# **CASIO**





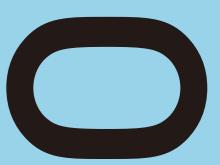


Envisioning a world no one has ever seen



CORPORATE REPORT

2016





# Envisioning a world no one has ever seen

"Necessity is not the mother of invention, invention is the mother of necessity." These are the words of one of Casio's founders.

The people who created Casio were determined to "invent necessity" to create products that met latent needs with groundbreaking capabilities no one had ever seen before.

Ever since, Casio has been doing just that, bringing new discovery and delight to people around the world. This is Casio's way of building an even more prosperous, richly rewarding world.



Corporate Creed

# Creativity and Contribution

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Policy





# Continuing to deliver new possibilities with products that surpass expectations

We believe that people have limitless potential, thinking and engaging in highly intellectual and creative activities based on knowledge gained by observing, sensing, and learning. Through this process, humanity has kept exploring new fields and areas of science and culture, making progress in leaps and bounds.

Inventions such as calculators, watches, electronic musical instruments, electronic dictionaries, and digital cameras have made it easy for anyone to use information such as numbers, time, music, and language in everyday life. At Casio, we see it as our mission to invent new products that support human intellectual and creative activities, which will, in turn, drive social progress around the world.

In our view, there are countless products in our world just waiting to be invented, each of which would fill a real need. Casio's job is to create the products of tomorrow that will one day be everywhere, that will make everyone wonder, "How did we ever do without that before?" That is why we value out-of-the-box creativity above all in our product development, or what we call "creating something from nothing." At Casio, we aim to provide the world with completely new value.

Products and services only have inherent value when there are people to use them, thus we must never forget to ask in what ways they can benefit users. The people who use and enjoy our products support Casio not simply because the products deliver essential features, but because they are easy to use, reliable, well-designed, and reflect a world view. We will continue to deliver products that stand behind these treasured values that we share with users—products that offer fresh ideas to fit a changing world and can make our lives better.

The greatest contribution we can make as a manufacturer is to deliver new possibilities to users, so that they can experience something completely new. At Casio, we will continue to create culture together with users, aiming to grow and develop together.

Chairman and CEO

President and COO

Kazuo Kashio

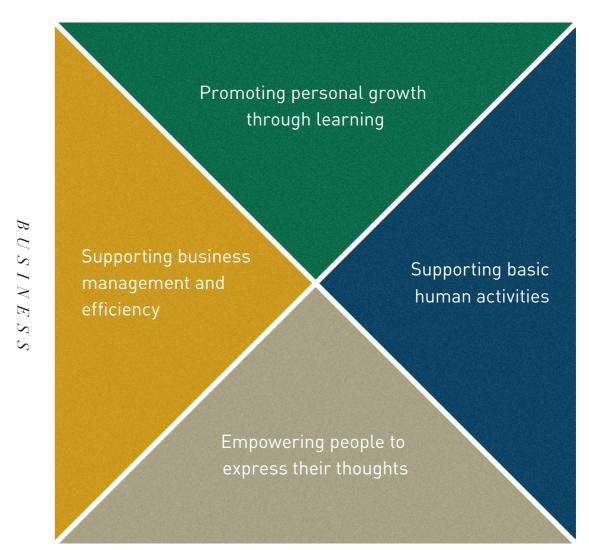
Kazuhiro Kashio

Casio provides support for the intellectual creativity of human beings, aiming to make the future more fulfilling for people everywhere.

Humans have unlimited potential. By applying the abilities of the human mind, anyone can create new value and contribute to social progress.

The value that Casio provides lies in creating new possibilities for people, not only in their personal lives, but also on the frontlines of business. Casio accomplishes this by providing original products and services that support intellectual creativity in diverse fields.

#### EDUCATION



 $C\ U\ L\ T\ U\ R\ E$ 

CASIO

# PRODUCTS

# How Casio creates value

Perhaps the time people shine the most is when they discover their own unique potential.



# LIFE



# Supporting basic human activities

When a rescue team carries out a mission in harsh conditions, total accuracy and speed are required in all circumstances.

An accurate watch is indispensable in tough environments. It enables rescuers to ascertain the current and elapsed time and to determine the next action.

Watches also provide important information in daily life, allowing people to make plans based on accurate information. Casio provides products that support all of these human activities.



# Promoting personal growth through learning

When children receive instruction in mathematics, they acquire problem solving skills.

Casio scientific calculators play a useful role in schools around the world. They make calculations easier to understand by displaying formulas just like they appear in textbooks and by displaying information in the local language. This helps students to focus on solving the problems assigned to them.

Both children and adults can grow by learning. Casio provides products that support everyone's desire to learn.





# BUSINESS



## Supporting business management and efficiency

When frontline staff handle packages in a logistics center, they have to guarantee highly precise operations.

Handheld terminals can be used to facilitate quick and accurate selection operations as well as management of product shipping and receiving. They can scan bar codes at high speed, even codes that are difficult to read because they are smudged, etc.

Increasing frontline speed and accuracy improves management in the logistics and retail distribution businesses and beyond. Casio provides products that enhance frontline efficiency for these businesses.



# Empowering people to express their thoughts

A pianist captivates audiences by playing beautiful melodies. The music is created through the sensitivity of the musician and the expressive power of the instrument.

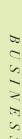
Imagine an electronic piano that can be played anywhere thanks to innovative technology. Then imagine one that also recreates the tone of a grand piano made by a traditional European piano maker. It sounds like the great pianos heard in concert halls.

To empower people to express their hearts and minds—this is why Casio makes products that enable people to share their joy and excitement.



Promoting personal growth through learning

Supporting basic human activities







# Main products and core technologies

Shock-resistant watch

G-SHOCK

Intelligent analog watch

EDIFICE

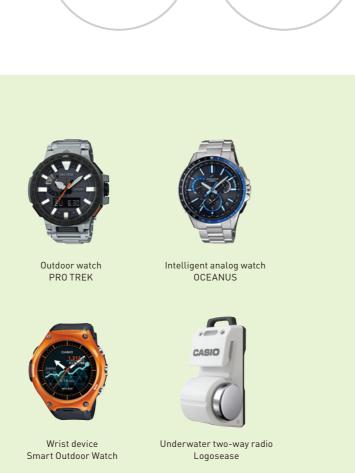
Tough watch for women

BABY-G

Metal watch for women

SHEEN

CLASSWIZ



Energy saving

Smartly operating on

little power

Digital

technologies

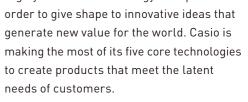
Making the

impossible possible



#### Highly advanced technology is required in order to give shape to innovative ideas that generate new value for the world. Casio is making the most of its five core technologies

Using highly advanced technology to create highly original products





Employing intellectual curiosity to create products that support intellectual creativity

Where value comes from

15

# Consistently Creating Unprecedented, Truly Needed Products

The Smart Outdoor Watch WSD-F10 represents a new product category. By linking with a smartphone, it can provide timely information that will enhance enjoyment of the outdoors. The road that led to its creation reveals Casio's unique product development approach.



original Casio app for the

watch measures changes in

the wearer's exertion level.

Other apps can also be added

which runs on the Android Wear $^{TM}$  platform.

to further enhance the capabilities of the device.

Generating Breakthroughs by Going Back to Square One

Around the end of 2011, a new concept began to emerge among Casio developers. They started considering how to create a new Internet-connected product worn on the wrist, a prime location for an information device. The following spring, Casio launched a project to develop a wrist device.

By the end of 2012, the first prototype was ready. With an emphasis on versatility, it resembled a smaller version of a smartphone, both in function and shape. Then the project members realized that, while it was great to have a device that could do anything, smartphones were already more or less serving that purpose. What would be the advantage of using the device on the wrist? Facing these challenges, the project was postponed.

Next, the team worked on a wrist device for use by runners. Although it had lots of features such as GPS, it also showed drawbacks—it was heavier and had a shorter battery life than electronic runner's watches on the market. Smartphone apps that could compete with the new wrist device were also already available. Senior management decided that the proposed product would not be a market winner.

Development team member Okada recalls that they were still struggling to make a breakthrough at that point. Their goal was to create entirely new value that no one had seen before, something that consumers would find truly necessary. But it just hadn't materialized. That was when Yamashita joined the project. He remembers opening the door to the team's workspace for the first time. Instead of a gloomy mood, he found the team full of optimism, ready to make a brand new product.

The development team members decided to go back to square one. They started to re-identify the advantages of putting a smart device on the wrist. As their thinking became more and more focused, a tighter concept emerged: a product that could provide handy information, in situations where using a smartphone would be too troublesome.

Finally, they hit upon the precise idea of a "smart outdoor watch" that could demonstrate truly unique value in outdoor leisure activities. Take mountain trekking, for example. With a smartphone tucked away in a backpack, the user could give a verbal command to the smart watch at the first sign of dark clouds, and the watch could instantly display the locations where it was raining nearby. Or when cycling, a user could easily check the smart watch to see the remaining distance to the destination. The watch could even advise the wearer when to take a rest. A complete vision for the new product had crystallized in the minds of the development team members. They formalized the concept, and finally got the go-ahead to create the product.

Takeshi Okada

Emerging Business Department, Hamura R&D Center

Since joining Casio in 2000, Okada has worked on the development of PDAs, business terminals, cell phones, and network services. When the wrist device development concept emerged at the end of 2011, a team was assembled, and Okada was tasked with planning and specification design.



Hiroshi Katsuda Emerging Business Department, Hamura R&D Center

Katsuta joined Casio in 2010. After working on the development of digital cameras, he moved into devices for sports applications. In the spring of 2012, he joined the wrist device development project, and is primarily responsible for packaging development



Itsuki Yamashita
Emerging Business Department,
Hamura R&D Center

After joining Casio in 2013, Yamashita was assigned to the Emerging Business Department, and immediately joined the wrist device development project. In 2014, he became the firmware developer.



# Conveying the Ineffable Concept with a Prototype

The team began full-scale development. They made it a goal to ensure toughness, and they wanted the product to meet US MIL standards by passing the necessary drop and vibration, and other testing.

One of the team's absolute requirements was the development of a waterproof mic. Understanding that users engaged in outdoor activities would often not have their hands free, a mic would be essential for voice operation of the device. They also realized that outdoor activities—fishing and many others—often involve water and the possibility of bad weather. Rather than just creating a device that would be resistant to water spray, the team was determined to build the world's first smart watch that is water resistant to 50 meters. Team member Katsuda explains the challenge: "We thoroughly examined potential materials for a vibrating membrane that would be both highly water resistant and could effectively transmit sound. Through a process of trial and error, we also came up with a construction that worked acoustically while still being able to resist deformation under strong physical pressure. With the unique product value delivered by 50-meter waterproof performance and resilience in difficult outdoor environments, we knew that we would be able to ensure very clear differentiation from competing products."

Around the time product development began, Google announced the Android Wear™ operating system for wearable devices. The team talked with Google about permission to use the OS. They described the product, including the highly original Casio display with monochrome and color LCDs layered one on top of the other. However, Google did not think its OS was right for such specifications, and the discussions faltered.

This, however, was no excuse to drop the project. With the dual-layer liquid crystal display, easy to view even in bright sunlight, and time shown using only the monochrome LCD to greatly extend battery life, the team members were confident that consumers would love the product. So they set about making a prototype that would demonstrate the appeal of their concept in a way that words could not match.

At the next consultation with Google, they showed a prototype with a dual-layer LCD. The Google team described the dual-layer design as astounding and was very impressed. Next, Yamashita and his team

refined the software for full practical use, and entered final-stage consultations with the Google team. Yamashita remembers, "They agreed to test our dual-layer LCD that could be conveniently used with Android Wear™, and finally we obtained the consent of the decision maker at Google. If we had not been able to do so, we would have lost some of the best functionality of the display."

Developing an Original App
That People Will Use
Again and Again

What kind of functionality does an outdoor enthusiast really need? How do we create value that people will continue to use over the years? In order to find the answers to these questions, team member Okada interviewed mountain climbers and actually went fishing with professional bass anglers. The knowledge he gained was used to create functions in the product's original app and to provide information tailored to each type of user's activities. These helpful functions perform tasks such as informing a climber that it is 30 minutes to sunrise, or providing advice to a cyclist on the timing of calorie intake, or notifying an angler of suitable time periods for fishing, based on the moon phase and hour angle. Okada describes the direction of future development, "Originally, when pursuing the special value that a wrist device could provide, we came up with the concept of 'momentary value.' This is the kind of value that provides helpful information the user may not know is available, the moment the user needs it. We want to continue expanding on this concept for people who enjoy the outdoors."

In March 2016, Casio released the wrist device developed by this team: the Smart Outdoor Watch WSD-F10. The development team had realized their quest to find new value that people would continue to use. By refusing to give up whenever they hit a wall, and by continuing to generate breakthroughs based on novel ideas, they rose to the challenge time and again. Leveraging this spirit of development as a driving force, Casio will continue to create unprecedented products that people truly need.



Water-resistant to 50 meters



Compliant with US MIL standards



Dual-layer display

# GLOBAL



## Casio, growing worldwide

Casio products are familiar to many people, and the brand is delivered worldwide through global production systems and sales networks. Casio products are useful in people's lives, and we will continue to provide products and services that offer new value around the world.



#### Percentage of sales outside Japan

68.6%

#### BRAND

#### Casio brand trademark registrations

Territories that are part of one regional trademark system are counted as one region

187 countries and regions

#### Global sales areas

#### GROUP NETWORK

#### Size of Casio Group

Number of headquarters and group companies (as of July 8, 2016)

#### **PRODUCTS**

#### Total calculator shipments worldwide

Total shipments from September 1965 to March 2016

billion units or more

#### Total G-SHOCK shipments worldwide

Total shipments from April 1983 to March 2016

million units or more

#### COMMUNICATION

Casio Techno Co., Ltd.

CXD Next Co., Ltd.

#### Experience-based events to promote shared awareness: SHOCK THE WORLD

SHOCK THE WORLD is a global promotional campaign that conveys the G-SHOCK brand worldview, along with its essential feature of toughness. Since the first event in New York in 2008, events have been held in a total of 73 cities around the world (as of July 2016). The initiative is designed to allow G-SHOCK fans to enjoy the product's appeal through a full sensory experience.

#### Raising the profile of the Casio brand at international trade shows

Every year, Casio participates in exhibitions attended by the world's leading companies. Held annually in Las Vegas, the International Consumer Electronics Show (CES) is one of the largest events of its kind anywhere. Baselworld is a watch and jewelry fair held in Switzerland that attracts media and buyers from all over the world. By participating in these and other events, Casio is distributing its latest information globally.

#### Casio Brasil Comercio De Produtos Eletronicos Ltda.

SHOCK THE WORLD 2016 SHANGHAI





Baselworld 2016

## Casio, a globally trusted brand

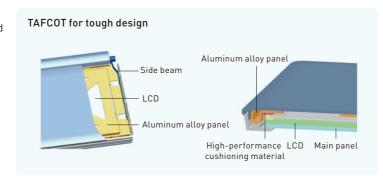
Seeking to ensure that customers can use Casio products with confidence over many years, the company maintains uncompromising manufacturing practices and strict quality control from the design stage to the completion of the finished product. In addition, Casio is also working worldwide to help people lead more enjoyable, safer lives.



#### Reliability initiatives

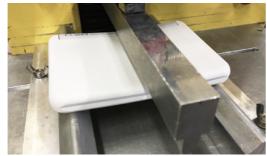
#### Product design concept for durability and peace of mind

Casio design concepts ensure that customers will be able to use their Casio products for a long time. Casio developed TAFCOT technology for product toughness; it enhances body rigidity with side beams made from high-strength material and aluminum alloy panels. This design mitigates any external force applied to the LCD panel thanks to high-performance cushioning material and the aluminum alloy panels, providing a protective interior space. Casio has adopted this technology for its electronic dictionaries to protect them from damage if dropped during use or if pressure is placed on them inside a bag.



#### Thorough quality testing in the design stage

Casio quality standards are created to ensure that products can be used with confidence in diverse situations. Casio performs stringent testing by prototyping products from the design stage. For example, electronic dictionaries are subjected to a pressure test, where a load is placed on the dictionary unit, verifying top-down robustness. Since Casio handheld terminals are designed for use in locations high above the ground, they are tested to ensure they provide height-specified drop strength. Only those prototypes that meet all the quality criteria for the product concerned, such as water and dust resistance, move on to the production process.



Electronic dictionary: Pressure test

#### Production system enhances quality with a high level of manufacturing technology

The Premium Production Line at Yamagata Casio produces high-quality Casio brand watches that sell at higher price points. It employs technology to maximize accuracy using the company's own special manufacturing equipment, combined with a high level of human skill found only in top certified personnel. Under a global production system, Casio sites deliver high product quality worldwide. For example, to prevent any particulate matter from contaminating products being made at Casio Thailand, plastic parts are molded in a clean room. This ensures steady production of highly reliable products.





Yamagata Casio: Premium Production Line Casio Thailand: Plastic part molding line

#### **Environmental initiatives**

#### Environmentally friendly products free from harmful mercury

Casio has been working hard to create products with a low impact on the environment. It has invented high-brightness projectors using the world's first light source technology that replaces high-pressure mercury lamps. As a result, all Casio projectors are now mercury-free. Global efforts to eliminate the use of mercury in products include the adoption of the Minamata Convention on Mercury, which aims to reduce the risk of hazardous mercury contamination. As part of this effort, Casio is striving to reduce its environmental impact as a leading company that provides mercury-free projectors.



#### Regional initiatives to address climate change

At Casio Electronics (Shenzhen), a production site in China, employee volunteers participate in an annual tree planting activity organized by the local government. With 2016 marking the ninth year of its involvement, the company is helping to promote regional reforestation.

The Casio World Open, a men's professional golf tournament in Japan sponsored by Casio, has been taking steps to offset the CO<sub>2</sub> emitted by its shuttle buses during the tournament since 2010. The tournament does its part by purchasing emissions credits, while also encouraging guests to use the shuttle bus rather than drive their own vehicles in order to help reduce CO<sub>2</sub> emissions.





Casio Electronics (Shenzhen) tree planting activity (Left: Tree planting activity in 2015 Right: Maturing trees that were planted in 2014]

#### Social contribution activities

#### Helping to improve educational environments and promote interest in science and technology

Casio China is promoting "My Dream Backpack," a program to help children lacking educational opportunities due to poverty or natural disasters. It aims to help improve the educational environment for these children by donating backpacks filled with school supplies, along with Casio products that can be used in the classroom, such as calculators and electronic musical instruments.

The Toshio Kashio Memorial Museum of Invention was established to showcase numerous inventions made by one of the founders of Casio. The museum holds an exhibit for children during the summer vacation. In 2015, young visitors to the museum were able to learn digital principles and experience the advantages of digitalization. To help them develop an interest in science and technology through a hands-on exhibit, the museum allowed children to make comparisons of a calculator with an abacus, a stopwatch with an hourglass, and an electronic dictionary with a paper one.







Toshio Kashio Memorial Museum of Invention: Summer Vacation Children's Exhibit

# HISTORY

### History of Casio innovation

Utilizing their distinct individual talents, the four Kashio brothers—Tadao, Toshio, Kazuo, and Yukio—succeeded in developing the world's first compact all-electric calculator, and founded Casio Computer Co., Ltd. in 1957. Toshio, the second eldest, was in charge of development. He had the notion that "invention is the mother of necessity." Instead of developing something that society had been looking for, he believed the product he and his brothers had invented would tap new needs people didn't even know they had. This conviction remained as the development philosophy of Casio, and the company went on to invent and develop many innovative products such as electronic calculators, watches, and electronic musical instruments using its advanced digital technologies. Casio continues to create new value even today.



1957: The world's first compact all-electric calculator. It boasted quiet, high-speed calculation in a unit small enough to be used in an office. The 14-A offered reliability thanks to Casio's development of its own relays, which were dust-resistant and less prone to contact failure. It was adopted by many companies and research institutions, and reduced the labor required for office and technical computing.



#### 001

1965: The world's first electronic desktop calculator with a memory function.

8888888 8



Left to right: Toshio (second eldest), Kazuo (third eldest), Tadao (eldest) Yukio (youngest). In front is the 14-A, the calculator they successfully developed



1972: A scientific calculator that enabled one-key operation for a variety of calculations such as triaonometric and exponential functions

fx-1



1972: The world's first personal calculator. It sold for just 12,800 yen thanks to a simple component design, a single-chip LSI and a six-digit display. The Casio Mini became widely popular in ordinary homes, and the series sold a total of 10 million units. It also contributed to semiconductor development



1974: This electronic watch was based on the concept of timekeeping by adding one second at a time. It was the world's first wristwatch to feature an automatic calendar that correctly adjusted the number of days for each month



1980: An electronic musical instrument based on the concept of a keyboard that anyone can enjoy playing. It produced sounds that mimicked various types of acoustic instruments using a Consonant-Vowel System developed by focusing on temporal variations in sound.



#### TR-2000

1981: A simple electronic dictionary with both English-Japanese and Japanese-English dictionaries



#### G-SHOCK

1983: A shock-resistant watch created under the development concept of a watch that will not break, even if dropped. It overturned the established notion of watches being delicate and breakable devices. The practical G-SHOCK could be worn anywhere and provided toughness to support users worldwide.



#### TV-10

1983: World's smallest pocket LCD TV (at that time), with a display that was easy to view in both bright and dark



#### SL-800

1983: A credit card-sized calculator with a thickness of just 0.8 mm. It was the ultimate thin calculator that could be taken and used anywhere.



1984: A digital synthesizer with a P.D. sound source that allowed users to easily produce a variety of sounds.



#### fx-7000G

1985: A scientific calculator that enabled the user to intuitively understand formulas with its graphing display.



1991: A full-fledged electronic piano featuring an AP sound source for delicate and rich expression.



1995: World's first consumer digital camera with an LCD. It helped to popularize digital cameras, creating a culture of communication through



#### FKT-100

1995: A wristwatch that always provided the wearer with the correct time, thanks to a function that maintained the exact time based on the reception of time calibration radio signals.



1996: This product marked the beginning of full-scale electronic dictionary deployment. It expanded the electronic dictionary market through substantial improvement of content and search capabilities.



1996: A portable information terminal that ran on the Windows® CE open platform.



2000: A tough cellular phone featuring shock and water resistance. This popular cellular phone could be used almost anywhere.

#### EXILIM



2002: A wearable card-sized camera with an LCD monitor and the world's slimmest profile (at that time). Since it was portable enough to be taken everywhere, the camera allowed users to capture images whenever the mood struck them.



2003: A space-saving and stylish electronic piano for playing enjoyment.



#### XD-1 4600

2004: An electronic dictionary with a robust design that resisted shock and vibration.



#### EX-F1

2008: A digital camera that offered high-speed continuous shooting at 60 photos per second.



#### Green Slim Projector

2010: Thanks to a hybrid light source using both laser and LED technologies, this environmentally responsible projector offered high brightness without using a high-pressure mercury lamp. A light source lifespan of 20,000 hours was also achieved.



#### EX-TR100

2011: This digital camera offered a dynamic shooting style thanks to a freely adjustable frame and a rotating lens.



#### FX-FR10

2014: A digital camera featuring a design with a detachable controller unit with an LCD monitor.

 $1957 \rightarrow 1960s \rightarrow 1970s \rightarrow 1980s \rightarrow 1990s \rightarrow 200$ 

# Shaping the future with ideas that defy conventional thinking and an unshakable belief in human potential

Envisioning a world no one has ever seen

#### Company Data (As of March 31, 2016)

Casio Computer Co., Ltd. Name

Headquarters 6-2, Hon-machi 1-chome, Shibuya-ku,

Tokyo 151-8543 Japan

+81-3-5334-4111 Telephone

Established June 1, 1957

Paid-in capital

**Employees** 

11,322 (consolidated)

¥48,592 million

URL

http://world.casio.com/

Hironori Daitoku

Jin Nakayama

#### Directors (As of June 29, 2016)

Chairman and CEO

Corporate Overview

President and COO Kazuhiro Kashio **Executive Vice President** Hiroshi Nakamura Senior Executive Managing Akinori Takagi Officers, Members of the Board Yuichi Masuda Shigenori Itoh Executive Officers, Members Toshiyuki Yamagishi of the Board Shin Takano

Harumi Saito

Kazuo Kashio

Directors, Members Hirokazu Ishikawa (Outside) of the Board Makoto Kotani (Outside)

Audit & Supervisory Tadashi Takasu **Board Member** 

Outside Audit & Supervisory Board Kazuhiko Tozawa Members

Senior Executive Nobuyuki Mochinaga Officers Tetsuo Kashio Takashi Kashio

**Executive Officers** 

Makoto Kobayashi Atsushi Yazawa Koji Moriya Masayuki Uehara Nobuyuki Inada

Toshiyuki Iguchi Hideaki Terada Shinji Ota Hitoshi Ando Kazuyuki Yamashita

#### Net Sales and Income (Consolidated, Fiscal Year Ended March 31, 2016)

¥41,069 million ¥352,258 million Net sales Ordinary income ¥42,169 million ¥31.194 million Operating income Net income

Others

Net sales

¥8,633 million

Operating loss

¥114 million

• Molds. etc.

#### ■Sales and operating income by reporting business segment

\* The consolidated operating income values by segment represent numbers before adjustme (Adjustment amount: -¥4,873 million)



Consumer

85.4

Net sales ¥300,956 million

Operating income ¥48.981 million

- Watches
- Label printers Clocks • Electronic musical
- Electronic instruments dictionaries • Digital cameras, Calculators etc.

System Equipment

Net sales ¥42,669 million

Operating loss ¥1.825 million

- Handheld terminals
- Electronic cash registers
- Office computers
- Page printers • Data projectors, etc.

■Sales by region

