LTCC multilayer substrate.



### Achieving further miniaturization and slimming

TDK supplies compact modules for 5G communications using proprietary semiconductor embedded substrate (SESUB) technologies and LTCC processing techniques. The LTCC processing techniques used in the manufacture of high-frequency filters use ceramic sheets with different dielectric constants in the capacitor and inductor parts, but when they are laminated and sintered, problems such as warping and peeling occur due to differences in their coefficients of thermal expansion and other characteristics. TDK established advanced technology for simultaneous sintering of different materials and successfully commercialized compact, low-profile, and high-performance high-frequency components.



## 02 DX TECHNOLOGY Analog–digital conversion through sensing and actuation

TDK boasts the world's leading lineup of non-optical sensors, and by combining different sensors and integrating sensors with software technology, we are able to provide diverse and advanced sensor solutions. In particular, TDK achieves advanced DX solutions through sensing and actuation using MEMS technology and by integrating sensors with ICs that perform conversion between analog and digital.



**High-speed, high-precision sensing**

The latest AR and VR systems are able to integrate virtual and real spaces without any sense of abnormality in physical movement. This is made possible by position tracking technology that uses sensors, and a time-of-flight (ToF) method is used to measure the distance to target objects. TDK's ultrasonic ToF sensor is an ultracompact, ultrasonic sensor based on MEMS technology. Unlike infrared methods, the distance to target objects can be accurately measured regardless of lighting conditions and transparency.



### Ultra-Small Laser Module Contributes to Smaller and Lighter AR Glasses

AR is expected to become increasingly common in the future. The imaging devices of earlier AR glasses were large and heavy, and there were problems with appearance and comfort. TDK has created an ultra-small laser module that is about one-tenth the size of general laser modules using a visible light planar light-wave circuit by introducing high-speed and high-precision alignment and bonding technologies. This will contribute to making AR glasses more compact and lighter.



Ultra-small (8.0 × 5.5 × 2.7 mm) laser module achieves full color display with approximately 16.2 million colors



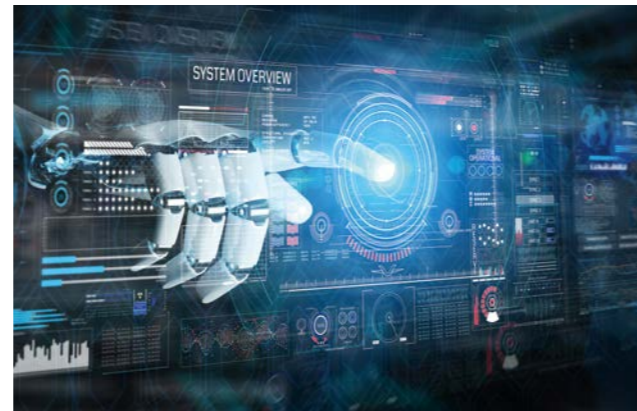
"Ultra-small full color laser module for AR glasses" won the CEATEC AWARD 2020 Semi Grand Prix for Elemental Technologies/Devices in the New Normal Society category.

DX TECHNOLOGY

## 03

### Dealing with labor shortages through automation and other measures

To address issues that modern society is facing including labor shortages brought about by a low birthrate and an aging population, healthcare and nursing care issues, and processing data that is undergoing explosive growth, TDK is contributing to DX development by increasing the efficiency and energy savings of robots, drones, data centers, and other applications.



Data Storage

#### Responses to the big data era and the challenges of higher processing speeds

In response to the rapid development of cloud computing and edge computing,\* TDK develops and supplies a range of products including the magnetic heads (TMR/PMR heads) that are key devices in HDDs used for data storage as well as flash memory. To respond to high-speed processing of data, which is increasing in volume explosively, we are developing advanced thermal assisted magnetic recording (TAMR) heads, microwave assisted magnetic recording (MAMR) heads, and dual stage actuators.

\* Edge computing is a method of computing that reduces delays and communications costs while improving security by processing information near the user (at the edge).



[HDD magnetic heads] TMR/PMR heads



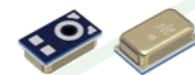
[Flash memories] Industrial SSDs and CFast cards



Robotics/ Drone

#### Robotics and drone technologies

In order to create more lifelike humanoid robots, TDK provides a diverse range of sensors, such as MEMS microphones, and advanced software. For drones, which can be called flying robots, enhancing safety and reliability to avoid accidents including collisions and falling are important issues. TDK's 7-axis MEMS motion and pressure sensors are advanced MEMS devices that integrate various sensors necessary for drone control and position information into a compact package.



[Sound sensors] MEMS microphones



[For detecting position and attitude] 7-axis MEMS motion and pressure sensors



Autonomous Driving

#### Autonomous driving technology support

For level 3 and higher autonomous driving, which allows the driver to leave the driving to the car and to engage in simple tasks such as checking email, advanced sensors and sensing technologies are needed to enable autonomous driving even in environments where GPS radio waves cannot be used, such as in tunnels. TDK supports autonomous driving technologies through the integration of diverse sensors and sensor fusion including motion sensors that integrate MEMS acceleration sensors, gyroscope sensors, and temperature sensors as well as TMR angle sensors, Hall sensors, and technology for high-speed processing of sensor data using software.



[For autonomous driving] MEMS gyroscope sensors



[Noise suppression components] Noise suppression filters



[For detecting steering angle] TMR angle sensors



### Healthcare and lifecare solutions

Populations are aging on a global scale, and consequently, improving the efficiency of healthcare and reducing the burdens on healthcare personnel are becoming important issues. TDK developed a remote monitoring system that combines wristband-type biosensors with a gateway. These devices are used for automatic measurements of the vital signs of seniors who live alone and hospitalized patients. TDK has also developed biomagnetic sensors with multiple arrays of high-sensitivity magnetic sensors. These compact sensors can detect biomagnetism including magneto-cardiograms at low cost in place of large and expensive superconducting quantum interference devices (SQUID).



Wristband-type biosensors

# TDK Products and Technologies That Support EX

Increasing the use of renewable energy and decarbonization are global issues that must be addressed for the realization of a sustainable society. TDK designs and produces products with the aim of achieving harmony with the global environment and provides a diverse range of EX solutions.

# EX

EX TECHNOLOGY

## 01 Contributing to energy saving in society

Reducing losses in conjunction with the conversion and transmission of energy is a long-standing issue in industrial society. TDK uses its accumulated core technologies in areas including wind and solar power generation systems, smart cities that use those power sources as key energy infrastructure, and home/building energy management systems (HEMS/BEMS) to contribute to the further advancement of EX.



### Contributing to renewable energy generation systems

Construction of magnet-type wind power generating facilities is advancing in various regions, but with conventional alternating current transmission, the longer the distance, the greater the electric power losses, so to address this problem, the use of high-voltage direct current (HVDC) transmission is increasing. With HVDC transmission, large-capacity capacitors are needed to stabilize the voltage. TDK's power film capacitors are highly durable, high-reliability power electronics capacitors used for HVDC transmission systems as well as industrial electric power infrastructure and other areas.



[For HVDC transmission systems]  
Power film capacitors



[For gearless wind power generating facilities]  
Large-sized neodymium magnets



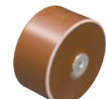
Renewable Energy

### Supporting transformer and transmission systems

Transformer and transmission systems use surge protection devices, such as varistors and arresters, and electronic components and devices, such as ultra-high-voltage ceramic capacitors, to stabilize the electric power quality. Varistors are elements that protect against transient excess voltage such as static electric discharges and lightning surges. Block varistors and strap varistors are used to protect transformer and transmission systems against excess surge current. Arresters are surge protection devices that operate by using the principle of arc discharge.



[Surge protection devices]  
Varistors



[For switches and circuit breakers]  
Ultra-high-voltage ceramic capacitors

### High-reliability power supply and power supply circuit electronic components

TDK's switching power supplies boast one of the world's highest shares of the market for standard power supplies used in industrial equipment, which requires high reliability. TDK seeks to develop that smallest possible high-efficiency power supplies unrivaled by competitors including power transformers and other devices created by using the ferrite cores developed by TDK and winding technologies. Many of TDK's own electronic components including aluminum electrolytic capacitors and film capacitors are used in the various circuits found in power supplies.



[Power supply circuits]  
Bidirectional DC-DC converters/  
AC-DC power supplies



[For inverters and converters]  
Aluminum electrolytic capacitors

### Entering an era when energy is used through "time shifts"

Use of "time shift" energy systems in smart cities and HEMS/BEMS is advancing. These systems generate electric power using renewable energy and store it in high-capacity systems such as lithium polymer batteries. TDK supplies batteries for use in residential energy storage systems, programmable power supplies used as test power supply systems for solar panels, bidirectional DC-DC converters for smart grids, and other devices.



Bidirectional DC-DC converters



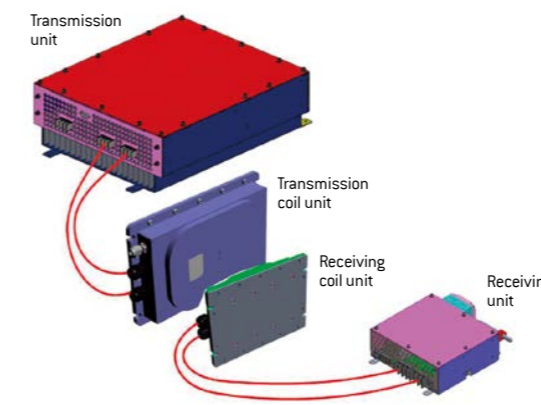
Programmable power supplies



High-capacity lithium ion batteries

## Wireless power transfer systems for industrial equipment

The electromagnetic induction wireless power supplies used in smartphones and other devices require close proximity and accurate alignment of the transmission coil unit and receiving coil unit. The magnetic resonance method solves this problem. TDK's wireless power transfer systems for industrial equipment can automatically charge the batteries in automated guided vehicles (AGVs) and logistics robots used in factories and other machinery without human intervention. TDK is also developing xEV wireless power transfer systems that use magnetic resonance.



Wireless power transfer in magnetic resonance systems  
For industrial equipment such as AGVs and logistics robots

EX TECHNOLOGY

## 02 Contribute to realization of a decarbonized society

The electrification of automobiles is advancing at a rapid pace with the aim of creating a decarbonized and energy-saving society. TDK supplies various power supplies that achieve high-efficiency energy consumption by xEVs and has an extensive lineup of environmentally conscious products that support safe and comfortable automobile use.



### Automotive power supplies and electronic components that contribute to increasing power consumption efficiency

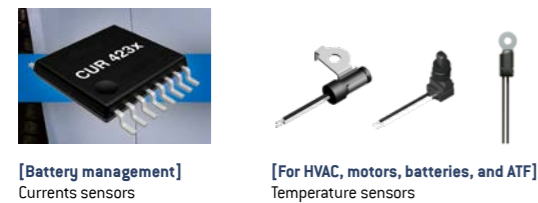
TDK supplies automotive power supplies, neodymium magnets used in drive motors, and various electronic components used in ECUs to support the global electrification of automobiles, contributing to higher power consumption efficiency by and comfort of xEVs. The DC-DC converter that transforms high-voltage electric power from the main battery to low voltage is a key component of an xEV. TDK uses low core loss ferrite material in the transformer core to create a compact device that greatly reduces thermal loss and is taking various other measures for energy saving by xEVs.



[Power supply circuits] DC-DC converters    [Power supply circuits] Onboard chargers    [For ECUs] MEGACAP [metal terminal MLCCs]    [For ECUs] Resin electrode MLCCs    [For drive motors] Neodymium magnets/ ferrite magnets

### Responses to safe and comfortable driving and the environment

The roles of sensors are becoming increasingly important for ensuring the safety and comfort of xEVs and responding to environmental issues. TDK provides various automotive sensors and sensor solutions including current sensors used in xEV battery management systems, Hall switches and open/close switches that use Hall sensors, position and rotation sensors, MEMS pressure sensors used for air pressure and gas detection, temperature sensors for detecting water temperature and exhaust gas temperature, and gear tooth sensors that detect crank angle.



[Battery management] Currents sensors    [For HVAC, motors, batteries, and ATF] Temperature sensors

### Creating convenient onboard infotainment

As autonomous driving technologies are developed, onboard infotainment systems such as connecting audio and navigation systems with smartphones are also making significant advances. TDK has an extensive lineup of automotive-grade electronic components, such as power inductors and capacitors for use in ECUs, as well as products for creating convenient onboard infotainment systems including thin piezoelectric speakers and ITO films for touch panels.



[For ECUs] Onboard inductors    [Thin piezoelectric speakers] PiezoListen™    [For touch panels] ITO films



## InWheelSense™ achieves battery-free tire sensing

Various automotive sensors are essential for safe and comfortable driving. TDK proposed InWheelSense™, a proprietary sensing solution that uses a piezoelectric energy harvesting device. An energy harvesting (EH) module installed on the wheel generates electricity from the weight of the vehicle, making it possible to install various sensors on the wheel, which previously was difficult because of the problem of supplying electric power to the sensor, and achieve wireless communications. The sensor can detect road and driving conditions in real time, thereby contributing to the safety and comfort of next-generation automobiles.



The EH Module, a TDK proprietary piezoelectric EH device installed between the tire and wheel.



"InWheelSense™" won the CEATEC AWARD 2020 Grand Prix for Digital City Planning in the New Normal Age category.

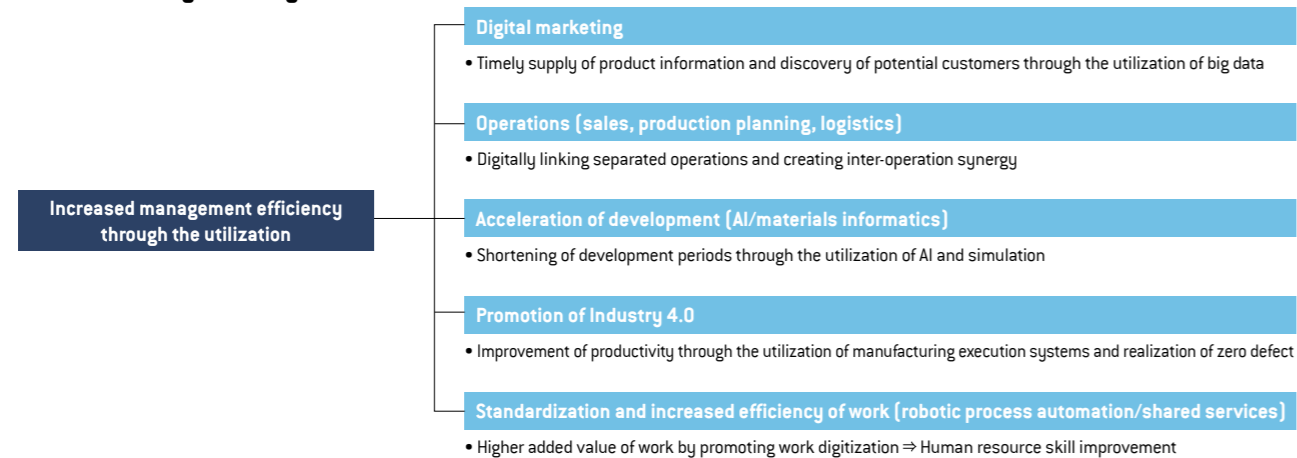
## To Continue Supplying Value

Against the background of the acceleration of digital transformation (DX) and energy transformation (EX), TDK will respond swiftly and accurately to the ever-changing demands of the market and, to continue supplying value to society, will transform itself into “Digi-TDK.”

### Promotion of Digital Management Conscious of “Time to Market”

To contribute to the DX and EX of society, first of all it is necessary for TDK to transform itself into an enterprise that can pioneer social change. As our own DX, the TDK Group is advocating the concept of “Digi-TDK,” by which we will promote digital management to utilize digital technology in all phases of design and development, *Monozukuri*, marketing, and administrative work, as well as tackling such initiatives as the digitization of production activities and the supply chain, digital marketing and agile development, and the establishment of digital communication platforms. Through these initiatives, we will realize greater management efficiency, accelerated development, improved productivity, and the standardization and increased efficiency of work, thereby enabling the supply of products with shortened time to market and transforming into an organization that can respond promptly to social change and contribute to the speedy solution of social issues.

#### TDK's Desired Digital Management

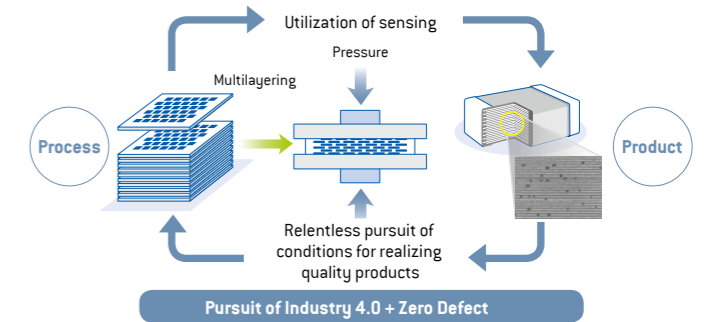


## Digital marketing to strengthen the customer/consumer experience (CX) perspective and create global synergy

In order to supply solutions that satisfy customers and to give them experiences going beyond their expectations, it is essential to have a CX perspective to think from the standpoint of customers and consumers, such as imagining and understanding the ways of use and purpose of the final product and the necessary specifications. The TDK Group is promoting digital marketing and endeavoring to supply timely product information and to discover potential customers through the utilization of big data. Furthermore, we aim to digitally link separated operations and create a global inter-operation synergy. Through the utilization of digital technology, we will build a setup throughout the entire Group in which every individual employee involved in product development and production enhances the CX perspective and mulls the question of what kind of value our products and technological capabilities can deliver toward solving social issues.

### Industry 4.0 + Zero Defect

In the future, electronics are bound to spread to every aspect of people's daily lives. The automotive industry, for example, is seeing the diffusion of xEVs (including HEVs, PHEVs, and EVs) and the practical advance of autonomous driving, and in the field of medical and healthcare, remote diagnosis looks highly promising. Since these industries are closely related to human life, the quality of electronic components is more important than ever. TDK's “Industry 4.0 + Zero Defect” initiative is an original manufacturing innovation that combines our drive to eliminate defective products with the Industry 4.0 concept.



### Progressively realizing *Arubeki-Sugata*

The *Arubeki-Sugata* (ideal process) movement arose out of self-motivated initiatives by employees involved in the thin-film coil manufacturing process at the Sakata Factory in Yamagata Prefecture, Japan, and it has since spread to all production sites.

The Inakura Factory East Site in Akita Prefecture is our main ferrite core factory that consolidates all ferrite core manufacturing processes from other factories. After thoroughly analyzing losses in the production process and eliminating all factors that could negatively affect quality, the process of sintering ferrite granules and creating finished products was automated. As a result, a line that formerly had a total length of 200 meters is now a mere five meters long, while production capacity has increased and lead time significantly shortened. Furthermore, quality risks have been successfully reduced. Another case in point is the Tsuruoka East Factory in Yamagata Prefecture, where thin-film coils (inductors) are manufactured. Processes with inherent quality risks were automated, and various other initiatives resulted not only in a reduction of quality risks but also an increase in productivity by 60%.

Simply trying to improve yields and reduce costs while disregarding remaining quality risks is not the proper way to improve manufacturing. Rather, the aim must be to thoroughly analyze the manufacturing process to identify and remove all possible instances of quality risks. This is what the *Arubeki-Sugata* activities within the framework of TDK's *Monozukuri* Innovation are designed to do.



Rather than having to sort out defective products from the final output of a line, thorough quality management covers the entire process from materials selection to completion of the product.

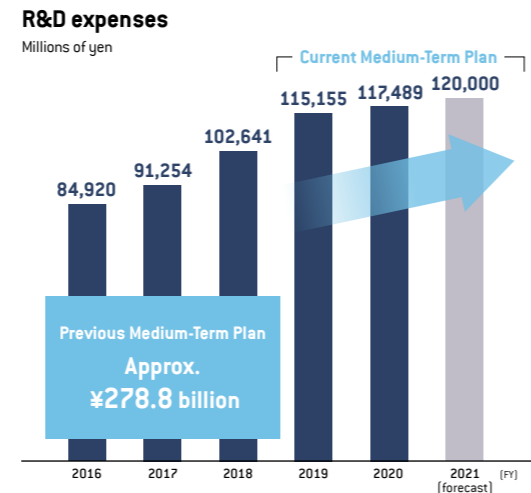
#### Inakura Factory East Site

Line length: **1/40**  
 Lead time: **1/10**  
 Production capacity: **4 times**



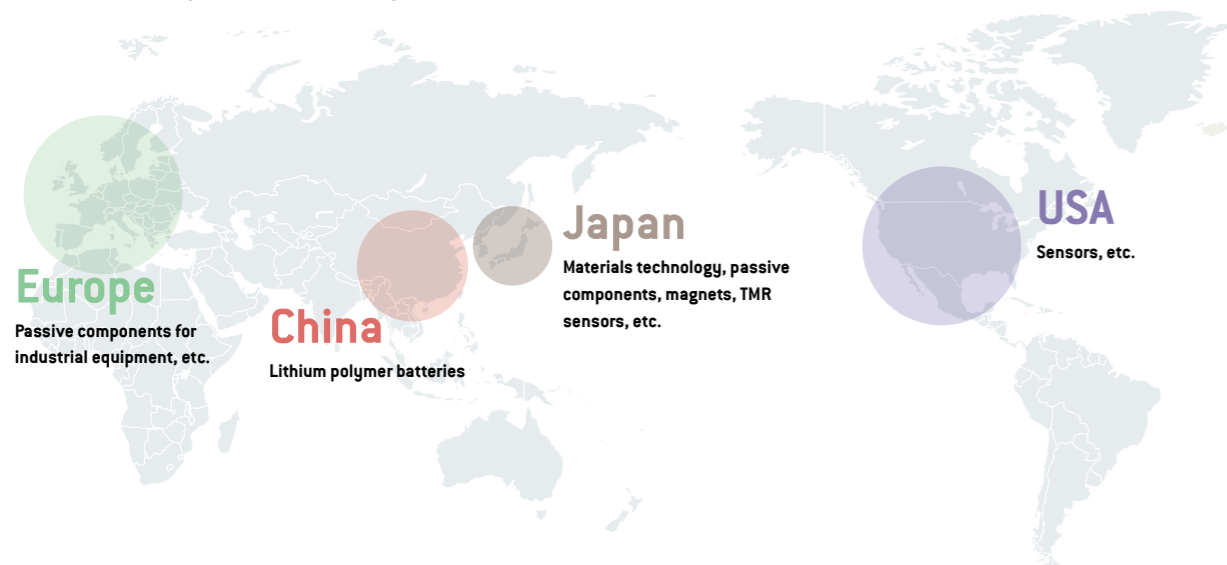
## Research and development for creating a stable future

The Medium-Term Plan "Value Creation 2020" (from fiscal 2019 to fiscal 2021), which followed a change in our business structure through M&As, encompasses higher R&D expenses than the preceding Medium-Term Plan (from fiscal 2016 to fiscal 2018). We are strengthening our foundation to realize strong organic growth. In the area of sensors, we have made an investment in creating solutions with high added value. In addition to existing lithium polymer batteries for smartphones, our R&D activities are targeting other fields as well, such as mini cells and power cells.



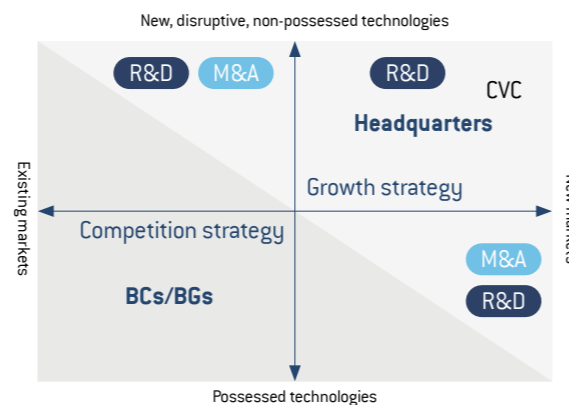
## Promoting development that leverages respective strengths of four global pillars

To meet the needs of customers in the respective areas, the R&D activities of the TDK Group are organized in a structure encompassing four geographically different locations. The Technical Center in Japan is the core base of global research and development, working on such core technologies as materials technology, passive components, and magnets. R&D facilities in the United States, Europe, and China are targeting areas related to products that are strong in their respective regions. These facilities are also working on product development, applications, and system development. In addition, some regional headquarters, which were newly established in the Group governance reform, and the Technology and Intellectual Property HQ at the headquarters in Japan, are collaborating globally to advance R&D beyond the framework of businesses and subsidiaries.



## Speeding up research and development and management

In sectors where we can rely on proprietary technologies to conduct short- to medium-term business operations in existing markets, we are realizing our strategies with Business Companies (BCs) and Business Groups (BGs). By contrast, technologies whose practical application is envisioned for five years or more in the future are the responsibility of the headquarters. When it comes to applying and diverting existing technologies to new markets or making forays into completely new markets that require new technologies, the headquarters will select suitable measures, such as M&As and the utilization of corporate venture capital (CVC). In this way, we will further perfect existing technologies, speed up the acquisition of new technologies, and accelerate the speed of management itself.



## Ongoing Improvements in Core Technologies

Since its inception, TDK has grown on the strength of five core technologies: materials technology based on ferrite; process technology used to realize materials' characteristics; evaluation and simulation technology to promote development designs; product design technology for merging electronic components into advanced and multiple functions; and production technology to support mass output.

TDK continues to steadily hone this core know-how with the aim of eliminating defects during the production process. The goal is the *Arubeki-Sugata* (ideal process) of *Monozukuri* aimed at realizing "Industry 4.0 + Zero Defect."

### 1 Materials technology

Researching the properties of materials at the atomic level and developing original electronic components and devices to meet advanced needs.

**Materials design technology**  
Realizing required characteristics through the blending of main materials and control of trace additives.

### 2 Process technology

Creating high-performance and functional products with nanometer-order control technology.

**Thin-film process technology**  
Forming thin film to create electrodes, coils, and head elements to manufacture HDD magnetic heads and thin-film electronic components.

## TDK's Monozukuri Foundations

### 3 Evaluation and simulation technology

Engaging in initiatives to enhance product functions, such as materials analysis, simulation of product structure, heat, and magnetic fields, and noise measurement and countermeasures.

**Evaluation and analysis technology**  
Conducting microstructure observations, atom distribution visualization, and other advanced processes.

### 4 Product design technology

Integrating electronic components to realize high-performance, multifunction electronic devices and optimum combination modules.

**Semiconductor embedded substrate (SESUB) technology**  
Embedding ICs, components, wiring, and other elements in substrate thickness to achieve modularization.

### 5 Production technology

Endeavoring to further raise quality, cost, delivery, and service (QCDS) and increase product strength via speedy responses to market changes.

**Equipment technology**  
Realizing outstanding products from outstanding production equipment. The development of original engineering methods and in-house creation of production facilities are the strengths of TDK's *Monozukuri*.

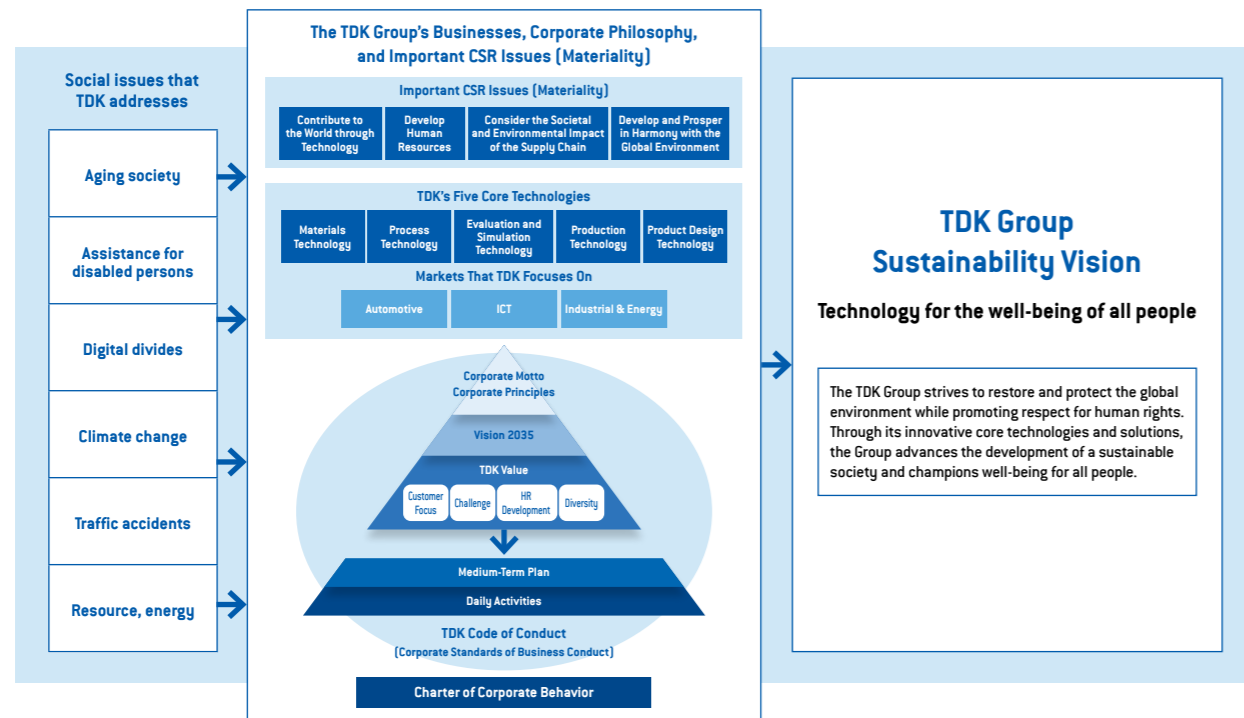
# Sustainability

In accordance with our corporate motto of “Contribute to culture and industry through creativity,” the TDK Group believes that contributing to a sustainable society through technology itself will lead to corporate growth. We will maximize the driving force of business combining both economic rationality and social rationality and strive to solve social issues through our business.

## Combination of a Sustainable Society and Corporate Growth

Various issues exist in the society surrounding us, including such environmental problems as climate change and the exhaustion of energy and resources, and such social issues as aging and the digital divide. The TDK Group seeks to solve these issues through our business and to achieve both a sustainable society and corporate growth.

As our corporate philosophy, the TDK Group abides by our corporate motto and corporate principles as the value standards for our daily conduct. Based on our corporate philosophy, Vision 2035, our corporate vision, states clearly the ideal image that TDK should aim for as we head toward the centennial of our founding, and TDK Value outlines the stance that all employees should adopt, regardless of their position, toward realization of the corporate philosophy and corporate vision. Adhering to Vision 2035, we aim to achieve various sustainability targets.



## Sustainable Society Created through Business

The TDK Group believes that leveraging our five core technologies, which are our strengths, in focus markets will lead to both the solution of social issues and corporate growth. Adopting a long-term perspective, we formulated the TDK Group Sustainability Vision after, among other things, reordering the social environment surrounding us, reconsidering the potential of our strengths and resources, and holding hearings with management and outside experts. This vision proclaims that by fully utilizing TDK’s proprietary core technologies and solutions, we will “advance the development of a sustainable society and champion well-being for all people.” Furthermore, in view of social issues, we stipulate four important CSR issues (materiality) in consideration of their impact from the perspective of both TDK and stakeholders, reviewing and setting important themes every year so as to facilitate more effective initiatives. We will continue to share this vision throughout the Group, put it into practice in our business, and consider and implement specific measures toward the realization of a sustainable and happy society.

Materiality	Key themes	Initiative items	SDGs
Contribute to the World through Technology	<b>Key theme 1</b> Addressing social issues by developing new kinds of products the world has not yet seen	<ul style="list-style-type: none"> <li>Strengthening of basic technology</li> <li>Promotion of technological development conscious of <i>Kotozukuri</i> (integrated solutions)</li> <li>Promotion of product development and sales of “first to market” products</li> </ul>	
	<b>Key theme 2</b> Pursue zero-defect product quality	<ul style="list-style-type: none"> <li>Construction of source control-type quality assurance system</li> <li>Manufacturing process innovation using IT and robots</li> <li>Continuous improvement of quality management</li> <li>Human resource development on a global scale</li> </ul>	
Develop Human Resources	<b>Key theme 1</b> Develop global human resources	<ul style="list-style-type: none"> <li>Expansion in range of collection and grasping of human resource information</li> <li>Introduction of global selection education</li> <li>Establishment of mechanism for fostering true global leaders</li> </ul>	
	<b>Key theme 2</b> Cultivate a corporate culture that respects diversity	<ul style="list-style-type: none"> <li>Consideration of expansion and improvement of accuracy of attribute information of human resources to be collected by the consolidated management database in order to link to measures</li> <li>Promotion of understanding of various cultures through the implementation of global and area-specific corporate human resource meetings</li> <li>Promotion of the improvement and maintenance of work environments that are easy to work in for diverse employees in each region</li> </ul>	
Consider the Societal and Environmental Impact of the Supply Chain	<b>Key theme 1</b> Consider the work environment at manufacturing sites	<ul style="list-style-type: none"> <li>Implementation of CSR self-checks and risk assessments in all production sites</li> <li>Improvement of activity levels through CSR audits by customers and voluntary CSR audits</li> <li>Continuous improvement of knowledge and ability through internal auditor training</li> </ul>	
	<b>Key theme 2</b> Consider the work environment of suppliers	<ul style="list-style-type: none"> <li>Promotion of global understanding of CSR procurement</li> <li>Improvement of management level of CSR procurement</li> <li>Construction of a system to understand the CSR efforts of outsourced suppliers</li> </ul>	
	<b>Key theme 3</b> Responsible sourcing of minerals	<ul style="list-style-type: none"> <li>Improvement of supplier ratio confirmed to be DRC conflict-free</li> <li>Continuous participation and collaboration with industrial organizations and related organizations</li> </ul>	
Develop and Prosper in Harmony with the Global Environment	<b>Key theme 1</b> Reduce environmental load throughout life-cycle stages	<ul style="list-style-type: none"> <li>Understanding of the environmental impact in each stage of the life-cycle perspective</li> <li>Establishment of CO<sub>2</sub> conversion methods for each environmental load</li> <li>Implementation of environmental load reduction activities in each stage of the life cycle</li> </ul>	
	<b>Key theme 2</b> Creating a framework for gauging product contributions	<ul style="list-style-type: none"> <li>Development and establishment of industry standards</li> <li>Awareness-raising activities for established standards</li> </ul>	

Please refer to the Sustainability Report for details.



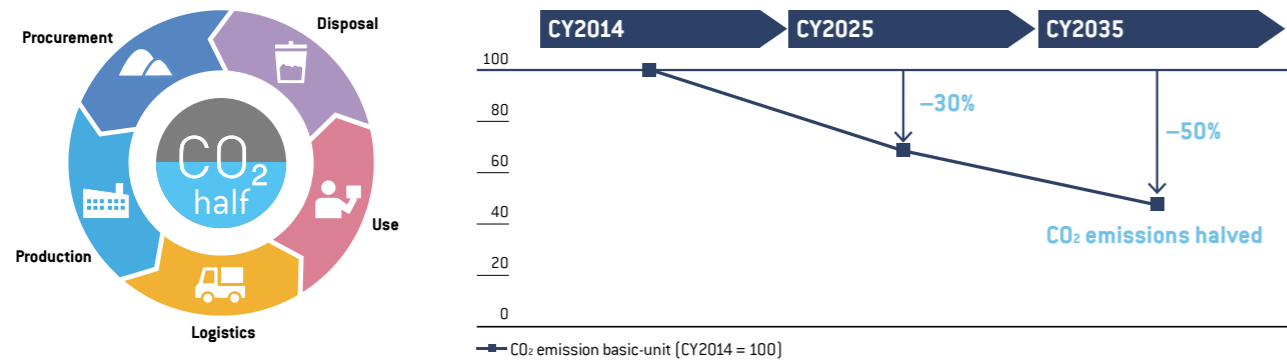
# Environment

Our efforts to address climate change and other environmental problems are an important management issue for the entire Group. In accordance with TDK Environmental Vision 2035, we will contribute to the realization of an energy-saving and decarbonized society by transforming TDK itself into “Eco-TDK” through the improvement of productivity, the thorough promotion of energy-saving measures, and a switch to renewable energy.

## Halving the CO<sub>2</sub> emission basic-unit in the life-cycle perspective

The TDK Group has compiled TDK Environmental Vision 2035, which defines the ideal image of TDK in 2035 as one of “operating with an environmental load that does not disrupt natural circulation” and advocates the goal of halving the CO<sub>2</sub> emission basic-unit in a life-cycle perspective by 2035.

In accordance with TDK Environmental Vision 2035, we also newly formulated TDK Environment, Health and Safety Action 2025 as an environmental basic plan until 2025. We are engaged in activities toward the achievement of action categories and targets decided in consideration of backcasting from TDK Environmental Vision 2035 and continuity and forecasting from TDK Environmental Action 2020. Furthermore, regarding health and safety as well, we have clarified new action categories and goals in writing with the aim of realizing the formation of safe and healthy work environments.



## Response to the TCFD

Please refer to the Sustainability Report for details.

In May 2019, we expressed our approval of the Task Force on Climate-related Financial Disclosures (TCFD), which makes recommendations relating to analysis of the impact of climate change on corporate finances and information disclosure. TDK believes that assessing the business risks and opportunities of climate change and appropriately disclosing information will be essential for harmonizing future corporate growth and a sustainable society and will take action as necessary.

### Reduction of CO<sub>2</sub> emissions at manufacturing sites

TDK has recognized energy-derived CO<sub>2</sub> emissions at manufacturing sites to be a major environmental burden for some time, and we are continuing to promote reduction activities.

### Reduction of CO<sub>2</sub> emissions from logistics activities

At TDK, we are working to reduce CO<sub>2</sub> emissions from logistics activities for the purpose of contributing to global warming countermeasures, improving transportation efficiency, and reducing transportation costs. In Japan, we set up a committee to improve energy conservation in distribution in CY2006, when the revised Energy Conservation Act was enacted, and we are implementing energy-reduction activities related to logistics.

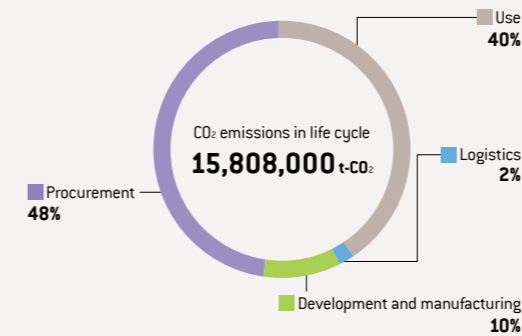
### Expansion of contributions to the reduction of CO<sub>2</sub> emissions from products

TDK introduced product assessment, whereby we assess the environmental impact of a product over its entire life cycle, in 1997. Only products approved by this screening are commercialized and distributed to the market. We are also promoting activities to reduce CO<sub>2</sub> emissions from products.

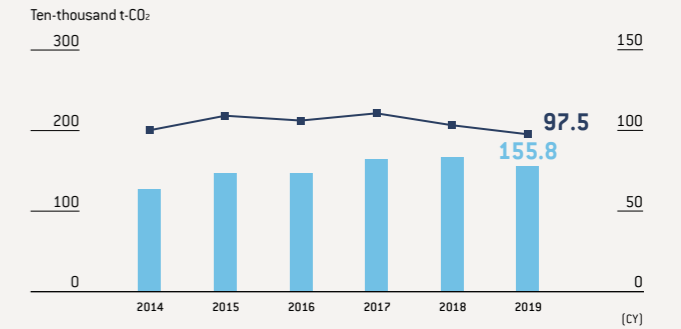
## Indicators and Goals

CY2019 goals	Achievements
To improve energy-derived CO <sub>2</sub> emission basic-unit in manufacturing sites by 1.8% from the previous year	Improved by 5.4% from the previous year
To reduce CO <sub>2</sub> emissions from logistics activities by 3.0% from CY2014	Reduced by 11.1% from CY2014
To improve product CO <sub>2</sub> emission basic-unit by 2.7% from the previous year	Improved by 6.9% from the previous year

### CY2019 breakdown of environmental load (CO<sub>2</sub> emissions)

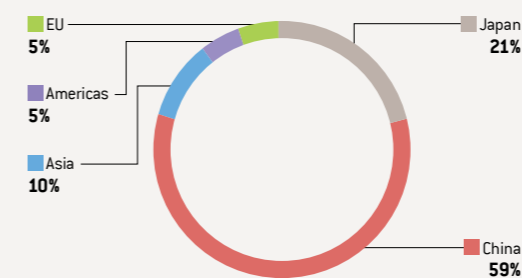


### Trends in CO<sub>2</sub> emissions at manufacturing sites (global)\*

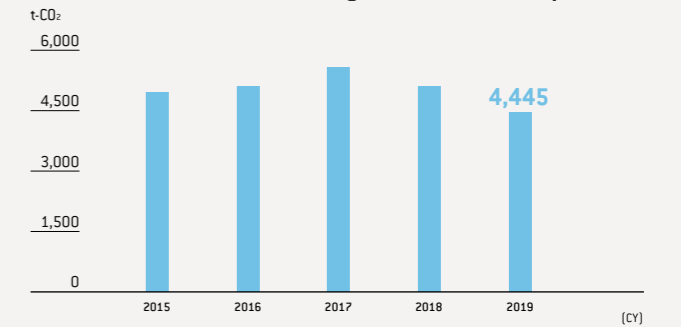


\* The measurement and calculation method and the numerical results of CY2019 were verified by a third party.

### CY2019 emission ratio by region (TDK Group total emissions)

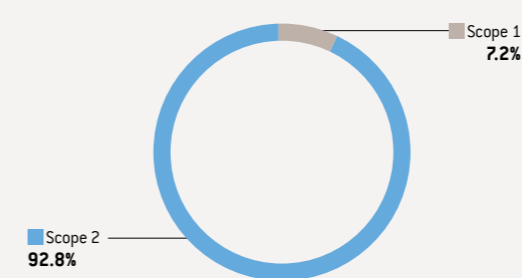


### Trends in CO<sub>2</sub> emissions from logistics activities (Japan)\*



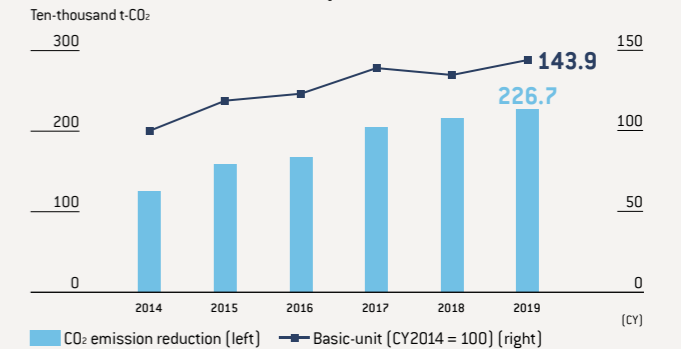
\* Calculated based on Japan's Energy Conservation Act.

### CY2019 emission ratio by scope (TDK Group total emissions)



Scope 1: Direct emissions from facilities owned and controlled by the Company  
Scope 2: Emissions from the production of energy consumed at facilities owned and controlled by the Company

### Trends in CO<sub>2</sub> emissions from products\*



\* The calculation method was reviewed by a third party.  
\* The product contributions have been calculated based on the internal guidelines compliant with the "TR62716 Guidance on Quantifying Greenhouse Gas Emission Reductions from the Baseline for Electrical and Electronic Products and Systems" of the International Electrotechnical Commission (IEC), the "Guidelines for Assessing the Contribution of Products to Avoided Greenhouse Gas Emissions" of Japan's Institute of Life Cycle Assessment, and the "Guidance on Calculating GHG Emission Reduction Contributions of Electronic Components" of the Japan Electronics and Information Technology Industries Association (JEITA).

## Human Resource Strategy

TDK is building a global-scale environment for spotting promising human resources and drawing out their abilities and potential. To continue identifying various social issues in the world and creating innovative products and services that anticipate social requirements, we are aiming to foster a corporate climate that respects diverse values and cultivate human resources with a variety of strengths.

### Human Resource Strategy from a Long-Term Perspective

Against the background of the acceleration of DX through 5G communication systems, AI, and so on, the business environment surrounding the TDK Group is changing dramatically. To respond flexibly to these changes, TDK engages in the recruitment, training, assignment, and management of diverse human resources equipped with the ability to generate innovations through the promotion of global recruitment, expansion of educational programs, optimization of our compensation system, and other measures. Our aim is to realize the sustained enhancement of our corporate value through the discovery, recruitment, and training of talented human resources and engineers on a global scale; the mitigation of labor shortages through the securing of personnel able to promote automation and robotics; the strengthening of our R&D activities; and productivity improvement.

#### Long-Term Human Resource Development: Attract, Develop, Place, and Manage Diverse Talents

The business environment will dramatically change in the next 10 years triggered by DX, particularly 5G and AI.  
The human resource function will support this change through the following measures:

##### Global talent development

Human resources will be even more scarce across key functions. We need to find talented people across the group worldwide and develop them as "Global Enablers."

##### Highly productive factories

Double productivity instead of doubling the number of factories and workers.  
Cope with increasing wages and upcoming retirements through more automation and robotics.  
Hire and grow production engineers who can drive automation and robotics across the Group

##### Highly productive staff

Hire and train people who can understand the AI concept and apply AI to optimize staff performance (eliminating daily routines and enhancing efficiency).  
Strengthen managerial capability at the Global HQ and leverage resources and functions at Regional HQs.

Customer-Centric  
Collaboration  
and Value Creation

##### Focused R&D talents

Engineers must be hired, trained, and managed strategically on a global scale according to the long-term direction from headquarters so as to increase the hit rate of R&D activities (e.g., organic material development, application development, algorithm development).

#### Secure and develop talents with the ability to manage diverse teams and to achieve innovation also through digitization

##### Talent acquisition

Global recruiting also for Global HQ from abroad  
Employer branding

##### Talent development

Human resource development programs, digital learning, English-language training, specialized training (software engineers, robotic engineers, data analysts, etc.)

##### Talent retention

Reform compensation schemes where appropriate



### Fostering of Corporate Culture Respecting Diversity

The TDK Group comprises numerous affiliated companies with business operations around the globe. We believe that we can continue generating innovative creativity by establishing an environment in which employees with diverse backgrounds can display their skills. This is crucial for realizing corporate growth. In April 2020, we formulated the TDK Diversity & Inclusion Policy.

#### Meeting People of All Kinds

#### Leads to Personal Growth

My job is to customize software products to meet the needs of customers around the world and to support resolving issues prior to the start of production. The most exciting things are learning a wide range of things both through my job and by working with others, plus working with new technologies. When you work overseas, it is important to step out of your personal comfort zone. In San Jose I am able to encounter people who have different cultures, languages and styles of working. Meeting those people and building trust have helped me to grow as a person. I will do my best to support customers with the idea of seeing things from "customer focus" in our TDK Value.



Suma Veerabhadrapa  
InvenSense, Inc.  
Sensor Systems Business Company  
MEMS Sensor Business Group  
Senior Staff Application Engineer

### Efforts to Respect Human Rights and Equal Opportunity: Diversity Promotion Action Plan

TDK includes provisions in the TDK Code of Conduct regarding respect for human rights and the prohibition of discrimination. We implement specific initiatives on respecting human rights, equal opportunity, etc., including awareness-raising education for employees and special counseling services, such as a telephone helpline. We have also established an array of systems designed to facilitate childcare and nursing care (childcare leave system, nursing care leave system, short-time work system, etc.). As a result of creating environments that facilitate work and promote workstyles that maintain a good work-life balance, TDK was certified by the director of the Tokyo Labor Bureau as a Compliance General Business Operator pursuant to the Act on Advancement of Measures to Support Raising Next-Generation Children and acquired the next-generation certification mark (commonly known as the Kurumin Mark) in CY2014. In addition, we have devised and have been carrying out the following two action plans in regard to the Act on Promotion of Women's Participation and Advancement in the Workplace, which was enacted in April 2016:

- The goal for the average percentage of women joining the Company from 2020 to 2022 is a minimum of 30%.
- Establishment of a dedicated department to promote the empowerment of women.

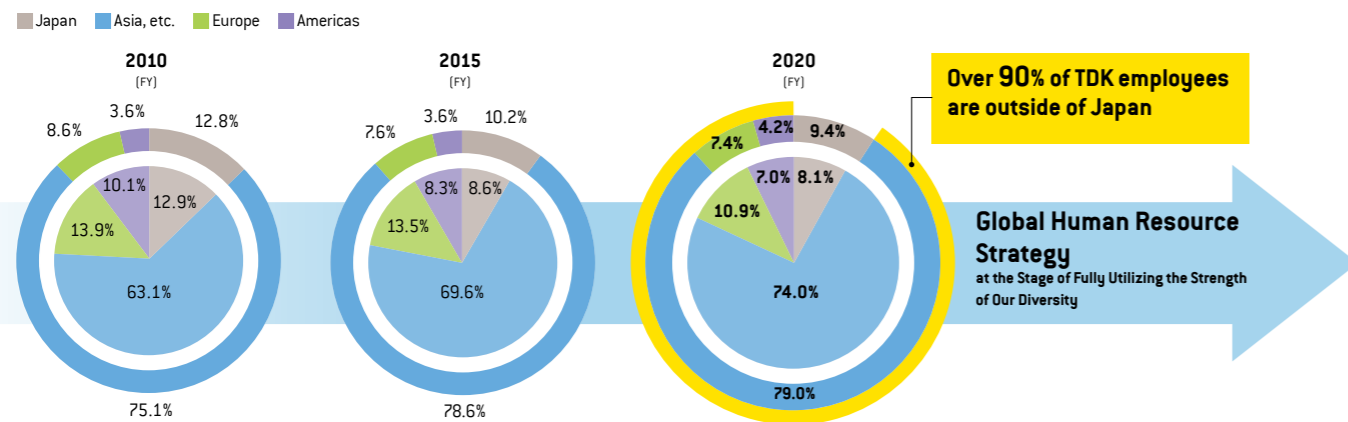
Going forward, we will review systems as necessary so that they are useful to our employees and introduce new systems that meet the needs of employees in view of social trends.



### Global Human Resource Strategy

TDK has been actively promoting globalization since the 1960s. Since the turn of the century, with our eyes on future markets, TDK has been boldly carrying out a reform of its business structure through M&As. TDK's post-merger integration policy of maintaining relations of equality rather than control and respecting corporate cultures has been hugely successful, and companies like ATL in Hong Kong and EPCOS (now TDK Electronics) in Germany have subsequently come to contribute enormously to our sales. In the background lies TDK's thinking that since acquisition targets are companies with not only outstanding technologies but also excellent managers, human resources, strategies, and operations, the probability of success of an M&A increases if these aspects are respected and managers of the acquired company are delegated authority.

#### Net sales (inside) / Number of employees (outside)



Over 90% of TDK employees are outside of Japan

Global Human Resource Strategy at the Stage of Fully Utilizing the Strength of Our Diversity

#### Examples of acquired companies

- 2005 ATL (Hong Kong)
- 2007 Magnecomp (Thailand)
- 2008 EPCOS (currently TDK Electronics, Germany)
- 2016 Micronas (currently TDK-Micronas, Switzerland)
- 2016 Hutchinson (USA)
- 2016 Tronics (France)
- 2017 ICsense (Belgium)
- 2017 InvenSense (USA)

The TDK Group comprises affiliated business companies with strengths in various domains, technologies, know-how, and so on. That is the essence of the strength of our diversity. As a result of TDK's efforts since 2016 to transform its business structure through M&As centering on sensors, the Company has expanded its business foundations to more than 30 countries and regions worldwide. In fiscal 2020, our overseas sales ratio was 91.9% and our overseas employee ratio was 90.6%. In the future, to supply the best solutions through various technologies and products, it will be necessary for us to vitalize collaboration among regions and among Business Companies. Furthermore, if we can make effective use of the different strengths in the TDK Group, we will be able to further boost the competitiveness of TDK as a whole through the interaction of our fortes. On the basis of this approach, as we have been doing so far, TDK will continue to forcefully promote a global human resource strategy aimed at enhancing the fluidity of human resources among Business Companies worldwide and discovering and nurturing human resources beyond national borders, while also bolstering the strength of our diversity by maintaining the independence of affiliated companies.



Andreas Keller  
Corporate Officer  
General Manager of Human Resources HQ

Through the human resource strategy from global and local perspectives, the TDK Group aims to become a company that continues to provide value to society by developing talented leaders and highly skilled employees.

Create new value by sharing a common vision within the entire group and respecting the individuality of each other

In the midst of the global energy transformation (EX) and digital transformation (DX) trends, the TDK Group is about to enter a new era. We continue to focus on *Monozukuri* (manufacturing excellence – provide high quality and value-added products through advanced technology). Furthermore, through accelerating *Kotozukuri* (integrated solutions – provide an excellent user experience that meets customers' needs through products), we will anticipate what society truly needs in the future and stay ahead of the times. To achieve success in these new challenges, we need to be more closely connected and linked to one another.

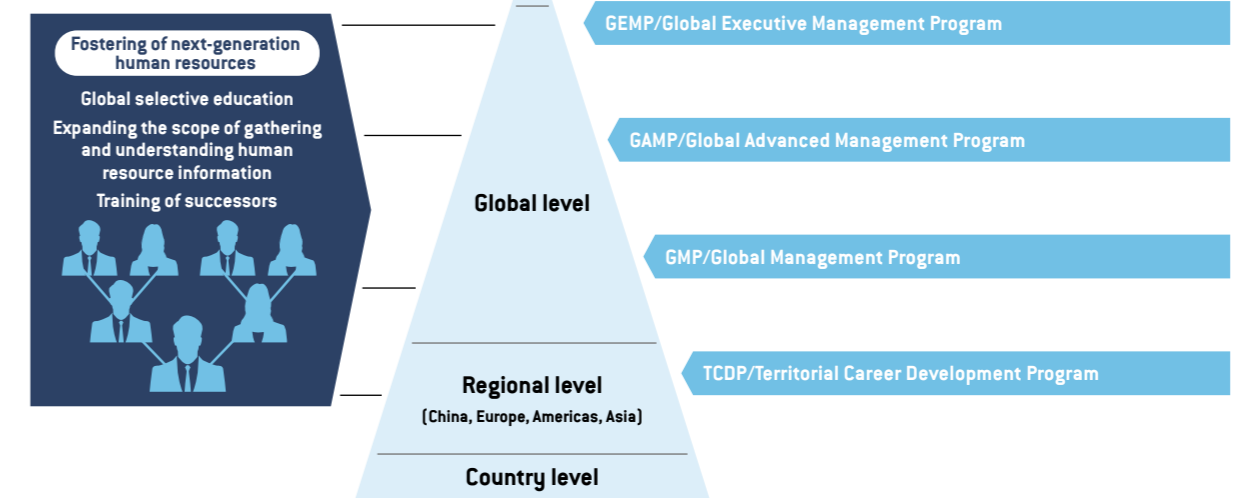
The TDK Group has a culture that values the individuality and working approach of every new consolidated subsidiary that has joined the Group, without forcing these Group companies to adopt a style similar to the Company while respecting corporate governance. This "cultural acceptance" has been a major reason why each Group company has been able to achieve growth as part of the TDK Group while leveraging its own individual strengths to the greatest possible extent.

To realize further growth while effectively using the strength of true diversity, we will promote our human resource strategy under the concept of "ONE TDK" by sharing our visions and experiences throughout the Group.

Our global human resource strategy aiming to discover and train human resources around the world is being promoted by the Human Resources HQ based in Munich, Germany. Mr. Keller is the general manager of the Human Resources HQ and also a corporate officer of TDK.



#### Global management development programs



**Achieve both the global common human resource development and the employee development system that enhances the skills and abilities required for employees at each workplace**

In 2019, global competencies for top management positions at the TDK Group were developed in order to strengthen our global approach as "ONE TDK." They define behavior characteristics that lead to high business performance, and also reflect our corporate motto, corporate principles, and founding spirit.

The global management development programs, which foster the next generation of talent, consist of four different programs from the junior to senior level. **P. 51** In these programs, participants can acquire leadership skills and generate new network and communication skills. It is a great opportunity to connect between the Group companies, share their practice and vision, and strengthen interactions.

On the other hand, for more than 100,000 employees worldwide, there are new efforts to realize "ONE TDK" at each site in each region.

Workers at manufacturing sites are very important for the TDK Group to make products with the high quality demanded by society, including customers. Because the skills required

for each product and manufacturing process are different, we provide various training programs for workers at each workplace to acquire the necessary skills, in addition to common training such as in product quality. We are also running a project to introduce a global learning management system to enhance these effects. It will be available 24/7, 365 days a year on all devices [PCs, mobile phones, and others] to be able to cover all geographical regions. It also includes a collaboration tool around learning topics, so employees can engage and find expert groups within specific areas. This will improve the individual skills of employees and also connect employees from around the world to realize "ONE TDK."

Under the spirit of "ONE TDK," we promote our global human resource strategy with the full synergy of the entire Group. We believe that the TDK Group can continue to create new value in society and achieve both a sustainable society and corporate growth.

**CY2019 Goals, Achievements, and Future Activities**

**CY2019 Goals and Achievements**

CY2019 goals	Achievements
<b>Continued implementation of the Territorial Career Development Program (TCDP)</b>	Successful completion of the TCDP in the four territories of Asia, the Americas, Europe, and Greater China (approx. 100 persons participated)
<b>New introduction of Advanced Management Program (AMP)</b>	Confirmation of the position of training programs implemented in some regions by the region or subsidiaries with the TDK Group as a whole
<b>Enhancement of English-language training program</b>	Implementation of an English-language proficiency test and English-language training globally

**Future Activities**

CY2020 goals
<b>Continued implementation of the TCDP</b>
<b>New introduction of the Global Advanced Management Program (GAMP)</b>
<b>New introduction of the Global Executive Management Program (GEMP) for newly appointed corporate officers and corporate officer candidates</b>
<b>Enhancement of English-language training program</b>

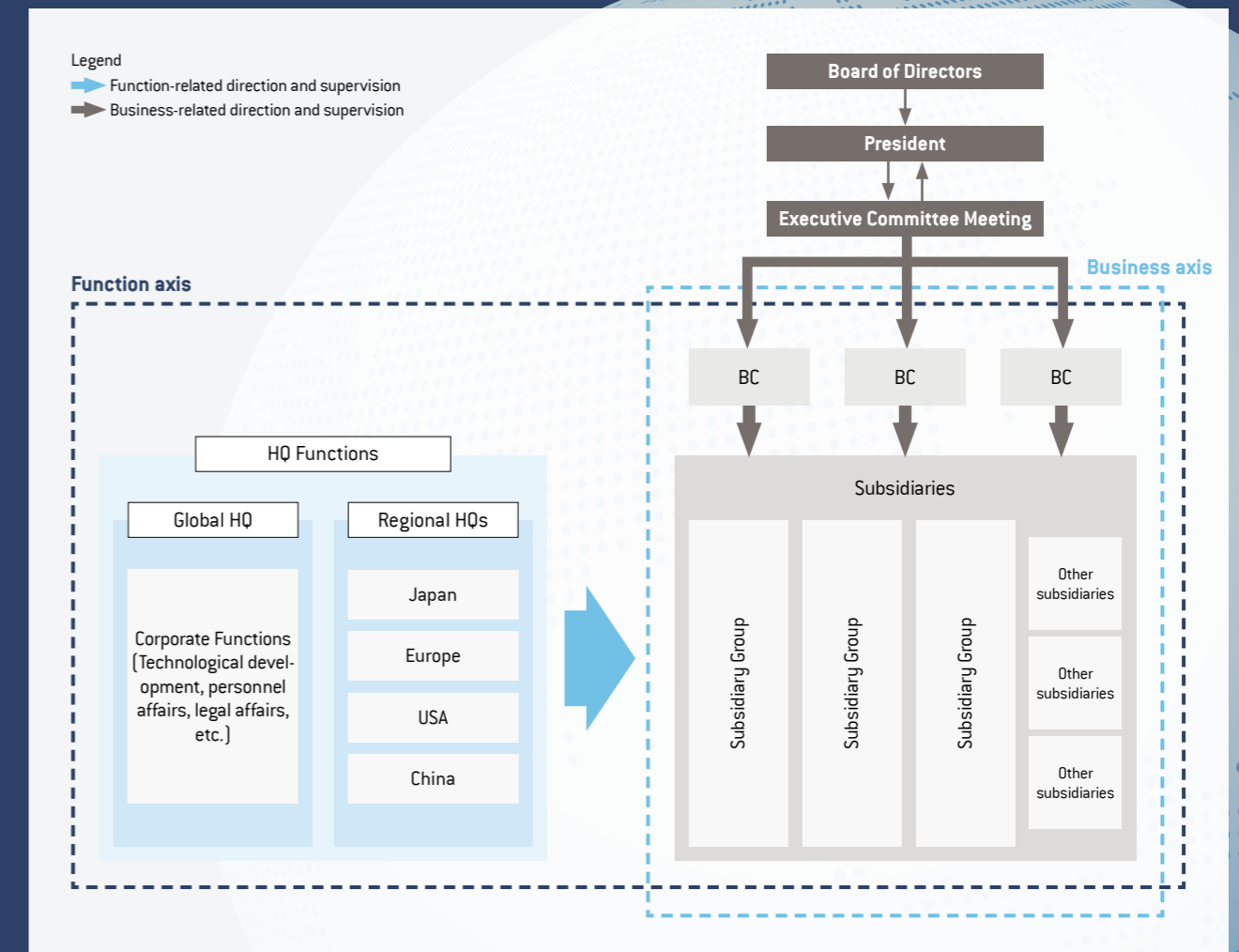
# IN DEPTH

## Strengthening of Group Governance

To survive in the coming era of intensive change, we believe it is necessary to strengthen coordination within the Group and raise the speed of management by swift decision making. Therefore, TDK has been promoting the strengthening of Group governance based on the theme of reform toward autonomous and decentralized organizations, advocating "Empowerment and Transparency"—that is, the transfer of authority to reliable people who share our goals and principles and the ensuring of transparency to stakeholders.

By holding business-related discussions from multilateral, impartial, and Groupwide perspectives in the Executive Committee Meetings, which are the premise for meetings of the Board of Directors, it has become possible for the Board of

Directors to concentrate on higher-level discussions and make quick decisions. In addition, we have implemented the structural reform of HQ functions and delegated authority to Business Companies (BCs) and Business Groups (BGs), which are the main executors of business, thereby enabling them to devote the utmost efforts to identifying with the needs of customers and working out *Kotazukuri*. A setup has been built in which such functions as technological development, personnel affairs, and legal affairs have been passed to the BCs and BGs, the Global HQ takes charge of horizontal functions promoting global coordination, and the Regional HQs in Europe, the United States, and China provide meticulous backup support in each region while maintaining close coordination with the Global HQ.



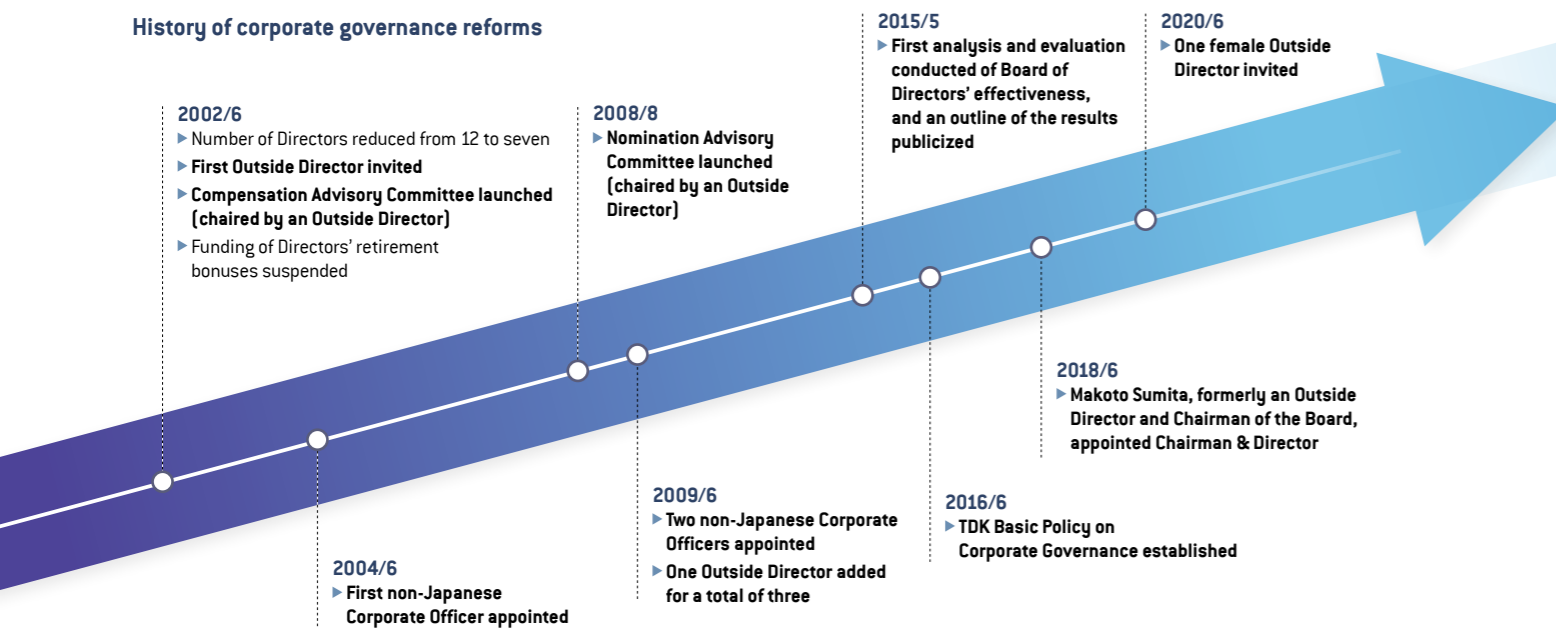
# Incessantly Enhancing Governance Linked to Strategy

TDK, which first embarked on globalization in the 1960s, remains constantly aware of global standards and has worked to strengthen its corporate governance systems. Today, TDK continues to consider measures needed to achieve long-term, sustainable improvement in corporate value.

## Factors behind strengthening of corporate governance

- Because businesses are affected by the impact of short-term market fluctuations, and also because it takes from several years to a decade to see the results of investments, governance is necessary to back medium- to long-term management judgments.
- As a global company, ensuring business moves forward smoothly requires a governance structure that is also compatible with the standards of countries in the West.
- With non-Japanese employees representing more than 90% of the workforce on a consolidated basis, TDK needs to consider further globalization at the officer level.

## History of corporate governance reforms



## Effectiveness Evaluation

### Progress in Addressing Issues Extracted in the Fiscal 2019 Effectiveness Evaluation

The Board of Directors listed the issues reported in fiscal 2019 as items to be addressed in the annual plan of the Board of Directors and worked on the improvement of such issues, and verified their progress through questionnaires, interviews, and discussions in the Board of Directors' evaluation this time.

#### 1. Deeper discussion of long-term strategy

At the Board of Directors' meeting held in February 2020, TDK's long-term vision, management strategy, and financial policies based on global social and technological trends for the next 10 years were reported and deliberated in detail. It was confirmed that the details of the long-term management strategy will continue to be reviewed and verified and will be fed back to each of the major business units and that they will work toward the formulation of the next Medium-Term Plan (from April 2021).

#### 2. Deeper discussion on succession plan in the Nomination Advisory Committee and sharing of basic ideas with the Board of Directors

The Nomination Advisory Committee was held a total of 10 times during fiscal 2020, with discussions focusing on the CEO and Corporate Officer succession plan. The activities of the Nomination Advisory Committee and its basic approach to the succession plan were reported to the Board of Directors' meeting held in March 2020, and it was confirmed that the Nomination Advisory Committee will continue to discuss and engage in activities related to the succession plan (including Outside Directors/Audit & Supervisory Board Members).

POINT

## 1. Organizational design in pursuit of practical efficiency

- TDK has pursued an **optimal balance** between monitoring-type governance (separation of management execution and supervisory functions) and management-type governance (Directors also serve as Corporate Officers).
- **TDK appointed an Outside Director as Chairman & Director.**
- TDK established the Nomination Advisory Committee, **chaired by an Outside Director and comprising a majority of Outside Directors.**
- The Nomination Advisory Committee **contributes to ensuring the appropriateness of nominations** of TDK's Directors, Audit & Supervisory Board Members, and Corporate Officers and **to transparency in the decision-making process.**

POINT

## 2. Selection of Outside Directors consistent with strategy

- TDK **has established "items to be verified regarding independence"** to ensure the independence of Outside Directors and Outside Audit & Supervisory Board Members.
- Outside Directors have a **deep understanding of technology and knowledge of global management.**
- Outside Audit & Supervisory Board Members **comprise professionals from important and diverse fields of expertise**, including finance, legal affairs, internal control, and risk management.



POINT

## 3. Remuneration system linked to corporate value

- The system was designed with an emphasis on **linkage with short-term as well as medium- to long-term results.**
- TDK constantly pursues the formulation of a competitive remuneration system to secure diverse and excellent human resources.
- TDK aims to set remuneration at levels enabling the maintenance of competitiveness compared with companies in the same industry and companies of similar scale in other industries.

POINT

## 4. True diversity

- **Eight of 19 Corporate Officers (42%) are non-Japanese.**
- TDK **has established the Human Resources HQ in Germany** with the aim of further utilizing global human resources.



## Future Issues

As a result of the Board of Directors' evaluation this time, the following three issues were recognized as the main issues that the Board of Directors should address in the future.

### 1. Continuous verification of long-term management strategies

Since the long-term management strategy is extremely important, because it indicates the direction and strategy of the Company in the future, the Board of Directors should continue to review, deepen deliberations on, and verify the contents reported at Board of Directors' meetings.

### 2. Strengthening Group risk management

The risks to which global companies are exposed in today's global environment are diverse, and TDK should further strengthen its management of risks and countermeasures for the entire TDK Group.

### 3. Improved communication among Outside Directors/Audit & Supervisory Board Members

With the election of Outside Directors/Audit & Supervisory Board Members, communication among Outside Directors/Audit & Supervisory Board Members, including newly appointed Outside Directors/Audit & Supervisory Board Members, became more important and was expected to be further enhanced.

## Structural design emphasizing **long-term** enhancement of corporate value

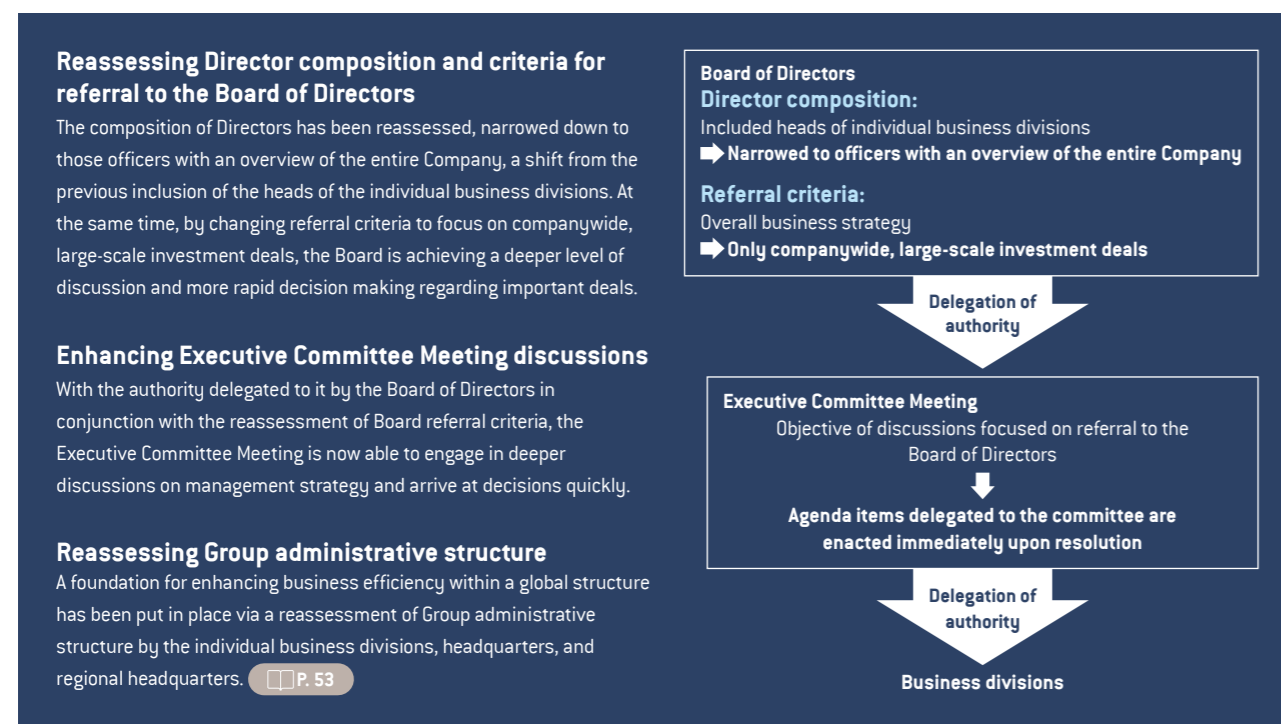
### Emphasis on effectiveness over form

Our basic policy is to have a small number of people in the Board of Directors so as to expedite the management decision-making process. The Articles of Incorporation stipulate up to 10 Directors; at present there are seven.

TDK has put Inside Directors in charge of non-business divisions and is working to increase the pace of decision making and reinforce both monitoring and supervisory functions while designing structures that place greater emphasis on enhancing corporate value rather than form in all areas, including the processes related to nomination and compensation and policies on the appointment of outside officers. TDK has appointed Outside Directors as Chairman of the Board and Chairman & Director.

### Operational setup in pursuit of practical efficiency

We have built a setup to realize deeper discussions and speedy decision making in the Board of Directors, as well as the efficiency and autonomy of Group management. In addition, the Nomination Advisory Committee and Compensation Advisory Committee, which are chaired by Outside Directors, guarantee a high degree of transparency.



### Advisory Committees

		Nomination Advisory Committee	Compensation Advisory Committee
Kazuhiko Ishimura	Outside Director	○	○ Chairman
Kazunori Yagi	Outside Director	○ Chairman	○
Kozue Nakayama	Outside Director	○	○
Makoto Sumita	Chairman & Director	○	○
Shigenao Ishiguro	President and CEO	○	
Seiji Osaka	Director		○



**Makoto Sumita**  
Chairman & Director  
(present post)  
INNOTECH CORPORATION

### From Outside Director to Chairman & Director

Through his experience as an Outside Audit & Supervisory Board Member from June 2011 and an Outside Director from June 2013, Mr. Sumita has a deep understanding of TDK's management, business portfolio, and so on. From the perspective also of an outside stakeholder, he endeavors to make decisions on important matters and to supervise the performance of duties, as well as to strengthen corporate governance as Chairman & Director.

## Outside officers appointed with an emphasis **on effectiveness**

### One-third or more of the Directors are independent Outside Directors

To secure the independence of the Outside Directors and Outside Audit & Supervisory Board Members recruited to the Board, TDK established "items to be verified regarding independence" by making reference to Article 436-2 (Securing Independent Director(s)/Auditor(s)) of the Securities Listing Regulations and Section III, 5(3)-2 of the Guidelines Concerning Listed Company Compliance, etc., established by the Tokyo Stock Exchange, Inc.

The basic policy is that one-third or more of the Directors shall be independent Outside Directors. Currently, three of seven Directors are independent Outside Directors, and an independent Outside Director is chairman of the Board. To reinforce the independence, objectivity, and accountability functions of the Board of Directors in relation to the nomination and compensation of officers, majorities of the Nomination Advisory Committee and the Compensation Advisory Committee, which are advisory organizations to the Board of Directors, are independent Outside Directors, and both committees are chaired by independent Outside Directors.

### Outside Directors with a wealth of practical experience

Persons recruited as independent Outside Directors have a wealth of practical experience relating to corporate management or a high level of financial knowledge and are able to provide advice from an independent perspective regarding general management for enhancing TDK's corporate value.

### Reasons for nomination of Outside Directors and Outside Audit & Supervisory Board Members

Outside Directors	Reasons for nomination
Kazuhiko Ishimura	Mr. Ishimura has an abundance of experience and knowledge regarding business management, as well as a broad perspective.
Kazunori Yagi	Mr. Yagi has an abundance of experience and knowledge concerning management of companies related to the electronics industry and has knowledge and insight into finance and accounting.
Kozue Nakayama	Ms. Nakayama has an abundance of experience and knowledge concerning global business related to the automotive industry, as well as knowledge and insight into corporate management.
Outside Audit & Supervisory Board Members	Reasons for nomination
Jun Ishii	Mr. Ishii has extensive experience and expertise regarding group governance, risk management, etc., of an international electronics company.
Douglas K. Freeman	Mr. Freeman has specialized knowledge on law as a lawyer and extensive experience regarding international corporate legal affairs.
Michiko Chiba	Ms. Chiba has specialized knowledge of financing and accounting as a certified public accountant and extensive experience regarding auditing.

## Remuneration system linked to medium- to long-term **corporate value**

### Design and determination process of remuneration for Directors and Audit & Supervisory Board Members

TDK designs its remuneration system for Directors and Audit & Supervisory Board Members with an emphasis on linkage with short-term as well as medium- to long-term results and is also continuously pursuing the formulation of a competitive remuneration system so that it can recruit diverse and excellent human resources for the purpose of promoting as much as possible behavior on the part of Directors and Corporate Officers geared toward enhancing corporate results and stock value. With regard to the determination of individual compensation, the Compensation Advisory Committee, which is chaired by an independent Outside Director and of which more than half of the members are independent Outside Directors, examines the remuneration system and the level of remuneration pertaining to Directors and Corporate Officers and reports to the Board of Directors in order to preserve the transparency of the remuneration decision-making process and help ensure that individual remuneration is reasonable.

### Revision of remuneration system to align benefits with those of shareholders

TDK's Board of Directors partly revised the remuneration system for Directors and Audit & Supervisory Board Members, changing the stock-linked compensation stock option plan to a post-delivery-type stock remuneration plan in order to share the benefits and risks of stock price fluctuations with shareholders toward the medium-term improvement of financial results and enhancement of corporate value.

**Short-term results linkage system**

Type of compensation	Method of calculation
Results-linked bonuses	In addition to consolidated financial results (operating income, ROE) in the relevant fiscal year, indicators are set for each division, and bonuses vary from 0% to 200% of base salary depending on the degree of attainment of targets.

**Medium- to long-term results linkage system**

Type of compensation	Strategic purpose of compensation	Method of calculation
Stock-linked compensation stock options	A system for raising corporate value from a medium- to long-term perspective and recipients share the same advantage of a rising stock value of the Company and the same risk of it falling as shareholders. The introduction of such a system is intended to increase the ambition and morale of eligible Directors and Corporate Officers with respect to the enhancement of results and stock value. It is also intended to further strengthen the linkage between executive remuneration and medium- to long-term results and corporate value.	Some stock-linked compensation stock options have a results achievement condition attached to them. The results achievement condition takes consolidated results under the Medium-Term Plan (operating income, ROE) as an index and varies the number of exercisable options between 0% and 100% of the number of options granted, depending on the degree of attainment of targets. TDK has established Corporate Stock Ownership Guidelines. TDK makes an effort to ensure that eligible Directors and Corporate Officers hold at least a certain number of shares in TDK pursuant to their rank, including stock-linked compensation stock options.

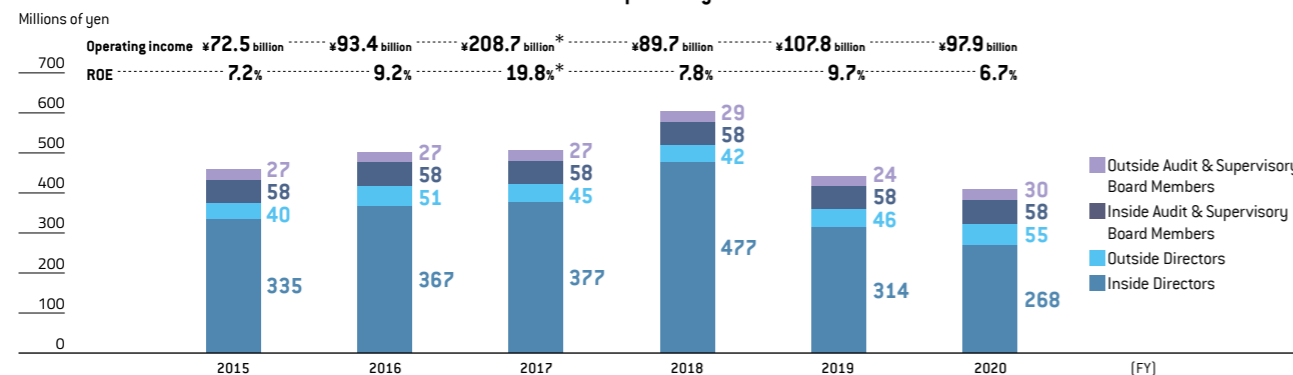
**Standard Allowance**



	[1] RSU	[2] PSU
Overview	RSU is a type of stock remuneration that is issued based on continuous service. In the case of RSU, subject to continuous service for a period of three years from the first day of the first year to the last day of the last year of the Medium-Term Plan (or a period of three years or more as determined by the Board of Directors of the Company, the "Target Period"), a predetermined amount of the Company's shares and money is delivered after the end of the Target Period.	PSU is a type of stock remuneration that is issued based on performance. In the case of PSU, an amount of the Company's shares and money calculated in accordance with the degree of achievement of performance targets set by the Medium-Term Plan is delivered after the end of the Target Period.
Eligibility for the grant	Directors excluding Outside Directors	Only Directors who also serve as Corporate Officers (Directors who do not concurrently serve as Corporate Officers and Outside Directors shall not be eligible for the grant)
Upper limit of total amount of remuneration claims and total number of shares	The upper limit of the total amount of monetary remuneration claims for RSUs and PSUs shall be ¥457 million per year (no change from the current amount), and the upper limit of the total number of common shares of the Company to be issued or disposed of otherwise to eligible Directors shall be 39,000 shares per year. The abovementioned total amount and total number of shares are in essence equivalent to the total amount of up to ¥196 million and total number of up to 16,700 shares per fiscal year, since PSUs for the Target Period will be delivered in a lump sum after the end of the Target Period.	
Method of calculation	① Number of common shares of the Company to be provided to each eligible Director $(\text{Base amount} \div \text{Stock price at grant}) \times 50\%$ ② Amount of money to be paid to each eligible Director $\{(\text{Base amount} \div \text{Stock price at grant}) - \text{Number of common shares of the Company as calculated in ① above}\} \times \text{Stock price at delivery}$	① Number of common shares of the Company to be provided to each eligible Director $(\text{Base amount} \div \text{Stock price at grant}) \times \text{Degree of achievement of performance targets} \times 50\%$ ② Amount of money to be paid to each eligible Director $\{(\text{Base amount} \div \text{Stock price at grant}) \times \text{Degree of achievement of performance targets} - \text{Number of common shares of the Company as calculated in ① above}\} \times \text{Stock price at delivery}$

TDK is changing the stock-linked compensation stock option plan to a post-delivery-type stock remuneration plan. In particular, the Company has decided to revise the current stock-linked compensation stock options with no performance achievement conditions attached to restricted stock units (RSU) and those with performance achievement conditions attached to performance share units (PSU), respectively. The Company is starting to provide RSU and PSU in fiscal 2021 and fiscal 2022, respectively, and abolish the stock-linked compensation stock option plan, excluding options that have already been granted.

**Trends in total amount of remuneration for Directors and Audit & Supervisory Board Members**



\* Includes ¥144.4 billion in gains from business transfer to Qualcomm

**Highly transparent nomination system**

**Nomination policies and procedures**

TDK established the Nomination Advisory Committee as an advisory body to the Board of Directors. The committee is chaired by an Outside Director, and a majority of its members are Outside Directors. It contributes to securing transparency in the decision-making process and reasonableness in the appointment of Directors, Audit & Supervisory Board Members, and Corporate Officers by nominating candidates after deliberating on the expected requirements regarding the nomination of Directors, Audit & Supervisory Board Members, and Corporate Officers. The Committee also deliberates on the independence of Outside Directors.

When nominating the CEO, the Committee forms an image of the ideal person suitable for the role of top executive and conducts deliberations that also cover such issues as systems and term of office. Efforts are also made to ensure objectivity through the utilization of an outside expert organization.

**Diversity in response to globalization**

**Promoting diversity in management systems**

TDK began encouraging globalization at an early stage, appointing a non-Japanese person as a Corporate Officer in 2004 and promoting the globalization of management by increasing the number of non-Japanese Corporate Officers since then. Today, more than 90% of sales and employees are derived and based overseas, and 42% of the Company's Corporate Officers are non-Japanese. In recent years, globalization has advanced as TDK implemented numerous M&As, and the globalization and diversification of management structures has become an important issue. We will continue to recruit outstanding human resources from around the world under the Human Resources HQ established in Germany in 2018.



Executive Vice President  
**Joachim Zichlarz**

Chief Financial Officer of Electronic Components Business Company, and General Manager of Europe HQ



Corporate Officer  
**Joachim Thiele**

Deputy General Manager of Electronic Components Sales & Marketing Group, and General Manager of Industrial & HA Group of Electronic Components Sales & Marketing Group



Corporate Officer  
**Michael Pocsatko**

Deputy General Manager of Electronic Components Sales & Marketing Group, and General Manager of ICT Group of Electronic Components Sales & Marketing Group



Corporate Officer  
**Hong Tian**

General Manager of Micro-actuator Solutions Business Group



Corporate Officer  
**Albert Ong**

Chief Executive Officer of Magnetic Heads Business Company, and General Manager of HDD Components Business Group of Magnetic Heads Business Company



Corporate Officer  
**Andreas Keller**

General Manager of Human Resources HQ



Corporate Officer  
**Ji Bin Geng**

General Manager of Energy Devices Business Group of Energy Solutions Business Company



Corporate Officer  
**Werner Lohwasser**

Chief Operating Officer of Electronic Components Business Company

# Directors, Audit & Supervisory Board Members, and Corporate Officers

(As of the end of June 2020)

## Directors



**Shigenao Ishiguro**

Representative Director  
President and CEO  
General Manager of  
Humidifier Countermeasures HQ



**Tetsuji Yamanishi**

Representative Director  
General Manager of  
Finance & Accounting HQ  
Global Chief Compliance Officer



**Makoto Sumita**

Chairman & Director



**Seiji Osaka**

Director  
General Manager of  
Corporate Strategy HQ



**Kazuhiko Ishimura**

Outside Director  
Chairman of Compensation  
Advisory Committee  
Member of Nomination  
Advisory Committee

Summary of career  
Born on Sep. 18, 1954  
Apr. 1979 Entered Asahi Glass Co., Ltd. (currently AGC Inc.)  
Jan. 2006 Executive Officer and GM of Kansai Plant of said company  
Jan. 2007 Senior Executive Officer and GM of Electronics & Energy General Division of said company  
Mar. 2008 President & COO & Representative Director of said company  
Jan. 2010 President & CEO & Representative Director of said company  
Jan. 2015 Chairman & Representative Director of said company  
Jun. 2015 Outside Director of the Company (present post)  
Jun. 2017 Outside Director of IHI Corporation (present post)  
Jan. 2018 Chairman & Director of Asahi Glass Co., Ltd. (currently AGC Inc.)  
Jun. 2018 Outside Director of Nomura Holdings, Inc. (present post)  
Mar. 2020 Director of AGC Inc. (present post)  
Apr. 2020 President of the National Institute of Advanced Industrial Science and Technology (present post)



**Kazunori Yagi**

Outside Director  
Chair of the Board  
Chairman of Nomination  
Advisory Committee  
Member of Compensation  
Advisory Committee

Summary of career  
Born on Apr. 1, 1949  
Apr. 1972 Entered Yokogawa Electric Works Ltd. (currently Yokogawa Electric Corporation)  
Oct. 1999 Vice President (Officer) and General Manager of Finance & Business Planning, in charge of Corporate Marketing of said company  
Apr. 2001 Senior Vice President and General Manager of Finance & Business Planning of said company  
Jun. 2001 Director, Senior Vice President and General Manager of Finance & Business Planning of said company  
Jul. 2002 Director, Executive Vice President and General Manager of Finance & Business Planning of said company  
Jul. 2005 Director, Executive Vice President and General Manager of Management Administration Headquarters of said company  
Jun. 2011 Advisor to said company, Outside Audit & Supervisory Board Member of Yokogawa Bridge Holdings Corporation (present post)  
Jun. 2012 Outside Director of JSR Corporation  
Jun. 2013 Outside Audit & Supervisory Board Member of the Company  
Mar. 2014 Outside Director of OYO Corporation  
Jun. 2017 Outside Audit & Supervisory Board Member of Sojitz Corporation (present post)  
Jun. 2018 Resigned as Outside Audit & Supervisory Board Member of the Company  
Outside Director of the Company (present post)



**Kozue Nakayama**

Outside Director  
Member of Nomination  
Advisory Committee  
Member of Compensation  
Advisory Committee

Summary of career  
Born on Feb. 25, 1958  
Apr. 1982 Entered Nissan Motor Co., Ltd.  
Sep. 2010 Deputy General Manager of Global Branding Division of said company  
Mar. 2011 Retired from said company  
Apr. 2011 Entered Yokohama City  
Apr. 2012 Director General of Culture and Tourism Bureau of said city  
Jun. 2018 President and Representative Director of Pacific Convention Plaza Yokohama  
Jun. 2019 Outside Audit & Supervisory Board Member of Imperial Hotel, Ltd. (present post)  
Jun. 2020 Outside Director of the Company (present post)  
Outside Director of Isuzu Motors Limited (present post)

## Audit & Supervisory Board Members



**Satoru Sueki**

Full-time Audit & Supervisory Board Member



**Takakazu Momozuka**

Full-time Audit & Supervisory Board Member



**Jun Ishii**

Outside Audit & Supervisory Board Member

Summary of career  
Born on Mar. 24, 1956  
Apr. 1979 Entered Matsushita Electric Industrial Co., Ltd. (currently Panasonic Corporation)  
Apr. 2007 Executive Officer of said company  
Apr. 2012 Managing Executive Officer of said company  
Jun. 2014 Managing Director of said company  
Apr. 2015 In charge of Human Resources, General Affairs, Social Relations, Legal Affairs, Fair Business, Corporate Governance, Risk Management, Facility Management, Corporate Sport Promotion and Executive Support Office; and Director, Risk & Governance Management Division of said company  
Jun. 2017 Director, Managing Executive Officer, Chief Risk Management Officer (CRO), and Chief Compliance Officer (CCO); in charge of Corporate Governance; Director, Risk & Governance Management Division; and in charge of General Affairs, Social Relations, Facility Management and Executive Support Office of said company  
Apr. 2018 Director of said company (Retired in Jun. 2018)  
Jun. 2019 Outside Audit & Supervisory Board Member of the Company (present post)



**Douglas K. Freeman**

Outside Audit & Supervisory Board Member

Summary of career  
Born on May 23, 1966  
Apr. 1990 Entered Goldman Sachs Japan Co., Ltd.  
Apr. 1996 Registered as lawyer in Japan  
Joined Mitsui, Yasuda, Wani & Maeda  
Jun. 1997 Joined Hamada Law Offices  
Sep. 2002 Registered as lawyer in New York, the United States of America  
Sep. 2002 Joined Sullivan & Cromwell LLP  
Sep. 2007 Principal of Law Offices of Douglas K. Freeman (present post)  
Feb. 2016 Outside Director of U-Shin Ltd.  
Apr. 2019 Professor of Keio University Law School (present post)  
Jun. 2019 Outside Audit & Supervisory Board Member of the Company (present post)



**Michiko Chiba**

Outside Audit & Supervisory Board Member

Summary of career  
Born on Jun. 27, 1961  
Apr. 1984 Entered Tokyo Metropolitan Government  
Oct. 1989 Joined Showa Ota & Co. (currently Ernst & Young ShinNihon LLC)  
Mar. 1993 Registered as certified public accountant in Japan  
Jul. 2010 Senior Partner, Ernst & Young ShinNihon LLC  
Sep. 2016 Principal of Chiba Certified Public Accountant Office (present post)  
Jun. 2018 Outside Audit & Supervisory Board Member of CASIO COMPUTER CO., LTD.  
Mar. 2019 Outside Audit & Supervisory Board Member of DIC Corporation (present post)  
Jun. 2019 Outside Director, Audit & Supervisory Committee Member of CASIO COMPUTER CO., LTD. (present post)  
Outside Audit & Supervisory Board Member of the Company (present post)

## Corporate Officers

### President and CEO

Shigenao Ishiguro

### Executive Vice Presidents

Seiji Osaka

Joachim Zichlarz

Tetsuji Yamanishi

### Senior Vice Presidents

Atsuo Kobayashi

Noboru Saito

Mitsuru Nagata

### Corporate Officers

Joachim Thiele

Michael Pocsatko

Hong Tian

Albert Ong

Dai Matsuoka

Osamu Hikita

Andreas Keller

Shigeki Sato

Fumio Sashida

Hiroyuki Yashiro

Ji Bin Geng

Werner Lohwasser







# Corporate Information

As of March 31, 2020

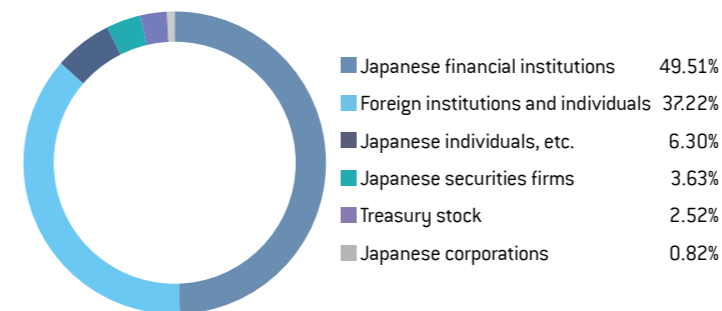
<b>Corporate name</b>	TDK Corporation	
<b>Corporate headquarters</b>	Nihonbashi Takashimaya Mitsui Building, 2-5-1, Nihonbashi, Chuo-ku, Tokyo 103-6128	
<b>Date of establishment</b>	December 7, 1935	
<b>Authorized number of shares</b>	480,000,000 shares	
<b>Number of shares issued</b>	129,590,659 shares	
<b>Number of shareholders</b>	21,922	
<b>Common stock</b>	¥32,641,976,312	
<b>Securities traded</b>	Tokyo Stock Exchange (Listed on the First Section in October 1961)	
<b>Securities code</b>	6762	
<b>Number of employees (consolidated)</b>	107,138	
<b>Transfer agent</b>	Sumitomo Mitsui Trust Bank, Limited 1-4-1, Marunouchi, Chiyoda-ku, Tokyo 100-8233	
<b>Independent registered public accounting firm</b>	KPMG AZSA LLC (the Japan member firm of KPMG International)	
<b>ADR information</b>	Type	Level 1 with sponsorship
	ADR Ratio	1 common stock = 1 ADR
	Ticker Symbol	TTDKY
	CUSIP	872351408
	Depository Bank	Citibank, N.A. Shareholder Services P.O. Box 43077 Providence, Rhode Island 02940-3077 U.S.A. Tel: 1-877-248-4237 CITI-ADR (toll free) Tel: 1-816-843-4281 (out of U.S.) Fax: 1-201-324-3284 URL: <a href="http://www.citi.com/adr">http://www.citi.com/adr</a> E-mail: <a href="mailto:citibank@shareholders-online.com">citibank@shareholders-online.com</a>

## Principal shareholders (10 largest shareholders)

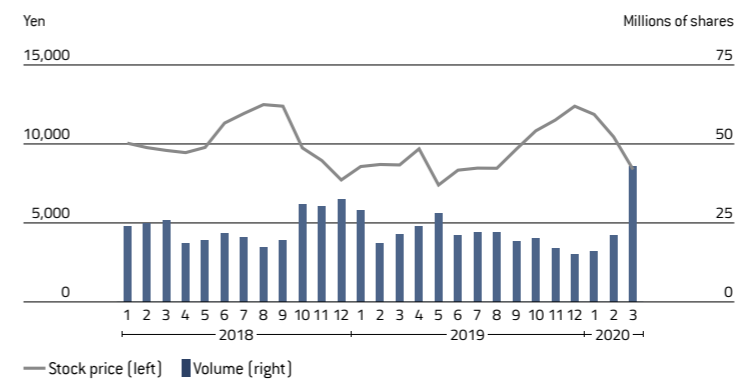
Name of shareholder	Number of shares held (thousands of shares)	Percentage of number of shares held in the total number of issued shares* (%)
The Master Trust Bank of Japan, Ltd. (Trust account)	26,862	21.27
Japan Trustee Services Bank, Ltd. (Trust account)	14,670	11.61
Trust & Custody Services Bank, Ltd. (Securities investment trust account)	3,334	2.64
Japan Trustee Services Bank, Ltd. (Trust account 9)	2,842	2.25
JPMC OPPENHEIMER JASDEC ACCOUNT	2,337	1.85
JP MORGAN CHASE BANK 385151	2,090	1.65
STATE STREET BANK WEST CLIENT – TREATY 505234	2,040	1.61
Japan Trustee Services Bank, Ltd. (Trust account 5)	1,968	1.56
Nippon Life Insurance Company	1,640	1.30
Japan Trustee Services Bank, Ltd. (Trust account 7)	1,613	1.28
<b>Total</b>	<b>59,395</b>	<b>47.02</b>

\* Other than the above, the Company holds 3,272 thousand shares of treasury stock.

## Status of ownership



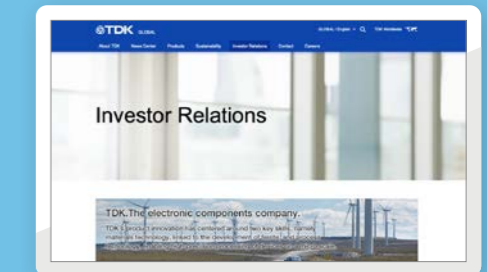
## TDK's stock price and volume



## About Our Website

### Investor Relations (IR)

<https://www.tdk.com/corp/en/ir/index.htm>



- Securities Reports
- Quarterly Financial Statements
- Management Policy

### Sustainability

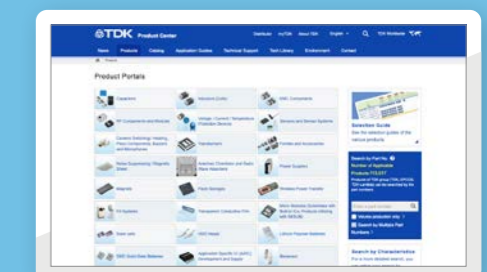
<https://www.tdk.com/corp/en/sustainability/index.htm>



- Sustainability Report
- CSR Activities

### Product Center

<https://product.tdk.com/info/en/products/index.html>





**TDK Corporation**

Nihonbashi Takashimaya Mitsui Building,  
2-5-1, Nihonbashi, Chuo-ku, Tokyo 103-6128  
<https://www.tdk.com/corp/en/>