



# Sustainability Communication Book 2019

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### Editorial Policy

This Sustainability Communication Book introduces those activities of the TDK Group relating to sustainability that we would especially like to convey to stakeholders. The basic of the TDK Group's sustainability activities lies in our aim to solve social issues through business on the basis of our corporate philosophy. In particular, in fiscal 2018 we clarified our thinking by compiling the new TDK Group Sustainability Vision. In this Sustainability Communication Book, we present an easy-to-understand outline of mainly the TDK Group's thoughts, worldview, and specific initiatives relating to this vision.

#### Top Commitment

There will be a message from President Ishiguro on the TDK Group's aim of "advancing the development of a sustainable society and promoting well-being for all people." Sustainability Vision

#### Sustainability Vision

In addition to the content of the vision, we will explain its position in the Medium-Term Plan, significance, and the connection between our priority markets and social issues.

#### Contributing to SDGs

As well as showing the TDK Group's stance of contributing to the SDGs, we will highlight the relationship with important CSR issues, the SDGs emphasized by TDK, and activities to raise in-house awareness and permeation.

#### Addressing Social Issues by Developing New Kinds of Products the World Has Not Yet Seen

We will introduce TDK's solutions to social issues and the SDGs utilizing the strengths of TDK's proprietary technologies and products and the future happy society envisioned by TDK.

#### Pursue "Zero-Defect Product Quality"

Regarding our pursuit of zero-defect product quality, which is the foundation of TDK's Monozukuri, we will carry an interview with the general manager of the Quality Assurance HQ and introduce the specific activities of model factories.

#### Launched the next generation leader development program within the TDK Group

There will be an introduction of the Territorial Career Development Program (TCDP), which aims to look around the world for potential future leaders of the TDK Group and cultivate talented human resources capable of being active globally and in a wide range of areas.

Our "Sustainability" website displays information of the TDK Group pertaining to sustainability, such as important CSR issues, activity reports, and data, in a comprehensive and detailed manner. Please take a look.

### Corporate Philosophy

#### Corporate Motto

contributing to culture and industry  
through creativity

#### Corporate Principles

Vision Courage Trust

#### Vision

Always take a new step forward with a vision in mind. Creation and construction are not born without vision.

#### Courage

Always perform with courage. Performing power is born by confronting contradiction and overcoming it.

#### Trust

Always try to build trust. Trust is born from a spirit of honesty and service.

## Sustainability

# TDK Group Outline

The TDK Group is active in over 30 countries and regions all over the globe, selecting suitable bases for plants, research facilities, and sales offices from the viewpoints of marketability, product range, distribution, etc. The TDK Group consists of 139 consolidated subsidiaries—13 in Japan and 126 overseas (59 in Asia, 45 in Europe, and 22 in the Americas). The Group's total work force is 104,781 persons.

Net sales **1,381,806** million yen

Operating income **107,823** million yen

Net income **82,205** million yen

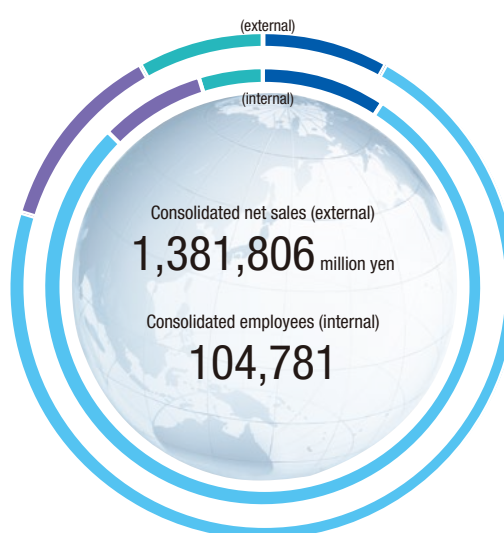
## Americas

Net sales **110,169** million yen  
(External) (8.0 %)

Number of employees **4,738**  
(Internal) (4.5 %)

## Europe

Net sales **167,285** million yen  
(External) (12.1 %)

Number of employees **8,205**  
(Internal) (7.8 %)


## Japan

Net sales **113,369** million yen  
(External) (8.2 %)

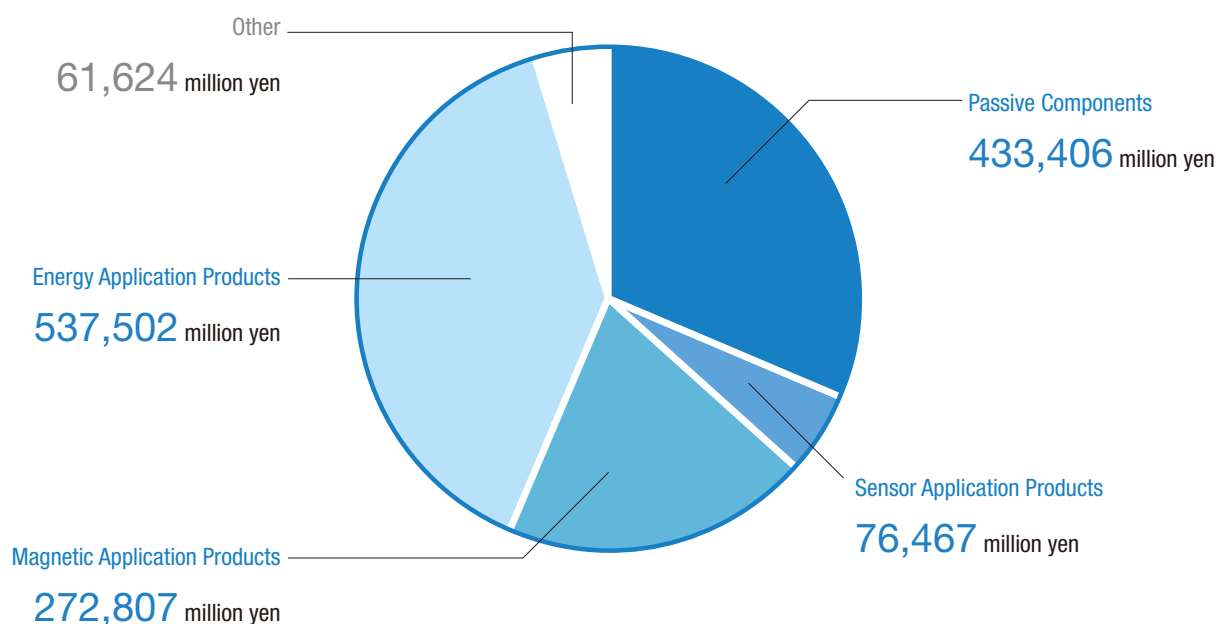
Number of employees **9,777**  
(Internal) (9.3 %)

## Asia and others

Net sales **990,983** million yen  
(External) (71.7 %)

Number of employees **82,061**  
(Internal) (78.3 %)

## Net sales by product segment (fiscal year ended March 2019)



## Sustainability

## Top Commitment



### Seizing on a turning point in digital technology and energy

Our world today is facing a major turning point. Since the Industrial Revolution, people have enriched their lives through the use of fossil fuels. But as problems such as climate change and the depletion of fossil fuels worsen, the need to establish a new kind of energy society has become unavoidable. Meanwhile, dramatic advancements in IoT and AI have reshaped industry and wrought major changes in how information is communicated.

Over the past four years, approximately six billion smartphones were shipped worldwide, and we are now living in a world where social media—said to represent more than 2.5 billion accounts—can alter the very shape of public discourse.

We interpret these major trends in two ways: as digital transformation (“DX”) and as energy transformation (“EX”). DX and EX cannot be accomplished without electronics, and I believe that for TDK, these transformations represent a treasure trove of opportunities to contribute to society.

In DX, we will work to optimize manufacturing through the use of digital data, as set forth in Industry 4.0. This will enable us to reduce losses of every kind—from energy, to resources, to time—and will also lead to achieving zero-defect product quality. TDK as a whole needs to undertake its own digital transformation, and I believe that this effort will deliver value that can be passed on to society.

In terms of EX, TDK—a company focused on electricity and magnetism—has pursued energy conversion efficiency as a means of maximizing the effect of even small amounts of energy. Even as we continue to seek further reductions in energy consumption through our proprietary technologies, it is important that we approach the issue not by simply replacing fossil fuels with natural energy, but based on efforts to explore ways of using as little energy as possible. TDK Group’s contributions to building a richer, more convenient society will require more than our own efforts as a manufacturer of components—inevitably, collaboration with companies responsible for systems and hardware will also be necessary.

## Seeking to “Advancing the development of a sustainable society and promoting well-being for all people”

The global economy is undergoing significant destabilization due to trade friction between the US and China, a slowdown in the Chinese economy, Brexit, and other factors. Still, this is unlikely to alter the DX and EX tide. Rather than getting caught up in short-term changes, we instead maintain a medium- and long-term perspective in responding flexibly to change.

Believing in the need for a roadmap to a sustainable future society, and seizing on global trends centered around DX and EX, in fiscal 2019 TDK established its Sustainability Vision. The goal of this vision is “Through its innovative core technologies and solutions, TDK Group advances the development of a sustainable society and champions well-being for all people.”

Along with our Sustainability Vision, “Value Creation 2020,” the Medium-Term Plan launched in fiscal 2018, addresses not only Commercial Value (Execute Growth Strategy) and Asset Value (Improve Asset Efficiency), but also Social Value (Enhance Enterprise Value). The inclusion of Social Value has enormous significance. More than just one of three parallel supporting concepts, Social Value will, if anything, propel the other two forward. Contributing to society (Social Value) leads to growth (Commercial Value), which allows for the efficient use of profits and assets (Asset Value). Those in turn can be leveraged toward further contributions to society, a cycle that will enable us to balance social development and growth for TDK.

To enhance Social Value, it is essential that we contribute to sustainable development goals (SDGs). Companies are being asked to take an active role in this effort, and at TDK, we see the challenges of addressing the global-scale social issues laid out in the SDGs as a major business opportunity. There are, for example, many parts of the world that still have no access to electricity; instead of installing transmission lines, deployment of solar panels, wind turbines, and storage batteries makes it possible to introduce electrification with a single effort, based entirely on renewable energy.

## Building a strong, resilient organization through empowerment and transparency

The fields in which we can utilize our technologies and solutions are expanding worldwide.

With non-Japanese nationals representing more than 90% of our employees, one of TDK’s advantages has always been the global diversity of our personnel. Combining the respective strengths of those individuals helps build an organization capable of responding to change with resiliency and strength. Over time, we have engaged in a variety of M&As; rather than expecting these newly acquired companies to take on TDK’s culture, we hope that the mutually beneficial impact we have on one another will allow the TDK Group as a whole to change anew.

At the same time, governance is an important corporate issue, one that I think comes down to valuing empowerment and transparency. This means trusting and motivating the people with whom you share your goals and philosophies. It means ensuring transparency for stakeholders, with both sides remaining open and honest with one another. In other words, in an age in which a centralized approach no longer works, strength lies in an autonomous, distributed, and resilient organization.

As we take on the challenges of this major turning point, the TDK Group sees its corporate motto and corporate principles as a foundation. I would like all of our employees to constantly consider what they can do to benefit society. This includes thinking about what kind of value each of us can offer our customers, suppliers, the global community, and other stakeholders, and understanding the importance of reexamining our own work from an outside perspective. In this way, the TDK Group as a whole will contribute to realizing a sustainable future society.



## Sustainability

## Sustainability Vision



## TDK Group's Sustainability Vision

Various issues exist in the society surrounding the TDK Group, including environmental problems, such as climate change, energy, and the exhaustion of resources, and social problems, such as aging and the digital divide. TDK will contribute to the solution of these problems and the building of a sustainable society for future generations.

As well as aiming to solve social problems through our business on the basis of our corporate philosophy, which is our fundamental stance, we have formulated a new TDK Group's Sustainability Vision. This vision proclaims that by fully utilizing TDK's proprietary core technologies and solutions, we will "Advancing the development of a sustainable society and promoting well-being for all people."

In the formulation of this vision, we again assorted the social environment surrounding us from a long-term perspective and studied the potential of the TDK Group's strengths and resources. In the process, we heard the opinions of not only management but also external experts.

From now on we will share this vision throughout the Group, put it into practice in our business, and consider and implement specific measures toward the realization of a happy society.

## TDK Group's Sustainability Vision

**"Technology for well-being of all people"**

TDK Group strives to restore and protect the global environment while promoting respect for human rights.

Through its innovative core technologies and solutions, TDK Group advances the development of a sustainable society and champions well-being for all people.

"TDK Group Sustainability Vision" was established in April 2019, considering it to be important to describe a sustainable future society.



## Contribution to Sustainability Through Business

In “Value Creation 2020,” the TDK Group’s Medium-Term Plan, we aim to contribute to society by creating the three values making up corporate value—namely, Commercial Value (execute growth strategy), Asset Value (improve asset efficiency), and Social Value (enhance enterprise value)—and, as a result, to grow our business.

Among these, we believe that Social Value—in other words, aiming to realize a sustainable society and company—is the starting point of the cycle toward other value creation. It means nothing other than practicing the Sustainability Vision’s goal of realizing a “Advancing the development of a sustainable society and promoting well-being for all people.” and is also consistent with our corporate motto.

By further strengthening our unique competitive advantages ((1) material and process technologies, (2) customer base, (3) strength in diversity, (4) global business bases, and (5) integrated production) and promoting our Medium-Term Plan, which incorporates the thinking of this Sustainability Vision, we will endeavor to contribute to sustainability through our business.

## TDK’s Priority Markets and Social Issues

In anticipation of social and industrial changes from now on, the TDK Group targets mainly the automotive, ICT (information and communication technology), and industrial and energy markets. In these markets, in addition to technological changes and the diversification of customer needs, efforts are required to solve issues and create new values toward the realization of a sustainable society.

### Main social issues in TDK’s priority markets

#### Automotive

- Traffic accidents
- Exhaustion of resources (scarce resources)
- Atmospheric and environmental pollution
- Etc.

#### ICT

- Explosive increase in amount of information
- Privacy and leakage of personal information
- Acceleration of urbanization and depopulation
- Etc.

#### Industrial and Energy

- Climate change (increased use of fossil fuels)
- Decrease of energy loss (highly efficient use of energy)
- Exhaustion of resources
- Etc.

In response to these issues, TDK, as stated in our Sustainability Vision, aims to “Advancing the development of a sustainable society and promoting well-being for all people.”“ by creating new values required by customers through the dual provision of solutions based on the idea of Kotozukuri (integrated solutions) and our trademark Monozukuri (manufacturing excellence).

Sustainability | TDK Group's Sustainability

## Contributing to SDGs



### TDK Group Contributions to SDGs

In September 2015, in order to make the global environment and people's lives sustainable, the United Nations General Assembly approved the Sustainable Development Goals (SDGs), consisting of 17 goals and 169 targets to be achieved by all countries by 2030. From fiscal 2018, TDK announced the Medium-Term Plan "Value Creation 2020" as its basic plan of action, aiming for sustainable growth through creation of three values. Realization of one of these—Social Value (enhance enterprise social value)—is closely tied to the achievement of SDGs. Creating social value to address issues facing society is no more than the realization of TDK's corporate motto of "Contribute to culture and industry through creativity." TDK seeks to enhance corporate value by contributing to solutions to global-scale issues identified as SDGs through its business.

## SUSTAINABLE DEVELOPMENT GOALS

17 GOALS TO TRANSFORM OUR WORLD

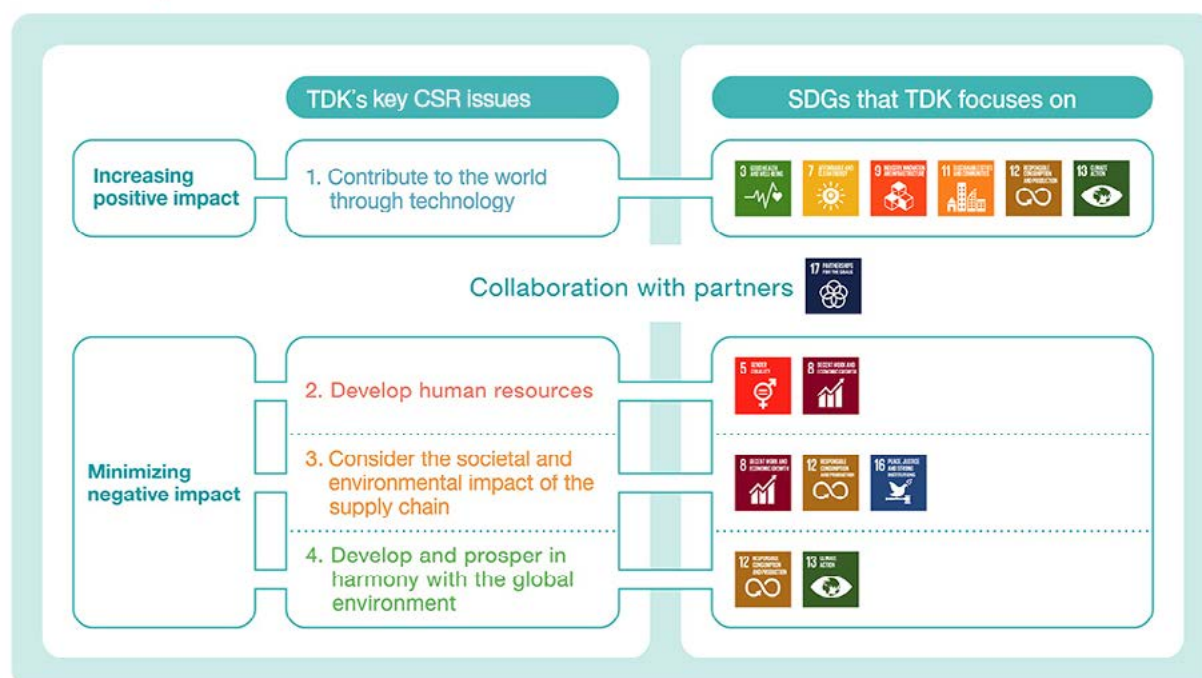




## TDK Group's key CSR issues and SDGs

TDK seeks to realize a sustainable society, identifying “Contribute to the world through technology,” “Develop human resources,” “Consider the societal and environmental impact of the supply chain,” and “Develop and prosper in harmony with the global environment” as key issues guiding CSR activity. TDK’s “Contribute to the world through technology” are based on TDK technology/products and the external social environment, focusing on fields enabling maximized provided value through SDGs (in following chart, SDGs corresponding to “1. Contribute to the world through technology”). TDK has clarified social challenges behind these 6 goals and contributes to realization of an ideal society in which these challenges are solved through its technology and products. TDK further implements initiatives toward “Develop human resources,” “Consider the societal and environmental impact of the supply chain,” and “Develop and prosper in harmony with the global environment,” thereby contributing to the various SDGs.

### ● TDK's key CSR issues and SDGs



## Intra-corporate Outreach Facilitating Comprehension of SDGs

TDK promotes in-house comprehension of SDGs, regularly sponsoring lectures and workshops in every division for every employee stratum to strengthen fundamental awareness of contributing to SDGs through corporate operations.

### SDGs workshops

In fiscal 2018, management workshops addressed the theme of SDGs and ESG (Environment, Society, and Governance). External experts were invited to lecture, generating lively discussion on issues such as: “the sustainability promotion dilemma of promoting a long-term perspective vs. safeguarding short-term profits,” “promoting awareness in a corporation of over 100,000 employees,” and “when employees have a strong sense of how their daily work contributes corporate profits while benefiting society, their motivation level will rise.” The workshops reinforced the importance of keeping “Kotozukuri (integrated solutions) business” in mind vis-à-vis contributing to CSR issues and SDGs while aiming for sustainable social and corporate growth. Workshops were also held highlighting the key role played by the Technology and Intellectual Property HQ and the Safety & Environment Office in addressing the key CSR issue of “Contribute to the world through technology.” Active discussion also centered on the TDK Group’s distinctive sustainability strategy to enhance understanding that creating sustainable value is a means of achieving corporate growth.

TDK will continue these in-house educational activities while discussing the establishment of specific goals for applying technology to solve social issues in alignment with relevant business objectives.



Management level workshop



Technology and Intellectual Property HQ lecture

## Addressing Social Issues by Developing New Kinds of Products the World Has Not Yet Seen



### Contributing to SDGs through Technology and Products

TDK contributes to realization of a happy future society through its technology and products which address six SDGs: Good Health and Well-Being for All (SDG 3), Affordable and Clean Energy (SDG 7), Industry, Innovation, and Infrastructure (SDG 9), Sustainable Cities and Communities (SDG 11), Responsible Consumption and Production (SDG 12), and Climate Action (SDG 13).

These SDGs represent areas in which we feel we can provide maximum value considering the potential of TDK technology and products to contribute toward solutions to social issues facing us today. In our efforts to draw an ideal society where issues are successfully solved, TDK will further develop its technology and products, thereby contributing toward solutions enabling realization of a happy future society.

SDGs	Social issues that TDK addresses	An ideal society
	<ul style="list-style-type: none"> <li>Increasing health and welfare challenges facing an ageing society</li> <li>Sharply increasing medical expenses</li> <li>An increase in people requiring nursing care with the transition to an ageing society</li> <li>Challenges in facilitating active lives and social participation for the disabled</li> </ul>	<ul style="list-style-type: none"> <li>Ensuring universal availability of highly advanced medical technology</li> <li>Maintaining a simple understanding of one's own health</li> <li>A comfortable lifestyle for nursing care patients</li> <li>Supporting independent lives and social participation for the disabled</li> </ul>
	<ul style="list-style-type: none"> <li>Climate change from increased fossil fuel usage</li> </ul>	<ul style="list-style-type: none"> <li>Transitioning to renewable energy (Gasoline-powered cars → EV)</li> <li>Use of highly efficient renewable energy</li> </ul>



- Fragile infrastructure of developing countries
- Deteriorating infrastructure of advanced countries
- Labor shortage
- Explosive increase in amount of information (IoT, autonomous driving, etc.)

- Strengthening the infrastructure base
- Recreating a resilient infrastructure
- Supplementing the labor shortage; enhanced productivity
- Ensuring storage capacity
- Realization of high-speed, high-capacity transmission



- Increasing natural disasters accompanying climate change
- Hypoactivity of local regions accompanying urban population concentration
- Privacy and leakage of personal information
- Traffic accidents

- Minimizing damage
- Provision of basic life services without regional favoritism
- Ensuring security
- Realizing “zero traffic accidents”



- Environmental pollution from abandoned electronics
- Exhaustion of resources

- Monozukuri (manufacturing excellence) without hazardous materials
- Curtailed usage of scarce resources
- Resource recycling
- A recycle-oriented society
- A sharing economy



- Climate change from increased fossil fuel usage

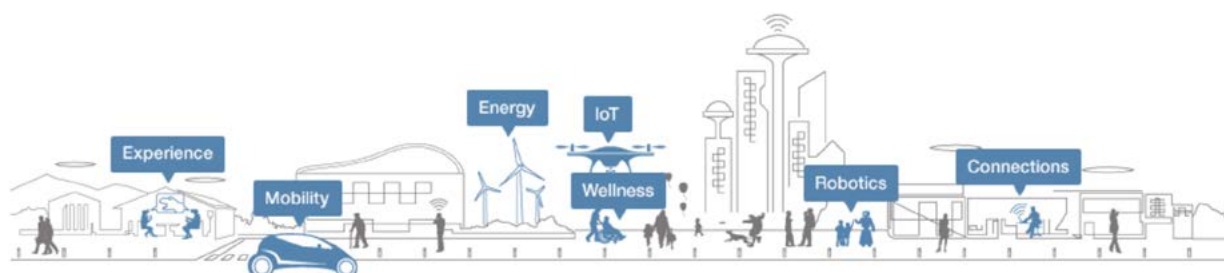
- Transitioning to renewable energy (Gasoline-powered cars → EV)
- Use of highly efficient renewable energy
- Improved energy usage

## Envisioning a Happy Future Society Enabled by TDK’s Distinctive Technology and Products

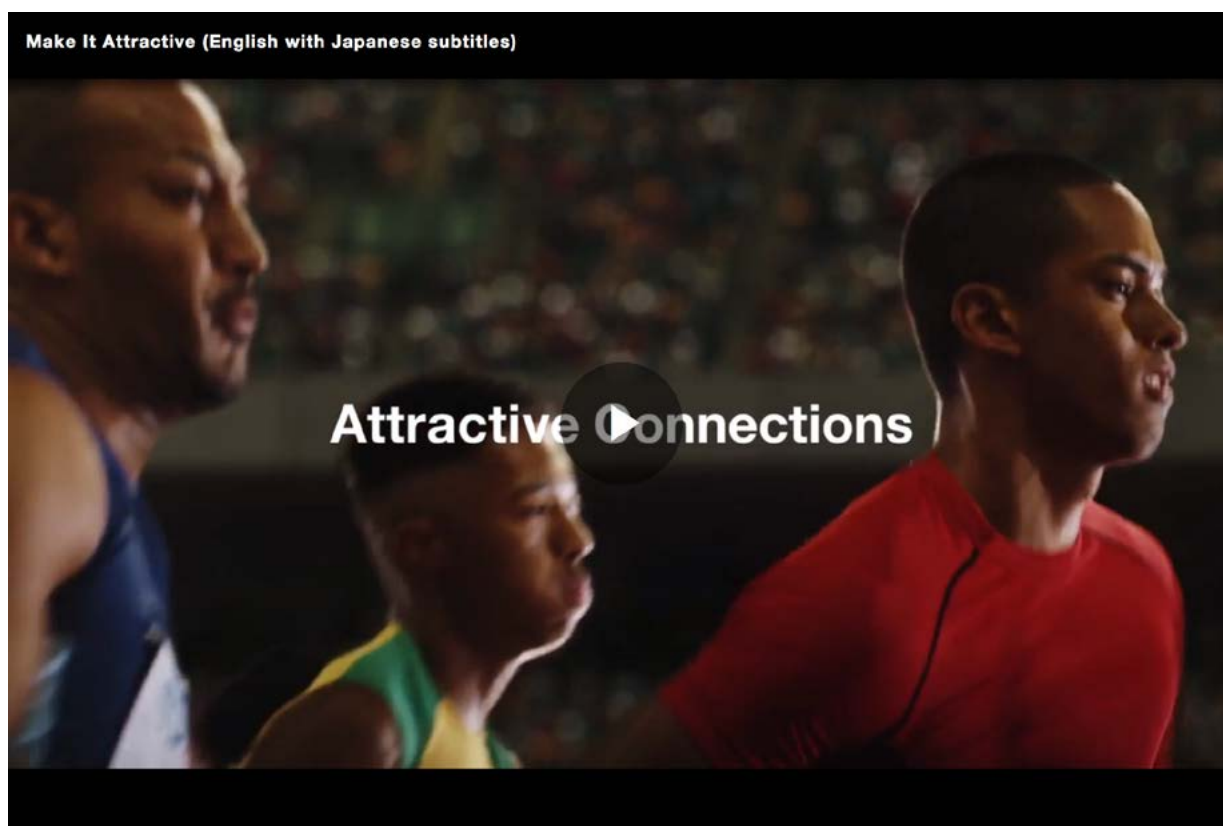
### ~Make It Attractive~

TDK continues to pursue new potential and challenges in hopes that the application of its unique technology and products will help create a happy future society. This enables realization of Social Value (Aiming for a sustainable society and enterprise), part of TDK’s “Value Creation 2020” Medium-Term Plan and is a shared initiative of the TDK Group companies.

Here we introduce TDK’s distinctive technology and products leveraged in seven markets to provide solutions to social issues. Please enjoy this short movie produced by TDK which presents its vision for a happy future society as well as the sincere intent of TDK developers.



## Concept Movie



## Attractive IoT

The world's smallest 7-axis sensor, which combines a 6-axis sensor with a pressure sensor, embodies reliable sensing technologies that are not adversely affected even under harsh environmental conditions. These sensors are used in drones that carry out social missions such as transporting medical supplies in conflict regions, stable flight and accurate position information to support these drones performing critical tasks in diverse terrain around the world.





## Attractive Mobility

A motion sensor with seven sensors that is just 3 mm square—the industry's smallest. In addition to providing data on acceleration and direction to guide vehicles to their destinations, they can also safely guide vehicles to the side of the road in the event of an emergency. They support autonomous driving technologies and hold substantial potential for the creation of a safe society with no traffic congestion or traffic accidents.



## Attractive Wellness

We created a compact biomagnetic sensor by integrating MR element process technologies acquired from magnetic heads with magnetic circuit design technologies. This makes it possible to perform biomagnetic field measurements without the insertion of a device into the body, something that was not possible in the past. These sensors will be used in devices that are more compact and lower cost than earlier products to perform diagnoses that are stress-free for patients.



## Attractive Connections

The drama of athletic competition will soon become more exciting than ever. With 5G, viewers will be able to watch multiple broadcasts simultaneously and instantly express their impressions around the world. RF (radio frequency) components with enhanced filtering functions and maximized total performance will simplify handling by customers. We are developing products for all 5G applications such as infrastructure, autonomous driving, and tele-medicine.



## Attractive Energy

Capacitors used in lightweight, compact, and high-reliability power electronics facilitate high-efficiency generation and transmission of renewable energy and improve people's quality of life. Looking to the future, we are designing low-inductance capacitors suitable for high-switching frequencies and will contribute to the creation of a sustainable society through clean energy.



## Attractive Robotics

The MEMS microphone, which has a tiny membrane that can detect sound, was developed by applying silicone MEMS technology. A robot equipped with the microphone can detect sounds and speakers at long distances, and when multiple microphones are used, a robot can identify where a sound or voice is coming from. Such applications will help hearing-impaired individuals and make it easier to call for help by persons who are unable to act during an emergency.

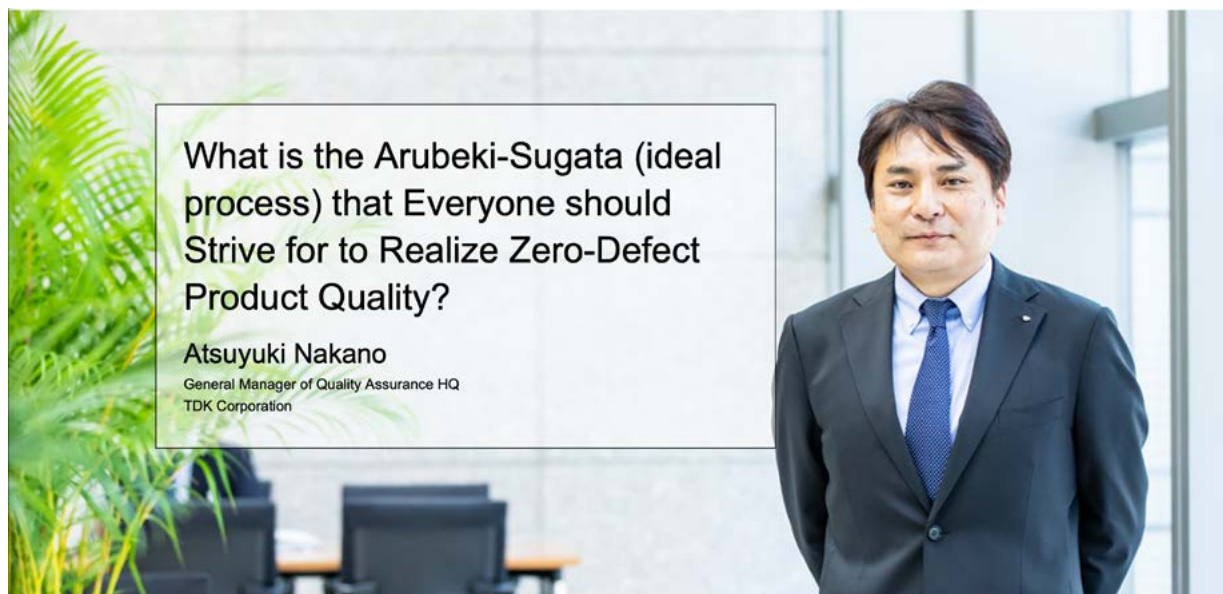


## Attractive Experience

VR and AR applications have enriched experiences in education and brought about significant progress and quality enhancement in learning by children. TDK's ultrasonic sensors can detect a device's orientation, rotation, position, and other information with high precision and determine accurately the movement of a hand in a virtual space. In addition, VR systems that use these sensors are low cost, making it possible for more people to have interactive experiences.



## Pursue “Zero-Defect Product Quality”



The pursuit of zero-defect product quality extending from raw material procurement to manufacture of the final product forms the basis of TDK’s Monozukuri (manufacturing excellence).

We asked the newly appointed General Manager of the Quality Assurance HQ, Mr. Nakano to tell us about the overall role that Arubeki-Sugata plays in TDK’s Monozukuri, and we also report on how this is put into practice in the model line at the Tsuruoka East Plant of TDK Shonai Corporation.

### What zero-defect product quality means

Since 2013, TDK has been intensifying activities aimed at ensuring Arubeki-Sugata within the Monozukuri framework. The aim is to realize a level of quality that makes it possible to manufacture products with zero defects.

In concrete terms, this involves thoroughly reducing waste on the manufacturing site to improve efficiency, and always aiming to deliver the best possible quality to the customer. When defects are eliminated, there is no waste of resources and materials, a fact that has positive repercussions also for society at large, contributing to a reduction in pressure on the environment. This is at the root of TDK’s Monozukuri and Kotozukuri(integrated solutions) concepts.



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.



## Devising Arubeki-Sugata solutions with the participation of everyone

Activities aimed at Arubeki-Sugata need to cover all processes, carefully identifying various risks. This requires an understanding not only of one's own area of responsibility but also of the entire process. It therefore is crucial to ensure the participation of all employees in thoroughly examining all the issues. Unless a risk is fully understood, it is not possible to devise proper countermeasures. Four kinds of defects can cause quality problems on the manufacturing floor: design defects, material defects, process defects, and management defects. Together with all on-site staff members, we explored solutions to these issues. During this process, four key elements emerged, namely the presence of an on-site improvement leader, teamwork, daily PDCA, and passion. In other words, the most important factor in achieving zero-defect product quality can be said to be "people." I believe that TDK's Arubeki-Sugata represents the ultimate conclusion drawn from an analog type analysis of the way dedicated people perform their work. Without an understanding of what may happen at any given point in a process, merely trying to rely on technologies such as AI and robotics will not result in zero-defect product quality. When the actual people involved in design, technology, and process execution thoroughly engage with an issue, bringing a high level of insight to the table, then we can be sure to make significant progress toward zero-defect product quality.



## Our future challenge: preventing problems before they arise

More than five years have passed since we launched the Arubeki-Sugata activities, and we have seen many successful examples. These in turn have contributed to enhanced awareness and ambition in the workplace, creating a virtuous cycle. Recently, even part-time staff can be heard talking about zero defects. This of course makes me very happy, and I see it as my mission to further spread the word and ensure that it leads to definite quality improvements. Also, it is a fact that the customers' expectations with regard to quality are constantly evolving with the times. For example, electric vehicles are increasingly gaining acceptance, and electronic components make up more than 70 percent of such vehicles, so that customers also have come to regard electronic components as key parts. Because a car carries precious human cargo, our responsibility as the manufacturer of such components is enormous. We must therefore strive toward zero-defect product quality with



all our might. The utilization of robots and AI for the standardization of manufacturing processes will be part of these endeavors. However, it is people who ultimately make this possible. While adopting some of the powerful principles of Industry 4.0, the challenge for the future is to prevent problems before they even begin to happen.

## Zero-defect quality begins in the first stage of development

Zero-defect quality must be designed into our products and processes right from the start. It is our responsibility to our customers and to society as a whole that our customers' products and applications function properly and safely for their entire life cycle. Zero-defect quality also means that we manufacture our products without wasting resources, whether we're talking about raw materials, semi-finished and finished goods in our production, energy or water. The result is a highly efficient production process that contributes to sustainability.

In order to achieve zero-defect quality, we need not only an advanced quality management system, but above all well-trained and competent staff. That's why we implemented a compulsory training program for all of our factories at TDK Electronics. We also need perfectly tuned and maintained production equipment. We are improving our manufacturing processes with Industry 4.0 methods by evaluating production data in real time and employing predictive maintenance to eliminate defect risks before they even occur. It is our standard practice to identify and assess such risks during product development. Thus, zero-defect quality begins in the first stage of development.



Dr. Werner Pint  
Head of the Technology  
Quality Corporate Department,  
TDK Electronics AG



A manufacturing floor with a design that reflects Arubeki-Sugata insights



## A model line for Arubeki-Sugata

The Tsuruoka East Plant which started production in August 2017 is positioned as a model line facility. Thin-film coil components for automotive use, whose demand is expected to rise further, are manufactured here and become components that are directly connected to life and safety. Zero-defect product quality therefore is crucial both for the customer and for society. A framework covering the four quality aspects of design, material, process, and management has been put in place to achieve this. The Arubeki-Sugata activities at the Tsuruoka East Plant are directed at realizing zero management quality defects. They take the form of “workflow analysis,” “Arubeki-Sugata work procedure/management design,” “identifying design and manufacturing problems and implementing countermeasures,” and “reflecting results in work key points.” In an environment designed to ensure safety and quality, the aim is to create processes where operators are thoroughly familiar with their own process as well as its methods and assessment of its intended results, to the extent that they can explain them fully.



TDK Shonai Corporation Tsuruoka East Plant



Tabulated design and manufacturing problems and countermeasures



10 m long printout of identified issues

## Think for yourself, devise improvements, and implement them through team cooperation



Tomomichi Hatakeyama

Tsuruoka East Plant Manager  
TDK Shonai Corporation

As a first step, the risks in 392 operations were methodically identified, resulting in a list of 1,702 problems. The Arubeki-Sugata for each problem and risk was then examined and defined, and a manual to convey the information to the manufacturing floor in an easy to understand manner was created. The aim was a concise, memorable format, with slogans such as “no waste, no wobble, no worry.” For example, risks and losses associated with transfer operations were reduced (no waste), standardized work operations and work layouts were defined to eliminate unevenness (no wobble), and work flow lines were designed to enable natural movement without strain (no worry).

QC activities have a particularly important role to play in this undertaking. As Mr. Hatakeyama, Tsuruoka East Plant Manager, puts it, “Think for yourself, devise improvements, and implement them through team cooperation.” A wide range of measures has been implemented to that end. Staff recite the purpose of their own process daily, to foster a clear understanding of the positioning of one's work within the overall process sequence. Tools such as monitors and tablets are used for discussions and to allow checking operations via video at any time by anyone. Special areas created within the work area are set aside for meetings, allowing teams to get together and engage in close communication. “I believe it is only through the steady repetition of diligent actions that zero-defect product quality can be realized.”



Work instruction on site



A recorded video shows operation procedure

## A well-trained workforce is the key to zero-defect product quality

Thorough implementation of Arubeki-Sugata activities has resulted in an 80% improvement in workplace-related defect ratio and an increase in productivity by at least 60%. However, as Mr. Hatakeyama points out, “Even with all the effort that went into identifying issues, defects due to common mistakes still occur. Unless defects really shrink to zero, we can’t say that we have achieved our goal. We must diligently repeat the cycle of identifying risks, defining the Arubeki-Sugata of operations and management design, and clarify remaining risks. Trying to reduce risks to the utmost degree is our mission.” And the most important aspect for the realization of this goal is human resources training. “Training of staff opens up the way toward zero-defect product quality. As we move into the future, we must strengthen Japan’s unique Monozukuri power.”



Staff members of the Tsuruoka East Plant



## Launched the next generation leader development program within the TDK Group



The TDK Group has grown rapidly through multiple mergers and acquisitions (M&As). Today, only 10% of TDK personnel are now located in Japan and roughly 80% have joined the group through M&As. TCDP (Territorial Career Development Program) was launched in 2018 with the aim to develop the next generation leaders from our diverse employees within the group.

### What's TCDP (Territorial Career Development Program)?

TCDP was built on a career development program of the same name which TDK Electronics started in Greater China ten years ago. In 2018, this successful training program was rolled out in Asia, the Americas, and Europe. The TCDP prepares talents from all over the world to become the next generation leaders of TDK. In addition, the TCDP will support global succession planning for key positions and the development of globally-capable leaders who can contribute in various fields.

Through this nine-months program, it is expected the participants selected from each of the four regions to become able to exercise their abilities in diverse fields and cultures. This program aims to deepen the understanding of the basic methods and principles used in management, develop leadership skills, increase employee engagement, and generally improve our management competence. With the TDK group members selected from all over the world, participants take part in the classroom training, group projects and factory visits. It provides opportunities for participants to deepen engagement between employees who rarely communicate with each other in their daily work. It also intends to foster the spirit of One TDK by building solid relations in between the diverse TDK group employees.



## Overview

The first round of TCDP in 2018 took place in each of the four regions, Asia, the Americas, Europe and Greater China with a duration of 9 months. The TCDP aims at employees of any function from any location within the TDK group. In the selection process, local site leaders propose candidates. Participants will then be selected from among these candidates by a committee of management representatives in each territory. The program is held in English and consists of five training sessions that take place at different TDK sites in each region, giving participants a chance to get to know as many of the company's business fields as possible. It is the TCDP's unique approach to having a group project activity with a team of 5~6 members, in addition to the classroom training and lecture-style studies. The participants are working together in group projects and have to apply the skills they have learned within the TCDP. At the end of the program, they present the culmination of their efforts to their territorial committee.

FY2018 Schedule (April 2018 - March 2019)

Territory	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Greater China	Zuha-Hongqi	Dalian			Xiaogan		Xiamen		Hong Kong			
Europe	Deutschlandsberg			Szombathely		Karmiel		Paris			Munich	
Asia	Singapore			Ayutthaya		Seoul		Johor Bahru			Tokyo	
Americas	New York			Lincolnshire		San Jose		Gravatai			New York	

Image



## From Global HR team

Diversity from over 100,000 group employees is one of strengths of the TDK Group. Uniting the group employees under a common vision can create new value. This initiative will improve dialogue within the group by building closer relationships between employees all over the world, and develop individual abilities in performing daily work. We believe it can lead to enhance the competitiveness of the TDK group.



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## Achievement and future plan

The first round of TCDP has been very successful. The participants worked on group projects with topics that outline inspiring ideas and new approaches pointing out opportunities for improvement. For example, members of the TCDP in Asia created a board game in order to enhance cross-functional knowledge. In Europe, participants launched a social pilot project to renovate parts of a migration center. In the Americas and in Europe, two project groups each had the idea to develop a common platform so employees can connect and share knowledge and therefore be able to work more efficiently. Some of the projects could even be implemented meanwhile or already take the next steps in this direction.

The second TCDP round in 2019 have already started, and the high number of applications shows the positive resonance the program is getting by managers as well.

## Voice of participants



Daniel Tran Viet Dung  
TDK Singapore (Pte) Ltd.

I not only could learn leadership concept in theory, but also applied the knowledge through many interactive sessions in this 3-days training. Besides, the cross-division relationship opens my eyes to a bigger & more complete TDK. It is giving me a unique experience which I strongly believe will benefit my work in both short- and long-term.



Kyung Dae Lee  
TDK Electronic Korea Corporation

It was a significant opportunity to meet people from different countries and different work this time. I would like to make an effort to grow myself through this opportunity and I will try to connect to the growth of TDK Group.



Yew Hong Lum  
TDK (Malaysia) Sdn. Bhd.

Firstly, before I join the TCDP, I worry the main barrier for us is communication, due to varies country, site, language, function, and background. But, after 4 days, my thought was totally different, we actually communicate very well no matter who you are, what position you belong to, or what is your job scope.



Diogo Gonsalves da Silveira  
TDK Electronics do Brasil Ltda.

This first module made it possible to increase self-awareness and realize that we can always learn more about any topic. Leadership is not a tool, it is a skill that must be developed. And now I feel more motivated and focused on building those skills so that I can also help more people develop and contribute to corporate growth.



Thomas Leneke  
TDK-Micronas GmbH

At the beginning, we were skeptical, if a training with 25 persons from different cultures, countries and TDK groups can be successful - and it can! The first evening, we already started to talk intensively about private and professional commonalities.



Gayatri Kulkarni  
TDK India Private Limited

TCDP has been an essential learning experience. It was interactive and impacted every one of us on our journey of self-exploration. Self-awareness is an important part of who you are and how you can evolve. It is the core of your personal being.

