# Discussions with Top Management

# Developing Impressive Products to Delight Customers

Casio has been striving to develop light weight, thin, short, compact and low power consumption products based on its management philosophy of "Creation and Contribution." For Environmental Report 2003, Casio Computer's directors and the general manager of the Quality & Environment Center held a meeting, inviting Tsutomu lijima, a representative of the Association for Environmental Planners, an environmental NGO, to discuss Casio products and act as the coordinator of the talks. They exchanged opinions about third parties' expectations for and ideas about Casio.

## Starting point of the development of Casio products: light weight, thin, short, compact and low power consumption

lijima: Recently, every manufacturing company is required to pay attention to the environment in its corporate activities. I believe that Casio is an advanced company in that it has always aimed to make light weight, thin, short, compact and low power consumption products in its manufacturing, which eventually leads to energy conservation and resource saving. General consumers, however, do not usually associate the concept of light weight, thin, short, compact and low power consumption with the environment. Through this discussion session, I expect you to develop further discussions to help everyone



Yukio Kashio, Executive Vice President

understand more about this issue.

Firstly, let's talk about the world's first pure electric, small calculator developed in 1957. At that time, mechanical calculators made in the Unite States were dominant, and compared with them, the calculator was much smaller. What responses were made to the product?

**Kashio:** At that time, calculators for general office use were mechanical, wheeled ones, but we developed an electronic calculator, the size of which was as large as a desk. It was indeed enormous compared with products available today, but the calculator was much more excellent than the wheeled ones in terms of speed and performance. It weighed as much as 140 kg and had to be carried by four adults! And you could buy a car for the price for this calculator! We visited our customers, carrying the calculator in a car to demonstrate its functions. At that time, there were few air condition-

ers. Customers felt pity watching four Casio employees carrying the calculator dripping with sweat, and said, "It would be hard to take it back to your office, so we will purchase it." (Laughing)

Subsequently in 1965, we developed an electric calculator, which was smaller than the electric one, but still weighed 15 kg. Initially it was designed for business use. We, however, were always pursuing light weight, thin, short, compact and low power consumption products and were committed to further downsizing and cost reduction. As a result, we could develop an electronic calculator for general consumers. I think that the calculator was the first product that made the market recognize the excellent features of Casio products. Presently, an IC electronic calculator weighs only tens of grams.

We attempted to develop a product as thin as possible, aiming to overcome the hurdle of 1 mm. We succeeded in reducing the thickness of an electronic calculator to 0.8 mm. We will continue to develop light weight, thin, short, compact and low power consumption products to provide customers with impressive products. I think it our pleasure as well as role and mission as an electronics manufacturer to please our customers with innovative products.

**lijima:** I guess that the creation of new products always involved various pains and effort. Could you talk about the hard efforts you have made in developing products?





Yoshio Ono, Managing Director

**Ono:** Watches represent all the techniques for light weight, thin, short, compact and low power consumption products. When our company started to participate in the manufacturing of watches, it was taken for granted that timepieces were made of metal. We, however, used plastics for manufacturing watches in order to utilize our technologies for electronic calculators and to enable mass production.

It was indeed difficult to improve plastics to make them suitable as a material for watches. First of all, watches needed to be water-proof. Also, a watch had a wrist band, which needed to be soft and to be connected with the hard body. We determined to integrate the two parts, one of which was soft and the other was hard.

To do this, we needed to develop new plastic materials by tying up and collaborating with a company specializing in plastics. Independent development would require more cost and time, and it was much more efficient to form a technology partnership with a company having expert knowledge about plastics.

For the development of the "G-Shock" series, we needed to conduct field examinations on a continuous basis to make the watches usable under various conditions. For product development, it is important to utilize our actual life experience, in addition to desk plans. For example, those developing a watch for divers might need to experience diving and those developing a watch for runners might need to participate in a marathon race! We have a product named Protrek for mountaineers, which is equipped with technologies such as altitude sensors and direction sensors. We developed this product by experiencing contact with nature for ourselves.

**lijima:** You created the "G-Shock" series by deepening understanding about human beings and nature through field experiments. Your wish to protect nature as a resource for creatures and to have contact with nature was indirectly communicated to consumers, which led to the smash hit of the products.

Now, I would like to ask about the story behind your next hit product: electronic diaries.

**Ono:** Electronic diaries were created in the process of developing electronic calculators. Our first electronic diary was released in 1983, as far as I remember. It also became the prototype for today's electronic dictionaries. Initially, the focus of an electronic diary was placed on the storage of personal data such as addresses and telephone numbers, not on the dictionary function. We developed it into a smash hit by adding the dictionary function.

Electronic dictionaries were developed based on the concept of computerizing paper dictionaries. Our latest electronic dictionary is equipped with functionality equivalent to 23 different paper dictionaries! It is easy to carry and provides an easy-to-use search function, which seems to have attracted many consumers.

Yamada: Parents always purchase new dictionaries for their children when they enter school. Every student has various dictionaries, such as a Japanese dictionary, a dictionary of kanji characters, a dictionary of old Japanese, an English-Japanese dictionary, and a

#### The Participants

Yukio Kashio, Executive Vice President of Casio Computer Co., Ltd.

Yoshio Ono, Managing Director, Member of The Board Senior General Manager Product Development HQ.

Atsushi Mawatari, Director, Member of The Board Senior General Manager Electronic Device Div.

Yoshinobu Yamada, General Manager of the Quality & Environment Center

Coordinator Tsutomu Iijima, Representative of the Association for Environmental Planners

Japanese-English dictionary. These five dictionaries together become rather heavy, and the weight of 23 dictionaries will amount to as much as 14 kg. Our latest electronic dictionary contributes to the saving of approximately 130,000 trees (based on the calculation that 50 kg of paper is produced from one tree; P19). Electronic dictionaries are much easier to carry than paper dictionaries and they were developed as advanced products towards a paperless culture.

**Kashio:** Electronic dictionaries also sold well because the elderly supported them. For them, the letters printed in



Yoshinobu Yamada, General Manager of the Quality & Environment Center

read, and so they prefer electronic ones. Electronic dictionaries indeed represent a universal design product for use across generations, including elementary school pupils, junior and senior high school students, university students, and working people.

## Casio's environmental management ranking jumping up to No. 19 in an environmental management survey

**lijima:** Casio was ranked No. 19 among manufacturers in the 6th environmental management survey conducted by Nihon Keizai Shimbun for achievements in fiscal 2002. What environmental management policies led to this excellent result?

Yamada: In the same environmental management survey for the previous year, we were ranked No. 171. Following this result, we analyzed our activities to identify the problems and what should be done in the next fiscal year to overcome the problems. Thus, we utilized the survey as a benchmark to clearly set the themes and goals for our environmental activities. We will continue to do this. The most important thing, however, is to steadily promote the Plan, Do, Check, and Action (PDCA) cycle (P13) in our environmental management system.

**lijima:** Regarding collaboration for technological innovation, which was discussed earlier, doesn't technological partnerships with various companies make it difficult for you to promote the green procurement of various components and devices when you want to independently develop environmentallyfriendly products?

Yamada: As a premise for green procurement, we need to obtain support from our suppliers. We never force them, but ask them to give us written



answers to our requests about green procurement. We rank the answers from suppliers, thereby clearly understanding their environmental policies and attitudes and what each of them thinks about the environment. We utilize these answers as a tool for environmental communication with our suppliers.

As the most important tool for building up a green procurement system, we introduced the Casio Voluntary Plan for the Environment (CVPE) in 1993. This Plan provides guidelines for voluntary environmental activities and shows the themes and measures for each stage of our business, from development, design, manufacturing, distribution, repair services to recovery/disposal. We attempt to develop products in line with this Voluntary Plan, in principle. The Plan has now been updated to Version VII and we will further continue to revise it in order to respond to changes in environmental trends. As a means to promote the implementation of the Plan, we have also developed our own environmental auditing sheet (P17). Using the sheet, we evaluate our own progress towards the achievement of the objectives declared in the CVPE at the three stages of planning, design, and decisionmaking on mass production.

Also, all Group companies with development units are ISO 14001 certified. At these companies, each business unit sets its own environmental objectives based on indirect impact assessment in compliance with ISO 14001. Furthermore, to promote environmental activities, we hold the Casio Environmental Conference twice a year, in order to communicate and share information with managers of the companies who are in charge of development, design and manufacturing units. In addition, the Quality & Environment Center has now its own website, through which employees can view and share company-wide environmental information, including educational materials.

Mawatari: The Electronic Component Division, recognizing the heavy environmental impacts caused by its activities, is making efforts to reduce such impacts. For example, 80% of electricity used by the Casio Group is consumed in the manufacturing of liquid crystals (P30). The TFT liquid crystals produced by Kochi Casio are used exclusively for mobile applications that require further power saving. For some of the LED backlights for liquid crystal displays of digital cameras, we use coldcathode tubes, which contain mercury. In the future, however, we will make all our LED backlights mercury-free. Initially we used four LEDs to ensure brightness but now use two as a result of improved performance of liquid crystals and LEDs. We aim to promote technological development for further power saving and cost reduction in order to ensure profitability as a company in a way compatible with environmental conservation.

Factories manufacturing electronic components use enormous amounts of energy and water and it is important for them to consider methods to reduce the environmental impacts caused by their



Atsushi Mawatari, Director

environmental impacts caused by their activities, which will directly affect their running costs. For passive liquid crystals used for timepieces and electronic calculators, we are facing competition from Chinese products. This will raise our product prices if we make further investments in the introduction of equipment and technologies to make more eco products, but we are determined to develop high-quality products with less environmental impact as Casio brand products, which we believe, will eventually be chosen by consumers.

### Development of impressive products will lead to contributions to society.

**lijima:** It is said that in recent years companies are facing more requests to fulfill their social responsibilities. How does Casio respond to this trend?

Yamada: In so-called Corporate Social Responsibility (CSR), environmental responsibility is just one factor. It might therefore be rather hard to deal with CSR in detail in our environmental reports. Rather, we should incorporate CSR in discussions concerning our management policies, associating it with corporate quality.

**lijima:** General consumers seem to associate Corporate Social Responsibility with what companies did or will do in the case of corporate scandals. There have been many such scandals in recent years. For companies, CSR is meaningless unless its fulfillment leads to higher corporate performance. For example, CSR could be a standard for investors to decide in which company to invest. Thus CSR might expand the possible range of fund raising. I think that companies should fulfill CSR in order to enhance their brand values.

**Kashio:** Casio's product lines include musical instruments. We manufacture

keyboards at comparatively reasonable prices, mainly for educational purposes. We don't think, however, that keyboards for children, which are sold at more reasonable prices, do not need to produce good sounds. Children in the early stages of growth are most sensitive to sounds. Younger children therefore need better sounds. We develop sound sources for children to help them develop rich emotions, through which we are performing our social responsibility, I think.

**lijima:** Making people happy by providing good sounds! I think a similar thing applies to digital cameras. In our daily lives, we photograph the moments that

we want to retain in our memories. The products provided by Casio are used in activities that appeal to human emotions and invoke joy and excitement.



ir. Iijima

I think this makes technological innovations truly meaningful.

Thank you very much for your interesting comments. Finally, would you each please give a messages to the general readers of this environmental report and to your employees.

**Ono:** We annually input more than one hundred and several ten million products into the market as Casio brand products. As mentioned, music makes people happy. I think that all our products, including musical instruments, should help people become happy and enjoyable.

We will never stop pursuing light weight, thin, short, compact and low power consumption as our core technology. For example, lighter, thinner, and smaller cameras will change people's lifestyles and will contribute to a reduction in environmental impact. I believe that this will also enhance the value of Casio brand products.

**Mawatari:** I tell a similar thing to employees working in the Electronic Component Division. Their customers are professionals, who will evaluate our technologies. To meet the stringent standards of these professionals, it is not enough to provide products at reasonable prices. We also need to make unique proposals that other companies cannot do.

Yamada: Environmental laws and regulations targeting manufacturers have been becoming more and more stringent. Especially in Europe, manufactures must meet extremely severe requirements. In view of extended producer responsibility, producers are required to take more responsibilities because they are in the position to be able to do more than consumers. What consumers can do after products are delivered to them is limited, and it is therefore important for manufacturers to develop products that are energy-saving regardless of how consumers use them and that do not generate any hazardous substances after consumers dispose of them as waste. Recognizing that producer responsibilities can be fulfilled only by producers, we should develop more unique products, which will differentiate our products from those of competitors and enhance the power of the Casio brand.

**Kashio:** Casio's corporate philosophy is "Create and Contribute." It is said that necessity is the mother of invention. What we want to create is products that are universally required, not those that are temporarily required. Casio is a manufacturing company, and we would like to give priority to the provision of impressive products for customers, including after-sales service.