

**ΑΛΕΞΑΝΔΡΙΝΟ ΤΕΧΝΟΛΟΓΙΚΟ ΕΚΠΑΙΔΕΥΤΙΚΟ  
ΙΔΡΥΜΑ  
ΣΧΟΛΗ ΔΙΟΙΚΗΣΗΣ Κ ΟΙΚΟΝΟΜΙΑΣ  
ΤΜΗΜΑ ΛΟΓΙΣΤΙΚΗΣ**

**FINANCIAL DEVELOPMENT OF SONY**



**ΦΟΙΤΗΤΡΙΑ:ΒΑΣΙΛΕΙΟΥ ΑΡΕΤΗ  
ΚΑΘΗΓΗΤΗΣ:ΓΚΙΟΥΡΗΣ ΘΩΜΑΣ**

**ΘΕΣΣΑΛΟΝΙΚΗ 2008**

**“THE SONY CO. LTD COMPANY”  
FINANCIAL HISTORY OF SONY CO. LTD  
AT OCTOBER 11, 2007**

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## **1. General**

Sony Corporation (Sonī Kabushiki-gaisha) is a Japanese multinational conglomerate corporation and one of the world's largest media conglomerates with revenue of \$70.303 billion (as of 2007) based in Minato, Tokyo. Sony is one of the leading manufacturers of electronics, video, communications, video game consoles and information technology products for the consumer and professional markets, which developed the company into one of the world's richest companies. Sony Corporation is the electronics business unit and the parent company of the Sony group, which is engaged in business through its five operating segments: electronics, games, entertainment (motion pictures and music), financial services and other. These make Sony one of the most comprehensive entertainment companies in the world. Sony's principal business operations include Sony Corporation (Sony electronics in the U.S.), Sony Pictures Entertainment, Sony Computer Entertainment, Sony BMG Music Entertainment, Sony Ericsson and Sony Financial Holdings. As a semiconductor maker, Sony is among the worldwide top 20 semiconductor sales leaders. The company's slogan is "Sony. Like no other."

## **2. Rebuilding from the Ashes**

In September 1945, Masaru Ibuka returned to Tokyo to begin work in the war-damaged capital. A narrow room with a telephone switchboard located on the third floor of the Shirokiya Department Store (Tokyo Department Store which closed on January 1999) in Nihombashi became the new workshop for Ibuka and his group. Having barely survived the war fires, the building had cracks all over its concrete exterior. Without windows, the new office was small and bleak. Gradually, the office environment started to improve as the silicon steel boards, drilling machines and other equipment were transported from the Suzuka factory, and the personnel who had been tying up loose ends there joined the Shirokiya staff.

In October, Ibuka and his group established a new facility, called "Tokyo Tsushin Kenkyujo (Toshkent), or "Tokyo Telecommunications Research Institute". Although everyone was eager to work for the new company and to help rebuild post-war Japan with their engineering know-how, no one knew what to do at first.

Most of the salaries were paid out of Ibuka's small, and dwindling, savings. To stay in business, they had to do something. After the war, the Japanese were hungry for news around the world. Many had war-damaged radios, or ones that had had the shortwave unit disconnected by the military police to prevent from tuning into enemy propaganda. Ibuka's factory repaired radios and made shortwave converters

or adapters that could easily make medium-wave radios into super heterodyne or all-wave receivers. Demand for such radios was rapidly increasing.

The shortwave adapters attracted wide attention, and the Asahi Shim bun featured them in its "Blue Pencil" column. As a result, demand increased even further. This article also brought Iuka and Akio Morita back together again (\*). As the war ended, Morita was backing home at Nosegays, in Aichi Prefecture. One day, he read the column that mentioned Iuka's name, and he wrote to his friend immediately. Iuka replied at once, urging Morita to come to Tokyo. Since he had been offered a job as a lecturer at the Tokyo Institute of Technology (Tokomak), Morita wasted no time in moving to Tokyo and in renewing their acquaintance.

(\*) Iuka and Morita, the founders of Sony, first encountered each other at the meetings of the Wartime Research Committee that was studying new types of weapons during the war. The two men became close friends; thought Iuka was more than a dozen years older.

In addition to work, radio repairs brought employees an extra reward as well. They often received rice from houses they visited on service calls, in addition to a normal service fee.

This was treasured during a time of serious food shortages. Subsequently, Iuka's factory worked on an electric rice cooker. As the war plants had closed down, there was more electricity than was needed at the time. This surplus fed Iuka's desire to produce items which were needed for everyday life. The electric rice cooker, made by merely interlocking aluminium electrodes which were connected to the bottom of a wooden tub, was a primitive product. The result depended heavily on the kind of rice used and the weight of the water. Tasty rice was a rarity, as the rice cooker produced mostly undercooked or overcooked rice. It was a memorable first failure for Iuka and his staff.

The rice needed for the development of the electric rice cooker was procured by Shozaburo Tachikawa on the black market. Tachikawa was a distant relative of Iuka's, and as a child, Iuka used to visit the Tachikawa family, who operated a marine products wholesaler in Hakodate, Hokkaido. Whenever Iuka visited Tachikawa, the whole family would make such a big fuss, saying, "Masaru is here, <and they would hide their clocks and other such items so as to prevent Iuka from tinkering with them. Wahiawa felt close to Iuka and looked up to him like an elder brother. Upon graduating from university, Tachikawa had expertly handled the Japan Measurement Instrument Company (Misspoke)'s general affairs. At Toshkent, he took charge of finance, personnel and general affairs. One of his first major tasks was to purchase rice on the black market, a routine that continued for several years until the food supply situation improved.

Needless to say, some Toshkent products were very successful. Vacuum-tube voltmeter that Yasuda worked on from the time of Misspoke was an excellent example. The company began supplying this product to government offices. The new business of Iuka and his group was well under way by the end of 1945.

### **3. The Choice of the Name**

The choice of the name Sony can be traced back to the spirit of Masaru Ibuka and Akio Morita. Back then, the name Sony had no obvious connection to technology or the electronics industry. Ibuka and Morita explained that they did not want to limit themselves to electronics. Rather, they wanted to be pioneers, to take on new fields, and build a corporate group recognized around the world.

Thus, Sony founded Sony Enterprise Co. Ltd. in 1961 to manage the Sony Building in Ginza. Over the next several years, Sony Enterprise added Sony Plaza, a retail chain to market imported goods, French restaurant Maxim's de Paris, Sony Travel Service, an insurance agency, and other services. Building on the theme not hardware, but 'heart ware' for everyday life to unite a diverse range of businesses, Sony Enterprise continued to move in new directions. It put together a plan to import fine foreign goods and, in the Mid-1970s, started to import sports equipment and fashionable luxury items. Sony was at the time aggressively engaged in exporting products and expanding its overseas operations. However, Morita thought it was important for Japan to be more receptive to imports and foreign investment in order to foster more balanced relationships with other countries.

Most of Sony's diversification into new areas of business was through joint ventures with foreign companies. The first operation to be diversified involved products connected to Sony's electronics business.

#### ***Over 80% of the Global Market***

In March 1965, Sony and Tektronix, Inc. of the U.S. formed Sony/Tektronix Corporation in Japan with equal start-up capital from each company. At the time, it was highly unusual for a foreign company to have more than a 49% share in a joint venture with a Japanese company. Tektronix was a well-known instrumentation and measuring equipment manufacturer commanding over 80% of the global market for oscilloscopes. In order to research new technologies, reliable high precision measuring instruments are needed. In fact, it is said that Leona Esaki's discovery of the semiconductor tunnelling effect was made possible by the innovative oscilloscope technology developed by Tektronix.

Tektronix was aiming to expand its market into Europe and Japan during the post war recovery period of the 1950s. Tektronix president Howard Vollum felt that a joint venture was the best method of penetrating the heavily protected Japanese market. Thus, in 1963 he set out to look for a partner in Japan.

Fate directed Vollum to Ibuka and Sony's management team. He felt that Ibuka had a keen intelligence that he had not seen in other company presidents. After meeting with Ibuka, Vollum visited Morita, who was then president of SONAM. Vollum was very impressed with Morita. An extremely energetic man. A passionate engineer with a sharp mind and strong curiosity. He even has laboratory equipment set up at his house to try out his latest ideas, thought Vollum. Tektronix was founded in the same year as Sony (1946) and the two companies had similar corporate cultures. They both placed priority on engineering expertise and had strong reputations for developing innovative products. Thus, although Sony and Tektronix had different core competencies, they seemed a good match. Both sides agreed that the potential was there for a successful joint venture.

Sony/Tektronix was housed in Sony's Osaki factory when it began operations. Morita was appointed president and Vollum vice president. They were joined by Masanobu Tada (who would later become president), Takashi Kumakura, and ten additional employees. Within ten years, production and sales of the company's main product, the oscilloscope, led the industry. Although initially established to conduct only production and marketing duties for Tektronix products, Sony/Tektronix eventually began to carry out R&D work. The company expanded its operations into new fields, including other electronic measuring instruments, graphic displays, broadcasting equipment, and optical devices. With such a variety of products, Sony/Tektronix was able to meet the needs of a wide range of customers.

By the second half of the 1970s, Sony had established a number of joint ventures in a diverse range of fields, many of which seemed to have no relation to electronics products. At this time, the Japanese economy was growing steadily, and consumer tastes were diversifying as purchasing power increased.

#### **4. Establishing Tokyo Tsushim Kogyo**

Steele joined Sony and Sony Broadcast Ltd. (SBC) was established. Thanks to Steele's leadership and the hard work of his team, Sony's European broadcast business expanded rapidly.

In the United States, Tsunoda was told by Morizono that Sony must fulfil a key requirement of manufacturers selling to broadcast stations--establishing a 24-hour service system. In response, all of Sony's service engineers were given pagers and their cars were equipped with tools. If there was a machine in need of repair, Sony made it a rule that the problem would be fixed by morning, even if it required working all night. When the service teams first visited customers and introduced themselves, the broadcast stations did not take them seriously saying, we are professionals. We cannot entrust our operations to a consumer products manufacturer. However, after about six months, Sony began building a solid reputation among the broadcasting community for the quality of its service. If you call Sony, they'll fix anything in half a day or one day at the most. No company has ever done this before. Sony really cares about their customers, was the

reaction in the broadcast community. Sony took note of this success and introduced a 24-hour service system in Europe right from the start.

Morizono strictly forbade his salesmen to sell in areas where service was not available. Sales people generally do what they can to get a customer to make a purchase, but Morizono stood by his strong belief that selling is not everything. If a customer buys our product and it breaks, service has to be provided. If we can't provide adequate service, the customer will never buy Sony products again. We'll lose their trust, said Morizono.

Sony's broadcast business remains successful thanks to the establishment of business operations in Europe, the United States and Japan that meet the customer's every need--an approach that has enabled the development of a sound relationship based on mutual trust. The local business bases eventually expanded from sales and service functions to include design and development of equipment customized to the needs of customers.

## **5. Heitaro Nakajima join Sony**

In 1971, Heitaro Nakajima resigned from his post as head of NHK's Technical Research Laboratories and joined Sony. Four years earlier at NHK, Nakajima had commenced work on the digitization of sound and within two years had developed the first digital audio tape recorder. He was struck with the idea of digitizing sound when trying to improve the sound quality of FM broadcasts. Nakajima thought that by using digital technology, which had only been used in computers and long-distance telephone transmission, the quality of recorded sound could be improved.

Spurred by the 1964 Tokyo Olympic Games, the Japanese government as well as private industries had aggressively invested in R&D activities related to broadcast technology. This drive induced growth and development of the domestic broadcast industry. For example, satellite broadcasting was developed and colour transmission followed closely behind. Until then, however, these advances in video and audio recording were restricted to analog technologies.

Ohson believed that if you think too much about a project before doing it, you could always find faults with it and too much discussion just creates delays. Ohson, Shizuo Takashino, and other members of the development team worked through the night two or three times a week and they kept each other motivated by constantly cracking jokes or having a few beers after work. Nakajima was one of the first to actually produce digital sound. He achieved this by sampling sound waves at defined intervals. Each sample was then converted into a binary number that could be recorded as a series of pulses on magnetic tape. This was the basic process used to digitize sound. At the time, no one could really see any future in Nakajima's large and expensive digital tape recorder, which reproduced static noise.

When Nakajima joined Sony at the invitation of Shigeo Shima, audio technologies were still primarily analog. In addition, there was considerable negative sentiment within Sony

toward digital technology, partly because Sony had decided to withdraw its only digital product, the SOBAX electronic desktop calculator.

Following the 1967 launch of the first SOBAX model, the ICC-500, the development of compact, low-priced electronic calculators progressed rapidly. This was due in large part to the development of such semiconductor-based components as ICs, which made electronic circuitry more compact, and LSI (Large-Scale Integrated) circuits, which were even more compact. Sony and other manufacturers developed LSI circuits based on MOS (Metal-Oxide Semiconductors). However, these proved to be quite expensive for Sony, and the company could not keep pace with the fierce competition. Sony thus decided to halt production of the SOBAX calculator in 1973. Because of this decision, Sony's digital technology, which had grown as a result of the development of the digital calculator, was temporarily stalled.

Despite these setbacks, Nakajima, unable to forget the first time he heard digital sound, did not give up. He earnestly believed that digital technology would be valuable in the future. Ten years after he started his research, he still held the belief that digital technology would be valuable within ten years. I'll make it so, he said. Achieving the best sound quality was his lifelong dream.

## **6. The PCM-1 product**

From the early stages of the PCM-1 development, Sony had been looking for a way to record and play back sound using a digital audio disc. In 1975, Sony put the Betamax VCR on the market. At the same time, Sony had been working to market an optical videodisc (laser disc) which was developed by Philips. Described as a record that plays a picture, and having a diameter of thirty inches, the same as a conventional LP record, this large platter was developed by Senri Miyaoka, the same person who had developed the Trinitron color TV. Deputy President Iwama remarked to Miyaoka, Sony must have optical technology in the coming age of electronics. Encouraged by Iwama, Miyaoka assembled a team of engineers to develop an optical recording system, selecting members from within the 2nd Development Division.

In spring 1976, Doi and his colleagues delivered a prototype of the PCM-1 to Miyaoka and his team and asked them to make a disc, which could record digital audio. This disc was probably the first digital audio disc prototype in the world.

The type of signals recorded by the Betamax and the video disc were the same, meaning that the PCM-1, which had been developed as an adapter for the Betamax, could also be used as an adapter for the video disc player. At this time, Doi's plan was to connect the videodisc player to the PCM-1, thus creating a digital audio disc. The sound quality of the Betamax was relatively high, so this seemed like a reasonable plan. When Doi and his colleagues tested the disc they had developed; however, they felt as if hit with a sledgehammer. What they heard was the complete opposite of their expectations. Far



from producing a clear sound, the disc produced a poor disconnected sound against a background of static and could barely be heard.

After looking into the causes, Doi made three decisions. The first was to use the PCM-1, which they had been preparing to launch in the autumn of that year, as an adapter exclusively for Betamax. This was a simple and logical decision. The second decision was to approach the audio disc and the videodisc as unrelated items and give priority to developing audio technology. In other words, to develop a brand new way to directly record the digital audio signal onto an optical disc, instead of using a video signal from a video recording format. At the time, the videodisc was a star product, which everyone believed would prove popular throughout the world. The decision to develop a digital audio disc that used a totally different format was extremely bold. Doi's third decision was to actively develop signal error correction technology, something for which no one had any experience to draw upon. Considering this, the third decision was quite exceptional.

Audio data is converted to binary digital signals, and recorded on the surface of a digital audio disc as an array of ones and zeros. When played back, digital signals are converted to electronic signals as a light beam reads them. Signal error correction is a function whereby the machine rectifies a situation in which a bit has been incorrectly read. Signal error correction is especially important in optical discs because, compared to tape a greater number of erroneous readings are made during playback. Under Doi's leadership, the team began to study signal error correction. At the same time, Doi ordered computer specialists to create a computer simulation system for studying signal error correction. Thanks to the efforts of Doi and his team, Sony was able to establish a firm position for it self in the field of digital audio.

At the 1977 Audio Fair, Sony and two other companies exhibited their digital audio discs and players. However, these two companies used a video signal on a videodisc, and they had a rather simple signal error correction feature. Sony's machine was an unmodified video disc player that recorded digital audio signals, not video signals, directly on an optical disc that employed signal error correction.

***The efficiency of direct audio recording is twenty-seven times greater than that Achieved using video signals***

Sure enough, people criticized Sony saying, Even though it's possible to meet industry standards by using a video disc with a video signal, Sony had to be different and use a different format. Responding to this criticism, Doi gave a speech during Audio Fair in which he said, using video signals, you can record a performance that's thirty minutes in length, but by recording audio directly you can record a performance thirteen hours and twenty minutes long. In other words, the efficiency of direct audio recording is twenty-seven times greater than that achieved using video signals. He tried to convince listeners of the technological superiority of direct recording. Ohga, who was later informed of this speech, angrily commented, Thirteen hours and twenty minutes is an absurdly long time. Hardware works only when it's fed software. Although Sony has its own software

company, CBS Sony isn't going to make any money by marketing a disc with hours and hours of music recorded on it.

Thirteen hours and twenty minutes was actually the theoretical limit of direct recording. In 1977, the playing time of a demonstration disc was an hour, and at the 1978 Audio Fair, the time was two hours and thirty minutes. Due to the structural limitations of the video disc player, the actual recording density achieved was lower than the theoretical level.

## **7. IC Technology for US Army and Space Applications**

In January 1964, TI had requested permission from Japan's MITI to establish a wholly owned company in Japan to manufacture integrated circuits (ICs). In the 1960s, ICs were considered the next big step since the emergence of the transistor. Originally, IC technology was developed for U.S. military and space applications. By the mid-1960s, however, electronics companies had obtained the technology and expected these components to allow huge advances in the quality and miniaturization of products such as televisions, household appliances and radios. At the time, Japanese companies had fallen far behind their U.S. counterparts in IC technology R&D.

Japanese electronics companies felt threatened by the prospect of TI, the largest manufacturer of ICs in the world, setting up production facilities in Japan. With Japanese makers still in the IC research phase, they strongly opposed MITI giving TI permission to set up in Japan. If TI is given free rein to manufacture in Japan, we're finished, was the general sentiment. MITI, which had supported and protected the growth and development of Japan's electronics and car industries, was opposed to conceding leadership in such key industries to a foreign company.

### ***Establishing operations in Japan under conditions***

However, Japan was being pressured to liberalize restrictions on foreign investment. Looking at the situation from an international perspective, a skilful and well-thought response was needed. Would Japan always remain a closed, protectionist country or would it embrace an international perspective and accept foreign investment? Two years passed before MITI finally gave TI an official response. But finally, in September 1966, TI was granted special permission to establish operations in Japan under the following conditions:

- The business had to be a joint venture with a Japanese company with both parties contributing an equal amount of initial capital. TI had to make their IC patents available to Japanese manufacturers and Manufacturing quantities had to be controlled for an initial three-year period.

But, TI would not change its policies to meet MITI's conditions. TI wanted to set up a wholly owned Japanese subsidiary and was prepared to make the patented information available only if MITI ceded to its requests. TI held significant patents for crucial IC technology and if TI did not make patented information available, Japanese manufacturers would not be able to export their own IC components for some time. Thus, the IC industry in Japan would remain at a standstill. But, with the passing of time, the

R&D capacity of Japanese companies would increase, and the attractiveness of TI's proposed venture into the Japanese market would diminish.

TI and Japanese manufacturers dug in, ready to defend their positions. Then president Ibuka, and vice president Morita realized that if the situation deteriorated any further, all parties would lose. Dragging out TI's bid to enter the Japanese market and the associated IC technology patent problem was not good for the Japanese electronics industry, for TI, or for U.S.-Japan relations. While acknowledging MITI's position, Ibuka and Morita decided that Sony should take action to resolve the problem as a representative of Japan's electronics industry.

TI CEO Patrick Haggarty and Morita were on good terms. Morita approached him directly with an offer to establish a joint venture company to facilitate the initial entry of TI into the Japanese market. The capital contribution of both parties would have to be equal. There was no way for Sony to get around this issue. However, as Sony had the capacity to meet all its IC needs through in-house production, it would essentially leave the responsibility of managing the joint venture to TI. In addition, Sony pledged to approach MITI to gain permission to transfer its total stock in the joint venture to TI after three years. Thus in the long run, the joint venture company would effectively be a wholly owned TI subsidiary. There was also the general expectation that the Japanese IC industry would improve significantly in the three-year period. The head of the International Division, Tetsuro Yotsumoto, assistant divisional head Yoshiharu Taira, and the head of legal affairs, Tamotsu Iba, set to work with MITI hammering out the details of the joint venture agreement.

In May 1968, five years after TI had made its initial application to MITI, Texas Instruments Japan Co., Ltd. (TI Japan), was formed as a 50-50 joint venture between Sony and TI. Haggarty was appointed chairman and Ibuka president. At the same time, TI signed contracts with Japanese companies agreeing to allow them to use TI patented IC technology. The agreement came on the heels of Sony's announcement that it would establish a records division through a joint venture with CBS Inc. The announcement of TI Japan caused a stir in the business community, because it represented the first step toward a full-fledged liberalization of foreign investment in Japan.

Free from the shackles of the TI patent problem, Japan's electronics industry moved full steam ahead toward the IC age. And, three years after TI Japan was established, Sony transferred all stock in the joint venture to TI in 1971, making TI Japan the first wholly owned foreign company within Japan's IC industry.

## **8. Sony and Philips work together**

Around the same time, Ohga received a telex from L.F. Ottens, a Philips technical executive. The message on the telex said if you happen to come to Europe, please visit us. Ohga had known Ottens since the mid-1960s, when Sony and Philips had successfully achieved the global standardization of the audio compact cassette. Since

then, a strong relationship based on trust had developed between the executives of Sony and Philips.

### ***Laser technology on videodisk system***

In June 1978, when Ohga had the opportunity to visit the Philips head office in Eindhoven, Ottens showed him an Audio Long-Playing (ALP) disc similar to the one which Nakajima and Doi had been working on. Philips was the manufacturer that had pioneered the optical videodisc system using laser technology in the 1970s. The ALP was a by-product of this technology. During the 1970s, various manufacturers had been competing to develop a digital audio disc. This 11.5 cm disc has a playing time of one hour, Ottens explained while giving a demonstration. To Ohga's eye, the disc appeared to be very small. Technologically speaking, it was something that Sony could also manufacture. If a 30 cm disc could yield thirteen hours and twenty minutes of playing time, a 9 cm disc would theoretically yield an hour's playing time. Philips had been trying to develop a one-hour disc that could fit into an automobile dashboard. Ohga recognized the value and marketability of the product. Philips believed that this disc, which produced high quality digital sound and was small and easy to handle, would completely replace LP records.

Ottens had invited Ohga to get a sense of whether Sony was interested in jointly developing and marketing the new 11.5 cm audio digital disc with Philips. Originally, the development of the audio digital disc in Sony was born from Nakajima's passion for high quality digital sound. Nakajima had dedicated himself to the task of developing such a disc. But could this product really be marketed? People still placed great trust in vinyl LP. Ohga's decision was quick. He felt that the small, shiny silver disc that he saw at Philips had great potential. He believed it would replace the LP record. The disc still recorded too much background noise and the development of a signal error correction system was at its very early stage. Nevertheless, Ohga felt that Sony and Philips could create a good product together. Philips was a world leader in optical videodiscs, and Sony had considerable expertise in digital audio signal processing technology. If Sony and Philips worked together, it was likely that they could produce an ideal recording medium. Moreover, both companies owned software record companies-Philips had world famous record company Polygram, while Sony had CBS/Sony Records, which was established in 1968 and had grown considerably since then. Polygram and CBS/Sony could therefore supply software for Philips and Sony. At that time, Ohga was an executive deputy president of Sony Corporation and the president of CBS/Sony.

While the new Sony-Philips partnership was being cemented, executives from both companies visited one another. During one of these visits, Morita, who was Chairman at the time, and Iwama, who was President, formally expressed their agreement for the joint development, in order to propose the result of their development to the DAD (Digital Audio Disc) Conference. The DAD Conference comprised of 29 manufacturers from around the world who had started talks toward the standardization of the digital audio disc in September 1977.

## 9. The world's first CD

On August 31, 1982, an announcement was made in Tokyo that four companies, Sony, CBS/Sony, Philips, and Polygram had jointly developed the world's first CD system. These companies announced that they would commence domestic sales in the autumn. From the evening of August 31 to the next morning, there were many news reports about the CD system, touting it as the development of the amazing digital CD player and the arrival of the digital age. The 12 cm CD player was light and compact, offering a one-touch selection function, was compact, lightweight and utilized a medium that was almost permanently durable. It was a dream comes true for many audio fans. The CD system represented a fresh wind of change for the recession-ridden audio equipment industry.

- ***TheCDP-101***

On October 1, 1982, Sony launched the CDP-101. Ohga said, in demonstrations, Sony had positioned the disc vertically in the player, but it was actually easier to insert the disc horizontally. As a result, the CDP-101 was manufactured so that the disc spun on a horizontal plane. Other companies designed systems in which the disc was inserted vertically, in the same way as Sony's test model, the Goronta. It had been approximately 100 years since Edison invented the phonograph, and record technology had been revolutionized about every 25 years since. First, the cylinder system was changed to the disc system. Then the electric record system and the LP record were invented. Soon after, monophonic sound was superseded by stereophonic sound. Finally in 1982, 100 years after the Edison phonograph, digital audio technology was born.

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Idei named the first Sony system the CDP-101. He worked relentlessly to launch the system and had based the model name on the numerals 0101 as a reference to the digital medium. In the binary language, 0101 represents the number five. Idei chose the number five to indicate that the product was of a medium class. The product launch actually took place without Idei, who was lying on a hospital bed suffering from a bout of pneumonia he had caught during the frenzy to commercialize the system. When Idei saw the CDP-101 advertisements in newspapers in the hospital, he said to himself, Ah, it has finally been launched.

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The CDP-101 retailed at 168,000 yen, a steep price for the average consumer. However, compared with other systems, Sony's was actually inexpensive. There was talk of developing a less costly and more compact model. Given the short development period, it was a miracle that they had managed to commercialize the system at all.

***The total number of titles at the end of the year reached approximately one hundred.*** Some time later, the sample discs that had been used all over the world for demonstrations found their way back to the engineers. Although the surfaces were covered with scratches, when the discs were put in the player, the sound quality was as if new. In addition, while Sony was launching the CDP-101, CBS/Sony launched the world's first fifty CD titles, the very first one being 52nd Street by Billy Joel. The first fifty titles included classical, popular and rock releases. CBS/Sony took the

opportunity to sell not only to audio fans but also to a wide range of people. Until then, electronics companies had only targeted such high-end audio products like the component stereo system representing 5% of audio fans. After the second and third set of CD titles was released, the total number of titles at the end of the year reached approximately one hundred.

## **10. Market products based on the Sony and Philips standard**

When the three different digital audio disc systems were appraised at the DAD Conference two years earlier, the Sony and JVC systems were accepted. However, with Sony's launch of the CD system, almost all other hardware companies announced that they would market products based on the Sony and Philips standard. In this way, the CD became accepted as the defacto industry standard, the result of an active worldwide promotion of the standard for a period of two years before product launch. Thus, the CD system was introduced worldwide. All divisions at Sony cooperated to commercialize CD hardware. Moreover, both Sony and CBS/Sony jointly developed hardware and software, doing everything possible to make the CD a product of the future. Ohga later said, there has never been an example as strong as the CD of how effectively the combined power of the Sony Group can be.

### ***A new music medium***

Ten years after the launch of CDs, Sony announced a new music medium. In the 1990s, the production volume of audio compact cassettes was rapidly declining from its peak of 76 million units in 1988. Seeing this trend, Ohga, then president, felt the need to replace compact cassettes. In the 1980s, Ohga had led the establishment of the CD business, and CD technology had quickly replaced analog audio technology thanks to its digitally-based, high speed random access and direct search capabilities. CDs were a great success, but they were originally a read-only media, and Ohga wanted to make something that was rewritable, a kind of disc that would replace the audio compact cassette.

When Tsurushima's team from the Audio Development Group exhibited a prototype of a recordable CD at the 1989 Audio Fair, Ohga stopped and paid close attention. Just after the development of the CD in the early 1980s, Sony began development of a recordable disc. The objective was to give magnetic tape the same function as discs. The result of Sony's efforts was the launch of the Write-Once (WO) optical disk in 1986 and a Magneto-Optical (MO) disk two years later. The prototype of the recordable CD that Ohga saw at the fair had actually been produced in 1987. It was based on the same recording technology used in the MO disk, which was originally developed together with KDD (Kokusai Denshin Denwa).

Demonstrations of the CD were made worldwide using the not-yet perfected prototype. In New York, at a joint press demonstration with Philips, one of the engineers out of view

from the journalists, was busy doing his utmost to prevent the system from overheating by cooling it with a Japanese paper fan

Though impressed, Ohga said to Tsurushima, You should develop a recording and playback device that uses a disc smaller than the CD to replace the audio compact cassette. This led to the development of a new music medium.

## **11. Hardware and Software get an early start**

Software and media standardization would be required in addition to hardware standardization. But Philips, Sony's partner in the development of the CD, was the original creator of the audio compact cassette. Philips had its own idea about what medium should replace the compact cassette, believing it should be a digital cassette. Sony and Philips held countless discussions, but consensus was never reached. It seemed inevitable that two new competing media would be developed.

### ***A new compact audio recording device created***

Engineers Toad Yoshida and Kazuhiko Fujiie, who had participated in the launch of the CD, were once again brought together under Tsurushima. Basing their work on Sony's established MO technology, the team began work on creating a compact audio recording device that used discs. It was decided that the new disc size would be 64 mm and that it would have a recording capacity of up to seventy-four minutes, the same as a CD, on an area one-quarter the size of a CD. With the cooperation of the Sony Information Systems Research Center, this led to the development of the ATRAC (Adaptive Transform Acoustic Coding) digital signal processing technology for audio compression. To ensure that the final product would be portable, technology to reduce track skipping when jostled was simultaneously developed with a new shockproof memory based on semiconductors.

### ***Minidisk the new audio standard***

In May 1991, all development was concluded, and the Minidisk (MD), the new audio standard, was announced. To enhance portability, the disc was housed in a shell. The MD combined recordable features of the cassette tape with the random access functions and high quality sound of the CD. Sony clearly explained the difference between the CD and MD; the CD was for leisure listening and the MD for enjoying music anywhere and anytime, much like the Walkman

Ohga announced the technical development of the MD in Japan and the US. He carried a prototype of the new personal audio system with him to all the press briefings and said, we call upon hardware and software manufacturers to endorse the MD system and target the product launch for the end of 1992. Ohga led Sony's efforts to establish the MD as the standard by holding MD conferences and demonstration campaigns and by signing licensing agreements with influential hardware and software manufacturers.

Shizuo Takashino now led the General Audio Business Group, which had a proven track record with miniaturization. With his team, Takashino worked to complete the development of the MD system in time for a future sales launch. It was at the end of 1991

that the plan to develop a small recording device using a disc 6 cm in size was announced to the 14 members of the development team. All the engineers were experts in miniaturization and they had been involved in the development of both the Walkman and the D-50. Unfortunately, the schedule gave them only one year to develop the new product, which was timed to coincide with the launch of Philip's Digital Compact Cassette (DCC) in November 1992.

The engineers burned the midnight oil, even working on weekends. Concerned about the tough work schedule of his staff, Takashino wrote letters to the families of engineers, seeking their understanding and support. We have entrusted the development of a technology that we consider very crucial to the future of Sony to a member of your family, he wrote. This person is working very hard for the company and we are most grateful for the efforts being made.

MD music software and recording media were prepared along with the hardware for the scheduled launch date. By this time, CD software plants had been established in Japan, the US, and Europe, and they would be ready to handle MD software production as well. In Japan, Shugo Matsuo led the effort to acquire up to 500 MD titles within the year. Abroad, Michael Schulhof, then Chairman of Sony Music Entertainment and President of Sony Corporation of America took on the task of persuading record companies. In August 1992, mass production of MD software began in Japan. In autumn of the same year, production started abroad.

The Sendai plant began producing MD media in July 1992. The Recording Media Business Group had set to work immediately after the technology announcement, and Teruaki Aoki led the efforts to establish MD production facilities. Ohga coordinated the development of hardware, software and recording media for the MD system, and operations went smoothly. Consumers and the mass media had created a furor over MD since its product announcements in September 1992, and in November a full line of new MD products was launched in Japan, ahead of the US and Europe. The recordable/playback MZ-1 model, the playback only MZ-2P, and the record-only MDW-60 were delivered to retailers nationwide along with 88 titles produced by Sony Music Entertainment. A Try and Buy campaign for the MD that allowed customers to test the product was launched at major electronic appliance stores in Tokyo, Osaka and Nagoya.

***In December 1992, the recordable/playback and playback-only models were launched abroad with software titles.***

With the launch of the CD in 1982 and the MD in 1992, the sales potential for digital audio products expanded vastly. In 1995, total annual sales of MD hardware in Japan reached one million units. The CD, originally developed for only music applications, soon found new uses in AV equipment, computers, games and other areas. The CD-ROM, standardized in 1985, is today used to store audio, video images and text. The Video CD, standardized in 1993, is utilized for recording audio and video images. Since the MD was developed to handle the same applications as the CD, the MD Data format was standardized in 1993 for audio, video and text recording. MD Pictures, a format for recording video images, was standardized in 1994.



### ***The new technology exhibits called DVD***

At the end of 1995, a new, large capacity recording medium the same size as a CD and capable of storing an entire motion picture was standardized. Called DVD (Digital Video Disc), this new technology exhibits a capacity equal to seven CDs and promises to be the next generation information and recording media. Initially, manufacturers were divided into two camps. Sony and Philips advocated a single-disc, multimedia CD system, and a group of seven Japanese, US and European companies led by Toshiba advocated a super density, double-sided disc system achieved by adhering two discs back-to-back. Discussions spilled over into the movie software field and the computer industry. In the end, the two camps reached consensus on the need to establish a common, single standard to benefit consumers, and the merits of both systems were recognized. Finally, manufacturers began product development aiming for product launches at the end of 1996.

### ***DAT Digital Audio Tape***

Digital technology, which flourished with the development of the CD, has expanded with the endorsement of the disc as its medium. At the same time, digital audio technology contributed to the advance of the cassette tape. In 1987, Sony introduced a superb sound quality recording system, DAT (Digital Audio Tape). The sound quality of a DAT equals a CD. Based on DAT technology, in 1992 Sony launched a digital micro cassette recorder, the NT-1, which uses a postage-sized micro cassette tape.

## **12. The commerce of CCD**

Digital technology continues to enjoy further expansion, in the area of both disc and tape. The move of personnel and equipment to the Research Center marked the beginning of the protracted struggle to commercialize the CCD.

The main issue addressed by the researchers was the improvement of the sensitivity and resolution of CCDs, both of which increase in accordance with the number of pixels. At the same time, it was crucial to solve the problem of black specks and white scratches appearing in the images. These two flaws were caused by the presence of fine particles of dust and contamination by heavy metals. Solving these flaws as well as eliminating other factors that resulted in a poor image quality was easier said than done.

### ***CCDs replace tubes***

Except for Sony, almost all competitors vying to develop CCDs had quit. Many companies had been basing their development of CCDs on established in-house MOS technology, since devices such as CCDs and MOS have similar structures. Because Sony had withdrawn from the development of semiconductors for use in electronic calculators, the main application for MOS technology, Sony had no MOS technology available on which to base its CCD development. In other words, Sony had to start from scratch. Sony's competitors had the luxury of retreating to MOS when they decided that CCDs were too difficult to make. Sony, however, had no such technology to rely on. This, in effect, influenced Sony to continue with the development of CCDs. Perseverance will

bear fruit, was the spirit. In 1977, another company offered to collaborate with Sony in the development of CCDs. However, this company gave up after a year and redirected its efforts to MOS. Through it all, Ochi and the engineers believed that CCDs will replace tubes in the future, and they continued to hope for success.

***Why can't you improve the image?***

Despite their confidence, Ochi and his team felt pressure to abandon their efforts on several occasions because of the expense incurred for the CCD development. In fact, at times the team was referred to as expensive, good-for-nothings, and the members had to endure criticism from their colleagues. But Iwama never pulled the plug on them, visiting their laboratory at least once a month. At times, he expressed his dismay at seeing the same, out of focus image on the screen marred with black and white lines. Why can't you improve the image? He would often ask. At the same time, Iwama never failed to give Ochi and his team guidance and encouragement, saying to them, don't give up.

Iwama was not a very talkative person. He thought things over before speaking, and his succinct statements always impressed those who heard them. Each time Iwama would visit, the entire team would consider his words carefully. Ochi used to describe him as the Guru speaking a few words of wisdom. His disciples, so to speak, would put their heads together later to decipher the meaning behind them. Iwama was not receptive to vague answers or overly qualified explanations from his engineers. These engineers learned to present him with concise and concrete reports. Whether or not Iwama was purposely doing this, it was good training for the engineers.

However, even Iwama's courage and endurance were tested during the pursuit of CCDs. He often had to fight a nagging feeling of insecurity during the long development stage. In view of the time and investment it required this project would not turn a quick profit in the near future. Morita and other top management members were anxious about taking on such a project and wondered when the investment would finally begin to bear fruit. Iwama constantly said to Ohga, who was in a position to approve budgeting, CCD development requires a lot of money and I can't assure you that we'll get return on this investment some time this century. At one point, Iwama surprised Ochi by saying. The heart of semiconductors is in crystallized silicon. Why don't we buy a crystal manufacturing company? Indeed, the major raw material used in CCDs is crystallized silicon, and the purity of this crystal determines the quality of the image. Yet Ochi had never thought about the prospects of buying a whole company simply to gain access to high quality crystallized silicon. This comment led Ochi to believe that Iwama was truly expecting to wait until the turn of the century to collect on the investment. At the same time, Iwama's endurance, passion and willingness to undertake such a large-scale endeavour mesmerized him. Iwama's enduring dedication combined with Ochi and his engineers' efforts yielded slow but steady improvements.

***From 2,000 to 8,000 and to 70,000 pixels***

The engineers were able to increase the number of pixels from 2,000 to 8,000 and to 70,000. Eventually in 1978, they were able to increase the number to 120,000. In its quest to produce high quality crystals, Sony invented the MCZ crystallization method. As a

result, the problem of dust contamination in the pixels was overcome. Dust from people, machines and other origins were removed and countered. Finally, a perfect, clear image was achieved. The team took a photograph of it and presented it to Iwama. You finally did it, was all he said. In 1978, the project was transferred once again. This time it was for the Atsugi plant to start production. Test manufacturing of the 120,000 pixel CCDs began that same year, and in 1979 the new CCD was commercialized as the ICX008. Total investment until that date amounted to 20 billion yen.

### **13. Sony's first computer "SOBAX"**

Sony's digital technology and computer development has a long history. The first computer-related product was the SOBAX, a desktop calculator introduced in 1967. However, Sony withdrew from this market in 1972 due to a severe price war. Utilizing transistors as the switching element, SOBAX had the potential of carrying Sony into the portable computer market. Yet Sony was unable to develop this product into a business model. Influenced by the co-development of the microprocessor with Intel Corp. in 1971, personal computers (PCs) were introduced a few years later and the world set off toward digitization. However, Sony's management firmly stood by the belief that the core of Sony's electronics business will always be audio and visual equipment for the masses and suppressed its R&D efforts in the computer field.

Yet Iwama, who became president in 1976, had a strong feeling that any company without a deep understanding of computers would be unable to survive in the 90s. PCs debuted in 1975, and in 1978 Toshiba launched the first Japanese-language word processor. Iwama supervised the gradual development of computers at Sony. Toward the end of the 1970s, a group led by Yoshiro Kato and Kenji Hori began computer-related product development in the office automation (OA) and microcomputer (MC) fields.

In December 1980, Sony's efforts in the OA field eventually led to the introduction of the Series 35 English-language word processor and the portable Typecorder typewriter, which featured a liquid crystal display. Both were targeted at the US market. In the microcomputer field, the SMC-70 Series, a microcomputer with high quality graphics capabilities, was introduced in September 1982. That year, Japan experienced a belated OA boom. The facsimile machine, PC, word processor, and copy machine began to be known as the four sacred tools of OA. In the home PC field, the Sony HIT BIT model, which conformed to the Microsoft-led MSX standard, was commercialized in November 1983.

#### ***Sony's became an industry worldwide.***

All these products followed Sony's policy of offering compact size with portability. The Typecorder, in particular, incorporated a unique concept by way of its compact size and convenience of use. In retrospect, this was the first step toward the introduction of laptop computers. In addition, the compact and large-capacity 3.5 inch micro floppy disk (MFD), first developed for use with English-language word processors, became an industry standard worldwide.

***An AVCC (Audio, Video, Computer and Communications) integrated systems business was the establishment of the MIPS Business Group.***

The end result was the establishment of an interesting point concerning these Sony products is that they were never intended to be linked to computer products. The design and development of each product was based on Sony's traditional strengths in audio and video technologies such as magnetic recording and optical disk. Sony's business at that time was strictly related to traditional technologies, and Sony management had created a certain environment within the company which was not receptive to deviating from this strategy. At one point, an attempt was made to integrate Sony's computer-related development efforts with the audio and video equipment businesses. This proposal was made to create an AVCC (Audio, Video, Computer and Communications) integrated systems business. The end result was the establishment of the MIPS (Media Information Products and System) Business Group in May 1983. Takao Ohira, who had joined Sony from Oki Electric and had extensive knowledge of telecommunications, was appointed MIPS general manager and Nobuyuki Idei, who was instrumental in the development of MSX and was knowledgeable about both computers and AV technologies, was appointed as his deputy. At the time, Ohira had just become president, and expanding into new business fields was one of Sony's main priorities. An aggressive step into the OA and telecommunications fields was part of his management strategy.

Unfortunately, in the middle of the new media boom, Sony was unable to establish a presence in this market, despite continuous efforts by the development team. Sony's computer-related products launched in the 1980s were eventually discontinued due to a lack of interest in the market.

In order for Sony's English-language word processors to sell well, the 3.5 inch MFD needed to be used by other manufacturers. We shouldn't keep this media for ourselves. Let's try to get other computer manufacturers to use the 3.5 inch disk media and drive, was the general consensus at Sony. In other words, Sony wanted to provide the 3.5 inch disk drive on an OEM basis to other manufacturers.

However, Sony management had announced guidelines to limit the manufacture and sales of OEM products at the time. Kato reasoned with Ibuka and other members of management until he finally won approval for his plans.

In spring 1982, the year following the US introduction of the Series 35, Sony began selling the 3.5 inch disk drive as a component to other manufacturers. Within Sony, however, engineers were not willing to develop items that would not be sold under the Sony name. We have to get each and every person to understand, Kato said. In April 1983, the engineers who were working on computer R&D in the System Development Division formed the Mechatronics Business Group, and Kato was appointed its general manager. His primary objective was to create an environment within the group that would generate a strong passion for the promotion of OEM business.

In 1982, an inquiry came from Hewlett-Packard Co. (HP). We'd like to use the 3.5 inch MFD drive and media for our new computer. Engineers at HP loved to teach. These teachers and Sony's engineers, the students, soon developed a very strong relationship. Building on this relationship, the 3.5 inch MFD drive was perfected and refined to a level usable by computer manufacturers, including HP.

Other competitors began announcing products based on a similar concept, and a struggle started to standardize the technology. HP stood by Sony and lobbied for the 3.5 inch MFD to be recognized as the international standard. Since Sony was a newcomer to the floppy disk market, this support from HP was more than Sony could possibly have hoped.

One year after Sony's announcement, Matsushita, Hitachi and Maxell announced a 3.0 inch floppy disk. Kato and his team more than welcomed the appearance of this new disk because it was also housed in a plastic shell, albeit a 3.0 inch shells. However, the disk had only half the memory capacity. We no longer have to explain why the shell has to be plastic. Now that we have competition from a similar product, it's easier to explain how our product is better, they said confidently.

Following the announcement of the 3.0 inch disk, disks of sizes within 3.0 inches plus or minus an inch were announced one after the other. Competition grew fierce, but in the end, the main contenders were Sony's 3.5 inch disk and the 3.0 inch disk. Eventually, the better specifications and powerful ally Sony had found in HP led the 3.5 inch MFD to victory.

In 1984, Sony succeeded in persuading ANSI (American National Institute for Standardization) to endorse the 3.5 inch MFD. Then, the Sony format was recognized by JIS (Japanese Industrial Standards) in Japan and ECMA (European Computer Manufacturers Association) in Europe.

Finally, the 3.5 inch was recognized by the ISO (International Standards Organization), which influences the recognition of standards in all nations, and it became a fully recognized international standard. All of this happened in 1984, the year the Soviet Union and other Communist countries boycotted the Los Angeles Olympic Games. With the move toward standardization of the 3.5 inch MFD, Apple Computer also endorsed the standard. Apple's request for a thin and reasonably priced disk drive for use in their PCs led to the establishment of an automated production line at Sony Audio System plant (now known as Sony Component Chiba). This line integrated Sony's FA (factory automation) technology and effectively generated further improvements in Sony's MFD production technology. Eventually, IBM endorsed the 3.5 inch MFD for their PS series computers. This successful OEM business arrangement with the world's leading computer manufacturers attested to the reliability of the Sony product.

***The chance that one of the guns will actually reach the target is greater...***

Tozawa's project management style was based on a range finding system employed by the Japanese Navy. By shooting three guns at once, all aiming at the same target, the

chance that one of the guns will actually reach the target is greater. With this approach, the target is reached faster and more accurately. In the same manner, Tozawa decided to start several research efforts simultaneously using slightly different approaches to reach the target of developing a lithium rechargeable battery. In this way, time lost when pursuing a fruitless avenue of research was kept to a minimum. However, this approach required the investment of many resources, namely, engineers, equipment and money. To manage it all, Tozawa became the project leader. In this position, he could make decisions on where to make investments. He could also free the engineers to concentrate on their assignments without having to worry about taking responsibility. The official announcement for the project (as one directly under the supervision of Tozawa) was made in July 1987.

#### **14.Rawmaterials**

At first, six research projects dealing with different materials were endorsed. At monthly meetings, these were all evaluated and eliminated one by one. The team was going through a process of trial and error in search for the dream battery. Finally, one of the research teams began rejoicing, we got it!

This newly developed lithium battery did not use potentially dangerous metallic lithium or lithium alloys. Instead, it employed a special ionic lithium alloy called lithium cobalt oxide for the positive pole and a carbon material for the negative pole. There was no danger of damage due to water, making the battery very safe. The number of cycles in a single battery exceeded 1000, one and a half times that of a nickel-cadmium rechargeable battery. The integrated energy volume or the amount of energy obtainable when used to its limit of 1,000 cycles was four times that of a nickel-cadmium battery of a similar type, and the equivalent of approximately 1,300 non-rechargeable, alkaline manganese dioxide batteries. In addition to the long life span of the battery, its energy density and average operating voltage were three times that of nickel-cadmium batteries of a similar type. The Sony battery was named the lithium-ion rechargeable battery, and Tozawa became known as its Godfather.

The selection of materials for the poles and electrolyte solution of this powerful battery was the result of endless tests conducted by the project members. For example, there were various types of carbon compounds that could have been used for the negative pole, which would affect the battery's performance. The engineers in charge of materials development searched for a better material in order to find new carbon compounds.

#### ***Some, problems and their,solutions...***

However, there were several problems that needed to be solved prior to its announcement. Patents had to be obtained for the carbon compounds and the methods used to create the lithium-ion alloy. In addition, an application had to be filed in the US for the product to be excluded from the hazardous materials list. Tozawa and the engineers worked frantically to solve these problems as fast as possible. Furthermore, a production plan for the battery was developed early on. These preparations were spearheaded by the Sony Energy Tec engineers and backed by the

entire Sony Group to enable a smooth start for mass production. By the time the product announcement was being prepared in 1988, production facilities with the capacity to manufacture 100,000 units per month were installed at the Koriyama plant in Fukushima Prefecture. The announcement was finally made in February 1990. Sample shipments began the same year, and mass production started from the following year. In September 1990, the Battery Business Group was founded within Sony. Koichi Tsunoda, then president of Sony Energytec, was appointed as its general manager, and efforts towards full-scale mass production were initiated.

When this battery was used to power the Sony CCD-TR1 8 mm camcorder, it received favorable reviews. As a result, competing battery manufacturers also began to produce lithium-ion batteries.

Once the potential of this high energy density, long-lasting and safe lithium-ion rechargeable battery was recognized, applications began to expand. Not only could it be used for camcorders, but it could also power other portable AV equipment, including CD players, compact LCD television sets, word processors, portable PCs, mobile cellular phones, PHS (Personal Handy phone System) units and other items. Soon, manufacturers began to advertise the use of lithium-ion storage batteries as a key selling point of their products. Having succeeded in developing the first lithium-ion battery, Sony today still maintains a high market share and is the leading company in the field.

For the development of the battery in April 1994, the Electrochemical Society of Japan awarded Sony the Tanahashi Prize, which commemorates the development of outstanding technology. In February 1995, Sony was awarded the Ohkouchi Prize, recognized as the most prestigious award for production engineering and technology in Japan. These awards are proof of its high performance. In September 1995, Sony succeeded in developing lithium-ion battery module for use in electric vehicles, a project Sony began in 1992. This achievement points to the future of the lithium-ion battery, while marking a further improvement in the battery's overall performance. So what became of the Trinitron, which Susumu Yoshida, Akio Ohgoshi, Senri Miyaoka and other engineers under Ibuka's supervision (see Part I, Chapter 10) had worked so hard to develop?

## **15. Sony, Design**

Five years had passed since the first Trinitron color television (KV-1310), was launched in Japan in October 1968. Overseas demand had grown steadily and Sony had built manufacturing plants for color TVs and cathode ray tubes (CRTs). As Sony was preparing to establish a new plant overseas, wonderful news came. Sony's Trinitron was selected for an Emmy Award. The Emmy Award is to the TV industry what the Academy Award is to the motion picture industry--the highest of all honours. The award is presented by the National Academy of Television Arts and Sciences to acknowledge television's best programs, actors, producers and TV stations as well as ground-breaking technology for broadcast hardware systems.

### ***The Trinitron***

The Trinitron was the world's first TV receiver to be awarded an Emmy. At the award ceremony broadcast nationwide in the US, Ibuka received the golden Emmy with a feeling of great joy and nervousness at the realization of the award's importance. Since then, and for more than 20 years, Trinitron technology—represented by a single-gun, three-beam aperture grille and a cylindrical flat panel—continues to maintain a leading technological edge. As a core Sony technology, Trinitron sustains the company's growth in AV industries worldwide.

The Trinitron was first introduced with a 13 inch screen, and the product line has since expanded to include both larger and smaller models. This reflects technological advances and the incorporation of such new design concepts as Profeel and Profeel Pro, making Trinitron one of the most popular home-use televisions.

Furthermore, thanks to its CRT technology, Trinitron's ultra high-resolution and bright screen gave birth to a new business that goes beyond the original applications for the home. The next great leap for Trinitron was triggered by the rapid increase in the popularity of computers during the 1980s.

Sony undertook CRT development with computer displays toward the end of the 1970s. At that time, there were market indicators that computers and CAD/CAM would become popular. Sony began receiving inquiries for Trinitron CRTs from computer manufacturers. There were even cases where such customers took the liberty of removing Trinitron CRTs from the television sets to install them in their computer displays because computer displays require high-resolution and brightness, to display small characters and fonts. Such needs naturally drew attention to the superior resolution of the Trinitron.

Sony eventually decided to begin full-scale development efforts to design a computer display utilizing Trinitron's strengths. The aim was to develop a computer display CRT to enable clear presentation of characters and graphics even in the screen's corners. Computer displays require a resolution level ten times greater than conventional TV screens, since computer displays process a large volume of information at high speed. The effort of Sony engineers was rewarded with the development of the Graphic Display Monitor (GDM) in 1983. This monitor had high-resolution and high-density display qualities ideal for CAD/CAM and computer graphics applications.

Sony's sales team aggressively promoted the GDM to manufacturers of workstations, rapidly establishing an excellent reputation for Trinitron computer displays. Reflecting the explosive growth of the workstation market from the latter half of the 1980s, OEM sales of the GDM to computer manufacturers increased drastically. Trinitron displays became the choice for workstations. These early developments in the computer display business were implemented by Eijiro Oki, then general manager of the TV Business Group, Koichi Momoi, Oki's deputy, and their team.

The increased use of PCs within educational institutions eventually led to the development of the CPD series, a line of lower priced and smaller screen sized products. Sales of this new line of computer displays and the existing GDM series began to take off



by the end of the 1980s. In the early 1990s, Sony established its own sales and distribution channels and launched a Sony brand display business to compliment its steadily growing OEM business. Since then, the computer display business has been enjoying rapid expansion.

***Sony did not stop its development efforts with the GDM. The engineers aspired to create a Trinitron CRT with the world's highest display capacity, and the result was a masterpiece.***

In May 1988, Sony introduced a super high-resolution Data Display Monitor (DDM). It featured a 20-inch by 20-inch screen and 2,048 by 2,048 lines, and it was capable of full color reproduction. The DDM boasted twice the capacity of conventional displays then available for computer graphics and CAD/CAM-use, and it could display over 40,000 characters. The DDM was chosen by the US Federal Aviation Authority for use in their AAS (Advanced Automation System) next-generation air traffic control system. The AAS analyzes and manages information on aviation systems throughout the US. Thus, components used in the AAS must be highly sophisticated and extremely reliable. It was a milestone for Trinitron to be selected for such an important professional application.

Trinitron technology also played a key role when NHK launched development efforts for what it called the next generation broadcasting system or high definition television. This new system was designed to process over four times the volume of information that conventional TV systems handle, by incorporating 1,125 scanning lines on the screen. This amounts to approximately double the number of lines on conventional NTSC standard screens. The development of the super high-resolution Trinitron CRT allowed what was previously impossible--the realization of image definition on par with that of 35 mm film. In April 1981, Sony announced its High Definition Video System (HDVS), the industry's first high definition system incorporating a monitor, camera and VTR. Three years later, when HDVS was launched, it received rave reviews: It's like seeing a glossy color photograph, and The scenery shown on the screen is so real that it's like one is looking out a window. Broadcasting professionals, film and program makers throughout the world were very impressed with this technology. The image quality was so high that it could even be used to appraise fine arts such as paintings, and antique drawings.

In June 1994, a quarter of a century after the first Trinitron CRT was developed, the cumulative worldwide output of Trinitron CRTs exceeded 100 million units. The second half of this quantity was manufactured in only the last five years. The emergence of large screen, high-resolution TVs and the continuing growth in computer display demand reinforced the excellent reputation of Trinitron. Demand for Trinitron CRTs spread beyond home-use to applications in the broadcast and computer industries. This rapid increase in demand was met while Sony continued its policy of manufacturing close to its markets. Following construction of color TV plants, Sony built CRT production sites in Japan, the US, Europe and Asia. With the completion of the Singapore CRT plant in 1992, Sony could ship CRTs for color TVs from all four regions. In the United States, where demand for computer displays is extremely high, Sony set up a comprehensive production line in 1995.

***By the beginning of 1995, Sony had become the world's number one supplier of color televisions.***

The popularity of PCs for home-use had by then increased drastically, resulting in further growth in the computer display market. Meanwhile, the broadcast environment changed radically, as satellite and high definition transmissions became widespread in some markets.

Sony introduced a new home-use television in Japan in October 1995. Known as Power Wide, this TV is capable of displaying three different sources simultaneously, including high definition television, and of serving as a PC display. The Power Wide TV is a wide-screen, 16 by 9 ratio monitor for the emerging multimedia age. The Trinitron CRT made it possible for the Power Wide product to display high definition images even in the corner of the screen.

As user demands call for even higher resolution displays, Trinitron technology continues to evolve. When thinking about Trinitron's contributions over the years, Morita often said, The Trinitron is the most important asset after the 'S\*O\*N\*Y' brand name.

In the 1960s, Sony placed a rather unusual advertisement in the *Asahi Shimbun*. The ad read, Wanted: People Capable of Arguing in English. The text revealed that the advertisement was placed to recruit staff for its overseas operations. Fortunately, it attracted much attention, and Sony received many inquiries. To become a world-renowned brand name, Sony began establishing sales and marketing operations abroad. The most pressing job openings requiring employees were in the areas of tape recorder and transistor sales. We need people who speak English and can understand the market as soon as possible, read the advertisement. There was no time to hire university graduates and train them.

Personnel with overseas sales experience were recruited from trading firms and this included Hajime Unoki, Shiro Koriyama, Toshio Miyamoto, and Masakazu Jinno the first year, followed by Akinobu Ishihara the second year, and Kenji Tamiya the third. These employees joined the already established International Division, which was located in a shabby building nicknamed the barracks atop the mountain. On their first day, they received a hearty welcome from the divisional director Masayoshi Suzuki, as well as from Manpo Komatsu, Hiroshi Okochi, and several other employees. Then they were shown to their desks on which countless documents and invoices needing attention were piled. The International Division at the time consisted of several groups divided by region, overseeing, all activities in the US, Europe, Asia, and Africa.

## **16. Sony, establishing offices all over the world**

In the late 1950s, Suzuki, Okochi and Jinno were transferred from the International Division to the US, whereas Komatsu was transferred to Europe. Armed with data based on thorough market research, they began preparations for establishing offices in their respective regions. In February 1960, Sony Corporation of America (SONAM) was

established in New York as a local legal entity. In Europe, the first Sony office was opened in Zurich in August of 1959. The following year, this office was expanded and incorporated as Sony Overseas S.A. (SOSA). This sales company began with just four employees: Komatsu as its director, Shiro Koriyama, Reiji Suzuki, and a Swiss secretary. Once SONAM and SOSA were in operation, daily contact with the Tokyo-based International Division was maintained by telex to determine production and sales quantities.

In Africa and Asia, sales were conducted directly through local dealerships, and inquiries and letters of complaint from these dealers left unattended had begun to pile up. The first assignment for the overseas sales staff was to familiarize themselves with the product model numbers in catalogs and reply to each letter. Most replies were sent out by mail with only those in need of urgent attention sent by telegram. Facsimile machines were not available at the time and overseas phone calls were too expensive. As soon as an order was confirmed, the staff completed order sheets based on previously written ones and sent them to the factories. The members of International Division were then responsible for making sure the products were shipped safely. On joining the International Division, these newly recruited employees were put in charge of many dealers. They were not given any specific job training or introduction program. It was tougher than many had anticipated. With no set guidelines, each had to invent their own way of doing things.

As overseas sales personnel, it meant being among those next in line for overseas assignment. Some of the section's new members were placed in the domestic sales force to receive on-the-job training in sales, as soon as they had learned to cope with all the paperwork. Sales training involved loading merchandise in a station wagon and calling on clients with the sales people from Sony Shoji Corporation. At the time, Sony Shoji Corporation had an exclusive nationwide sales network for Sony products from the northernmost island of Hokkaido to the southern island of Kyushu. This work experience was ideal for these staff members who would later be responsible for establishing sales operations abroad.

In the early 1960s, aside from SOSA and SONAM, Sony's two other overseas operations consisted of the Hong Kong Office, established in 1958 and a production plant in Ireland, established in 1959. Members of the International Division took turns taking two to three month business trips to establish local distribution channels and conduct market research.

In those days, people going abroad were still so rare in Japan, so that they were seen off by groups of well-wishers shouting *Banzai!* For good luck at Haneda Airport. The names of employees travelling abroad and returning to Japan were all listed in the Overseas Travellers column of the weekly internal corporate newsletter. Six months after Tamiya returned from Latin America, Morita gave him a new assignment. The assignment was to establish a subsidiary company in Hawaii that operated independently of SONAM.

At the time, Sony's business in Hawaii was being conducted through a dealership, which in turn was handled by SONAM's office in Los Angeles. In May 1968, Tamiya landed

alone at Honolulu Airport with \$50,000 in operation funds. In approximately one month, Tamiya found office space and a warehouse and hired the minimum number of employees necessary to start the operation. Tamiya founded the company with six employees, including two Japanese staff. This is how Sony Hawaii Inc. was born.

The \$50,000 was spent quickly, and Tamiya began to use his salary to pay utility bills and employees' salaries for the first two or three months. The products had not yet arrived, so money was spent while none was coming in. Products finally arrived in August. Sony Hawaii had already established agreements with a number of dealers, and once the products were distributed, revenues began to come in. At the time, products meant only transistor radios. Sony Hawaii could not sell tape recorders due to an exclusive dealership agreement Sony had with Super Scope, which covered the U.S. mainland and Hawaii, and color television sets were not yet available. The first order Sony Hawaii received was for two radios and two stereos.

In 1969, a year after Sony Hawaii was founded. Sony of Canada Ltd. joined the Sony family. Established in Toronto, Sony Canada originally dealt in professional-use VTRs and other equipment. Shigeru Inagaki was appointed its president and Tsunoda appointed its vice president. After tireless negotiations with Morita and lawyer Edward Rosiny, Sony Canada expanded in the mid 70s through a merger with Gendis Inc., a dealer with a long history of selling Sony's home-use audio products. The new Sony Canada (50% Sony-owned and 50% Gendis-owned) was established under President Albert Cohen. In 1995, Sony Canada became a wholly-owned Sony subsidiary.

On the other side of the Atlantic Ocean, preparations to establish sales companies in Europe were underway. Sony Overseas S.A. (SOSA), established in Zurich in December 1960, oversaw all European accounts as well as European finance and foreign exchange related operations. Komatsu, Koriyama and Suzuki founded SOSA. While Nobuyuki Idei, Masakazu Namiki, Yasumasa Mizushima, and Suehiro Nakamura were stationed in cities throughout Europe as sales representatives. Namiki was in the UK, Mizushima in Germany, and Idei in France. The three had a friendly competition among themselves when selling transistor radios and Trinitron TVs. Their shared goal was to counteract the traditionally negative image that Japanese products held at the time. They emphasized to customers that Sony products were of high quality and worth the higher average prices. Sony products were 10% more expensive than European brands and 20% more expensive in Germany.

They were also seeking to establish local sales companies in Europe. Sony was preparing to sever ties with its distributors and establish companies that would function as wholesale companies and sell directly to retail outlets in major European countries. Sony's aspirations were high: to increase direct sales, boost brand-image, and build a servicing network.

Morita always said, Sales is a form of communication. To persuade consumers that Sony products improve their lives, we must have our own sales channels. Morita wanted to get as close to consumers as possible, whether in Japan or abroad.

In 1967, the European Community (EC) was formed among six countries and this union has continued to expand ever since. Namiki, Mizushima, and Idei were not yet quite 30 years of age when they were given assignments to establish local companies in Europe. When they were chosen, there were voices within Sony advocating older, more experienced businessmen for the assignments. But one of Sony's policies is to give young and inexperienced employees a chance if they are promising. Rising stars are given great responsibilities and a degree of freedom. The three men were entrepreneurs and full of energy. Once abroad, they struggled with new business practices, laws, and rules which were totally different from what they were accustomed to, but they made steady progress. They received the full support of Tetsuro Yotsumoto back at the International Division in Japan. In May 1968, Namiki was the first to dissolve a relationship with local distributor Debenhams, founding Sony (UK) Ltd. under Haruo Fukatsu.

## **17. Critical Accounting Policies and Estimates**

Debenhams at that time had only three sales representatives dedicated to selling Sony products. These three handled the accounts of 600 dealers. When Namiki learned of this, he was in utter shock. We'll never be able to expand in large strides with this kind of sales infrastructure, he said to himself. Fortunately, Debenhams had a well-earned reputation, and the dissolution of Sony's distribution agreement occurred on amicable terms. The president of Debenhams even gave Sony (UK) a gift to congratulate the company on its new beginning. Debenhams allowed Sony (UK) to hire several of its employees who had been working on the Sony account and sold Sony a large desk for Namiki and two delivery trucks at a very low price. Debenhams even agreed to be the guarantor for Sony (UK) to rent its first office space. Because the Japanese government had imposed a strict limitation on foreign exchange transactions, the support Debenhams provided Sony (UK) was invaluable to the new company.

Due to the strong support and encouragement from Debenhams, Namiki and his team were extremely motivated to succeed. Business in the UK therefore grew at a rapid pace. In its first month of business, sales were double what Debenhams had recorded in the previous month. In six months, Sony was selling three times what Debenhams had sold in the same month of the previous year.

In June 1970, Mizushima founded Sony G.m.b.H. in Cologne, home to Grundig, Nordmende, Telefunken, and other electronics giants. In terms of hierarchy at Sony G.m.b.H., Akio Morita served as president, Haruo Fukatsu as director, and Yasumasa Mizushima as company secretary. As the Germans were proud and confident that their domestic electronics manufacturers were the world leaders, it was an uphill battle for a little-known Japanese company like Sony to sell in Germany.

Sony G.m.b.H. began with only slightly more than 20 local and 5 Japanese employees.

When Sony products were sold through distributors, sales floundered. But once Sony began selling to dealerships directly, Mizushima's policy of promoting the superior quality of Sony products boosted sales. By the end of 1970, Sony G.m.b.H was affluent enough to provide Mizushima with a Mercedes-Benz as a company car.

France proved to be the country where it was most difficult to set up a new business. Idei began preparations to establish a sales company there in 1971. At the time, France had effectively sealed its borders to direct investments from abroad. Idei paid many visits to the Ministry of Finance in the Elyses Palace, seeking permission to establish Sony France. France's Ministry of Finance emphasized the protection of homegrown industries and thus was not amenable to the idea of Sony France. Furthermore, the owner of Tranchant Electronique, then Sony's exclusive distributor, and Minister of Finance Giscard d'Estang were close personal friends. Accordingly, Sony's request to terminate the distributor agreement as a premise to the founding of a 100% Sony-owned subsidiary was not warmly received.

After Idei spent much time negotiating through lawyers, a three-year contract to form a quasi-joint venture with the Suez Bank was finalized. In February 1973, Sony France was founded with Jacques Dontot, former chairman of the French Electronics Industry Association as its president, and Yasuhiko Ohga of Sony as its vice president. The two years of negotiations were a nightmare for Idei, but the solid relationship that was formed during this period later enabled Sony to buy out its partner with relative ease.

In September 1971, a showroom was completed on the busy and fashionable Champs Elyses, just as Morita had requested. Idei was gradually awakening to the realization of what it takes to establish a brand name in a market. Brand name goods are those goods which are not easily attainable, but yet are in constant demand. He was beginning to understand that in Europe, and especially in France, brand name goods were desirable. Thus, it was very important for Sony, virtually unknown in France at the time, to quickly establish its brand name. The Sony showroom on the Champs Elyses played a crucial role in measuring the improvement of the Sony image among those who visited Paris.

The success of these sales efforts effectively ended an era when Sony sales staff worked from a rented office belonging to an exclusive distributor. With its own sales operations, Sony was now ready to directly promote its high quality products and establish a brand name both in Europe and the US. Each Sony pioneer went through many hardships. Yet to have been given such a large task at such a young age, and to have experienced the building of a business in a foreign country, was enriching and satisfying to both Sony and the pioneers. Once the new companies were established, local staff members were sought. The fact that Sony was an unknown foreign firm worked to its advantage because the people who came to work for Sony in those days were ambitious risk-takers.

***The 1960s and 1970s were not just a time of overseas expansion for Sony. Morita was also pursuing other projects during this time.***

One day in May 1972, while the San Diego plant was still under construction, Morita who was then president, and other Sony top management gathered for a brainstorming

session on the future course of Sony. Morita's suggestion of importing products from the US took everyone by surprise. Some agreed, others kept quiet, and the rest were strongly against the idea as they were concerned about the hassles their salespeople would face. Tetsuro Yotsumoto, then director of the International Division, was one of the people who strongly opposed the idea. Morita replied to him by saying, I can see where you are coming from, but it will help Sony Corporation in the end.

At the time, the dollar was still unstable, despite the Smithsonian Agreement on a fixed exchange rate of \$1=308 yen. Additionally, the US trade deficit with Japan was showing no signs of decreasing. Protectionism was on the rise in the United States, and Japan was being branded an economic animal. Many US industries were accusing their Japanese counterparts of dumping and claiming that the Japanese market was closed to them. Neither European nor US companies had much sympathy for Japanese companies. While establishing sales channels in the United States, Morita had been concerned that emotional clashes between the two countries might irrevocably damage their relationship. At that time, Sony was exporting just under 50% of its Japan-made products.

***If Sony is a leader in exporting, it should also become a leader in importing***

Morita was convinced that Japan's export volume would continue to increase and that pressure for Japan to step up imports would rise accordingly. Hence he insisted, If Sony is a leader in exporting, it should also become a leader in importing. Before the pressure mounts, we should introduce Japan as a market for US and European exports. Let's make a solid push in that direction.

Morita was in the United States when the dollar was devalued and the yen was introduced to the floating exchange rate system. There he experienced the harsh anti-Japan sentiment prevalent in the United States firsthand. This experience led him to think that, Japan as a country must be more aware of its role in the international community. The Japanese government had just begun to implement such measures as tariff reductions to encourage imports.

Two weeks after the brainstorming session, Morita flew to New York and held a meeting with the public relations and advertising managers of Sony Corporation of America. This was the first step in Sony's preparations for importing items from the US.

On May 31, 1972, Sony placed full-page advertisements in four major US dailies proclaiming, *SONY WANTS TO SELL U.S. PRODUCTS IN JAPAN*. The first line of the ad read, Japan is a promising market for US-made products, and announced that Sony would draw on its sales expertise and knowledge of the Japanese market to provide support to US firms wishing to export their products to Japan. As Sony was known primarily as a company that sold transistor radios and color televisions, the initial response to this ad was one of surprise that a firm such as Sony would venture into the importing business, but the company soon drew support for its efforts. The aim of the ad was simply to deliver the message that in Sony, US firms had a friend thousands of miles away across the Pacific.

SONAM received over 1,500 inquiries following the placement of the advertisement. They were so busy handling the replies that help had to be sent from the International Division in Japan. Morita was delighted with the response, which was much greater than he had anticipated. He announced that Sony would establish a trading firm to carry out the operation in the proper fashion. Hence, in July 1972, Sony Trading Corporation was founded with Taketoshi Kodama as president. A similar advertising campaign was conducted in Europe shortly after the one in the United States, and managers stationed abroad received orders to look out for products that would be suitable for the Japanese market. Morita implemented all the measures he could think of to promote imports to Japan.

The criteria for selection were that the products had to live up to Sony's reputation for quality, and they had to enrich the lives of Japanese consumers. The first foreign company to sign an agreement with Sony Trading was the Whirlpool Corporation. Shipments of large refrigerators and other electrical appliances were scheduled to begin from January 1973.

***High after-Sales service costs:***

Sony Trading's import business grew to include everything from whiskey and vacuum cleaners to helicopters and jet airplanes from all over the world. However, high after-sales service costs exceeding the price of the products themselves, and competition from Japanese domestic products, resulted in constant headaches for Sony Trading staff. Meanwhile, Japan's trade surplus was surging and in 1978 a new catch phrase emerged: US-Japan trade friction. In 1979, Japan was described by the EC as a workaholic country where people live in rabbit hutches. This prompted other Japanese companies to begin importing activities of their own. They came to Sony to learn about importing. Sony received an award from the Japan External Trade Organization (JETRO) for promoting imports to Japan and won praise for its leadership in the field.

In 1985, the G5 countries met to address how to deal with the yen-dollar currency rate situations and the strong dollar. They signed the Plaza Accord as an expression of their shared desire to avoid increased protectionism. At the meeting Morita exclaimed, Thank God we made Sony Trading.

***While Sony was busy expanding abroad, Sony Trading continued to grow***

In the 1980s and 90s, while Sony was busy expanding abroad, Sony Trading continued to grow under the successive leadership of Tetsuro Yotsumoto, Hajime Unoki, Tamotsu Iba, Toshio Miyamoto, and Haruo Akita. Sony Trading has religiously stuck to its founding principle that trade should be an interactive and bilateral process and continues striving to find quality products regardless of their country of origin.

In May 1989, the Advanced Video Technology Center (AVTC), the development base for HDTV in the United States, was established in San Jose, California. At the opening ceremony, Morita said, we believe it is necessary to develop products locally in order to meet the needs and requirements of the local market. Also, if we could transfer local specialties such as digital technologies from the United Kingdom, or graphics and special



effects technologies from the United States to other regions, we would realize a global synergy in R&D.

The message behind Morita's speech was that global localization, as the new guiding principle for the future of Sony, would be applied to R&D and include technology transfers from one regional R&D center to another. Moreover, like marketing and manufacturing, R&D would be conducted close to Sony's end markets. For many years, Sony has been conducting technological development abroad for broadcast and industrial applications. The first such center was Sony Broadcast Ltd. (SBC), established in the United Kingdom in 1978. Since then, SBC has been conducting sales and marketing of broadcast equipment, while pursuing broadcast systems design and R&D projects. The SBC R&D team successfully developed the first broadcast-use digital component VTR through a joint development project with Atsugi-based researchers. However, in the area of home-use products, Sony did not establish overseas R&D operations until several years later.

In the early 1990s, global localization of R&D continued in all product areas. By then Sony had over twenty R&D centers outside Japan. Yet despite the fact that overseas sales accounted for 70% of Sony's consolidated sales, overseas production still amounted to only 30% of the total. R&D localization still had a long way to go. In the 1990s, Sony was still guided by the principles of conducting product R&D close to markets while fully utilizing the technological strengths of each region. It also continued to see the need to establish R&D operations abroad in order to minimize the effect of exchange rate fluctuations.

***Telecommunications infrastructure and software development was more advanced overseas than in Japan.***

As Sony expanded from its traditional AV realm into such areas as computers and telecommunications, the pursuit of R&D activities overseas became more and more advantageous. The U.S. also boasted many talented engineers, particularly in the field of software development, and was a substantial resource base for technology licensing agreements with high-tech companies. Changing times triggered shifts in demand, and Sony needed to establish a system that enabled it to increase efficiency by internally coordinating R&D efforts around the world. To this end, it needed first to construct R&D bases for regional coordination, and to appoint a supervisor to oversee these bases. In April 1994, the Research Laboratories were founded in San Jose, California. Kenji Hori, an instrumental player in Sony's development, was appointed Chief Technology Officer (CTO).

In 1972, construction was completed on Sony's color television factory in San Diego. However, even with the plant operating smoothly, Morita would frown with concern at any mention of San Diego. Morita was unhappy with California's unitary state tax system. California promoted its position as the closest of the lower 48 states (excluding Hawaii and Alaska) to Japan and emphasized its many attractive locations including Silicon Valley and Los Angeles which would make ideal bases for Japanese companies in the US. While he recognized that Sony was responsible for paying a certain level of tax,

Morita believed that California's tax system was unjust. Its Unitary Tax System was one of the oldest in the US, dating back to the nationwide expansion of US railway companies in the mid-19th century

### ***Tax/tax system***

Under a unitary tax system, tax authorities calculate the amount of tax payable by taking into account not only the income returned by the local company, but also by its parent and affiliated companies regardless of whether or not such income is earned within the jurisdiction state. For subsidiaries of foreign companies, this necessitated the arduous and expensive task of having to calculate and submit group sales figures for global operations. The system operated in such a way that a local company might actually record a net loss, but end up having to pay substantial taxes due to income earned by overseas affiliates. Criticism was increasingly levelled at the system because it ignored national borders, and the tax was a deterrent to foreign companies considering operations in the United States.

### ***Morita's reply : The unitary tax system is unjust...***

In April 1977, California Governor Jerry Brown visited Japan to attract investment from automobile makers and other manufacturing companies. (In 1971, following the changing fortunes of the dollar in foreign exchange markets, the US government was trying to increase exports to Japan, while encouraging overseas investment from Japan). The curt response he received from all quarters was that the Japanese investors were not interested in California as long as the unitary tax system was in force. Governor Brown did not fully comprehend the complaints being made of the system. It was suggested that he should speak with Sony president Morita, who had been conducting business in California since 1972. Morita's reply was blunt: The unitary tax system is unjust. It stands in sharp contrast to your appeals for companies to invest in California and we are losing all interest in further investment in your state. In fact, as the situation currently stands, it is probably better for us to cease our operations in California altogether. Governor Brown returned to California, shocked at Morita's response.

At that time, the unitary tax system was gaining ground throughout the United States. Although originally applied to only industries in California, the tax now applied to several industries in other states. To Morita, the unitary tax was a troublesome issue. So, being a man of action, he decided that the corporate sector would have to take the lead in rectifying this unfair system.

## **18. Sony Creative Products Inc**

By the second half of the 1970s, Sony had established a number of joint ventures in a diverse range of fields, many of which seemed to have no relation to electronics products. At this time, the Japanese economy was growing steadily, and consumer tastes were diversifying as purchasing power increased.

In 1979, Sony's diversification reached its peak. In August of that year, Sony announced

that an affiliate company of CBS/Sony, Sony Creative Products Inc., would begin production and marketing of cosmetics. In the same month, Sony established a joint venture agreement with U.S. life insurance giant The Prudential Insurance Co. and called the new company Sony Prudential Life Insurance Co., Ltd. The following month, Sony began importing and selling sports goods in Japan under the name Sony Wilson Inc.

Through Sony Enterprise, Sony had previous experience importing and selling sports equipment and it built on this in its venture with Wilson. Wilson was a top manufacturer in the Pepsico group and Sony Wilson sold Wilson brand products for sports such as golf, tennis, baseball and softball. Morita's acquaintance with Donald M. Kendall, then chairman of Pepsico, provided the opportunity for establishing this new joint company. Unfortunately, six years later, Sony's association with Wilson came to an end and Sony Transferred its shares in Sony Wilson to Pepsico.

As Sony continued to diversify its operations in publishing, luxury goods, cosmetics, insurance and restaurants, many voices expressed concern that Sony was spreading its resources too thin and that this could hurt its core electronics business. However, Morita had confidence in Sony's capabilities. He would say, if we have the personal resources and management know-how to provide services that are of benefit to consumers anywhere in the world, there is no reason why we shouldn't. These new businesses are a plus for Sony. Also, Sony's new subsidiaries provided opportunities for its employees to work in smaller organizations, which helped to foster a spirit that was difficult to maintain in a large, single-unit corporation. The overwhelming majority of Sony's joint venture companies have succeeded in strengthening the corporate base of the Sony Group.

## **19. Entering the Computer Video Games**

The digital technology revolution has brought about the birth of new media and the integration of computers, telecommunications and television. In the age of multimedia it is essential to achieve synergy between hardware and software, and the companies of the Sony Group continue to work toward this end. Sony applied digital technology to audio products for the first time with the development of the compact disc. Ten years later, it was used again in to develop the Minidisk, which brought a new personal music medium to the market in 1992. During the ten year period in between, products like the CD-ROM and Video CD were also added to Sony's line up of multimedia products.

Over the years, the revolution in hardware technology has created many new possibilities for media and content development. With its wealth of experience in the software industry, SME is well positioned to take advantage of new business opportunities. For the entire Sony Group, synergy between hardware and software products is growing as the hardware and content businesses work together to advance each other's technology and future direction

An example of this synergy can be found in a new venture which emerged in November 1993. Sony Music Entertainment (Japan) Inc. (SMEJ) and Sony Corporation had jointly established Sony Computer Entertainment Inc. (SCE) to engage in the development, marketing and licensing of video game consoles and game titles. Although Sony had previously been involved in business tie-ups with computer game companies, Sony decided that the new company would concentrate on independent software development. To this end, personnel from various sections of the Sony Group, including broadcast products development staff and SMEJ staff involved in software development, were brought together at SCE.

Toshio Ozawa, former chairman of SMEJ, was appointed president of SCE, with Teruhisa Tokunaka of Sony Corporation as vice president. Shigeo Maruyama, a man renowned for discovering and nurturing new artists at EPIC/Sony also joined the new company. Led by Ozawa and his new management team SCE's employees came together from many different backgrounds and began creating a unique corporate culture which incorporated elements from across the Sony Group.

A year after its establishment, SCE successfully combined the hardware expertise of Sony Corporation with the software know-how of SMEJ to develop the 32-bit PlayStation video game system. With its CD-ROM-based software and the processing power of a computer workstation, PlayStation was far more than just a toy.

***A long line of people waiting to see a prototype of the PlayStation...***

In December 1994, PlayStation was launched in Japan. At that time the computer game market was dominated by Nintendo Co., Ltd., and there was no guarantee that a Sony brand product would be able to capture significant market share. Nevertheless, the initial stock of 100,000 units sold out on the first day of business, and the next 6 months recorded accumulated sales of more than 1 million units. Sony's entry into the video game market had been an overwhelming success. Following this initial triumph in Japan, SCE launched the PlayStation in the U.S. and Europe in the autumn of 1995 under the new leadership of Tokunaka. As of May 1996, the accumulated number of PlayStation units sold worldwide had exceeded 5 million forming a true milestone in Sony's sales history. It was the first time that a single model had sold such a large number of units in such a short period of time.

## **20. Sony Design**

Sony always strives to manufacture products that fit the Sony brand image. These products are usually classified and marketed as the "World's First," "World's Smallest," "World's Biggest," or "World's Best" products. By the same token, Sony approaches the design of new products in a way that nobody else has done before, emphasizing originality and uniqueness. Good examples include the Walkman, Profeel and Handycam products.

One person who was always particularly concerned with product design was Ohga. He said, "If the design of the product isn't attractive, we can't put the Sony logo on it. An appealing design and ease of maintenance are the hallmarks of good industrial design."

In the 1960s, when Sony's transistor radio market share was decreasing, Morita asked Ohga, then general manager of the Tape Recorder Division, to take charge of product design. Ohga replied that he would only do it if he were also given responsibility for advertising. Morita agreed, and as a result the product design and advertising departments were combined to form the Design Division.

This new division was responsible for introducing two new colours, black and silver, to convey robustness and simplicity in a functionally appealing design. New product designs featured a combination of black plastic parts and silver-colored metal. The first product designed under Ohga's direction was the TFM-110 FM radio, popularly known as the "Eleven." The square design of this product shattered the commonly held belief that radios had to be oblong in shape. The combination of the shape and the black and silver color scheme resulted in such excellent sales that Sony's radio business was rejuvenated. "Eleven" became one of Sony's classic designs, which were used in successive products.

## **21. The latest Trinitron. The catchphrase used to promote Trinitron TV**

A simple and functional design was characteristic of Sony products in the 1970s. Approximately ten years after the launch of the first Trinitron TV, the color television market was maturing. Ohga, then deputy president of Sony Corporation, took it upon himself to develop a 13-inch color television with a unique design appealing to young people. This marked the birth of the "Citation" model. At the time, mainstream television design was centered on the "wood-grain" look, but the sleek and black "Citation," with its simple panel of buttons at the top, was a hit. Its success changed the course of television design.

The end of the 1970s saw the start of multiplex and satellite broadcasting, as well as the emergence of the PC and new multimedia products. Amid this wave of new technology, Sony searched for products that would carve out a new category in the television market. Morita suggested a monitor-type television that incorporated neither a tuner nor speakers. This prompted the Design Division to come up with the idea of a "naked" or "bare" television without a traditional wooden frame. Speakers, controls, and other ancillary parts would be supplied as separate components.

### ***A consistent product philosophy is the basis of Sony's brand image.***

This new "monitor look" was introduced in 1980 with the "Profeel," or "professional feeling," color television. The new component-style design of the "Profeel" allowed it to be stacked one on top of another, and the novel design found both home and industrial applications. Other TV manufacturers followed this new design trend. But for Sony, it

was really nothing new. This approach of dispensing with unnecessary features had originally been applied in the design of the Walkman.

Even after becoming Sony president in 1982, Ohga paid special attention to the design phase of product planning. He emphasized that products must be worthy of the SONY logo -- products that would make customers pleased with their purchases, products they would enjoy, and products that they would eventually replace with new Sony products. Ohga insisted that Sony products must have a certain, extra something that wins over customers. He was concerned that as Sony grew bigger and its product lineup became more diverse, it might drift away from its philosophy of consistently developing high quality, innovative products. On this issue, Ohga was quoted as saying, "A consistent product philosophy is the basis of Sony's brand image. With it Sony can expand and globalize, while still maintaining consistency in design over the long-term. From the customers' point of view, there is only one Sony."

## **22. Sony strength**

Sony has learnt much from previous unsuccessful products. The Sony MSX home computer, for example, did not attain a satisfactory level of success. But it did teach Sony development engineers valuable know-how that would be applied in later years. In effect, these engineers became living resources, representing latent power within Sony that did not exist in other AV companies. These young engineers who developed Sony's information processing technology in the past were eventually scattered throughout the Sony Group and active in many different areas thanks to their strong familiarity with computers.

The Sony Group gained outstanding software production capabilities from an early stage. Sony's music business had developed rapidly and toward the end of the 1980s was complemented by its newly acquired motion pictures business. Then with the launch of PlayStation in 1994, Sony Computer Entertainment Inc. enjoyed explosive sales worldwide.

Sony had other strengths too, such as its superior AV technology incorporated into computer peripherals. The company had created a wide range of media for computers, including the 3.5-inch microfloppy, WO and MO disks, as well as the CD-ROM. Sony had developed these products by combining magnetic and optical technologies. Moreover, the spread of computers meant increased use of high-resolution Trinitron displays, and this also strengthened Sony's position. Well aware of Sony's considerable strengths and its forward-looking attitude, Idei developed a clear path for Sony. He aimed to make a computer integrating AV and IT technologies that drew on Sony's technological assets -- a computer unique to Sony. The computer would offer basic functions common to all computers, but add personal entertainment value as a key feature. Ohga remarked that, "Only Sony could possibly hope to make a system integrating computer, communications and AV technology with entertainment content."

In November 1995, Sony announced the establishment of a long-term technology

agreement with Intel Corp., the largest manufacturer of microprocessors for computers in the United States. Intel had an established track record in semiconductor and computer technology, while Sony's strengths were in AV hardware and software. By integrating their respective strengths, the two companies would create a new home-use computer. The dream of developing a market for AV products that complemented computer technology was at hand. An agreement was reached between Intel president Andrew Grove and Idei as the plan to launch the personal computer for home-use was announced. The PC would be introduced in the U.S. in autumn 1996, followed thereafter in Japan and Europe. Sony's objective in establishing this collaborative agreement was not simply to enter the PC market. If Sony was going to sell computers, it was also going to have to restructure its AV business while establishing new marketing and customer service systems to stimulate and improve employee awareness. The catchphrase "Digital Dream Kids" was primarily designed to increase employee awareness of this new corporate direction.

On November 20, 1995, Idei received resounding applause after delivering a keynote speech entitled "Sony's Dreams are Sony's Challenges," at the National Academy of Television Arts and Sciences in New York. Idei's speech described Sony's future business strategy to an audience composed of people in the television and communications industries throughout the world.

### **23. A new foundation**

In 1996 Sony celebrated its 50th anniversary and marked the start of another fifty years. As part of this new beginning, Idei re-evaluated the strategies he planned to follow with key management such as Minoru Morio, Chief Technology Officer (CTO) and Tamotsu Iba, Chief Financial Officer (CFO). Effective April 1, these strategies would include widespread reform to regenerate Sony's operations and strengthen the functions of Sony's divisional company system and headquarters.

The growth of IT and the shift from analog to digital technology have been continuous. With rapid progress in the digitization of images, and the advent of digital satellite broadcasting and cable television, Sony's 50th anniversary was earmarked as the start of a new digital age. Also, in dealing with the rapid change in the distribution process for products and services, Sony reorganized its management structure to enhance its divisional company system. This system had originally been introduced in 1994 to enable Sony to respond more rapidly to market change and create a structure that facilitated the development of new businesses. By enhancing the divisional company system in 1996, Idei aimed to increase employee awareness of new business direction and culture.

In mid-January 1996, Idei announced the reorganization to both an internal and external audience. Firstly, the company system would be restructured. To speed up decision-making and market responsiveness, the eight divisional companies were reorganized into ten. Ten divisional presidents were appointed, including some from a younger age group, and they were given autonomy to develop their respective companies as they saw fit.

These ten companies were grouped into five units, each to be overseen by a chairman and co-chairman drawing on their experiences to offer support and advice to their presidents. Subsequently, the divisional company system has further evolved under this advisory mandate to foster management for the next generation.

If the sum total of Sony Corporation's operations were likened to a computer, the headquarters would be analogous to the computer's operating system. A strategy to strengthen the role of the headquarters was also developed with the aim of making Sony a healthier and more efficient company. To implement this strategy, an Executive Board chaired by Idei was established that included nine executives and senior managing directors. Six of these nine members were also chief officers responsible for overseeing one of the following areas: technology, finance, personnel, production, marketing and communications. In this way, Sony had created a stronger top management team.

On May 7, 1996, Sony celebrated its 50th anniversary. Company employees based in the Tokyo metropolitan area and their families, approximately 20,000 people in total, gathered at Tokyo Disneyland to celebrate the occasion -- known as the "Digital Dream Kids Day." During the 1996 Sony Management Conference held on May 24, at the New Takanawa Prince Hotel in Tokyo, Ohga and Idei expressed their heartfelt appreciation to the founders of Sony Corporation for their great ideals and leadership. At this conference, Ohga and Idei proceeded to set forth a clear vision of Sony's future direction.

#### **24. The challenge of the Digital Dream kids**

Since its founding, Sony has grown steadily with the Japanese economy. With its free wheeling spirit at the company's center, Sony began its fifty-year history with the development of audio and video technologies. As a leading manufacturer in the areas of communications and computer peripherals, Sony has entered an age in which digital technology is becoming widespread in a variety of industries worldwide. Sony's uniqueness lies in its ability to integrate traditional hardware expertise with software content. This continues to lead the company in new areas of business and growth.

To take on these challenges, Ohga and Idei said that Sony must design innovative products that meet the requirements of a rapidly expanding computer network environment. Therefore, they reasoned, future product planning had to take the form of system planning. As part of this, Sony needed to develop new software facto standards among manufacturers. In cases where internal development of software architectures was deemed too difficult, Sony would form alliances with appropriate companies.

In addition, to further heighten Sony's greatest asset, the Sony brand name, four key words were outlined in the company management philosophy for all companies in the Sony Group. These words were: "unique," to ensure that Sony would always be an innovative company; "quality," reflecting emphasis on product quality; "speed," in the form of a framework that would enable the company to respond quickly and decisively to new market conditions; and "cost," reflecting the importance of competitive pricing once the other three conditions were fully met. For Sony, quality has always been an extremely



important element of its business philosophy. And Sony continues to place increasing emphasis on quality issues throughout the Group.

At the 1996 Management Conference, Idei stressed that Sony would not only continue to offer innovative, high quality products, but also increase its role as a good corporate citizen throughout the world. As a result, he predicted that consumer trust in the Sony brand would continue to increase. Idei closed his speech by saying, "If all employees take a positive outlook, together we can make Sony's next fifty years very bright."

As it enters the 21st century, Sony welcomes the next fifty years of its history. No matter the era, Sony will be a company that offers new lifestyles to people through exciting hardware products and entertainment software.

***Sony management had announced guidelines to limit the manufacture and sales...***

In order for Sony's English-language word processors to sell well, the 3.5 inch MFD needed to be used by other manufacturers. We shouldn't keep this media for ourselves. Let's try to get other computer manufacturers to use the 3.5 inch disk media and drive, was the general consensus at Sony. In other words, Sony wanted to provide the 3.5 inch disk drive on an OEM basis to other manufacturers. However, Sony management had announced guidelines to limit the manufacture and sales of OEM products at the time. Kato reasoned with Ibuka and other members of management until he finally won approval for his plans.

In spring 1982, the year following the US introduction of the Series 35, Sony began selling the 3.5 inch disk drive as a component to other manufacturers. Within Sony, however, engineers were not willing to develop items that would not be sold under the Sony name. We have to get each and every person to understand, Kato said. In April 1983, the engineers who were working on computer R&D in the System Development Division formed the Mechatronics Business Group, and Kato was appointed its general manager. His primary objective was to create an environment within the group that would generate a strong passion for the promotion of OEM, business.

In 1982, an inquiry came from Hewlett-Packard Co. (HP). We'd like to use the 3.5 inch MFD drive and media for our new computer. Engineers at HP loved to teach. These teachers and Sony's engineers, the students, soon developed a very strong relationship. Building on this relationship, the 3.5 inch MFD drive was perfected and refined to a level usable by computer manufacturers, including HP. Other competitors began announcing products based on a similar concept, and a struggle started to standardize the technology. HP stood by Sony and lobbied for the 3.5 inch MFD to be recognized as the international standard. Since Sony was a newcomer to the floppy disk market, this support from HP was more than Sony could possibly have hoped.

One year after Sony's announcement, Matsushita, Hitachi and Maxell announced a 3.0 inch floppy disk. Kato and his team more than welcomed the appearance of this new disk because it was also housed in a plastic shell, albeit a 3.0 inch shells. However, the disk had only half the memory capacity. We no longer have to explain why the shell has to

be plastic. Now that we have competition from a similar product, it's easier to explain how our product is better, they said confidently. Following the announcement of the 3.0 inch disk, disks of sizes within 3.0 inches plus or minus an inch were announced one after the other. Competition grew fierce, but in the end, the main contenders were Sony's 3.5 inch disk and the 3.0 inch disk. Eventually, the better specifications and powerful ally Sony had found in HP led the 3.5 inch MFD to victory.

In 1984, Sony succeeded in persuading ANSI (American National Institute for Standardization) to endorse the 3.5 inch MFD. Then, the Sony format was recognized by JIS (Japanese Industrial Standards) in Japan and ECMA (European Computer Manufacturers Association) in Europe.

Finally, the 3.5 inch was recognized by the ISO (International Standards Organization), which influences the recognition of standards in all nations, and it became a fully recognized international standard. All of this happened in 1984, the year the Soviet Union and other Communist countries boycotted the Los Angeles Olympic Games.

With the move toward standardization of the 3.5 inch MFD, Apple Computer also endorsed the standard. Apple's request for a thin and reasonably priced disk drive for use in their PCs led to the establishment of an automated production line at Sony Audio System plant (now known as Sony Component Chiba). This line integrated Sony's FA (factory automation) technology and effectively generated further improvements in Sony's MFD production technology. Eventually, IBM endorsed the 3.5 inch MFD for their PS series computers.

## **25. Sony Bank to Become Wholly Owned Subsidiary ding computer manufacturers attested to the reliability of the Sony product architect**

At a meeting held today, the Board of Directors of Sony Financial Holdings resolved to acquire the outstanding shares of Sony Bank Inc. held by Sumitomo Mitsui Banking Corporation, converting Sony Bank to a wholly owned subsidiary.

Since its commencement of operations in 2001, Sony Bank has steadily expanded its scope of operations as an internet bank catering to individual asset management. As of January 31, 2008, the bank's balance of deposits exceeded ¥1 trillion—the first time an institution specializing in Internet banking has reached this level.

Following its conversion to a wholly owned subsidiary, Sony Financial Holdings aims to strengthen ties among Group companies and further enhance its corporate value.

## 26. Sony Financial Holdings

### 1. *Shares to Be Acquired*

Of the 500,000 shares issued by Sony Bank, all 60,000 shares held by Sumitomo Mitsui Banking Corporation.

### 2. *Sony Financial Holdings' Ownership of Sony Bank's Shares Following the Acquisition*

	Before Acquisition	After Acquisition
<b>Shares Hold</b>	440,000	500,000
<b>Percentage Holdings</b>	88.0%	100.0%

**Note:** *This is an English-language summary of a Japanese announcement made by Sony Financial Holdings Inc. on December, 2007. The summary was prepared by Sony Financial Holdings solely for the convenience of non-Japanese readers.*



About Sony Financial Holdings Inc.

**Company Name** Sony Financial Holdings Inc.

**Established** April 1, 2004

**Head Office** 1-1, Minami Aoyama 1-chome, Minato-ku, Tokyo, Japan (Access Map)

**Business** Management control of subsidiaries (life insurance companies, non-life insurance companies, banks and others) specified by the Insurance Business Law of Japan and the Banking Law of Japan and all duties incidental to that role.

**Common Stock** ¥ 19,900 million

**Number of Shares Outstanding** 2,175,000 shares

<b>Directors and Statutory Auditors</b>	President, Representative Director	Teruhisa Tokunaka
	Executive Vice President, Representative Director	Hiromichi Fujikata
	Director	Taro Okuda
	Director	Shinichi Yamamoto
	Director	Shigeru Ishii
	Director	Ryoji Chubachi
	Director	Nobuyuki Oneda
	Director	Yasushi Ikeda
	Standing Statutory Auditor	Hiroshi Sano
	Statutory Auditor	Takemi Nagasaka
	Statutory Auditor	Hiroshi Ueda
	Statutory Auditor	Masahiro Kodama
	Statutory Auditor	So Sato

(As of Oct. 11, 2007)

## History of the Sony Financial Holdings Group

- Aug. 1979** **Life** Sony Prudential Life Insurance Co., Ltd. (the present Sony Life) is established as a joint venture between Sony Corporation and the Prudential Insurance Company of America ("Prudential")
- Apr. 1981** **Life** Sony Prudential Life commences operations and introduces the Lifeplanner® system
- Oct. 1986** **Life** Sony Prudential Life launches sales of variable life insurance (whole-life protection)
- Jul. 1987** **Life** Sony Prudential Life reaches agreement with Prudential to terminate joint venture contract
- Sep. 1987** **Life** Sony Prudential Life changes corporate name to Sony Pruco Life Insurance Co., Ltd. (the present Sony Life)
- Oct. 1989** **Life** Sony Pruco Life establishes independent agency system
- Apr. 1991** **Life** Sony Pruco Life changes corporate name to Sony Life Insurance Co., Ltd.
- Apr. 1992** **Life** Sony Life commences sales of comprehensive medical insurance
- Jun. 1998** **Assurance** Sony Insurance Planning Co., Ltd. (the present Sony Assurance) is established
- Aug. 1998** **Life** Sony Life establishes Sony Life Insurance (Philippines) Corporation in the Philippines
- Apr. 1999** **Life** Sony Life commences sales of whole-life comprehensive medical insurance
- Sep. 1999** **Assurance** Sony Insurance Planning changes corporate name to Sony Assurance Inc.  
Sony Assurance begins writing automobile insurance policies via the Internet
- Oct. 1999** **Assurance** Sony Assurance begins writing automobile insurance policies over the telephone
- Apr. 2001** **Bank** Sony Bank Inc. is established
- Apr. 2001** **Assurance** Sony Assurance opens Claim Service Center
- May 2001** **Group** Sony Life's Lifeplanner® sales employees commence sales of Sony Assurance's automobile insurance
- Jun. 2001** **Bank** Sony Bank commences operation (products comprise ordinary yen deposits, yen time deposits, investment trusts and card loans)  
Sony Bank launches MONEYKit® service site
- Sep. 2001** **Bank** Sony Bank starts handling foreign currency deposits
- Mar. 2002** **Bank** Sony Bank starts offering mortgage loans
- Mar. 2002** **Group** Sony Life commences underwriting of group credit life insurance for mortgage loans extended by Sony Bank
- Jun. 2002** **Assurance** Sony Assurance begins offering medical and cancer insurance
- Jun. 2002** **Bank** Sony Bank begins offering special-purpose loans

- Jun. 2002** **Assurance** Sony Assurance opens Sapporo Customer Center
- Apr. 2004** **Holdings** Sony Financial Holdings Inc. is established.  
Sony Life, Sony Assurance and Sony Bank become subsidiaries of Sony Financial Holdings Inc.
- Jun. 2004** **Group** Sony Bank commences sales of individual annuities offered by Sony Life
- Oct. 2004** **Group** Sony Assurance begins offering fire insurance to mortgage loan customers of Sony Bank
- Dec. 2004** **Group** Sony Life's Lifeplanner® sales employees begins introducing Sony Bank's mortgage loans
- Sep. 2005** **Holdings** Purchase of Shares of Sony Bank Inc. (Sony Financial Holdings' share ownerships increased from 84.2% to 87.4%)
- Dec. 2005** **Bank** Sony Bank begins handling credit card settlements
- Dec. 2005** **Bank** Sony Bank commences securities intermediary service  
Capital Increase of Sony Bank Inc. through Allocation of New Shares
- Feb. 2006** **Holdings** (Sony Financial Holdings' share ownerships increased from 87.4% to 88.0%)
- Jun. 2006** **Bank** Sony Bank launches mobile banking service
- Sep. 2006** **Life** Sony Life's opens Life Planning SQUARE showroom in Ginza Sony Building
- Sep. 2006** **Life** Sony Life ties up with Watami Co., Ltd. in the nursing care field
- Oct. 2006** **Bank** Sony Bank begins offering new card loans
- Oct. 2006** **Life** Sony Life completes construction of Sony City building, the new headquarters of Sony Corporation
- Jun. 2007** **Bank** Sony Bank establishes a wholly-owned subsidiary, Sony Bank Securities Inc.
- Oct. 2007** **Bank** Sony Bank Securities and Sony Bank to Launch Securities Intermediary Services
- Oct. 2007** **Holdings** Listed on the First Section of the Tokyo Stock Exchange

# Sony Financial Holdings Inc.

