I SEE SDI

Sustainability Report 2005
About Sustainability Report

The third episode about sustainability
Samsung SDI opens its third sustainability report this year.

- Activities from January 1 to December 31, 2005
  If significant changes occurred to April 30, 2006 from the reporting period, the changes are reported.

- All global production sites, sales offices, and R&D centers in Korea and Germany
  The SDI Germany that had been reported until last year is not covered in this report, as it was affected by business restructuring.
  Tianjin Samsung SDI Mobile Display which was not reported last year is reported in this report.

- All display products and energy products
  PDP, CRT, OLED, STN-LCD, VFD, Rechargeable battery and future products (concept products) under development are reported

- The report has been prepared based on GRI guideline 2002 for Sustainability Reporting and Environmental Reporting Guidelines announced by Ministry of Environment in Korea, and has audited independently following AA1000AS.

- In April 2005, the second report was published
  Samsung SDI publishes its sustainability report every year.

See the future through Samsung SDI
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Dear global partners!

There is Samsung SDI that achieved outstanding growth and development for the past 36 years. Samsung SDI, a company that opens a new chapter in the display and energy industries! Based on business experience in Korea, the company is developing rapidly to be a global top-tier company with nine production bases in five countries including Malaysia, China, and Hungary. Even at this moment Samsung SDI is changing itself to be confidently positioned as a future-oriented, sustainable company.

Winner takes all
The display market is highly competitive. Market players are in difficulty. Prices drop everyday, new products come out, and plants are opened. The reason that we try to win in this cut-throat competition is that we know only a winner can survive in the market. Those who can overcome the current troubles can take all. We saw some of our competitors have already given up. But Samsung SDI is different. We diversify businesses with PDP, OLED, and rechargeable batteries and continue investment with no hesitation.

Market Driven Change
What is dragging the market down is rapidly falling prices. However the price is something that has to fall at some point in time. Samsung SDI wants to see a world where people can get products they want more easily. For more people to use better products, companies have to lower prices.

It takes not only quality and price but also ability to satisfy consumer requirements in detail to capture a market. Samsung SDI gathers strength with ‘Market Driven Change’. MDC is a change that leads a market. Samsung SDI has built strong marketing capabilities to feel what the market wants and adapt itself to changes very quickly.

Run to the future
No change, no future. Rather than seeking short-term profits, Samsung SDI chooses to invest in opportunities for the future. Not complacent with our platform businesses, we will continue business structure transformation by focusing on development businesses and future businesses. Already Samsung SDI succeeded in making profits in PDP and battery businesses. Now it is constructing a plant to produce AMOLED, which is known as a dream display.

Samsung SDI is Technology Driven Company both in name and reality. Samsung SDI is shaping our future with excellent, competition beating technologies. The CEO of Samsung SDI is also the CTO, responsible for R&D.

Life Cycle Thinking
It is said that people come from earth and go back to earth. So are products that people use. All are part of the eco-system.

Samsung SDI is always attentive to the impact the company has on the Earth. Environment is the focus when we think of where our products come from, how they are treated in use, and where they go after use. This is being called ‘Life Cycle Thinking.’ By life cycle thinking, Samsung SDI buys environment-friendly materials (green procurement) and develops environment-friendly products (eco-design). And we manufacture products in a clean manner (environment management system) and deliver them to customers (eco mark). We also discuss how to reuse or recycle used products (product recycling rate assessment).

Samsung SDI’s products encapsulate the spirit of Samsung SDI. SMIS has been designed as a base system to effectively incorporate life cycle thinking into products.

Harmony with stakeholders
Ten years have passed since we started efforts to help those in need have their eyes cured. Caring neighbors is one of responsibilities of Samsung SDI. Free eyesight recovery operations have expanded into overseas. Following suit in Tianjin and Dongguan, China, more overseas plants are going to deliver warm-hearted community service to their neighboring communities from this year.

Samsung SDI is growing with you. From customers to employees, from suppliers to communities, and from the national economy to the world, all are stakeholders of Samsung SDI. They would have different requirements for Samsung SDI so that it is hard to please them all. We know that they express differently but want one thing in common. A better world. Samsung SDI endeavors to open up a brighter and more warm-hearted future. For our stakeholders, we will do everything we can to delight customers, and nurture every single employee as a precious gem of the company. We will gather strength with suppliers to contribute to the national economy and share joy of growth with communities. We will create higher quality products for people to enjoy a better world.

We see SDI
Samsung SDI jumped into the display market and secured a leading position in a short period of time. We will make strenuous efforts to be a sustainable company in a sustainable world through accurate forecast for business environment changes, proactive R&D investment, and environment-friendly, value-added product development.

Samsung SDI is looking into the future. We are the winner of today and will be the winner of tomorrow. Respected partners! Look into the future through Samsung SDI!

President & CEO  Kim Soon Taek

Soontae_kyun
Samsung SDI is a world-class company leading the display and energy businesses.
Samsung SDI has 17 global posts in 8 countries including 12 production bases, 2 R&D bases, and 2 sales offices. Beyond that, branches and offices are distributed across different countries. As of late 2005, 25,912 employees were working in Samsung SDI in total, 9,819 in Korea and 16,093 in overseas. (For overseas, only production plants are counted in)
Rediscovery of core values

Re-establish value structure, the foundation of organizational culture and the way of working and deploy various activities to share them.

:: DNA of Samsung
An enterprise is like an living organism. To grow sustainably, it has to have DNA for its members to share, which is a set of corporate values. Since its foundation, Samsung has shared various values associated with its management philosophy. In the process of expanding its business into the world, Samsung has witnessed severe competition in and out of the organization and increased diversity. In 2005, Samsung analyzed those values that had been shared and re-established them to find out the spiritual center that would be matched to its position as one of excellent global enterprise. The value structure of Samsung is composed of management philosophy, core values, and business principles. These will tie a global Samsung as a single Samsung. Samsung believes that corporate culture driving in one direction would be the springboard that helps it take off as a true global leading company.

Samsung SDI, as a member of Samsung, is also executing multi-angular activities to develop the Samsung value structure into the DNA of the company leading to success.
Companies are asked for more in terms of their social responsibility fulfillment. Ethics management is now emerging as an international standard to determine whether a company is a global top-tier company or not.

Since its announcement of the ethics codes of conduct in 2002, Samsung SDI has continued its efforts to practice right management and trusted management as a way to secure global competitiveness. The ethics codes of conduct were formulated based on Samsung Constitution and management philosophy. They promote respect for customers and shareholders, co-prosperity with suppliers, co-existence with the country and communities, environment-friendly management, responsibilities asked for a global company, and admiration of employees. Based on those ideas, they have suggested criteria for value judgment and guidance of behaviors for fair and transparent corporate management.

As Samsung proclaims its value structure and business principles, Samsung SDI is ensuring it heads in a common direction by aligning its ethics management with the principles. The ethics codes of conduct are going to be replaced with Samsung business principles.

To communicate the changes, Samsung SDI conducts education on management philosophy and value structure as well as the ethical oath-taking campaign for all employees. This is designed to encourage changes of mind-set by promoting ethics management in day-to-day operations. Most of all, as part of wider training, two-hour classes for clean culture promotion are provided annually to entry-level employees and newly promoted managers. Anti-corruption education is conducted on an ongoing basis by division heads in customer-facing divisions such as procurement, engineering, and sales. A system for proactive monitoring is also established in areas relatively prone to misconduct and corruption to prevent such misdeeds in advance and detect potential signs of such practices. Reporters are thoroughly protected so that they are not exposed to any potential disadvantages.

Samsung SDI puts in place policies to prevent behaviors undermining fair competition and guide employees to good practice. The internal portal site provides information pertaining to definition of corruption and right ways of behavior. It also carries examples of corrupted behaviors and the consequences, awakening employees to the danger of corruption.

In 2005 Samsung SDI put together a dedicated team for ethics management and added ethics management to SM committee responsibilities to incorporate ethics management into the whole management processes involving HR, finance, and auditing. Samsung SDI is making strenuous efforts to root ethics management into day-to-day operations in an organized way.
Samsung SDI's business vision is 'creating the future of display and energy'. The vision indicates Samsung SDI's commitment to go beyond simple product making to identify customer needs before they realize and create products based on hi-technologies, shaping the future of display and energy industries.

To achieve the vision, Samsung SDI is going to increase R&D investment, strengthen market dominance, expand businesses, secure talents, and develop cooperation within the industries.

:: Business portfolio
Samsung SDI created its business portfolio with the platform business (CRT, STN-LCD, VFD), the development business (PDP, rechargeable batteries, OLED), and future business (FED, HPL, Fuel Cell) to concentrate competencies for continuous growth. Samsung SDI spares no efforts for R&D, in particular, for development businesses and future businesses, that would be the growth engine for the future.

:: Core competency
Samsung SDI drives itself to be Technology Driven Company. As core competency for TDC, Samsung SDI defined four factors of creative people, technology leadership, aggressive and innovative culture, and customer value creation. Creativity is the key to survival in the era characterized by global competition. Samsung SDI strives to achieve sustainable growth with customers by developing creative people, securing technology leadership and internalizing them in our organization culture.

:: Practical principle
To translate core competencies into goal achievement, Samsung SDI works with 6 Sigma. 6 Sigma was introduced as enterprise-innovation initiative in 1996 for the first time in Korea. 6 Sigma became the way Samsung SDI works. Believing that management is equal to innovation and innovation is equal to 6 Sigma, we have deployed 6 Sigma to all divisions, customers, and suppliers.

:: Sustainability management
Sustainability management is a corner stone of all management activities in Samsung SDI. It means Samsung SDI's strong commitment to practicing sustainability management. Through sustainability management, Samsung SDI is going to do its best to achieve economic growth, creation of environmental values, and social responsibility fulfillment, while building up trust with different stakeholders.
Governance

Governance of Samsung SDI is in compliance with relevant acts. All organizations and activities related to governance are run and conducted appropriately and reasonably according to the commercial law and the Securities and Exchange Act.

Stockholders meetings and board of directors

The stockholders meetings and board of directors are the two pillars of decision-making. The former is the highest decision-making body in Samsung SDI, while the latter is the one to put the decision into practice. Board of directors members are selected in the stockholders meeting. Those who are well versed in economy, business management, laws and technologies or have rich experience in relevant areas are to be selected as independent members of the BOD. Independent director candidates are recommended by the nominating committee and finalized in the stockholders meeting. Registered directors of Samsung SDI at the moment consist of 3 internal directors and 5 independent directors. Independent directors outnumber internal directors. The regular BOD session is supposed to convene quarterly, but can be skipped if there is not particular agenda or items to report. The Special BOD session is called on as-needed basis. In 2005, nine BOD sessions, two regular BOD sessions and seven special sessions, were held. All decisions are made transparently according to relevant laws and regulations.

Committees under the BOD

Under the BOD are three committees. Audit committee is responsible for the financial statement and business operation reports. Management committee is the forum to discuss important management issues. Lastly nominating committee recommends qualified independent director candidates. Audit committee is made up with independent directors. The committee helps Samsung SDI improve transparency in management. The recommendation committee is half-filled with independent directors. Anyone who has special interest in the company is disqualified from independent directorship.

Compensation for executives and directors

In the shareholders meeting, compensation for directors is capped and detailed execution items are commissioned to the BOD to determine. An individual director is paid appropriate amount not exceeding the cap according to his or her performance. Criteria to determine the compensation level for executives count in safety, environment, industrial relations, any misconduct/irregularities, and security aspects in risk management context.
What do you do as an independent director?
As a member of the BOD, I attend meetings to consider major issues and make decisions regarding management agenda specified in laws and articles of association. I, as an independent director, make recommendations, in particular, on ways to enhance management transparency, earn trust from communities, and better fulfill corporate social responsibilities. And also I involve directly and indirectly in major issue handling pertaining to management strategies. As the chairman of the audit committee, I help assess appropriateness of Samsung SDI's internal control system and business performance, giving advice on how to improve and complement them on an ongoing basis.

Please make comments on transparency of Samsung SDI’s management decisions
Transparency of management decision-making can be assessed in many ways. First of all, decisions should be made in ways to meet shareholders’ interest and respect social responsibilities by legally appropriate procedures. In this respect, I see that management decisions in Samsung SDI are made transparently. This is also true if it is compared to other companies as well. In particular, there has not been unjust insider trade. When interests in management efficiency, social responsibility, and global competitiveness collide, Samsung SDI tries its best to ensure transparency in management.

We understand that you as an independent director give objective, long-term, and professional advice to various management agenda. What is your advice mainly about?
Enterprise activities are done at various levels. Many management issues arise from investment decision, resource management, global strategies, capital management, and exploration of new businesses. I make objective assessment and recommendations of these management issues. For example, I can propose objective ideas as an expert about capital management with consideration of foreign currency exchange rate change, industrial relations, long-term business restructuring, government industrial policies and economic outlook in the hope that those ideas can help enhance competitiveness of Samsung SDI.

Do you think that for Samsung SDI, listening to independent directors like you is helpful in setting out more sustainable management strategies based on coordinated views from inside and outside?
Yes, I do. For sustainability management strategies to work, a company has to be armed with global competitiveness, fulfill its social responsibilities in culture with management transparency and environment-friendliness. And the company has to continue innovation within. Most of all management transparency and social responsibility parts are important internally, but they are subject to objective assessment from the outside and closely related to social recognition. This is where independent directors’ roles are required, who participate in company management as well as are aware of public perception.
Risk management and sustainability management

Run an internal control system and CRO(Chief Risk Officer) organization as part of risk management activities, and have CCO(Chief Communication Officer) leading company communication activities.

:: Risk management

Internal control: CEO(Chief Executive Officer), CFO(Chief Financial Officer)

Internal control is a series of processes continuously executed by the BOD of an organization, management and other members in order to provide reasoned confidence for management transparency. Internal control includes internal accounting management system for the purpose of credibility enhancement of financial information. The system covers asset protection, and check and control of irregularities. Based on internal control system operation results, CEO and CFO certify business reports, resulting in enhancement of reliability and transparency of financial information.

Risk management: CRO(Chief Risk Officer)

CRO takes care of five risk aspects of man-made accidents, security, environment and safety, customers, and natural disasters and terrorism. Each plant installed CRO organization, which is headed by the vice managing director. As the CRO of the relevant plant, he or she carries out proactive and systematic management against various risks. In emergency, the contingency system is turned on with CRO at center to resolve the situation.

Communication: CCO(Chief Communication Officer)

CCO is in charge of interactive communication to increase corporate brand value. CCO communicates the company vision and management activities through various media such as the press, advertisements, and exhibition to internal and external customers and general public and seeks for understanding. On the other hand, the officer collects voices internally and externally and uses them as critical assets for management activities, leading open communication.

:: SM committee

SM committee is the highest decision-making body to discuss and approve sustainability management strategies. The committee is composed of people in the highest ranks in each division. The committee holds two regular meetings with CEO and all members present. Under the committee is SM Office that coordinates sustainability management of Samsung SDI. And SM committees by site and division are convened, discussing more details regarding sites and product groups.
Samsung SDI lives together with different stakeholders, who can be categorized into two.

**Economic stakeholders**
Economic stakeholders directly exchange economic values with Samsung SDI. The relationship is characterized by economic growth and redistribution of economic values.

**Social stakeholders**
Social stakeholders are interested in diverse issues such as technology, environment, and society. They may jointly develop technologies and reinvest in society, creating and distributing economic values in an indirect way.

**NGO**
NGOs are the one among stakeholders who takes great interest in sustainability of Samsung SDI. In particular, they look at environmental and social issues. They actively express opinions regarding Samsung SDI activities in such context.

Categorize stakeholders into different groups by looking at if stakeholders exchange economic values directly or not, their level of interest in sustainability management of Samsung SDI, and the frequency of feedback, in order to better coexist with various stakeholders.

Samsung SDI builds a future with money from shareholders and investors. Profits are returned in the form of dividend and interests or reinvested for profits of a more distant future.
Samsung SDI listens to NGOs in refining its management system and putting together this report. Because we know that if we listen to different views and opinions, we may find something helpful for our development. Samsung SDI is a member of ‘Manbun Club’ a group of organizations that donate 1/10,000 of theirs sales for balanced development of environment and economy of Green Fund. We also converse with civil groups like Citizens’ Action Network. Samsung SDI tries to have more active communication with all stakeholders.

Samsung SDI joins hands with an academic society and industry associations to develop technologies and enhance competitiveness. Samsung SDI can hire talents, while college graduates can have employment opportunities. This contributes to boosting national competitiveness. Samsung SDI executed over 2,000 joint projects in 2005.

Media brings social trends and Samsung SDI’s trends to the public very quickly. Media also call the public attention to sustainability management. They serve as the largest channel for Samsung SDI to get public opinion on itself.

Samsung SDI complies with and respects laws and ethics. There was no case that it violated laws in 2005. Samsung SDI paid about 43 billion won in corporate tax on a global basis and Korean employees paid about 46 billion won in income tax.

Suppliers are partners of Samsung SDI. Samsung SDI leads the display/energy market with 1,069 suppliers around the world. Suppliers discuss all aspects of quality, environment and society with Samsung SDI and develop together.
Full HD 50” module development

The 50” full HD PDP, successfully developed recently, has full HD with 1,920 x 1,080, brightness of 1,200 candela(cd/㎡) and luminance efficiency of 1.8 lumen(1m/W). 50” full HD PDP has twice better resolution than existing 50” HD PDP (1,366 x 766). It is a collection of the state-of-the-art PDP technologies such as HD technology, hexagonal structure and light-emitting technology, and upgraded text expression technology. With HD technology secured, we were able to produce the full HD PDP on existing lines without additional investment, which means a lot in terms of cost saving. On large DTV screens, rounded shape in images and characters were not clear. This problem was
solved with our unique and new text expression technology of ‘upgraded text expression,’ proving that Samsung SDI is equipped with technology capabilities for TV and PC monitors.

:: Development of ‘W’ PDP, the emotional picture quality

‘W’ is the initial of ‘With PDP,’ meaning that PDP is a friendly TV and good for home. It implies our commitment that PDP has to secure an absolute position in the large display market and take off to a higher level with quality improvement.

PDP products with ‘W’ attached express brighter and dynamic images with three times contrast, the emotional quality, of existing products with complementary color panels. In terms of grayscale, it realized 8,192 scales, which means it can express 550 billion colors, eight times as many colors as the existing product (V4), which has 68.7 billion colors. Customers can enjoy the rich and diverse colors, the great advantage of PDP, feeling as if they are in the real world.

:: Kim Chulhong, selected as one of 2,000 outstanding scientists

Kim Chulhong of PDP development team in Samsung SDI made the list of ‘2,000 Outstanding Scientists of the 21st century,’ hosted by International Biographical Centre of Cambridge. Mostly professors in their 40’s and 50’s who presented excellent research outcomes have made the list of IBC. It is rare to see a young researcher in early 30’s being listed.

Mr. Kim has played a pivotal role in developing materials used for PDP in PDP Development team in Samsung SDI.
He is said to have taken nano application technologies pertaining to nano wire synthesis to a higher level. He was the one who brought about a critical opportunity in securing the best quality in existing displays by applying the nano wire to PDP.

As Mr. Kim, aged 33, was selected as a outstanding scientist in pure and applied science, PDP products of Samsung SDI commanded better recognition and technological capabilities of research folks are accepted as the best competitiveness source in the PDP industry.

**Construction of PDP premium line**

Samsung SDI decided to build the PDP line 4 to catch up with changes in the display market and rising demand. The PDP line 4 will be constructed in the Busan plant on 99,173m².
The maximum capacity of the PDP line 4 would be 3 million units (42" /8-panel) a year. Combined with line 1~3 at the Cheonan plant, annual capacity would reach 7.32 million units.

As digital TV gets larger and larger, the line 4 would focus on 50" to double the productivity of old lines, and produce 42" and 50" full HD products, using it as a premium line for PDP.

Samsung SDI has developed new technologies and processes to apply to line 4 and accumulated the best PDP building capabilities for including superior quality, quality grade, technologies, and cost competitiveness for line 4.

Samsung SDI is going to build various strategic products and differentiate its products as a premium PDP brand.
As more and more contents demand high definition such as dynamic images and DMB, the quality of a mobile display became critical. Many mobile phone users are looking for a display for clearer and more vivid images. To catch up with users’ demand changes as such, Samsung SDI has done R&D for new displays. We found that OLED, a light emitting display, is the best display equipped with clear color expression and wide viewing angle for natural moving image play. Applying 10-year accumulated knowledge in mobile display production and productivity to OLED, we maximized syner-
gy effect and proactively responded customers’ demand.
As a result, we accomplished to ship out 30 million units cumulatively in three years and two months after mass-production of PMOLED in August 2002.

:: World-first investment in mass-production of AMOLED
As more and more interest is paid to AMOLED, the next generation display, Samsung SDI began investment for commercial production of the generation 4, LTPS AMOLED for the first time in the world.
The production lines of AMOLED will be built in the Cheonan plant on 45,619m². The line began commercial production in January 2007.
As AMOLED employs super-slim design and is excellent for motion play with superior picture quality, it is known as the best display for high-end handsets, DMB phones, and WiBro phones. Starting with small and medium sized AMOLED with QVGA grade for handsets with top-emitting technology applied, Samsung SDI will expand the market to cover PMP, game players, and information handsets. Our goal is to produce 50 million units a year from 2008. From 2007, consumers can experience a mobile phone with AMOLED. The color gamut of AMOLED denies comparison with other displays. You may look forward to AMOLED.
3D display for mobile games
As mobile contents increase explosively, displays that overcome the boundaries of mobile games are commanding attention. Samsung SDI presented to the Korea Electronics Fair and FPD International Expo in Japan 2.2” and 3” three-dimensional displays that express three-dimension images perfectly. Receiving great attention in those fairs, these products can keep three-dimension images at any angles even if users change the display position from vertical to horizontal. It was commented that the displays took 3D technologies to the next level.
Beyond Slim

:: 19" CRT, an environment-friendly well-being product

What is well-being?
Literally, it is a concept indicating a living style and culture seeking happiness by harmonizing physical and psychological health. An environment-friendly product is a product made to take environment and people into consideration.
We began to commercially produce 19" well-being CRT for PC monitors. The CRT generates negative ions and far infrared rays. Negative ions neutralize polluted positive ions in the air, clean indoor environment, and activate beta(β)-endorphin that has calming-down effect for people, helping people to find mental peace.
and to lead pleasant life.
The 19” well-being CRT is able to generate negative ions, far infrared rays, and silver-nano along with HD and reasonable prices, which enables air purification effect and sterilization effect. That’s why the CRT is much welcomed as the best display in the so-called well-being era. We developed this product based on thorough market research by making use of competitiveness built by being a leader that enjoys the largest market share (30%) in the global CRT market and on consumer needs analysis. The product boasts the best resolution with 1600X1200, brightness of 400 candela (cd/m²) and contrast of 250:1.

In the changing display market, in which multimedia function involving games, Internet, and graphic are much emphasized, we applied well-being CRT technologies to 19” models for monitors, which are found to be a niche market. The 19” wellbeing CRT can generate 3,935 negative ions in 1cc, which is 22 times higher than 175 negative ions in 1cc, the amount that 4 vases (30 roots) of Sanseveria can generate, a plant known for negative ion generation. The well-being CRT that emits negative ions, instead of electronic waves! Samsung SDI commits itself to more development of environment-friendly products.
Vixlim, the contributor to resurrection of CRT

The history of TV is the history of CRT. It has been CRT that has sustained the world display market to date from 1930’s, when TV was commercialized. Now changes are taking place. Analog broadcasting is replaced with digital broadcasting, which leads changes in digital display devices. With advent of large flat TV, the era of CRT is coming to a close. CRT that has boasted excellent picture quality has one problem, which is thickness. We thought that if we can overcome the barrier, we can bring about resurrection of CRT. We developed a super-slim CRT called Vixlim in July 2004 and began commercial production in 2005.

Vixlim was 15cm slimmer than existing CRT. The sales of the 32” new CRT grew 16 times in two months after product release. 32” Vixlim
was sold 2,000 units in last February, the first month of commercial production. And the figure rose to 14,000 units in March, and to 32,000 in May. It was 16 times growth in just two month after mass production initiation. And from June, 29" Vixlim began to be produced, initiating model diversification. And production sites were expanded into Shenzhen and Mexico. 21" Vixlim for TV and 17" Vixlim for PC monitors are under development. We expect that the slim CRT market will grow by 150% annually by 2008. We ask for your attention to our Vixlim which led resurrection of CRT with slim design and excellent picture quality.
On July 5, 2005, Samsung SDI began commercial production of Li-ion batteries with the world largest capacity. The capacity is 8.3% higher with 2,600mAh than 2,400mAh of existing products. Cylindrically shaped, the product, 18mm in diameter and 65mm in height, is going to be used for laptops and camcorders. The Cheonan plant began to produce...
10,000 cells a month in July, and increased the production volume to 90,000 cells a month by the year end.
Recognising increased use of mobile multimedia, which led to explosive increase in demand for high-capacity batteries, Samsung SDI is going to develop high-capacity products exceeding 2,600mAh, bringing to reality a true mobile world.

:: Development of Li-ion batteries for electric tools for the first time in Korea

Electric tools such as a drill and a screwdriver require strong and long-lasting rechargeable batteries. Rechargeable batteries for electric drills should power electric tools so intensely and instantly. They need momentarily high current, unlike rechargeable batteries for mobile phones and laptops that require stable supply of current.

Samsung SDI dramatically improved parts through pole plate design using low voltage, lowering resistance of batteries under the half of that of general Li-ion batteries. This enabled high-current discharge that can be used in electric tools.

Cylindrical Li-ion batteries for laptops can generate 2C (C-rate: the maximum current) as maximum output, whereas this product can generate high current four times higher than that of existing products. When it is completely discharged, it can be re-charged quickly within 30~40 minutes. Moreover it can perform up to 80% of its initial performance after 500 times of recharges and discharges.

:: Fuel cell, the next generation energy

Do you know what is the most welcomed energy source when oil prices are rising? It is a fuel cell.

Fuel cells are electric chemical batteries that can transform chemical energy from chemical reactions of fuels into electric energy continually. It is called the next-generation 'power generation device with no pollution.'

Can you believe that 200cc of fuels can operate a laptop for 15 hours?

Samsung SDI succeeded in developing highly-performing power supply for a laptop that has 50W at maximum output and 20W at rated output with methanol fuel cell (DMFC : Direct Methanol Fuel Cell). Most of fuel cells required a separate device to extract hydrogen from fuels and convert the gas into energy. But this fuel cell can convert methanol
Beyond Strong

into energy directly.

Besides, we developed a fuel cell that you can use for more than 5 hours at 100W with portable butane can as fuel. This cell will be used as an emergency power source and for outdoor activities for example, involving a small color TVs and a laptop. We plan to commercially produce the cell late 2007 and continue to study 300W grade butane fuel cell.

Responding to rising oil prices, companies concentrate on R&D activities to develop alternative energy sources, and people are highly interested in future alternative energy sources. That is why R&D for fuel cells, the next-generation energy source, is commanding great attention. Samsung SDI is going to come up with stronger and more environment-friendly alternative energy technologies.
PMP is a multi-player with features of a MP3 player, navigation, an electronic dictionary, a game player, and DMB reception. The PMP market, which was 400,000 unit-sized market in 2004, is expected to grow to 6.5 million unit in 2008. Samsung SDI developed the fuel cell for PMP that enables four-hour operation without recharge that is enough to play eight drama episodes. The fuel cell for 5W-PMP uses a 20cc methanol cartridge, which is very small, to play eight 30 minute-episodes with no additional charge. With simple replacement of the small methanol cartridge, you can watch contents for longer time. The potential for development of fuel cells is unlimited. A fuel cell that can last for 10 hours will be commercialized soon. Samsung SDI continues its efforts to produce stronger, safer, and more environment-friendly fuel cells for people to enjoy the true mobile world.

The world first development of fuel cells for PMP
A dream of visual revolution comes true at Plasma TV. Samsung SDI has developed the world's first 102 inch Plasma TV and the best picture quality with high technology. Samsung SDI's W series applied by complementary colored panel shows the highest bright-room characteristic. Samsung SDI keeps going on development of new plasma technologies and commits to deliver more natural and vivid images to your home.
SPD-42P7HD Model
Vixlim 32"
Slimmer Samsung SDI CRT was built upon magic like science. Samsung SDI’s leading technologies move up revolutionary evolution of CRT. The best display for more refined digital broadcasting. Samsung SDI displays even your fascination.
2.0" QVGA AMOLED
Small but great freedom in my hand with OLED Samsung SDI is by far taking the initiative in OLED, the mobile display for next-generation as well. We are going to dominate OLED market with our advanced technology along with the development of full-color AMOLED for multimedia device and the successful mass production of full-color first time in the world.
Flexible Display

Have you imaged a display that you can bend? You can use flexible display anywhere and anytime with ease, and bend or roll it up to carry. Once commercialized, it will lead a mobile life. The flexible display will be applied to various media such as PDA, e-Book, sign boards, and etc.

Battery

Power to give life to mobile. Strong wings to free mobile. Batteries of Samsung SDI free mobile world to the fullest. They promise delight of mobile life for a longer time with unmatched robustness and safety. They enrich your mobile life.
5.6" UTL (Ultra thin and light) flexible AMOLED display
The display and energy markets are expected to grow backed by widespread digital broadcasting, launch of DMB service in Japan and Europe in 2006, and commercialization of WiBro planned in 2007, high-speed wireless internet service. Moreover consumers demand for excellent picture quality, slim displays, and cleaner energy is expected to support market growth very firmly. When Samsung SDI finds out changing requirements of end users and our customers exactly as they are and releases products satisfying them, Samsung SDI would be able to lay foundation for sustainable growth.

In the U.S., analog broadcasting will be completely replaced with digital broadcasting by 2009. This implies that Samsung SDI will have to concentrate on development of a display with undisputed competitive edge in terms of picture quality and price.

In the energy side, oil prices are expected to break the price record every year. Samsung SDI should pull all energy to bring next-generation energy sources such as HPL and fuel cells earlier to the market.

Samsung SDI will capture the reality as it is with strengthened capabilities to detect changes in business environment and complete building a business portfolio focused on PDP, OLED, and next-generation energy businesses that Samsung SDI is currently concentrating its competencies. On Samsung SDI commits to you that it will position as a company specialized in display and energy both in name and reality based on those efforts.

Opportunities for future growth

:: Hong Sukjoon executive vice president head of management planning division
Opportunity and challenge

- Displays are one of the most effective means to deliver information. Batteries enable people to get information conveniently anytime and anywhere.

- Samsung SDI, ranked top in the world display market and the third battery maker, is increasing facility investment to secure competitive advantage in the growing DTV market and fuel cell markets and preparing for mass production of AMOLED and commercialization of mobile fuel cells.

:: Eye and heart in the digital era

"Knowing more and using better" determines competitiveness in this era. This is the age of informatization. Any people try to get quality information effectively. We want to have more current and quality information to achieve economic growth, increase political power, and lead prosperous life.

Display products are the very means to deliver information in the most effective way. "The most effective" is valid because human being accepts more than 80% of information by seeing things.

Energy is needed to get information easily anytime and anywhere. A battery that is easy to carry and lasts long dramatically changes the way people live.

A semiconductor is likened to the brain of people. Likewise a battery is to the heart and display products are to the eyes.

Samsung SDI is producing display products and rechargeable batteries. Its display products enjoy the largest market share. Batteries, currently in the third position in the market, are moving up. This shows that Samsung SDI is delivering the eyes and the heart of the digital age.

:: Growth of the DTV market

Though many display products have always been around, for example, in a monitor, a mobile phone, a game console, and etc, it is a TV that people find most friendly. As digital broadcasting starts servicing in earnest, the DTV market is growing dramatically. If the trend continues, analog TVs would go almost extinct by 2010 and DTVs would form an enormous market that would sell more than 100 million units a year globally. As the logic goes, an attractive market will have been created valued at 100 billion dollar by 2008.

Large TVs over 40", in particular, will constitute the mainstream, because people want to enjoy information with a larger and more vivid images. In the large TV market, PDP will prevail, which does not harm eyes and delivers outstanding picture quality.
Future display and energy

An attractive market is crowded with competitive market players. Aggressive investment expansion is needed, which may create difficulties at present. That assures success of tomorrow. Samsung SDI is making bold investments to secure its top position in the DTV market.

There are various ways to express images on a display. CRT, PDP, and LCD are different devices in that they employ different ways to express images. AMOLED is a dream display. It is beyond comparison with other devices in terms of clear picture, beautiful colors, and natural motions. That's why it is called a flower of displays that would beat competition among devices.

Samsung SDI is now building a plant to mass-produce AMOLED for the first time in the world. At the same time it is making efforts to cut its prices and extend its life-cycle.

Samsung SDI opens the future, when you can enjoy information easily and conveniently.

:: Convenient and clean energy

Batteries enable you to get information wherever you are. People want to use a simpler product for longer time. Oil prices have more than doubled over the past couple of years and are expected to rise further. Stronger regulations have been being enforced on greenhouse gas emission.

Fuel cells generate convenient and clean energy. They are called mobile cells that power mobile phones, PMP, PDA, and laptops that can be in use anywhere. The market for mobile cells is expected to reach 25 billion yen by 2008, 100 billion yen by 2010, and 200 billion yen by 2015 in size.

:: Future display and energy

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Samsung SDI is ahead of others in the fuel cell market. The company has a plan to unveil three types of fuel cells for use in mobile products targeting 2007 and 2008. Besides, various fuel cells for cars are under development.

Samsung SDI opens the future, when you can enjoy information easily and conveniently.
Able to generate electricity in an environment-friendlier way through fuel cells.

In 2005 Samsung SDI developed a fuel cell using portable butane gas, a fuel cell for a laptop that has the highest energy density in the world, and a fuel cell for a portable media players for the first time in the world.

Fuel cell

:: Beginning of self-power generation age
An age is around the corner when anyone can produce and use electricity in an environment-friendlier way. One of them that makes it possible is fuel cell. So far most electricity has been supplied only through lines provided by an electricity company. However not in the distant future, gas and liquid fuels such as methanol will be used to produce electricity at home and outdoor and power electric goods.

:: Fuel cells using portable butane!
Samsung SDI succeeded in developing a fuel cell using butane as power source in August, 2005. The butane fuel cell uses a small butane can weighing 220g that is generally used in any portable gas range, and lasts for over five hours at average 100W. That means it can run laptops (at 20W) for 20 hours and powers a TV, a DVD player, an electrical lamp, and an audio system all at the same time. It can be used for outdoor activities as well as emergency power source in our daily life. The key to this products lies in 'butane reform technology.' A special catalyst is applied to butane gas(C4H10) and water, followed by extraction of hydrogen(H2), which generates electrical energy. Samsung SDI is going to enhance the output of power up to the 300W level.

Cho Hyunseok
Fuel cell researcher in energy lab of corporate technology operation

Fuel cell! Change the world
Samsung SDI's plan is to advance days when a fuel cell is commercialized that can be used from high-tech portable electronic and electric goods to mobile homes to supportive power devices for outdoor uses.

A fuel cell is a small power-generator. You can get electricity as long as fuel is supplied. Unlike existing rechargeable batteries, you don't have to charge the cell, which is convenient for consumers. A fuel cell with no need to re-charge is operable for a long time once the fuel cartridge is replaced instantly.

Scientists predict the energy mega trend that the era of hydrogen energy will come after 2030. A fuel cell is highly efficient in converting energy, compared to the internal combustion engine that burns fossil fuel, and is cleaner energy source with high efficiency that does not emit carbon dioxide and other pollutants. It is the essence of environment-friendly technology most relevant to practical use.

A fuel cell will be used for mobile handsets in immediate future and as power source for home and vehicles in a distant future. So it is expected to bring sea change to the life of people. Samsung SDI pledges to develop the fuel cell business to be comparable with semiconductor and display businesses for the national economy.
Fuel cell, the beloved mobile energy source!

In November 2005, Samsung SDI succeeded in developing a fuel cell with the highest energy density in the world for a laptop. The cell boasts 200 Wh/L in energy density that can power 15 hours with only 200cc. Despite the high energy density, it is built with super-slim design of 23cmx8.2cmx5.3cm. The newly developed methanol fuel cell does not require a methanol reformer (hydrogen generator) so that it can be small in size and operable at lower temperature. With water recycling technology being applied, water, the byproduct of a fuel cell, is recycled. This product will be commercialized around 2007. Jointly with SAIT (Samsung Advanced Institute of Technology), Samsung SDI developed a fuel cell with highest power output for a mobile phone and a fuel cell for portable media player for the first time in the world in January 2006. The newly developed fuel cell has addressed such technological problems as pump noise, by-product (water) from fuel reaction, stoppage of fuel, coming ever closely to commercialization. The SAIT and Samsung SDI succeeded in creating independent technologies covering the whole life cycle of a system including core technology involving nano materials and fuel supply technologies, securing winning competitive edge in technology competition in the fuel cell industry which has been touted as next-generation energy source. In the development process 36 items were applied for patent, adding even more competitiveness. The developed fuel cell secured the highest power output in the world at 50–60 mW/cm² per unit cell, and had both fuel efficiency and current collecting efficiency maximized. With the small body, power requirements for long-hour calls has been satisfied. Samsung SDI continues efforts for fuel cell development for portable electronic devices and domestic use. The efforts will bring about a new world in the near future, which will overhaul the current centralized electricity supply system dependent on fossil fuels and eventually contribute to relieving environmental burdens.
Investigation of greenhouse gas emission and the result
In September 2005, Samsung SDI investigated greenhouse gas emission from domestic plants. We added an ozone-depleting material to six materials defined in the Kyoto Protocol and looked at a period from 2002 to 2005. Education for energy and environmental management staff in Korean plants began, which was followed by multiple workshops. Finally in January 2006, comprehensive investigation on greenhouse gases was completed.

As a result, the total greenhouse gas emission was found to stand at 730,000 CO₂ tons in Korean plants as of 2005. Indirect emission by using electricity took up 67.8%, the highest proportion, which was followed by emission by boilers and LNG use in processes at 16.6%.

By year, the figure rose sharply to 730,000 CO₂ ton in 2004 from 583,000 CO₂ ton in 2002. It was when the PDP business accompanying relatively higher CO₂ emission was growing and production increased noticeably. This was proven by the fact that CRT proportion in sale was dampened in 2005, while emission volume proportionate to sales increased. We expect that process stabilization and expansion of multi-panel technologies would lead to continuous cut of CO₂ emission per product.

In December 1997, the 3rd Conference of the Parties to the United Nations Framework Convention on Climate Change was held in Kyoto, Japan, and adopted the Climate Change Convention as an international convention to limit and prevent global warming. The Kyoto Protocol, which was the concrete action plan setting the goal of greenhouse gas emission by industrialized countries, became officially effective from February 16, 2005. The objective of the protocol is to regulate emission of six greenhouse gases of CO₂, CH₄, N₂O, HFCs, PFCs, and SF₆ to prevent global warming. Efforts against global warming are now moving into the actual execution stage. Except for Hungary, no countries that host Samsung SDI plants are duty-bound to comply with the Kyoto Protocol. Nevertheless Samsung SDI will set comprehensive greenhouse gas emission control and reduction as important environmental goals beyond simple energy saving efforts, playing out systematic and multi-angled efforts.

The reason that data have gap from those of 2004 report is that data of 2004 captured greenhouse gas emission caused by energy and indirect emission.
The total energy consumption in 2005 was 11,161TJ in Samsung SDI globally, which was 1.2% down from 11,291TJ of 2004. However, consumption per sales rose to 0.14 from 0.12, rising by 17%. This was because prices of display and energy dropped. Not being discouraged, Samsung SDI continued energy saving activities. Through the e-Energy system linking all locations at home and abroad, daily energy consumption is managed. Other activities such as the energy saving campaign and energy saving check by department with a dedicated person appointed have been conducted. In the same context, all Korean plants signed a voluntary agreement with the Korea Energy Management Corporation and successfully have curbed actual increase of energy consumption.

Case study of energy saving (the Busan plant)
The Busan plant conducted energy saving activities, aiming to stop using three absorption refrigerator 1,000 RTs from May to July in 2005. Major improvements were, first, to repair the overall air-conditioning system including improvement of the control valve of the air-conditioners and change of sensor valve positions, second, to replace pumps of outdated freezers and install inverters for con-
Energy saving is directly related to product competitiveness and environmental issues. With less energy consumption, processing cost would be brought down, enhancing price competitiveness. And it would lead to less greenhouse gas emission, which is good for environment protection. On the other hand, since most of energy we use is generated from fossil fuel, a limited resource, we can pass down more resources to the next generations to use if we save energy.

Samsung SDI carries out various activities to curb greenhouse gas emission such as reuse of emitted heat from manufacturing processes, improvement of energy efficiency of facilities, reuse of hot water used in processes, and cooling high temperature processes with outside temperature during winter time. Energy data of Korean sites and overseas sites are accessed and sorted out by date and by process through e-Energy system real time.

What is most important in energy saving is the commitment of management. On top of it, I believe initial process design of a designer and energy awareness of a process engineer would be critical in energy saving efforts. Samsung SDI is committed to energy saving efforts as always, resulting in enhancement of competitiveness and leading environment protection efforts.

trolling discharge pressure and discharge volume of pumps, and third, to improve exhaust volume with the working environment improvement in mind in order to reduce air-conditioning loads within processes added due to unnecessary exhausts. Thanks to these activities, operation hours of the three absorption refrigerators cut by 99.5% year on year and pump operation loads were reduced by 99% (saving about 700,000 kWh). As a result, 300 million won was saved in energy cost.

The Busan plant cares a lot to bring down water use as well. The efforts paid off, cutting LNG use, which is needed to warm water, by 18%. This is proof of synergy created from cutting down environmental impact.

:: e-Energy system

Samsung SDI operates the e-Energy system, the global energy management system. It is accessible anywhere in Samsung SDI premise. It stores various energy information of plants (U-Cost, energy usage/amount, energy saving performance, best energy saving practice, weather conditions, ship-in and ship-out of raw and sub energy materials), which is available real time. The e-Energy System resolves communication problems in the way of collecting energy-related monthly data from global locations. It is easy for users to retrieve data they want, realizing a true global single SDI.

The e-Energy system is composed of three modules and linked to other systems including SMIS.

:: Utility Management Module

With daily power data entered in system, monthly power utility expense is managed. That makes it possible to predict unjustifiable losses, analyze cause of problems and come up with solutions; contributing to cost saving after all.

:: Mobile Scanning Module

Improvement of site efficiency through improvement of manual processes. Foundation being laid for power management through time-based management of power supply and power consumers.

:: Cost Saving Module

Performance data are compiled into database and distributed to other plants, which lead to very effective energy saving activities.

With the system up and running in all locations, Samsung SDI uses it to lessen environmental impact of power source, collect information to make long-term policy decisions, innovate energy source structure, reduce loss in enterprise power cost, and forecast management to respond environmental changes.
Pay various efforts to respond quickly to customers, improve productivity of customers’ lines, and satisfy customers’ needs from quality assurance to recycling of packaging materials to consider environment in our global sites.

Caring environment with customers

Environment issues are a hot topic around the world and in Europe in particular. SDIHU is thinking about environment issues with customers at customer interface.

SDIHU has undertaken a project to collect and recycle packaging materials and pallets that have used to carry products. Poland customers like SEH, HISENSE and DEMPOL were involved. As a result of the project customers were able to save efforts and cost for packaging material disposal, and Samsung SDI saved 1.2 billion won thanks to recycling. On top of that possibilities that the disposed packaging materials might pollute the environment were lowered. Samsung SDI caught three birds with one stone.

Samsung SDI Hungary (“SDIHU”)

The best partner of FUNAI

"...We reached the daily production target easily. Actually we could finish production earlier before 5:00 p.m... (Yoshitaka Kobayashi, CRT Quality, FUNAI)"

A product is not the only thing that Samsung SDI provides to a customer. The company supports everything a customer wants ranging from quality, people, service, and productivity improvement. SDi(M) improved the 17” monitor CG
adjustment time of SDMA by 32%. Pulling off productivity improvement project of FUNAI, Samsung SDI shared joy of 51% productivity improvement with the customer. SDI(M) was selected as the best supplier of FUNAI in 2005.

SDI Malaysia ("SDI(M)"

:: Shooting customer trouble within 24 hours

"...Quality is stable with little defects, compared to competitors. Your products helped us improve productivity. And service after sales people of TSDI were greatly helpful. Thank you for all this. May I wish for unchanged quality, service after sales, and technical support from you (Mi Yan Chun, Quality Control of KONKA)." Samsung SDI tries to solve a customer's difficulties as soon as possible. Competitors take 3-4 days to respond to customer requests on average. TSDI responds to them within 24 hours.

Tianjin Samsung SDI ("TSDI")

:: SQCI(Supplier Quality Control Innovation) / Eco-Partner certified (SE, May 2005)

TSDIM is a new plant. It successfully laid foundation for customer satisfaction in less than a year. The biggest concern of customers is quality and environment. TSDIM is solidifying its ground with environment-friendly systems and proactive quality assurance system for customers.

Tianjin Samsung SDI Mobile Display ("TSDIM")

:: Raise productivity of customers

"...Thank you again for helping SKYWORTH take our overall management to a higher level (Lian Jun, senior manufacturing manager of SKYWORTH)." The Chinese TV market is already faced with unlimited competition. SKYWORTH, a large TV company, was eager to raise competitiveness through productivity and quality improvement. SSDI helped improve production speed of customer lines, changed process designs, and analyzed structure of customer products to strengthen outgoing inspection, ultimately improving productivity. Line productivity was up 41% in SKYWORTH.

Shenzhen Samsung SDI ("SSDI")

:: Basics and principles

"Customers don't wait for us. Delighting customers with the best quality is the only way that we can survive (Chun Sungwoog, LCD manufacturing, DSDI)." Quality is the most basic requirement for customer satisfaction. DSDI aims to minimize defect rates on customer lines. DSDI succeeded in significantly lowering the defect rate of NOKIA TMC lines by thorough operation management practices, for example, night time-meeting on a daily basis and audits around the clock. A way to quality enhancement is to go by principles. DSDI tries to be a plant that perfectly complies with standards.

Dongguan Samsung SDI("DSSDI")

:: Quality as customers want

ISO/TS 16949 certified / SONY Green Partner recertified
"Quality system management should be done from a customer perspective (Park Moonkyoo, SSVD)." SSVD produces VFD. To produce vehicle products, a company has to be equipped with a quality system that satisfies special requirements. ISO/TS 16949 is a certification that earned world-wide confidence in the vehicle industry.

Environment-friendly quality that customers require is continuously provided. SSVD was re-certified as a green partner of SONY.

Shanghai Samsung Vacuum Electron Devices ("SSVD")

:: Share delights with customers

"On March 14, the new 24V CRT TV was successfully introduced to the market. Please, thank everyone at Samsung SDI for the efforts to make this possible (S. Yamai, SANYO)." As the US market regulations changed, TVs larger than 25" had to be able to accommodate digital broadcasting. Because of this, any TV makers must invest in chassis, on which parts are assembled. In early 2005 one of Samsung SDI customers came across that particular problem. SDIM created a test sample for customers to quickly respond to market changes. SANYO successfully launched a new product in March 2005. This was the result of all SDIM members' efforts to deliver success to a customer. A delighted customer delights Samsung SDI.

Samsung SDI Mexico ("SDIM")

:: Always being the best with end-to-end service

SDIB became the best supplier of TOSHIBA. Since 2001 SDIB has been selected the best partner by TOSHIBA. It is unprecedented for a company to be selected as the best partner for four years in a row within the industry.

SDIB helps whatever activities that can be a help for customers to make products. If a request concerns a competitor's products, Samsung SDI goes. Samsung SDI shoots trouble on products regardless of the maker. SDIB communicates with customers regularly and reads their requirements and addresses them. Samsung SDI provides full service by tackling any quality problems.

Samsung SDI Brazil ("SDIB")
Light to the world

10-year footprint of free eyesight recovery operation

- Conduct a picnic to Kumgang mountain for beneficiaries of free eyesight recovery operations to mark 10th anniversary of the free sight recovery operation campaign.
- Have supported free eyesight recovery operations since 1995 and treated 104,636 in Korea over the last decade. Plan to expand the campaign to overseas sites.
- Operate a mobile eye clinic bus where a clinic is not available.

:: The sky above my home back in my eyes
"Samsung SDI opened my eyes. Now I go to the Kumgang mountain. I am so overwhelmed as if I see my hometown Hungnam I left behind some 50 years ago. The first thing that I saw after opening my eyes following the operation was warm-heartedness of Samsung. (Ms. Moon Jangsoo, a beneficiary of free eyesight recovery operation)

:: 10-year footprint
"I wish those who found back health can experience a new world and holds bigger hope. I would like to develop our relations with beneficiaries further, rather than just funding the operation and forgetting them. I am happy to feel light of the world with them (Kim Hyejin, responsible for social contribution of Samsung SDI)."

Since 1995 Samsung SDI has led free eyesight recovery operations with the Siloam hospital. We intended to help people failing to get due treatments for their impaired eyes due to financial difficulties. Until 2005 104,636 patients received treatment under the eyesight recovery scheme. Over the past decade, Samsung SDI donated 2,024,000,000 won for the scheme and mobile eye clinic buses on two occasions.

In May when spring is everywhere, 28 grandmothers and grandfathers who went through eyesight recovery operations went to the Kumgang mountain. Marking 10th year of supporting the operation and 35th anniversary of its foundation, Samsung SDI organized the Kumgang mountain tour for the beneficiaries. The elderly, who suffered enough from a cataract and a glaucoma, looked around Guryongyun, Manmulsang, and Haekumyun with their healthy eyes. The participants were mainly the solitary-living elderly, people with advanced age, and those born in North Korea.
On World Sight Day in 2005, DSDI hosted the ‘Warm-Hearted Day’ event. DSDI donated 100,000 Yuan to the Dongguan local government (Houjiezheng) to support eyesight recovery operations. From November 2004, DSDI began extending help to cataract patients. Samsung SDI wishes that it is able to see as many people as possible find back more beautiful images and bright light. We hope that no one stays blind because of financial difficulties. In 2006 SDIM will begin support for free eyesight recovery operations for people in such trouble. Samsung SDI will deliver its good faith gradually to all communities where it operates.

:: Mobile eye clinic bus
A bus goes to where clinics are not available. The mobile eye clinic travels around farming and fishing villages, island villages, and mountainous areas. The bus is equipped with state-of-the-art medical equipment, treatment space, and operation space. Two-to-three ophthalmologists and five to six nurses are on the bus and help the elderly living alone, parentless adolescents, and those in financial difficulties recover their lost eyesight. The bus traveled 417 locations up to now from 1996 and provided medical help. The bus is still looking for a place to deliver the good faith of Samsung SDI.

:: Reaching out to the world
June 6 is World Sight Day in China. Literally, it is the day to love eyes. On World Sight Day in 2004, TSDI made a commitment to help treat troubled eyes of the elderly, orphans, and the financially challenged. Since then TSDI has donated 100,000 Yuan a year. TSDI also provided scholarship to a school for the visually challenged after forging a sisterhood relation and sponsors an art company of the visually challenged.
We are "taking a leap" with strong boost. We are jumping to reach there, with all our strength using all our muscles. Samsung SDI is taking off.
Commitment to innovation and challenges

:: Lee Jungwha executive vice president
head of corporate management / head of management innovation / CFO

Samsung SDI is spreading the two wings of transformation. Performance and value are the two pillars of transformation. Performance is for the present and value is for the future. For better business performance, we improve quality with 6 Sigma and enhance price competitiveness with cost structure reform. We transform the business structure to increase value, while focus on development business involving PDP, batteries, and ALMOED. We listen to the voice of market and lead the technology trend.

Present and future are not one another. Present profits are the foundation to power future growth. Samsung SDI had set record profits every year until 2004. Believing in our ability to do so, all employees try to advance the future to the best of our ability. Sustaining painful periods of transformation, Samsung SDI will be reborn as a larger, stronger, and more sustainable company. Samsung SDI keeps looking out for challenges and takes up them to share stronger economic values and a more proud name with all of you.
Mid and long term growth strategy

Samsung SDI recognized growth potential of display and energy industries through external business environment analysis. Based on the recognition, we developed 4-point focus strategies to strengthen internal competency.

:: Top in development areas

The priority task for mid-term development of Samsung SDI is to top in its development business (PDP, batteries, and OLED) markets. For the PDP business, Samsung SDI is going to expand investment by 2010 to strengthen its leadership position in terms of production volume, and eventually open an era of ‘one PDP per household.’ For the battery business, with the goal of ‘top in the market by 2010,’ Samsung SDI is going to expand the production bases to sharpen its global competitiveness. For the OLED business, Samsung SDI is going to make its position as the ‘absolute winner in the mobile market’ more firmly secured with investment in AMOLED which will begin in 2006.

:: Accelerate future business and incubate new business

Samsung SDI devotes its energy to gear up future businesses (FED, HPL, and fuel cell) based on profits made by platform business and development business. With ‘business preparation committee’ with the head of the planning division at its center, Samsung SDI is detailing out strategies to make three future businesses viable. On top of it, Samsung SDI continues efforts to find out new businesses.

:: Sustain profits of platform business

For the CRT business, Samsung SDI will focus on Vixlim that is innovatively slim, compared to conventional CRT, and expand global production bases for the product. In doing so, we expect trailing-edge premium effect (In the declining industry, a company still remain in the market after competitors gone out of market and take the monopolistic position) to work in favor of us. At the same time, we will continue constructive restructuring for conventional CRT, responding proactively to changes in the display market. For the STN-LCD business, along with the OLED business, Samsung SDI is going to solidify its positions as a total solution provider in the mobile market.

:: Optimize global bases

Samsung SDI is operating the efficient global production network by taking advantage of 13 production bases in six countries. We plan to optimize the CRT business through these production bases and achieve the mid and long-term growth vision by globalizing development business.
Sales and net income

Severe competition in 2005 put display makers in trouble. Samsung SDI was not an exception in suffering from negative growth in terms of sales and net income. But it is fair to say that Samsung SDI was crouching to prepare for a higher leap during the difficult time. While it was crouching, the company has been doing well in its development businesses and building the AMOLED plant. These are the examples of its preparation for a better future.

Stable and sound financial structure

Samsung SDI has solid foundation with healthy financial structure. Debt ratio is equal to debt capital divided by total assets. Current ratio is equal to current assets divided by current liabilities. The lower debt ratio is and the higher current ratio is, the more stable a company is. Samsung SDI is a healthy and secure company with sound financial structure.
Due to fiercer competition in the market, Samsung SDI suffered from temporary negative growth in terms of sales and net profits. But financial structure remained stable. Investment in R&D and facilities continues.

\[\text{Due to fiercer competition in the market, Samsung SDI suffered from temporary negative growth in terms of sales and net profits. But financial structure remained stable. Investment in R&D and facilities continues.}\]

\[\text{Invest in tomorrow: technology and facility investment}\]
Technology holds the future of a company. A plant depicts the immediate future of a company. Samsung SDI strenuously invests to develop technology in Samsung SDI and to build facilities. Samsung SDI is one of the best companies in the display business in deed as well as in name. It dominates most of markets for TV panels and all areas of the mobile display business. It rose fast to the 3rd position beating prominent competitors in the battery market. Members of Samsung SDI run straightly toward tomorrow with no looking back.
Business structure transformation

Having changed proportion of foundation business and development business in the business portfolio through continuous reshaping of business structure, the PDP and rechargeable battery businesses turned profits. Preparation is under-way for mass production of AMOLED.

:: Change of business portfolio
Samsung SDI is posed to shift its growth axis. It undergoes business structure transformation with the focus shifted from platform business (CRT, STN-LCD, VFD) to development business (PDP, rechargeable battery, and OLED) that is made up with high-end products responding to consumer needs. Our plan is to grow the development business that accounted for 32% of the sales in 2005 to the one that can take up 74% of the sales and 93% of profits by 2010. By the time, the development business would be positioned as the backbone business of Samsung SDI.

:: Stronger PDP competitiveness
The PDP TV market continues to grow in North America and Europe. In 2005 Samsung SDI saw 141% and 34% increase in the number of PDP units sold and sales respectively. To improve profit structure of PDP, the core development business, Samsung SDI has made strenuous efforts such as production cost innovation and expansion of value-added model production. As a result, in September 2005, Samsung SDI began reporting profits from the PDP business. With the World-Cup soccer matches in Germany in 2006 and the Olympic Games in 2008, in Bejing, China, we expect demand for PDPs will rise explosively. To respond to the soaring demand, Samsung SDI modified the Line 3 to employ the 6-panel technology and finalized the plan to build Line 4.

:: Making profits with rechargeable battery
The business began in 2000 and turned profits in May 2005 and on. Based on such achievement and increase of sale volume, Samsung SDI made it top three in the global rechargeable battery market in 2005. With the target of achieving 5% in profit rate of the battery business for 2006, Samsung SDI is making efforts to earn higher recognition in the energy industry.

:: Bold investment
Samsung SDI would like to secure sustainable growth with bold investment in development business and future business. In 2006, Samsung SDI has a plan to invest one trillion won in production facilities, doubling the investment made in the previous year. 800 billion won will be invested in PDP, rechargeable batteries, and OLED, while 100 billion won in platform business involving modification of Vixlim, and another 45 billion won in future business involving fuel cells. R&D budget increased by 25% to 500 billion won from last year with intention to secure unshakable leadership in display and energy markets in deed as well as in name.

Upscale mobile phones featured with DMB and WiBro are forming a market. AMOLED is viewed as the optimal display to use for such high-end mobile phones. We expect the share of sophisticated mobile phones with AMOLED adopted would reach 48.8% by 2009. Samsung SDI’s bold investment decision is backed by confidence based on technology leadership and competitiveness earned as we grow to secure the largest market share as a mobile display maker with products such as PMOLED and STN-LCD. The fact that Samsung SDI has secured major customers in Korea and overseas as the top mobile display maker constitutes the strongest competitiveness of Samsung SDI.
Focus on customers and markets

Market and technology uncertainties are growing in display and energy businesses. A company is exposed frequently to unexpected changes. Processes to read market demand and develop products are getting complex. In this situation, the ability to detect changes and make quick responses will make or break a company.

Samsung SDI built Market Oriented Planning Process (MOPP) after standardizing market-oriented marketing strategies. In the initial phase of the process, engineers and marketing folks analyze market and customer needs together, and the company as a whole organically moves to plan for products.

Samsung SDI is refining Global Marketing System (GMS), the integrated marketing information system, and runs quarterly marketing strategy committees. And the company reinforces the expert pool and reshapes marketing training courses.
Beyond Growth

Technology Driven Company
Run on technology

Samsung SDI is driving itself to be TDC. TDC is defined as a company that can lead a market with products customers want, develop creative and innovative technologies, and create values customers want.

:: Converting technology into assets
In order to survive in the global market, a company has to enhance market competitiveness of its products and be equipped with source technologies. As product life cycle gets shorter, who take the leading technologies is also an issue.

For the vision of TDC, Samsung SDI concentrates on R&D for technology and makes efforts to secure technologies and patent competitiveness. Currently 37,000 patents are applied at home and abroad, and 9,000 patents are registered. They are Samsung SDI’s intellectual properties out of R&D efforts. In 2005, Samsung SDI applied the most number of patents pertaining to OLED. Samsung SDI will do the most to realize TDC not only through market dominance but by developing source technologies and securing patents to protect them.

:: The dream display with the clearest pictures
2.65” 302ppi VGA ultra-high resolution AMOLED
LITI technology delivers clearer picture quality. Developed by Samsung SDI, LITI was the key to building AMOLED with the clearest picture quality in the world (May 2005). The resolution of 2.65” VGA is 302ppi, which is the best in the world. This would be impossible with conventional technologies. Top emission structure makes the screen brighter than before.

LITI is unique to Samsung SDI. It makes it rather easy to enlarge the screen. The time is just around corner for Samsung SDI to come to customers with AMOLED, the dream display.
DSSC

:: Electricity-generating window

DSSC (Dye-Sensitized Solar Cell) with 10% of efficiency

Imagine people using electricity with no issues around environment, cost, and mobility. DSSC allows us to taste such a future.

DSSC is a solar cell with films coated with fine dye particles. When DSSC is placed on a window, it can serve both as a window and solar cell (solar window). It can be bent so that it can be placed on curved surface. Various colors are available. This is something impossible for conventional solar cells to deliver that using Si-wafer. They can neither be bent nor are transparent.

It is cost that is in the way of widespread use of solar cells. Si-wafer is expensive. Conventional solar cells have to go through complicated semiconductor processes so that mass production is difficult. As the solar cell market expands, it is getting difficult to source Si-wafer. Defying all these problems, DSSC can be mass produced at lower cost.

DSSC made by Samsung SDI boasts the highest level of conversion efficiency at 10% from light to electricity. For practicality, the efficiency has to higher than that and the life cycle has to be expanded.

Samsung SDI aims that more people use solar cells at lower cost.
Beyond Growth

Change, and survive

Improvement

- With three pillars of innovation, product structure innovation, innovation of the way of working, and change-oriented organization culture, Samsung SDI executes continuous process innovation and 6 Sigma activities.
- Operate the knowledge management portal system and the learning cell as the base of knowledge management.

:: Management=Innovation=6 Sigma

Unless a company changes, it can't survive. Since its foundation, Samsung SDI has expanded innovation to all divisions. The way Samsung SDI implements changes is through 6 Sigma. With 6 Sigma, Samsung SDI has resolved root causes of a problem and innovated processes.

With three innovation pillars of 'Product, Process, People,' Samsung SDI seeks for business and product structure innovation, innovation of the way we work, and change-oriented organization culture.

By establishing the mid-term goal for innovation, Samsung SDI tries to secure development cost competitiveness with R&D innovation. In parallel, the company is implementing strategies to strengthen marketing capabilities, build up the best SCM through compliance with rules and processes, beef up manufacturing competitiveness, and reinforce human resource capabilities.

:: The 3rd 6 Sigma Olympiad

The 3rd 6 Sigma Olympiad was held in Busan, Korea in November 2005, following in Tianjin, China in 2003 and Malaysia in 2004.

Samsung SDI shared best practices and awarded the contributors in 6 Sigma Olympiad. The event has greatly contributed to encouragement of 6 Sigma in overseas plants, raising awareness of enterprise innovation.

The recent Olympiad was attended by 400 champions and black belts, reviewing excellent performances. And they shared the next 6 Sigma strategies, exchanging opinions and making resolutions for take-off.
Continuous process innovation

With the goal of ‘No.1 competitiveness of global process,’ Samsung SDI implements process innovation. Process innovation is directed toward speed innovation, cost innovation, and infrastructure innovation, through which Samsung SDI pursues overall optimization of processes.

For process optimization, the company, having established the global standard process, now aligns division processes and processes among customers, suppliers and partners with the global standard process.

To sustain the result of innovations, Samsung SDI does process asset management, system refinement aligned with processes, operation of the dash board system that can contribute to business performance, and knowledge management activities.

Process asset management

Processes are critical assets to a company, because they are summary of management strategies and business know-how of the company. To ensure optimization of internal processes, they are defined into four mega-processes of R&D, customer management, supply chain management, and business management, under which six sub-processes are defined and established.

Dash Board System

For speedy decision making, Samsung SDI operates a dash board system that informs management status and major management issues real time.

The dash board system contains major management metrics by site and product. It helps to reduce loss in operation management and leads to ‘Speedy management’ by connecting the root cause identification and resolution of problems in an organic manner through a system.
:: Knowledge management
How well make use of intangible assets such as knowledge makes or breaks an organization in this global era. Knowledge management in Samsung SDI is defined as an activity to maximize management performance based on new knowledge re-created as a result of the process of creating, accumulating, sharing, and using knowledge and information held by members. As an attempt to secure knowledge competitiveness, Samsung SDI opened a web-based knowledge sharing portal in 2001 and has encouraged knowledge management by employees since.

:: Knowledge management portal system
Samsung SDI has established a knowledge management portal system to make systemic management and utilization of knowledge related to actual job performance easy. The system has various programs to encourage knowledge management such as technology community, standard management, and knowledge refill station. As such, Samsung SDI is settling down voluntary knowledge management culture in an environment which enables quick accumulation of high quality knowledge and convenient utilization of the accumulated knowledge.

:: Learning Cell system
In an attempt to settle down culture of learning by experience through a voluntary learning organization, Samsung SDI began the learning cell system in January 2006. Breaking from the conventional in-house study practice forcing cramming, members can take courses of their choice with people who want to study voluntarily.

Through the learning cell, people put together a cross departmental team and lead seminars and discussions to share experience and skills. Study topics and facilitators are selected on their own, and the company only supports the activity financially and does not interfere with the learning cell activities at all.

In just over a month, 734 people registered and 78 cells were created, proving the system was well accepted. The new system spreads out self-learning culture throughout the organization.
Beyond Growth 67

Shareholder centered management

- Increase the pay-out ratio to 30% to return more profits to shareholders.
- Collect shareholders opinions with active IR and try to fulfill the promise with shareholders.

:: Earnings to shareholders
Year 2005 was a difficult year for the whole display industry. Global IT business slowed and various display devices were out in the market, bringing down prices. But difficulties will not last forever. In the matter of a few years, winners will take the display market. Samsung SDI gave back around 30% of profits of 2005 to shareholders. Concerned that shareholders would get less dividends affected by difficulties in markets, we tried to give back more profits to them. Samsung SDI pledges to be the winner for sure and returns more to shareholders in the longer term.

:: Commitment to shareholders
In 2005, Samsung SDI conducted 431 IR activities including four business briefing sessions. In IR sessions, executives were actively involved and had face-to-face meetings with shareholders. Sometimes shareholders were invited and had one on one meetings, or Samsung SDI visits shareholders to have IR sessions. Institutional investors were offered with line tours and observed product making processes. The webpage carries a lot of information including IR related one accessible anytime and anywhere. Some individual investors request for faster reply through e-mail. VOC system is another place to cover IR information and manage shareholders’ requirements.

The biggest requirement of shareholders in 2005 was to secure a new growth engine with investments in new businesses, and to increase the pay-out ratio for them to receive more dividend. Having decided investment in production lines for AMOLED, the next generation display, Samsung SDI laid foundation for sustainable growth. In 2005, we increased the pay-out ratio in the year-end dividend payment. Samsung SDI is committed to satisfy expectations of shareholders to the fullest and in the finest detail.
**Key Financial Index**

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**Sustainability assessment**

Recently financial institutions are actively considering environmental, social and ethical aspects and risks in evaluating corporate value. They make investment decision after looking at sustainability of a concerned company. SAM of Switzerland, Innovest of the United States, and FTSE of England are major evaluating agencies for corporate sustainability. The evaluation results are referenced as credit rating as well.

**DJSI, electronic and equipment industry leader**

SAM of Switzerland is an enterprise asset management and investment firm. Working with Dow Jones of the U.S. it created Dow Jones Sustainability Indexes. SAM evaluates top 10% of companies in terms of sustainability by industry. DJSI is the average share prices of excellent companies among them. SAM singles out companies that are able to return high earnings to shareholders in the long term after reviewing economic, environmental, and social aspects.

Samsung SDI was selected DJSI for two consecutive years and selected the most sustainable company in the electronic equipment industry in 2005.
### Summary Income Statements (in million won)

<table>
<thead>
<tr>
<th></th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales</td>
<td>5,635,265</td>
<td>6,633,908</td>
<td>7,198,169</td>
<td>9,321,770</td>
<td>7,882,777</td>
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<tr>
<td>Gross profit</td>
<td>1,363,295</td>
<td>1,564,077</td>
<td>1,644,647</td>
<td>1,676,602</td>
<td>1,118,940</td>
</tr>
<tr>
<td>Operating profit</td>
<td>783,083</td>
<td>873,404</td>
<td>906,967</td>
<td>775,457</td>
<td>308,258</td>
</tr>
<tr>
<td>Ordinary profit</td>
<td>723,058</td>
<td>785,331</td>
<td>825,003</td>
<td>748,219</td>
<td>272,014</td>
</tr>
<tr>
<td>Net income</td>
<td>555,953</td>
<td>589,191</td>
<td>649,358</td>
<td>741,749</td>
<td>240,074</td>
</tr>
</tbody>
</table>

### Summary Balance Sheet (in million won)

<table>
<thead>
<tr>
<th></th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assets</td>
<td>5,630,805</td>
<td>5,725,091</td>
<td>6,406,786</td>
<td>6,722,372</td>
<td>6,700,613</td>
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<tr>
<td>Current assets</td>
<td>1,844,869</td>
<td>2,418,398</td>
<td>2,736,184</td>
<td>2,761,811</td>
<td>2,778,503</td>
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<tr>
<td>Liabilities</td>
<td>2,505,062</td>
<td>2,224,502</td>
<td>2,212,057</td>
<td>2,240,624</td>
<td>2,002,328</td>
</tr>
<tr>
<td>Current liabilities</td>
<td>1,644,269</td>
<td>1,512,160</td>
<td>1,823,722</td>
<td>1,803,321</td>
<td>1,503,241</td>
</tr>
<tr>
<td>Long-term liabilities</td>
<td>860,733</td>
<td>712,342</td>
<td>388,335</td>
<td>437,503</td>
<td>499,087</td>
</tr>
<tr>
<td>Equity</td>
<td>3,125,743</td>
<td>3,900,588</td>
<td>4,197,741</td>
<td>4,481,548</td>
<td>4,698,285</td>
</tr>
<tr>
<td>Capital stock</td>
<td>240,198</td>
<td>240,681</td>
<td>240,681</td>
<td>240,681</td>
<td>240,681</td>
</tr>
<tr>
<td>Capital surplus</td>
<td>1,260,860</td>
<td>1,265,822</td>
<td>1,267,867</td>
<td>1,281,431</td>
<td>1,291,600</td>
</tr>
<tr>
<td>Retained earnings</td>
<td>1,468,370</td>
<td>1,962,267</td>
<td>2,614,181</td>
<td>3,122,955</td>
<td>3,252,794</td>
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### Corporate Stability Index

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<tr>
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<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current ratio</td>
<td>112.20%</td>
<td>159.93%</td>
<td>150.03%</td>
<td>153.15%</td>
<td>184.83%</td>
</tr>
<tr>
<td>Debt ratio</td>
<td>80.14%</td>
<td>63.55%</td>
<td>52.70%</td>
<td>50.00%</td>
<td>42.62%</td>
</tr>
<tr>
<td>Leverage ratio</td>
<td>25.29%</td>
<td>16.49%</td>
<td>13.42%</td>
<td>13.63%</td>
<td>12.10%</td>
</tr>
</tbody>
</table>

### Profitability Index

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<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ratio of net income to net sales</td>
<td>9.87%</td>
<td>8.99%</td>
<td>9.02%</td>
<td>7.96%</td>
<td>3.65%</td>
</tr>
<tr>
<td>ROA</td>
<td>9.84%</td>
<td>10.38%</td>
<td>10.70%</td>
<td>11.30%</td>
<td>3.58%</td>
</tr>
<tr>
<td>ROE</td>
<td>19.88%</td>
<td>17.78%</td>
<td>16.87%</td>
<td>17.09%</td>
<td>5.23%</td>
</tr>
<tr>
<td>Earnings per share</td>
<td>11,878won</td>
<td>12,608won</td>
<td>14,528won</td>
<td>16,682won</td>
<td>5,494won</td>
</tr>
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### Growth and Activity Index

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<tr>
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<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales growth rate</td>
<td>1.56%</td>
<td>17.72%</td>
<td>8.51%</td>
<td>29.50%</td>
<td>-15.44%</td>
</tr>
<tr>
<td>Net income growth rate</td>
<td>1.96%</td>
<td>5.98%</td>
<td>10.21%</td>
<td>14.23%</td>
<td>-64.21%</td>
</tr>
<tr>
<td>Net asset growth rate</td>
<td>-0.58%</td>
<td>1.67%</td>
<td>11.96%</td>
<td>4.88%</td>
<td>-0.32%</td>
</tr>
</tbody>
</table>
We plant seeds for harmonious future. We plant seeds of "sustainable" environment. Samsung SDI will take the lead to create environmental values for the earth and people.
Samsung SDI always aims at making the best of the best products. The best products are created out of the best technologies. The best technologies are technologies that customers want. Samsung SDI develops technologies before markets demand. Markets have already demanded environment-friendly technologies and the trend, we expect, will last and become more apparent. Given the assumption, Samsung SDI tries to lead markets by devoting efforts to development of environment-friendly products. Development of environment-friendly products is two-folded in Samsung SDI.

First, we create future products based on environment-friendly technologies. Samsung SDI puts spurs to R&D for future displays and batteries such as AMOLED, FED, fuel cell, HEV cell, and solar cell. We are undertaking transition to the sustainable product portfolio for sustainable business.

Second, we change existing products into environment-friendly products. Efforts are made to reduce resource requirements and power consumption of products and curb use of hazardous materials to enhance environment-friendliness of existing products. With cleaner production technologies, Samsung SDI endeavors to cut back greenhouse gas emission, water use, and waste generation in manufacturing processes through cleaner production technologies.

People dream of a convenient future and safe and pleasant environment at the same time. Samsung SDI will take the lead to realizing the dream.
Strategies for environmental sustainability

- Establish environmental sustainability goals and execute action plans with five strategies and eco-network as a basic direction for environmental value creation.

**To create eco-value**
In 2003 when Samsung SDI began sustainability management, it established the goal of environmental sustainability as eco-value creation. It indicates that externally a company contributes to the society by creating eco-values and internally environment as one of three aspects in business management creates critical values. To this end, Samsung SDI set out five strategies across all processes of corporate activities. The five strategies are composed of integrated environmental management system for continuous improvement of the whole organization and the system, environmental supply chain management to build green partnership with suppliers, cleaner production for least resource use and minimization of pollution, eco-design to create environmental values for customers, and interactive communication. Accordingly, Samsung SDI worked out action plans for each strategy and has been continuing their execution.

**Eco-network**
To create true eco-values, the whole life cycle related to management of a company has to be managed, and green partnership has to be forged along with nature, suppliers, customers and the society around Samsung SDI. For the nature, in particular, you have to take less and emit less from and to the nature. But with suppliers and partners, customers and the society, you have to cooperate and exchange more. This is the direction that Samsung SDI is heading for environmental sustainability.
Eco-value – 2010

:: Mid-term plan for environmental sustainability
Samsung SDI created Eco-value - 2010 to achieve sustainable growth through eco-value creation. It suggests that Samsung SDI has strong commitment to execution of strategies and works hard to deliver its commitment. The mid-term plan is set for each strategy for environmental sustainability. In order to achieve the goal of the plan, Samsung SDI is going to check progress of the plan execution every year, improve problems, and come up with a new way to reach the goal, if necessary. It is possible that we have to adjust some of the plan if need for scope change is suggested and may not be able to proceed as we planned. Samsung SDI, however, would not give in. We would revise the plan and try to achieve the final goal.

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<tbody>
<tr>
<td>Toxic chemical-free products</td>
<td>Removal of hazardous materials including six RoHS substances, PVC, Halogen flame retardants</td>
<td>-</td>
<td>Six RoHS materials</td>
<td>Voluntary and continuous removal of hazardous materials within products</td>
</tr>
<tr>
<td>Eco-design</td>
<td>Continuous reduction of products’ environmental footprint through eco-design</td>
<td>-</td>
<td>Deployment of eco-design IT system</td>
<td>Development of environmental efficiency index and continuous improvement of efficiency</td>
</tr>
</tbody>
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</thead>
<tbody>
<tr>
<td>Reduction of greenhouse gases</td>
<td>Reduction of greenhouse gas emission (per sales)</td>
<td>2002</td>
<td>5%</td>
<td>15%</td>
</tr>
<tr>
<td>Reduction of water use</td>
<td>Reduction of water use (per sales)</td>
<td>2001</td>
<td>15%</td>
<td>30%</td>
</tr>
<tr>
<td>Reduction of wastes</td>
<td>Reduction of waste generation (per sales)</td>
<td>2001</td>
<td>15%</td>
<td>30%</td>
</tr>
<tr>
<td>Improvement of recycling rate</td>
<td>Improvement of waste recycling rate</td>
<td>-</td>
<td>85%</td>
<td>90%</td>
</tr>
<tr>
<td>Landfill rate</td>
<td>Landfill rate of wastes</td>
<td>-</td>
<td>10%</td>
<td>1%</td>
</tr>
<tr>
<td>Reduction of toxic material use</td>
<td>Reduction of toxic chemicals (per sales)</td>
<td>2005</td>
<td>5%</td>
<td>30%</td>
</tr>
</tbody>
</table>

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</thead>
<tbody>
<tr>
<td>Enhancement of environmental management capabilities of suppliers</td>
<td>Deployment of support and mentoring to half enhance environmental capabilities of suppliers</td>
<td>-</td>
<td>100% certification as S-partner</td>
<td>Continued support and mentoring for capability enhancement</td>
</tr>
</tbody>
</table>
Acceleration of sustainability management through SMIS

- Develop Sustainability Management Initiative System (SMIS), the world-first integrated information system for sustainability management.
- SMIS is composed of four product/plant environment related modules and two management support modules.

**Sustainability Management Initiative System**

Samsung SDI developed the world-first integrated information system for sustainability management. The system, Sustainability Management Initiative System (SMIS), is designed to proactively respond to global environmental regulations. The system is composed of four product/plant environment related modules of environment management system (EMS), green procurement/eco-design (GP/ED), and life cycle management assessment (LCA), and environmental accounting (EA) and of two management related modules of SM task management and SM index management.

SMIS is the Global One system applied to all domestic and overseas locations and all products. Implementation of the system and user training have been completed.
:: The EMS module
EMS is the module for integrated management of environmental information of plants. It is designed to standardize work procedures and enhance efficiency. It controls environment journals of all plants, toxic chemical data, environment pollutants, and environment management related information. Environmental data of all plants are managed real time, and used as basic data for product environmental assessment (LCA/ED) eco-friendliness assessment and environmental accounting in the system. With EMS in use, time required to work on confirmed emission specification, waste volume and treatment cost, environmental pollution management, and various reports creation can be cut down dramatically. It improves work efficiency and enables transparent data management.

:: The EA module
EA is a system to support cost-benefit analysis of environmental investments. The objective of the module is to reduce environmental impact of enterprise management activities. Samsung SDI does enterprise environmental accounting analysis. It shares data with SAP, investment system, and EMS, and analyzes the data by plant. Samsung SDI plans to create environmental accounting guidelines and improve the level of environmental accounting continuously.

:: The GP/ED module
GP/ED is composed of GP and ED. GP enables to manage S-partners and assess parts’ environmental data and their eco-friendliness, while ED supports eco-design. Aligned with BOM data, the module enables to respond to customers’ request for product environmental information immediately. It enables recycling ratio analysis for all parts and products. Environmental information management of parts at source becomes possible as the existing CPC (Collaborative Product Commerce) and green procurement system are connected. From now on all products Samsung SDI is going to build should go through eco-design (product design review: Q, C, D+E) before mass production. Eco-design assessment items are categorized into material, energy, and toxicity, and relevant business divisions manage low-level assessment items.
:: The LCA module
LCA quantifies material consumption and generation, energy use, and emission throughout the life cycle of a product and analyzes eco-friendliness of the product. It provides eco-profile by product. Samsung SDI improved e-Energy system, linked the LCA module with utility allocation by process, and collected basic LCA data of parts from suppliers. Then we used IO(Input-Output) LCA for upstream, and original process LCA for internal process. This is Hybrid LCA.
Energy and emission status and CO$_2$ generation can be analyzed by product group in the LCA module. If it is linked to GP/ED, we can perform time-series analysis for monthly recycling rate assessment.
All products Samsung SDI produces automatically generate Hybrid LCA scores. We will continue to collect part LCA information to enable full process LCA, too.

:: The SM task management module
SM task management is a monitoring system for SM task progress and status check by department/strategy code. It can do consolidated management for even ISO 14001 and OHSAS 18001 programs.
Tasks are deployed according to ten SM strategies divided into environmental and social aspects. In 2005, a record high number of SM programs were underway with focus on environment and safety strategies. From 2006 more strategies other than safety in social aspect will be included

:: The SMI module
SMI is a system to manage economic, environmental, and social indices. Users can access to indices broken down into global standard, Samsung management principles, and SMIS.
SMI provides a holistic view on SM activities so that users can analyze status and situations by division and plant level with detailed index.
Beyond Keep

Product development through life cycle thinking

:: Life Cycle Thinking
Samsung SDI uses life cycle thinking in designing environment-friendly products from product planning, development, and design phases. The concept of environment is incorporated into existing quality, cost, and delivery concept. Though Samsung SDI is not an end-product maker, it considers end users’ product use and disposal when making products. To comply with RoHS, WEEE, and EuP, Samsung SDI refined internal work processes to be aligned with PDCA. All products to be produced by Samsung SDI will go through eco-design. And ecological profile is automatically calculated by a computing system in the mass production phase.

:: LCA
LCA is a tool to compile and evaluate the inputs, outputs and potential environmental impacts of a product system throughout its life cycle. Samsung SDI collects environment information of parts, runs LCA for parts, and analyzes recycling ratio. To address potential inaccuracy of part information, Samsung SDI built a system (for hybrid LCA) to additionally conduct IO LCA by making use of inter-industry relations table. It also performs material-based LCA with input from suppliers on energy/utility requirements for parts that Samsung SDI buys, emissions, transportation mode and distance the supplier to Samsung SDI.

Hybrid LCA for HD grade, V4, 50” PDP
- Average data for three months from December 2005 to February 2006 (Cradle to Gate)
- Automatically calculated data by the LCA module of SMIS
- Develop environment-friendly products considering the whole life cycle from product planning to disposal.
- Conduct Hybrid LCA and material-based LCA
- Plan to manage product environment efficiency index from 2006.

To assess environmental impact of manufacturing processes, Samsung SDI uses BOM data from cost account system and energy/utility usage data from e-Energy system. With air, water and waste emission data from EMS module of SMIS, Samsung SDI can perform cradle-to-gate LCA.

:: Calculation of environmental mass balance
Environmental mass balance indicates the difference of output material volume from input material volume. You look at the gap and track what route the material passed through and what reaction it went through. Samsung SDI is in the middle of establishing the data set for mass balance of all products and by plant. After refining the data quality, we will create an total material flow map from 2006. Along with it, we will standardize materials for parts, and link them to upstream database. That will be the basis for material based LCA execution.

:: Product environmental index management
Samsung SDI is going to use SDI Eco-Efficiency after setting baselines by product from next year.

<table>
<thead>
<tr>
<th>Plan</th>
<th>Unit</th>
<th>Results</th>
<th>Raw and sub materials</th>
<th>Air</th>
<th>Water</th>
<th>Energy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global warming</td>
<td>g SO2-eq/unit</td>
<td>3.31E+06</td>
<td>3.31E+06</td>
<td>2.69E-02</td>
<td>3.81E+02</td>
<td>1.07E+01</td>
</tr>
<tr>
<td>Ozone depletion</td>
<td>g CFC11-eq/unit</td>
<td>3.40E+00</td>
<td>3.40E+00</td>
<td>4.37E-10</td>
<td>1.74E-07</td>
<td>1.18E-06</td>
</tr>
<tr>
<td>Acidification</td>
<td>g SO2-eq/unit</td>
<td>1.92E+04</td>
<td>1.91E+04</td>
<td>1.56E+02</td>
<td>1.21E+00</td>
<td>1.86E-01</td>
</tr>
<tr>
<td>Eutrophication</td>
<td>g PO4-3-eq/unit</td>
<td>1.24E+03</td>
<td>1.20E+03</td>
<td>3.27E-08</td>
<td>4.35E+01</td>
<td>2.06E-05</td>
</tr>
<tr>
<td>Resource depletion</td>
<td>g Sb-eq/unit</td>
<td>8.02E+03</td>
<td>8.02E+03</td>
<td>4.00E-04</td>
<td>3.17E-01</td>
<td>5.10E-03</td>
</tr>
<tr>
<td>Photochemical oxidant formation</td>
<td>g CH2-eq/unit</td>
<td>1.46E+03</td>
<td>1.46E+03</td>
<td>5.18E-06</td>
<td>3.40E-01</td>
<td>1.47E-01</td>
</tr>
</tbody>
</table>
Environment-friendly product development

OLED super-slim display

- OLED is a self-emitting display without backlight, has lower power consumption than TFT-LCD, and does not use mercury, a hazardous material. It is one of the most environment-friendly devices ever existed.
- Samsung SDI is constructing a plant for mass destruction of 4th generation AMOLED for the first time in the world.
OLED is a display with a lot of benefits. OLED, a light-emitting display by itself, doesn’t need backlight. Therefore it doesn’t need additional power supply, because of which it consumes less power than TFT-LCD. Thanks to that, it is better used for mobile service such as DMB and WiBro that require much power. It doesn’t contain mercury, a material that backlight should contain, and is slim. Therefore, it is considered to be the most environmentally friendly display ever. OLED is operable almost anywhere in the world as its operating temperature range is broad. Other benefits include low voltage, excellent video picture image, and clear picture quality.

:: Investment in mass production of the generation 4 AMOLED for the first time in the world! 
In November 2005, Samsung SDI initiated investment in mass production of 4th generation LTPS (low temperature poly-silicon) AMOLED (Active Matrix Organic Light Emitting Diodes) for the first time in the world. Mass production will begin in January 2007, which we can cover in detail in the next edition. AMOLED holds the dream of Samsung SDI to contribute to the world with environment-friendlier displays. The dream will come true soon.

Bringing a dream display to reality
AMOLED is a new product under development as one of the next generation displays. Many hazardous materials that most of conventional products contain are not used in AMOLED. Unlike TFT-LCD, it is built on a simple structure with no need for backlight and color filters and less parts and material requirements. Consequently it generated conspicuously less wastes after disposal. That’s why we consider the products the environment-friendliest display of all.

Samsung SDI is constructing a plant in Cheonan, about 50 miles south of Seoul, for mass production of AMOLED. The building will sit on 45,278.5m² of area with 20,491m² of a clean rooms. Clean rooms are designed with cleaner features and better quality than semi-conductor production facilities. The plant will be equipped with the world first and largest lines dedicated solely to the mass production of AMOLED. Samsung SDI is going to complete the construction with pride that we lay foundation for sustainable growth of the industry.

AMOLED is called a dream display and a technology-intensive product requiring very complicated processes. That’s why other companies feel afraid of starting the business. The AMOLED business would provide Samsung SDI with opportunities to confirm its technology strength and long-term growth potential. Combining STN-LCD and PMOLED business know-how, technological strength that we accumulated for the last six years, excellent people, and our passions and capabilities, we will work a miracle with the AMOLED business.
Environment-friendly product development

PDP's leap toward environment-friendliness

- Cut down the number of parts by 20% on annual average, and try to remove hazardous materials, aiming at development of environment friendly PDP.
- Power consumption of a PDP is affordable and is on continuous decrease.

**Why PDP!**

Movie mania, sports mania, and documentary mania watch PDP TV!

Samsung SDI works hard to create PDP that offers the best picture quality. With vivid expression with true natural colors and speedy response time, which is good to enjoy sports programs, PDP of Samsung SDI delivers breathtaking natural pictures.

In 2006 Samsung SDI changed its development concept from V to W. W stands for Win in World wide display market with dynamic picture expression. The W1 concept that began in 2006 is to apply film filter and complementary color panel and save 30% in material cost through reduction of resource use. The higher the version of W is, the environment friendlier PDP will become.
:: Power consumption
A lot of myths have been hanging around power consumption of PDP. Early PDP consumed a lot of energy. But current PDP uses much less energy thanks to continuous technology improvement. As is shown in the digital TV power consumption comparison done by a KBS 1 TV program called ‘Ask whatever you want,’ broadcast on April 28, 2005, power consumption of PDP was found to be reasonable enough for households to have. The power consumption is on the continuous decrease.

<table>
<thead>
<tr>
<th>Plan</th>
<th>LCD 46&quot;</th>
<th>PDP 50&quot;</th>
<th>Electric rice pot</th>
<th>Refrigerator (670L)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated voltage</td>
<td>350 W</td>
<td>380 W</td>
<td>1050 W</td>
<td>37kWh/mon</td>
</tr>
<tr>
<td>Power consumption for one hour</td>
<td>272 W</td>
<td>280 W</td>
<td>301 W</td>
<td>78 W</td>
</tr>
<tr>
<td>Power consumption for a month (6 hours a day)</td>
<td>49 kW</td>
<td>50 kW</td>
<td>54 kW</td>
<td>14 kW</td>
</tr>
<tr>
<td>Electricity bill for a month (based on 200kWh in use at home)</td>
<td>9,620 won</td>
<td>10,000 won</td>
<td>10,740 won</td>
<td>3,280 won</td>
</tr>
</tbody>
</table>

* Ask whatever you want, KBS TV, in 2005

:: Less resource use
Samsung SDI tries hard to reduce resource usage through application of film filter and thin glass technologies. Along with that, the company has achieved to use parts about 20% less annually and 60,000 hours in panel life cycle, going toward ultimate reduction of resource use.

:: Removal of hazardous materials
Samsung SDI’s lead-free soldering for PDP began in 2004. Although the company asked EU to exclude lead compounds used in barrier ribs of a PDP panel from RoHS, Samsung SDI is determined to continue its efforts to remove lead from PDP panels, ultimately developing a technology that allows lead-free in all materials of a PDP panel. PDP of Samsung SDI is firmly positioned as one of the best flat panel displays.

PDP, the best large display
PDP is a self-light-emitting display through plasma discharge of each pixel. Because its response time is shorter than that of LCD, eyes are more comfortable with it. As color gamut is excellent, it displays more natural colors. Its viewing angle is so wide that viewers can enjoy clear images at any angle from the screen. Despite the excellent capability to deliver great picture quality, it is built on rather simple structure, which offers another advantage that it can be mass produced and manufactured with high productivity. Therefore PDP is highly likely to be positioned as the display device with the strongest competitiveness in the market soon.

To build eco-friendly PDP, Samsung SDI is developing lead-free dielectric substances and glass frit and applying lead-free soldering to PCB. We also try to come up with ways to reduce power consumption through light-emitting efficiency improvement and low-voltage operation technology, and lower energy use during manufacturing process through new material development that makes quick low temperature sintering possible. In addition we are striving to come up with detailed ideas product recycling.

To maintain PDP as the best display, Samsung SDI endeavors to improve productivity and quality, reduce the number of parts and share parts with an aim of reduction of resource consumption, and make a product lighter. All of these efforts are directed to development of eco-friendly technologies.

Since PDP has advantage in picture quality and simplicity in panel structure, it is fair to say that the product has greater potential for further development in the future than other displays. On top of this, as we can secure price competitiveness with large screen and full-HD quality, I am confident to say that PDP that boasts excellent quality relative to price would prevail the HDTV market in the future and be positioned as the most popular display.
HEV improves fuel efficiency and reduces pollutant emission. Samsung SDI developed li-ion HEV batteries.

Driving mechanism of a hybrid car
There are two types of a hybrid electric car: parallel hybrid electric vehicle, and series hybrid electric vehicle. The former, like other electric vehicles, uses a motor and a storage battery as power source and operates an internal combustion engine system such as an engine and a gas turbine all at the same time or independently. The latter uses a motor and a storage battery to run a car and converts mechanical energy generated from an internal combustion engine system such as an engine and a gas turbine into electric energy as power source.

Li-ion battery & Portable display
- PVC of the outer tube of a li-ion battery is replaced with PET.
- Mass produce 2,600mAh that is 8% higher in capacity than conventional ones.
- Develop super-slim TFT module, 38% slimmer than the products of 2004.
- Use one chip instead of two chips in PMOLED, reducing resource usage and costs
Portable display

:: Super-slim TFT module
Today more and more features are added to a mobile phone (1.30 million pixel camera, moving image recording and playing back images, MP3, Blue tooth and etc.), and the body gets slimmer. To accommodate the trend, Samsung SDI has developed a product with 2.13”QVGA grade excellent picture quality and super-slim body. This is about 43% slimmer than that of 2002 at 2.1mm as 0.4t TFT and 0.45t super slim BLU design are employed. With optimization of optical design and high-brightness LED chips, 50% in color gamut and 220cd/m² in brightness are achieved. This feature is adopted to the world- slimmest slide phone of Samsung Electronics (SGH-D800, 14.9mm), leading slim LCD technologies.

<table>
<thead>
<tr>
<th>Year</th>
<th>'02</th>
<th>'03</th>
<th>'04</th>
<th>'05</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thickness(mm)</td>
<td>3.7</td>
<td>3.3</td>
<td>2.9</td>
<td>2.1</td>
</tr>
<tr>
<td>Improvement rate</td>
<td>-</td>
<td>11%</td>
<td>22%</td>
<td>43%</td>
</tr>
</tbody>
</table>

:: PMOLED 1pad 1chip employment (128x160 QVQGA as basis)
OLED, admired as the next-generation display, is commercialized in PM mode. The size of panel of PMOLED, used in the sub display of a mobile phone, and MP3 players, gets larger as devices are getting sophisticated. When the panel size gets larger, the light emitting feature and uniformity feature get deteriorated due to characteristics intrinsic to passive displays. A popular solution to this problem is to use more than two chips (Driver IC) and film (COF).
Samsung SDI completed development of 128x160 QVQGA 1Pad 1Chip product with new organic materials and structure, new IC, and the optimal wiring technology, not compromising product performance at all.

Li-ion battery

:: Development of PVC-free battery
The thermal contractible PVC (Polyvinyl chloride) tube, which was used as the external tube of a cylindrical cell, is replaced with thermal contractible PET (Polyethylene terephthalate) tube. When burned, PVC emits a toxic gas (dioxin caused by chlorine). That is why we changed tube material. From January 2005, Samsung SDI began PVC free batteries. PET raised cost 2.5 times higher than PVC, but Samsung SDI addressed cost rise with continuous productivity improvement and expanded use of substitutes for other parts.

:: Higher-capacity
In July 2005, Samsung SDI began mass production of cylindrical li-ion battery with the highest capacity for laptops. This battery has capacity at 2,600mAh, 8% increase from existing 2,400mAh. It is 18650 type model (18mm in diameter and 65mm in height) for laptops and camcorders that Samsung SDI developed in 2004. This product was applied with optimal design technology to minimize dead space inside of a battery and electrode high density technology to accommodate material characteristics. Development of engineering technology was underway on parallel to back special materials and design in the product development phase. The number of components and the proportion of the facility being shared with 2,400mAh products was maximized so that the current production lines could be utilized as they were without adding more lines or modifying them.
As data processing time of portable electronic devices such as laptops gets shorter, and more features are added such as moving image, DMB, and multimedia, power consumption increased and demand for rechargeable batteries lasting longer is rising. Samsung SDI will take the lead in development of li-ion batteries with higher capacity that benefits people and the environment through continuous R&D efforts.
The basic function of CRT glass is to maintain the tube vacuum, and enable stable electron discharge while ensuring safety in use. User safety would be ensured by reducing X-ray discharge created by electronic beam and by protecting users when artificial forces shatter CRT to pieces. If focus is only on safety, glass inevitably becomes heavy, increasing resource requirements and amount of wastes. Samsung SDI has been working hard to minimize the weight and secure safety at the same time.

A semi-tint panel and a light funnel was developed and applied to flat CRT for 29” and 21” TVs and flat CRT for 17” and 19” monitors in 2003, which achieved 10% reduction of weight. The effort expanded to all models from 17” and 29”. With aim of energy saving, Samsung SDI undertook the green project and E-project, which led to announcement of 29” green CTR and 17” DFE CRT for monitors in March 2005, successfully saving 10-15% in power consumption and taking off another 10% in weight.

Building upon these environment-friendly technologies, Samsung SDI will develop 17” FSE and 19” DFE in April 2006, and 29” Vixlim Green CRT in July. Samsung SDI will continue to cut down energy consumption and weight of all models.

CRT

Less resource usage for glass
The basic function of CRT glass is to maintain the tube vacuum, and enable stable electron discharge while ensuring safety in use. User safety would be ensured by reducing X-ray discharge created by electronic beam and by protecting users when artificial forces shatter CRT to pieces. If focus is only on safety, glass inevitably becomes heavy, increasing resource requirements and amount of wastes. Samsung SDI has been working hard to minimize the weight and secure safety at the same time.

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:: Light metal parts in CRT
CRT involves many metal parts. They include shadow mask, frame, inner shield, and spring. Samsung SDI has been driving minimization of resource requirement by reducing part scrap and their thickness.
Well-being CRT

With a trend of people seeking for improvement of quality of life and living in harmony with the nature, people tend to prefer home appliance with well-being features. Well-Being CRT has its funnel outer-surface coated with artificial ceramics, offering negative ion and far infrared ray radiation features.

Negative ions are known to help clean air, remove dusts, sterilize, purify blood and increase body immunity. Far infrared rays are known to reform water, facilitate blood circulation, activate cells, and regulate the nervous system. The vital coating using artificial ceramics discharges negative ions and far infrared rays, while pure coating using photo catalyst of nano silver/TiO₂ has anti-microbial effect and deodorization, further enhancing well-being feature.

:: Energy-saving CRT

Lowering power consumption of electronic products is critical. CRT is not an exception in that. Creation of CRT product images starts with creation of thermo-electron, followed by high speed deflection, then by phosphors’ light emitting. For the sake of bright picture expression and quicker image processing, anode voltage (Eb) at 20 ~ 30kV and deflected current of less than 10 mA are used. A prerequisite to lower power consumption in CRT is lowering anode voltage. But if so, brightness and focus that determines clarity are to be compromised. To address the problem, Samsung SDI improved photo penetration by 10% by making panel slimmer and light emitting efficiency by 10% with development of highly bright phosphors. To ensure excellent performance with good quality in spite of lower voltage, Samsung SDI improved the structure of electronic guns, addressing the focus problem. Now 17” flat CDT is operable at 20% less power than before.

:: VFD

Development of a circuit that reduces standby power consumption to 1/1000

As long as power is supplied to the unit in the VFD module even though nothing is on display actually, the VFD is supplied with power because of input voltage, which results in power consumption in filament. The power consumed at that time is between 1-5W at 5V of input voltage. This is because input voltage of the unit is not directly connected to the power transformer of VFD. To save this standby electricity consumption, operation mode and standby mode have to be detected effectively, and power supply to the VFD power transformer has to be blocked in circuit. Samsung SDI developed a circuit to cut down power supply in standby mode. Dropping electricity consumption in standby mode to below 5mW at input voltage of 5V.
Environment-friendly product development

Eco label and product recycling

- Place the eco label for an environment-friendly product for self declaration of environmental claims.
- Recycle around 90% of parts of CRT scraps and 420 tons of battery scraps annually.

Product recycling

:: Recycling of CRT

CRT scrap glasses generated during production are sent to a glass interim treatment company for glass recycling before sent again to a CRT glass maker. Last year alone, recycled amount of glasses reached to 2,688 ton in domestic plants. CRT TV glasses that end users dispose are also recyclable. In Korea 90% (by weight) of TV parts reclaimed from scrapped CRTs are recycled.

:: Recycling of li-ion battery

Cobalt used in li-ion batteries is a scarce mineral. Recycling cobalt is important for resource protection. Samsung SDI pays active attention to recycle 420 ton/year battery wastes generated during production as well as scraped batteries produced at the end of life cycle jointly with many battery groups and associations.

:: Eco label

Since September 2005, Samsung SDI has applied the eco label to environment-friendly products. Eco labeling is in line with self-declaration of environmental claims, terms and definitions (ISO 14021, type II) of ISO 14020 (for environmental labeling and declaration) series. In this case, environmental claims are made for goods and services by the producer. As for Samsung SDI, if a customer asks to label in their way to indicate any status of hazardous material contents of a product, Samsung SDI is obliged to do so. But if not, Samsung SDI applies this label. Currently lead-free products and RoHS compliant products are applied with the eco label. Samsung SDI plans to increase the number of products to apply this label.
Reduction of resource use and pollutant emission

- Use 18,911 kilotons of water in 2005.
- Reduce air pollutant emission by using cleaner fuels for 94% of the total energy use.
- Recycle 118 kilotons out of 140 kilotons of wastes.

:: Water use control

Samsung SDI used 18,911 tons of water globally, 1,622 ton, or 8% of which was underground water and 17,289 ton, or 92% of which was surface water.

Looking at water use trend by year, water volume used increased after 2004. This was because as PDP production rose from 2004, water usage in the Cheonan plant shot significantly after 2003 by about 70% year on year. Still lines are being added, but Samsung SDI is going to apply a design to minimize water use on those newly added lines.

:: Air pollution control

In principle Samsung SDI uses LNG as fuel for boilers. Barring overseas plants where LNG is not available, Samsung SDI’s global plants use the clean fuel. Only 6%, or 682TJ, of the total energy use in Samsung SDI comes from diesel and gasoline.

On a similar note, efforts are made to reduce volatile organic compounds emission, the air pollutants. To continue the efforts, we are expanding facilities that can control the VOC emission concentration under 10 ppm level.

:: Case study of water saving

Samsung SDI Malaysia (‘SDI(M)’) saved 40,000 tons of water a year by water recycling. They collected water that had been wasted after used in backwashing and rinsing carbon filters and sand filters in manufacturing processes, to the original water container and recycled it after checking the quality. Another 30,000 tons of water was saved a year by letting water of the cleaning process circulated from twice to three times, eventually allowing discontinuing the use of city water.

Samsung SDI Hungary (‘SDIHU’) installed the RO concentrated water reuse system, reducing waste water generation by 300t/day. The Busan plant conducted precision analysis into water and steam use history and began various campaigns for improvements, resulting in 20% reduction in water consumption per product and in the amount of de-ionized water use, which led to 900 million won/year in water cost saving.
Beyond Keep

:: Water pollutants emission control
In 2005 Samsung SDI plants discharged 12,464,000 tons of waste water globally. It was 5% increase from the previous year, and 23% increase per sales. The reason is the same as that of water use increase. Samsung SDI is making continuous efforts to cut back on waste water generation and the severity of the pollutants in order to reduce water pollutant emission.

:: Wastes control
In 2005 Samsung SDI saw 140 kilotons in waste generation in its global locations. 84.2%, or 118 kilotons of them were recycled, 4.4%, or 6 kilotons, were incinerated, and 9.6%, or 13 kilotons was land-filled. The recycling rate, which in 2004 stood at 72% domestically, went up to 83% domestically and 84% globally. The recycling plan for 2005 included PDP glass scraps to raise the overall recycling rate to 90%. But since recycling of glass scraps fell behind the plan, the goal of 90% in recycling rate is expected to accomplish in 2006. Samsung SDI’s journey will last to recycle other wastes and have no wastes going to landfills.
Use of toxic substances

Use of toxic substances in Samsung has been on the sharp rise for the last two years. The reasons are as following:

1. PDP production rose dramatically.
   PDP production began to rise from 2003, and showed sharp increases up to 2005. Increased PDP production led to increase in resource consumption.

2. Lead monoxide (PbO) is categorized as a toxic substance
   Until 2005 lead monoxide had not been clearly categorized as toxic substance. Suppliers of the material supplied the material with no indication of toxicity.

   In 2005 Samsung SDI was aware of that lead monoxide has to be classified as toxic material and asked the supplier to confirm the toxicity. Since then lead monoxide has been classified as toxic material and managed accordingly.

Use of ozone depleting substances

Samsung SDI does not use Class 1 materials defined in the Montreal Protocol in any of its manufacturing processes. Some overseas plants use them as refrigerant for air conditioning, which will be, however, replaced gradually. In addition, HCFC materials are not allowed for new use and those already in use are being cut down.

Case study of air pollutants emission control

SDIHU and the Busan plant installed a control facility to cut back on Volatile Organic Compound emission. SDIHU invested 600 million won to install a regenerative thermal oxidizer to get rid of VOC generated in the degreasing process, while the Busan plant spent 4 billion won to place biofilters on six processes that gave out a bad smell and VOC generated by chemical use. The investments paid off that VOC concentration dropped to less than 10 ppm level.
Supply chain environmental management

- Support development of environment-friendly products and establishment environmental management system of suppliers with green procurement and transfer and dissemination project on cleaner production, while expand the S-partner system to global sites.

:: Procurement with Q, C, D + E

Year 2004 was the year when Samsung SDI began green procurement true to its name. In the beginning the company investigated basic environmental management capabilities of suppliers and harmful substance use practices. In 2005 Samsung SDI already defined environmental management levels of over 600 Korean and foreign suppliers, and succeeded in identifying RoHS material contents in parts and materials supplied by them and reduced to levels defined in the regulations.

Now green procurement is one of the keys to procurement activities of Samsung SDI. From September 2005, suppliers entered environmental data of materials to supply in MegaSTEP, a procurement portal system.

:: SCEM expansion and development with the transfer and dissemination project on cleaner production

Samsung SDI began the Cleaner Production Technology Transfer and Dissemination project in May 2004. The project is intended to assess early capabilities of suppliers for environment management, support for reduced use of hazardous materials, establish environmental management and information systems. Samsung SDI has been actively involved in the project. Some of participating suppliers visited Samsung SDI, receiving education on environmental management and sustainability management, and others applied for special training sessions.

:: Sustainable partnership

Samsung SDI introduced the concept of the S-partner scheme to local suppliers for SDI plants in Tianjin, Shanghai, Shenzhen, Dongguan in China and Malaysia. Beginning from it, we plans to globalize S-partner scheme to overseas and forge sustainable partnership with all global suppliers.
Locations

Global premise of Samsung SDI takes up 4,009,000m² of land. 50.84% of the total ground area are used as greens, and the rest are dedicated to an impermeability layer of buildings and roads. Except for SDIHU, most of production locations sit within industrial complexes. By nature of the electronic goods manufacturing, Samsung SDI’s activities have relatively little impact on biodiversity, compared to other industries.

Environment preservation activities

Environment preservation activities are an important part of corporate social contribution activities. Each plant of Samsung SDI undertakes various activities to preserve environment. Here go some examples of such activities.

- One plant and one river campaign: Each site is assigned with a mission of cleaning one river nearby and conducts environment preservation activities regularly. A plant undertakes the activities alone, or with neighboring companies and environment groups. For example, the Busan plant began the Sangchun river cleaning campaign regularly and supported an environment music concert dedicated to Taewha river.

- Environmental technology mentoring for neighboring small-mid companies: This is about technology mentoring about environmental pollution prevention facilities for SMEs sharing the same hydrosphere. For example the Suwon plant reached out to nearby SMEs, jointly with local government agencies, for environmental technology mentoring.

- Environmental Impact monitoring: This is an activity to monitor water quality and air quality around the company premise and come up with ideas for improvement.

- Eco-park creation and management: SSDI and SDI(M) are active in this. They designate parks nearby and conduct environmental preservation activities for them.

The Cheonan plant won the green entrepreneurship award from Cheonan/Asan Korea Federation for Environmental Movement

The Cheonan plant was received the ‘Green entrepreneurship’ award in the 5th Green Environment Award hosted by Cheonan/Asan Korea Federation for Environmental Movement. The plant hosts animal feeding events every winter. This year, in particular, it invited local parentless adolescents and students to the event for free during the winter vacation. This year marks the 4th anniversary. This event was getting popular and enjoyed annual increase in the number of applications from parents and local people. It was well received by students as well, who also found the winter forest experience program funny and exiting.

The sisterhood project with neighboring Upsung elementary school is undertaken in cooperation with a civic group with a basic plan for all-year educational programs. Rather than doing onetime event-like activity or extending simple financial support, we would like to fully recognize corporate social responsibility and commit to fulfillment of the responsibility.

Environmental management of a company is the key to practice ‘Local Agenda 21.’ The importance of corporate environmental management grows over time as an agenda to come up with the right role of a company that fits local characteristics. The Samsung SDI Cheonan plant is one example of corporate efforts to find out the right role of a company within the community it belongs to.
Environmental management and environmental cost

- All sites are ISO 14001 certified and manage environmental management system continuously.
- As a result of analysis by the environment accounting module of SMIS, the company created 58 billion won in environmental benefits.

:: All sites ISO 14001 certified
All global production sites of Samsung SDI have been operating the environmental management system and been ISO 14001 certified by a third party. For continuous maintenance of the environmental management system, Samsung SDI underwent internal and external environmental audits. About 300 nonconformity items and observation items were identified in 2005 and corrective measures have been taken for them.

:: Environment Accounting
Environmental accounting module operate with links to investment system, work order system, EMS module, e-Energy system, SAP system and SM task management module.
Having calculated environmental cost with it, Samsung SDI spent 4.5 billion won in environmental investment and 45 billion won in environmental cost, and created 58 billion won in environmental benefits in Korean sites in 2005.
Samsung SDI will refine environmental accounting guidelines and expand the system coverage to overseas plants, accelerating integration and harmony of environment and economy.

<table>
<thead>
<tr>
<th>Activities</th>
<th>Investment (million won)</th>
<th>Costs (million won)</th>
<th>Benefits (million won)</th>
<th>Contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Post-treatment up activities</td>
<td>3,315</td>
<td>20,611</td>
<td>-314</td>
<td>In-house environmental facility operation, commissioned treatment, others</td>
</tr>
<tr>
<td>Preventive activities</td>
<td>1,206</td>
<td>24,113</td>
<td>24,612</td>
<td>Environmental education, measurement analysis, audits, waste management, process improvement</td>
</tr>
<tr>
<td>Stakeholders activities</td>
<td>-</td>
<td>86</td>
<td>33,537</td>
<td>Support for environmental groups, regional cooperation, environment events</td>
</tr>
<tr>
<td>Law observance and restoration activities</td>
<td>-</td>
<td>157</td>
<td>-</td>
<td>Payment for wastes, insurance payments</td>
</tr>
</tbody>
</table>

:: Environment cost in 2005, Korea only
Legal compliance

No violation of environment regulations in all global sites in 2005.

Legal compliance

The report of 2004 declared that Samsung SDI has not violated any environmental regulations in any of its sites. However, we are reporting that one violation of an environmental regulation went unreported as it occurred during the preparation period of the report.

In 2004 the Busan plant repaired its incinerator. After the repair, the plant piloted operation to check if repair had been done completely. But air pollutants were generated above the legal limit during the pilot operation. Following this incident, Samsung SDI shut down the incinerator in February 2005.

Samsung SDI reports that it has not violated any environmental regulations in global sites in 2005.

We identified that some overseas plants saw their environmental impact increased to the level of near-violation of legal limits. Samsung SDI will improve the situation and reduce our impact on environment continuously.
Beyond Together

We are partners to live together.
We share dream and hope together.
We all want to be happy,
in diverse ways.
Samsung SDI is "with you"
on the road to happiness.
Samsung SDI is one of members of the society. As awareness of corporate social responsibility is getting mature, the objective of a company is not only about making profit. Beyond maximization of shareholder interest, a company has a mission to deliver satisfaction and delight to all stakeholders including customers, employees, suppliers, and communities.

Co-existence begins with putting myself to others' shoes. We are living in a society with different people. It takes dialog and mutual understanding for us to live in harmony.

Samsung SDI opens its ears to you. Listening to stakeholders, we think about how to refine internal structure and systems, and share results of growth with all. Management based on opinion sharing and mutual respect and understanding will power sustainable growth.

By sharing happiness and pains together, Samsung SDI will build a fun place to work for its members and a company to join for outside people.
Strategies for social sustainability

Build win–win partnership based on six strategies by stakeholder and realize social sustainability.

:: Win-win Partnership
Samsung SDI has made strenuous efforts to execute six strategies for social aspect of sustainability management that it set in 2003 to fulfill corporate social responsibility, one of three pillars of sustainability management. In order to ensure organized management of action plans, Samsung SDI deployed the SM task management module and SMI module within SMIS in Korean and overseas plants by 2005.

:: Customer benefiting management
Customers are the top priority of Samsung SDI. We try to benefit our customers with best quality products and services.

:: Value adding HRM
Samsung SDI promotes career development that considers the whole career life cycle from entry to retirement from the company for employees to improve their capabilities and value of life.

:: Human rights management
Samsung SDI tries to protect human rights and diversity of employees working in all Samsung SDI premise and employees of suppliers.

:: Sustainable supply chain management
Samsung SDI conducts various support activities to build a long partnership with suppliers and elevate their sustainability capability.

:: Integrated social contribution
Samsung SDI will contribute to improvement of quality of life in communities and countries with extended social contribution activities.

:: Transparent and ethical management
Samsung SDI endeavors to establish transparent and honest management activities and processes. Hoping that ethics is rooted down into daily operation and life of employees, Samsung SDI will redefine ethical management strategies and put them into practice in 2006.
Help employees manage stress, listen to them, and try to develop female workforce with the open door center.

:: Open door center
Stress is highlighted as the major culprit that undermines productivity and organizational sprits among employees of any companies. With objectives of establishing healthy organizational culture by means of stress management and capitalizing on increased professional female workforce, Samsung SDI opened the corporate open door center.

The open door center has four counseling experts, who run various programs such as private counseling, cyber counseling, a group program, a psychological test, sexual harassment prevention education, and counseling training. The center helps employees actively cope with various problems in their daily life and keeps all counseling contents confidential. It also studies and educates advanced trends pertaining to female workforce.

:: Employees with physical and mental soundness
The open door center provides professional counseling service for all employees to lead a health life mentally and physically. After investigating areas most requested by employees, the center provides preventive programs. Through regular meetings with employees, it proactively finds out problems and provide customized counseling. Effective communication skills and parenting skill information is also communicated to help employees be better parents.

:: Use of the center
331 sessions a year were reported in the open door center in Busan during pilot operation in 2004. To promote the center, Samsung SDI opened cyber counseling center upon opening the corporate open door center, sent out news letters, and began mailing service by plant. These efforts paid off. In just five months after the official opening of the center in 2005, 841 sessions in Kiheung, 588 sessions in Cheonan, and 942 sessions in Busan were reported, showing big improvement in use of the center. And site-specific programs also helped to boost the use of the centers, for example collective psychological tests in schools in relationship (Busan), line tour psychological test (Cheonan), psychological test for employees children (Suwon), and team-building programs (Kiheung).
Main issues for counseling
Looking at counseling contents, majority 49.6% of the problems troubling people were personal issues such as personality and emotion, family, intimate relations, and inter-personal relations. Among others, personality and personal emotion related problems are found to be main counseling subjects. Such high interest in personality is proven in high popularity of psychological tests among users. This indicates self-development oriented nature of employees as they want to improve personality by identifying good and bad sides of it and their interest areas.

Future plan
The open door center will organize enterprise level programs to develop satisfactory husband and wife relationship, and prepare female workforce development and utilization plans. It will play more active roles to serve as a channel for employees’ stress relief and grievance handling.
Forum for win-win communication

MegaSTEP

Run MegaSTEP, a portal system for suppliers, enabling interactive communication.
Facilitate various businesses by following standardized processes within a system.

Forum of win-win and cooperation
In August 2005, MegaSTEP opened its door. MegaSTEP is an information system helping Samsung SDI and suppliers work with each other effectively. MegaSTEP enables people to more effectively work than with existing the s-BUY system.
MegaSTEP, the supplier portal, enables active communication between Samsung SDI and suppliers. It is communication that is interactive for two parties exchange their needs and issues, not an unilateral or one-way communication.

Effective supplier information management
MegaSTEP standardizes jobs for supplier management ranging from procurement, suppliers’ information and various supports. Accurate information is shared on-line. Both suppliers and Samsung SDI can figure out how well and how much things have been progressed. With MegaSTEP, both can work more effectively and more conveniently.

All in one
Suppliers work with different departments of Samsung SDI. When a supplier works on many jobs on a disparate basis, it would be hard for the company to convey its positions collectively to Samsung SDI. This problem is addressed by MegaSTEP, in which a supplier can do all jobs on-line. A supplier can easily exchange
information with Samsung SDI. Processes from issuance of e-bill to job closure can be performed on-line in a series.

:: Active communication
A supplier can reach any responsible person easily through MegaSTEP. E-mail, SMS meetings, and on-line meetings are available when required. Parties can deliver whatever they want wherever they are. You can force the person at the opposite end to view the same screen.

:: Uniform procurement system, Procurement Work Place
Procurement WP is a uniform procurement system linked to MegaSTEP. All procurements can be performed in procurement WP. Procurement WP enables Samsung SDI an easy and transparent procurement activities.

:: One-stop procurement
Previously Samsung SDI had to use different systems to procure goods from suppliers such as procurement e-Biz, the system for incoming materials, and SAP. Now one-stop procurement became possible with procurement WP. It is supported by MegaSTEP which facilitates commonly conducted jobs involving online-survey and various certifications.

:: Procurement information available for anyone
Samsung SDI centralized the widely distributed procurement information into procurement WP. You can find key information that has to do with procurement in procurement WP at a glance. Procurement WP provides customized information. Employees of Samsung SDI can use information relevant only to their needs.
Bringing satisfaction to customers

Customers

1. Address customer problems with the agent of customer, the VOC system, and 6 Sigma activities and operate PL Hot Line to secure health and safety of consumers.

:: Agent of customer
A customer is always right. Thinking about all customers want is the beginning of customer satisfaction. Samsung SDI has customer agents. They serve as a channel linking between Samsung SDI and a customer. They handle quality, service, delivery, and VOC from the customer perspective. All work and jobs in Samsung SDI are done for customers' benefits. Customers grow with Samsung SDI.

1. A customer is always right so that we learn from the customer.
2. Be clear about quality issues and respond quickly.
3. Establish right standards and observe them.
4. Do thorough prevention and cut back quality cost.
5. Never ship out defects.

:: Ears open to customers: VOC system
To provide best quality product and service, you have to know what customers want. Samsung SDI runs the VOC system, which enables Samsung SDI to listen to customers voices and support what they want.

The process goes from VOC registration, to quick response, to action, to solution, to confirmation, and to happy call. All VOCs are responded within 24 hours. When a problem is resolved, the relevant customer agent confirms customer satisfaction and manages it. This is what is called Happy Call.

Customers voices are named Total VOC. Different VOCs are classified into six for management.

:: Feet running for customers: ACFC
Samsung SDI does not sit and wait for customers to come. It moves first to find out what customers want. Some of the customer wishes may be answered immediately. Sometimes Samsung SDI has to solve complex problems to offer the result to customers.

The way Samsung SDI addresses a complicated problem is the 6 Sigma methodology. We call the activity that we come to customers and address their problems with the 6 Sigma as ACFC, which stands for At the Customer For the Customer. Samsung SDI blazes a trail leading to development with customers by means of ACFC.
Beyond Together 105

**CRT**

“Thank you for voluntarily increasing productivity of monitor production lines. Productivity went up 30% to date, and would rise continually (Keven Jing, lead engineer, PROVIEW).”

The CRT division delivers more and more satisfaction to customers with ACFC. Any customers wish for better product quality as well as higher profits. The CRT division increased a customer line productivity with 6 Sigma champion projects. As a result, Samsung SDI forecast that customers including PROVIEW will enjoy profits exceeding 2.2 billion won. Customers became able to build quality products more and faster.

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**MD**

“Thank you for addressing things waiting for attention in Motorola for the year. Our success was backed by special efforts of Samsung SDI (ED Zander, CEO, Motorola, Stu Reed, vice president in chief of SCM, MOTOROLA).”

There was a sharp rise in demand for E815 and V710 of MOTOROLA. Samsung SDI and MOTOROLA made a great deal of efforts to make far more products than before. May we wish that we can succeed with our customers in 2006, too.

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**Battery**

Samsung SDI was selected as the first battery vendor by DELL in its quarterly business review for the third quarter of 2005. DELL looks at field service, cost leadership, continuity of supply, technology/time to volume, quality for comprehensive assessment. Samsung SDI is the leader with new technology for large capacity cells. Samsung SDI offers price online (e-bidding) and ships more and more products by sea to lower prices.

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**Customer Health and Safety: PL Hot Line**

PL (Product Liability) is to hold a producer liable when the product does any harm to a consumer's health and safety due to problems of the product. Samsung SDI took out the PL insurance in 2002. For immediate response, Samsung SDI operates PL Hot Line that links responsible people in quality management team, legal & IP team, corporate PR team, and each business division. Samsung SDI has created and abided by regulation to protect any customer’s health and safety. The whole company including manufacturing, design, sales, and service care a lot to prevent any accidents and incidents. Employees receive PL trainings. PL committees in each site make efforts to improve product safety to the world best level.

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**PDP, pledge for customer satisfaction**

PDP is a product that expresses images through plasma discharge. By nature, improvement of discharge quality is critical to PDP. Understanding that, Samsung SDI focuses on reading the black box of processes, taking right measures, and discovering quality problems proactively. In addition, to raise satisfaction level of global customers, Samsung SDI expands global bases, and employs more local people, laying foundation for all-time customer satisfaction.

To please global PDP customers, Samsung SDI has to address tasks as following. First, we have to build easy-to-use products. It takes efforts to reduce the number of parts and secure reliability, with which products sustain high-pressure. Products also reduce weights by making glasses slimmer. Second, we have to continue improving brightness and power consumption. Samsung SDI improves quality by changing the product version almost every ten months.

Only a company at the top can remain in the market and quality tells who wins and loses after all. Samsung SDI will do the best to secure the best quality in PDP that customers and end-users can recognize and appreciate by saying, “Samsung products are the best.”
A corporate is like people, talents present the future

Try to strike a balance of individual growth and company development from recruitment to retirement based on the management philosophy of ‘priority to human resources.’

Secure talents based on open recruitment free from discrimination and TH Matrix and develop talents with various training courses. In 2005 per capita training hours reached 154 hours in Korean sites.

Create a fun place to work based on fair evaluation and compensation, work and life balance, and harmonious labor-management culture.

Operate programs by site, aiming at health improvement of employees and try to create a disaster-free workplace.

Talents equal to the future

There are no companies that don’t value talents. In Samsung SDI, ‘talents,’ the most important assets and the leading force of change, innovation, and creation, are at the center of all values as the very engine for businesses.

Believing in that ‘talents create the future,’ Samsung SDI regards people as the most important assets and goal, and provides opportunities and environment that employees can find fun and happiness in workplaces.

From the moment of being hired and to the moment of retiring, employees are given a lot of trainings and education for self-development. Samsung SDI tries to ensure work and life balance for better quality of life.

Through this process, Samsung SDI balances the two goals of individual development and company development.

Recruitment to retirement

Recruitment

Samsung SDI has an organized and rigorous recruitment system to secure best people, the key to future competitiveness.

Samsung SDI adheres to ‘open recruitment,’ by which employment opportunity is not limited by religion, race, nationality, gender, and academic credentials.

From 2003 Samsung SDI introduced and implemented Technology Human Resources Matrix or TH MATRIX, in an effort to secure excellent technology resources. Based on TH MATRIX, Samsung SDI analyzes the gap with the world best technologies, then identifies key resource requirements to remove the gap, and then plans for key resources recruitment by area and by technology priority. This is the organized and efficient way that Samsung SDI secures excellent talents.
:: Resource development
Samsung SDI offers various training and education programs to support career development from entry to retirement of employees and develop recruited people into the best of the best resource. Training courses are segmented by job and title, offering different on and off line training programs. Special programs to groom experts in a job category are also offered to develop customized resources to a job group/title.

:: Development of global leaders
Samsung SDI offers a lot of targeted programs to groom global leaders. One is the MBA program to groom future managers and executives. Long-term academic study running from 2-5 years are supported to develop MA and PhD researchers. Since 1990, the regional experts programs have been in operation on which senior managers, overseas expats, and regional experts have been groomed. Trainees are dispatched for 0.5-1 year in the relevant regions.

:: Cyber training
SDI Campus, the cyber training program, is open to any SDI members. In 2002, the global cyber training system was established targeting local employees in Chinese sites. This system is going to be expanded to other locations.

:: Career development support throughout the whole life
To help the newly hired adapt to their new work environment, Samsung SDI began the DNA (Development & Advice) program in 2005. The new employees are matched with seniors relevant to their work one on one, learning work and job skills and developing attachments to them. Besides, Samsung SDI provides a program for those nearing retirement with classes linked to life-long education centers in universities to help the would-be retirees to prepare for national certificate exams and professional certificate exams. This is designed for them to make psychological and practical preparation for after-retirement.

<table>
<thead>
<tr>
<th>Category</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>Investment(billion won)</td>
<td>5.2</td>
<td>5.9</td>
<td>6.7</td>
<td>11</td>
<td>12.2</td>
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<tr>
<td>Per capita(thousand won)</td>
<td>685</td>
<td>685</td>
<td>860</td>
<td>1,061</td>
<td>1,240</td>
</tr>
<tr>
<td>Per capita training hours</td>
<td>137</td>
<td>119</td>
<td>104</td>
<td>107</td>
<td>154</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Job group</th>
<th>Training hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Support/marketing</td>
<td>80 – 150 H</td>
</tr>
<tr>
<td>Production</td>
<td>40 – 80 H</td>
</tr>
<tr>
<td>R&amp;D</td>
<td>40 – 200 H</td>
</tr>
</tbody>
</table>

Customized talent development for job group and job title

G7
- Strengthening leadership (Leading change)
- Strengthening job performance (Securing competitiveness)

G1
- Strengthening adaptability (Growth engine)

License class arrangements
Arranging with Bukyung University, the Busan plant has been offering dining business administration, real estate agent license, real estate auctioneer license courses as part of career development before retirement. Recently the financial wealth management course is being designed.

Professional certificate support program
Samsung SDI operates a program to encourage the people to earn international certificates as a way to improve job skills and capabilities and develop a pool of experts. When its members obtain international certificate in procurement, quality, administration, finance, and etc. the company pays for application fees and gives out grants.
:: Training result assessment

From 2006 Samsung SDI is going to measure training result and establish a stable, intensive and scheduled re-investment plan. To this end, Samsung SDI is going to introduce assessment criteria to measure return on investment in training.

Later Samsung SDI will establish a training result analysis methodology by training level and use it to forecast concrete contribution level of resource development practices to business management and reflect it to evaluation of executives responsible for training.

:: Evaluation scheme

Aiming at accomplishment of the Samsung SDI vision, it wants to develop experts in strategic jobs. To this end, the company re-established HR structure by job type considering the nature of its businesses, and implemented team-based organization and annual salary scheme. Positions structure is redesigned to accommodate role changes in actual job performance.

And Samsung SDI evaluates performance of all its members from the CEO to staff against a consistent goal. Required capabilities by position are identified, based on which capability performance is conducted.

:: Compensation scheme

Samsung SDI's compensation scheme is based on ‘compensation without discrimination and compensation for performance’ to ensure internal impartiality and external competitiveness. Those on the same position are given same amount of base salary disregarding gender, nationality, religion, social status, and age. On top of it, differentiated compensation is made according to individual performance. Individual performance determines individual capability reward and group performance determines Productivity Incentive (PI) and Profit Sharing (PS).

:: Protest-filing system

Samsung SDI has institutional means up and running to guide fair and understandable evaluation and for the evaluated to defend themselves. If the evaluated submits an application to file a protest within five days after disclosure of evaluation results, HR committee is convened with the evaluator and the evaluated present and adjusts the results, if necessary.
Work and life balance

As social value changes, growing importance of key resources, increase of female workforces affect business environment, work and life balance has been a topic of discussion. Samsung SDI has institutions to support members to strike a balance between work and life in terms of time and physical supports.

:: Management of working hours
To monitor compliance with legal working hours, Samsung SDI operates a system to prevent overworking. The system tallies overtime hours daily by individual, and selects those who are likely to work more than legal limits, and then sends out warning mails to the people concerned, their bosses, and the HR manager.

:: Various forms of welfare
Samsung SDI tries to help address employees concerns ranging from health, children education, mortgage and to after-retirement. The objective in doing so is to raise the satisfaction level of its members, and provide better working environment.

In Samsung SDI, domestic employees are covered by national pension scheme, health insurance, industrial accident insurance, and employment insurance as required by law. On top of that, mortgage support, medical expense support, personal pension scheme assistance, fitness facilities, and recreation facilities are provided.

<table>
<thead>
<tr>
<th>Category</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal pension</td>
<td>Financial support for stable retirement</td>
</tr>
<tr>
<td>Medical expense</td>
<td>Medical cost support for employees and their spouses</td>
</tr>
<tr>
<td>Fitness facility</td>
<td>Use of fitness centers for free, supported by the company to help stress release and health promotion</td>
</tr>
<tr>
<td>Group insurance</td>
<td>Group insurance for all employees covering incidents, accidents, injuries and diseases during the term of employment</td>
</tr>
<tr>
<td>Family affair support</td>
<td>Support for family matters for condolencences and congratulations</td>
</tr>
<tr>
<td>Mortgage</td>
<td>Financial support for housing</td>
</tr>
<tr>
<td>Financial support for children education</td>
<td>Financial support for children education and for disabled children</td>
</tr>
<tr>
<td>Recreation</td>
<td>Allow refresh leaves for all employees and make available recreational facilities in sightseeing destinations</td>
</tr>
</tbody>
</table>

:: Refresh system
To motivate people to work better, Samsung SDI encourages employees to take leaves available for them. Employees must prepare their leave plan. Then the system tracks if an individual actually takes planned leaves or not. Rate of Individual leave use is counted as KPI in HR monthly, where leave-use record is controlled at the individual/division level.

<table>
<thead>
<tr>
<th>Year</th>
<th>Per capita welfare cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>13.3</td>
</tr>
<tr>
<td>2002</td>
<td>14.4</td>
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<tr>
<td>2003</td>
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<tr>
<td>2004</td>
<td>13.3</td>
</tr>
<tr>
<td>2005</td>
<td>15.4</td>
</tr>
</tbody>
</table>
An industrial relation that creates future value based on trust and respect is a must to be a global top-tier company. In Samsung SDI, labor and management work together to create a fun place to work.

:: Labor-Management Council
Samsung SDI is building up mutually cooperative labor-management culture with the Labor-Management Council, changing and improving outdated mindsets and practices. The Labor-Management Council is composed of 3-10 representatives from each the labor side and the management side. Representatives of employees are selected by direct/secret ballots, while management representatives are executives of business divisions.

The selected council members collect complaints and concerns from employees and put them on the table for discussion with their counterparts. The result of the discussions are communicated to all employees and incorporated into company policies. And the employer opens business status and policies to labor council members during sessions as a way to communicate management information and policies to all employees. And the company tries to link the discussed items in the council to employee welfare items.

:: Fun place to work
Samsung SDI is creating a workplace full of spirit with no barriers with informal gatherings for all ranks and position led by the council and many events that labor and management can enjoy together.

Each plant has its own unique programs and events. Low level employees and executives have gatherings for chatting and informal discussion.

:: Employee Satisfaction Index survey
Samsung SDI conducts the employee satisfaction survey to collect opinions of all employees and manage them scientifically, and to reflect them in setting a direction for HR management.

In 2005, an enterprise-wide survey was conducted on employees of Korean sites. The survey results have been shared with employees, and vision presentation sessions were organized to come up with solutions to problems by plant. In addition, the company prepared a comprehensive measure to increase the level of satisfaction of each item and has been trying hard to implement it.
Human rights and diversity

Observing international labor standards stipulated by the International Labor Organization in all operations around the world, Samsung SDI complies with human rights regulations, respecting cultural differences of different sites, areas, and countries as well as individual human rights of all employees.

Equality in opportunities, anti-discrimination, and human rights protection of employees are clearly stated in the employment rules and regulations, which specify terms of employment and working conditions. All employees are obliged to abide by the rules and regulations with integrity.

:: Equal opportunities and anti-discrimination

Samsung SDI makes clear in its ethical regulation and HR policy that no individuals will be discriminated against their academic credentials, regional background, gender, age, religion, and race in recruitment, placement, promotion, training, retirement. As a part of efforts to expand opportunities for female resources, Samsung SDI fills up to 20-30% of the recruitment pool with female college graduates.

:: Forced/child labor

In compliance with labor laws of the countries where business is in operation, forced labor is totally banned in any of Samsung SDI’s premises. Following laws enforced in countries where business is in operation, child labor is banned.

:: Human rights education

Human rights education is included in the training course for new entrants, and other training programs. All employees have to attend the workplace etiquette class including the subject of sexual harassment prevention once a year. These are efforts to create a healthy and pleasant working environment.

Expat. replacement with locals

In 2004, Samsung SDI refined the overseas sites localization structure. With an aim of motivating local employees and developing self-development capabilities, the refinement was characterized by restructuring in favor of local employees and redefining the role of Korean expats. Accordingly Samsung SDI set the 3-year plan for localization of expatriates, targeting 2007, when the number of expatriate posts will come down by 37%, and is now taking action for it. From 2006, Samsung SDI will find out excellent localization practice and spread it to all overseas plants.
Restructuring of Samsung SDI Germany

Samsung SDI Germany had produced CRTs. As market focus was shifted to flat panel TVs such as PDP and LCD, SDIG was faced with sharp price fall. It was also attacked by cheap CRTs entering the market from China and India. And the European CRT market had shrunk so quickly. With line operation rates declining sharply and profitability turning sour, SDIG was confronted with ever-growing losses.

Finally a decision was made to close the CRT business of SDIG and 720 employees of the CRT division had to be placed under restructuring to be conducted by laws and regulations.

Five months before restructuring, Samsung SDI made the announcement to give employees enough time to find other employers or think of individual careers and life. When the restructuring plan was opened, Samsung SDI held briefing sessions to make them understand why restructuring was unavoidable and made presentation about structural changes in the display market, and limited competitiveness of SDIG with objective data.

On parallel, Samsung SDI went through eight rounds of negotiation with IG-Metal, the German metal industry union, while sending out formal letters informing employees of negotiation progress and legal procedures. In the meantime, Samsung SDI sought for arbitration service from the Berlin labor committee according to due procedures for facilitated progress. Helped by active arbitration of the committee chairman, Samsung SDI resolved differences and finalized restructuring agreement on December 30, 2005 through labor-management agreement, not by court order.

During the negotiation, Samsung SDI ran in-house training programs on folk-lift driving, English, and computer skills to help employees find new employment. After restructuring, Samsung SDI supported former employees with Transfer Company, a replacement training system, and provided separate support for their children and disabled workers. To help ease unemployment of the community, Samsung SDI offered the company building for free lease and tried to house a new company to the premise. With such efforts, Samsung SDI was doing the best to resolve employees' complaints over restructuring and helped redesign their career path.

TC(Transfer Company) of SDIG

Under the German labor law, if the streamlined establishes TC, a company specialized in replacement after retirement, TC is entitled to 60% of government subsidy for its after-tax salary payments for a year and supported for as long as two years.

As Samsung SDI found out that the industrial labor union association preferred TC to lump-sum payment, it supported TC operation.
Samsung SDI committed that the aged retirees who might have difficulties in finding new jobs should be able to run TC for two years. It was going to support up to 80% of after-tax salary after the first year of government subsidy entitlement. Moreover it committed to pay miscellaneous expenses including training costs as well as implement measure to prevent any deteriorated treatment in terms of welfare benefits such as holiday allowances and bonus.

CRT line restructuring at the Busan plant
Samsung SDI Busan plant shut down two lines, Line 5 in late March, and Line 4 in November 2005. When restructuring was undertaken for lines, Samsung SDI held briefing sessions for CRT division, explaining market changes, lowered competitiveness, and overall reason for line restructuring. Through ad-hoc labor-management council meetings for the CRT business, the two parties concluded on restructuring. The shift scheme for large lines (#7,#8) for CRT has been changed from 3 shifts with 3 groups to 3 shifts with 4 groups, which absorbed most of idle resources created as a result of line shut-down. Some resources were replaced to new business divisions (PDP and batteries) through job transition training. Through such an effective resource operation, Samsung SDI successfully completed line restructuring with no sacrifice from either side.

Health and safety
Samsung SDI respects industrial safety/health criteria dictated by the International Labor Organization and operates many programs to promote health of employees and prevent safety failures. Samsung SDI established the CRO system to guarantee health and safety of employees and prevention of accidents and incident, finding out various risk factors for proactive management. All domestics sites and six overseas plants have already OHSAS 18001 certified. Later all sites plan to have OHSAS 18001 certification.

Industrial safety and health committee
Each plant of Samsung SDI installed the industrial safety and health committee. The committee is composed of the plant head, the management support team leader, the environmental safety division leader, a safety manager, a health manager, the chairman of Labor-Management Council, the honorary supervisor of industrial safety, and a representative of employees. In quarterly meetings and ad-hoc meetings, they discuss issues regarding health and safety of employees and make decisions.

Occupational safety education
Trainings for prevention of occupational accidents have been provided for eight hours a year for the newly hired, 16 hours for supervisors, and two hours a month for manufacturing workers. In addition, 20 hour-cyber course for environmental safety has been developed and used by about 3,000 employees so far in four sites in Korea and five sites in China.

Occupational accident rates
Samsung SDI has various organizations, institutions, facilities, and trainings in place to prevent occupational accidents, which have maintained the rate much lower than other companies in Korea and in the same business. Samsung SDI is making continuous efforts to realize ‘accident-free’ workplace, hoping that the company can contribute to improvement of employees living quality and their healthy vocational life.
:: Medical check-up
Samsung SDI conducts medical check-up for domestic workers. Signs of degenerative diseases and contagious diseases including HIV/AIDS, and other major illness are to be detected in the check-up. Those who are exposed to hazardous environment receive special check-up. The results are managed by on-site clinics, which use the information for employee health care.

:: Medical facilities
Samsung SDI is equipped with a clinic that provides emergency medical care. For general health care and work-out, the Wellness Center is available. In the Busan plant, in particular, where aged population is proportionately high, a physical therapy center is available with a physical therapist stationed, which provides physical therapy treatment and rehabilitation treatment in the preventive medicine context.

:: General health care
Each site has its own activities to promote general health in the workplace. The clinic in the Suwon plant runs intensive care programs about four major diseases (hypertension, diabetes, liver disease, and hyperlipidemia), and does such activities as regular check-up and education, and treatment. The Cheonan plant, the Busan plant, and R&D Center apply intensive care to those who show signs of cerebro-cardiovascular diseases or such patients, and have conducted non-smoking campaign.
The Well Program

Samsung SDI Cheonan plant is running ‘The Well Program’ with an aim of work efficiency improvement and better quality of life through health care. The program is a care program for cerebro-cardiovascular patients, people with aural/visual problem symptoms, musculoskeletal disease patients, and anti-smoking management programs. It enables to take comprehensive care of employees health from controlling threatening diseases to health promotion, for example, anti-smoking. The Cheonan plant investigated causes of musculoskeletal diseases, and aural problems. When causes were found to have something to do with any operation processes, the plant improved lines with facility automation and working environments. These efforts worked well in that they prevented diseases and patients and people with symptoms saw their conditions improved.

Physical therapy center

The Busan plant has operated a physical therapy center equipped with electric therapy devices and rehabilitative exercise machines in order to prevent musculoskeletal diseases among employees since 1995. One physical therapist stations in the center, exercising physical therapy and rehabilitative treatment in the preventive medicine context. In 2005 alone 841 employees visited the center. Besides, the Busan plant was benefited of direct and indirect cost reduction as the center contributed to curbing relapse of diseases and cases of chronic diseases.

Benefits in 2005

- Cerebro-cardiovascular disease care program
  - 31 showed improvement out of 198 patients on intensive care list
- Aural/visual problem care program
  - 21 showed improvement after process change and working condition improvement
- Anti-smoking management program
  - 12 out of 30 succeeded in 2005
- Musculoskeletal disease care programs
  - process facilities were automated and working conditions improved
Sustainable partners: S-partner

:: From green procurement to ethical procurement
Samsung SDI runs the S-partner system, which stands for sustainable partner. Samsung SDI helps suppliers to consider economic, environmental, and social aspects.
A supplier that satisfies quality, cost, delivery and environmental requirements is qualified as S-partner. A supplier has to prove that it does not use materials with negative impact on environment and operates a system to produce products with little environmental footprint.
Now is time for them to consider social aspect to be ethical companies. Samsung SDI investigated to see if suppliers were qualified as its partners in terms of social aspect. It looked at health and safety, whether they listen to employees, child/forced labor practices, and anti-discrimination. If they don't consider these social aspects from July 2006, they would lose the S-partnership.
Samsung SDI visits the plants of suppliers on hand and confirms if they are qualified or not. If they are found to be under-qualified, Samsung SDI conducts quarterly-education and re-audits within six months.

:: Strategic assessment looking far ahead
Suppliers of Samsung SDI used to be grouped into four. Now with the mid-long term strategy, they will be further broken down.
Samsung SDI changed its evaluation system to compare suppliers which produce the same parts, and the results will be shared. Supplier would know where they are, compared to competitors, so that they work to be better.

:: Support professionally
It would be hard to be the best if you provide support only when requested. Professional teaching, trainings and operation are required. In May 2005, Samsung SDI put together an organization dedicated to supplier support. The mentoring organization full of experts supports suppliers looking out into the future. They mostly teach S-PPM, ISO 14001 certification, S-partner certification, manufacturing innovation, and the 6 Sigma methodology.
Suppliers should satisfy environmental and social criteria as well as criteria for quality, cost, and delivery to earn S-partnership.

Assess suppliers strategically and support financially and technologically their growth.

:: We work with 6 Sigma
Samsung SDI helps suppliers make use of 6 Sigma. First Samsung SDI tried to build consensus on why 6 Sigma should be used and developed white belt resources. During the period of laying basic infrastructure for it, 6 Sigma champion workshops and green belt trainings are conducted. This fact is counted in supplier evaluation. From 2003, Samsung SDI’s black belt and master black belt resources guided their projects. From the last year, the suppliers renewed their efforts to be able to improve 6 Sigma utilization to the level of Samsung SDI.

:: From capital to technology
Samsung SDI supports suppliers financially to help develop top-tier competitiveness in parts making. To secure top-tier competitiveness, they have to excel at all areas from technology, quality, and environment. Depending on the strategy of Samsung SDI and consultation outcome with suppliers, Samsung SDI provides loans to suppliers for free. From October 2004 to date, Samsung SDI lent 2.5 billion won for nine companies. Samsung SDI has an organization called CE. CE stands for component Engineering, a concept to help suppliers across the whole process from part development to disposal. Samsung SDI and suppliers make new parts together for quick mass production.

:: Global Sourcing
Global sourcing indicates two things. One is economic implication that it is a way to increase price competitiveness, and the other is social implication that Samsung SDI makes deals with various suppliers globally and redistribute wealth.

Global sourcing of Samsung SDI take up half of the total procurement every year. In global sourcing, Samsung SDI buys more than half of raw materials from non-OECD countries.
Help find your vision back

Social contribution

:: We are a member of the society
Samsung SDI is on top in the world display business. With quality products, we delight customers and return profits to shareholders. We create jobs and export products, contributing to the national economy. We continuously develop technologies to give a more convenient world to the people. But they are not all responsibilities Samsung SDI has. There are more. Samsung SDI would like to grow with neighbors. Caring for our neighbors in difficulties is also one of our responsibilities. Samsung SDI is also one member of the society.

:: Light and sound of the world
Samsung SDI focuses on three social contribution activities; free eyesight recovery operation, guide dogs project for the aurally challenged, and matching grant of ‘Light of Love’ fund.

Samsung SDI found the free eyesight recovery operation project fitting into the nature of our business of making displays. The project is about curing failing eyes of our neighbors in difficulties. Marking the 10th year of the project in 2005, Samsung SDI organized a variety of events.

A guide dog becomes the ears of the aurally challenged. Guide dog candidates are selected among those in street dog shelters. After six-month training, the successful guide dog befriends with those in need of help. Since 2003 when two guide dogs found new masters, 26 people have been benefited so far.

Matching grant is a grant made with the specification that the amount donated by employees must be matched on a one-for-one basis by the employer. Samsung SDI introduced matching grant in 2000 for the first time in Korea and has run the ‘Light of Love’ fund since. As of December 2005, 77% of employees in Korea participated in the social contribution scheme. So far the company and employees donated with one-for-one basis 2,743,800,000 won in total.

Besides, Samsung SDI supports library operation, environment music concerts, and students with extraordinary athletic aptitude.
Conduct many social contribution activities such as free eyesight recovery operations, the guide dogs project for the auditory impaired, and matching grant to fulfill corporate social responsibility.

- Operate the Shares’ Lounge, in-house community service system, accumulating service mileage.
- Hold gatherings with residents in communities to listen to their issues.

:: Sharers’ Lounge

Samsung SDI opened Sharers’ Lounge in 2005. The Lounge is an on-line system for community service. All employees can have access to find out community service contents and records of themselves and teams they belong to. Employees can collect mileages based on hours of service, blood donation, and contribution to the Light of Love fund. When they donated the accumulated mileages, Samsung SDI converts the donated mileage into money and donates it. Employees can accumulate mileages with their community service, which leads to another type of community service by donating mileages.

Employees’ interest in voluntary activities have been growing thanks to Sharers’ Lounge. The Lounge also facilitated administration of community service activities.

:: We meet face to face

Samsung SDI listens carefully to the communities where it operates. Each site hosts informal meetings to talk with the communities. Residents in such communities mostly want Samsung SDI to support welfare and environment improvement of their communities. Some expresses concerns over import of agricultural products. Samsung SDI receives their requirements and discuss solutions.

The Cheonan plant runs the SDI Moving Together program, by which the company helps neighbors in difficulties move twice a month with the Cheonan city government. The plant gets together with the social welfare council twice a month to discuss what to do for welfare improvement in the community. Besides, all Samsung SDI plants and sites meet with community groups and people to address problems in their communities.

Kim Hyejin
responsible for social contribution

I think that people working for social contribution are happy and blessed. We are encouraged and excited as there are people who appreciate our small help and employee who join voluntary activities say, “please call us again next time for sure.”

I wish I can deliver more of Samsung SDI’s love to more people. To my regret, I might not able to look broadly enough that I can not reach fully out into the community. Not only in Samsung SDI, but in general, I hope that people understand the fact that social contribution is not an extra activity, but something that have to be done.

I will do my best until the day comes, when all Samsung SDI employees think voluntary activities are part of their life, and the awareness takes root as our corporate culture.
:: Hungary
SDIHU shares love with a welfare center for the disabled. In winter it hosts the day of Santa Clause and in summer it helps gardening. A charity bazaar and clothes collecting events are held. It also gives out presents and toys. SDIHU wants to come closer to its neighbors in need.

:: Malaysia
SID(M) shared the pain of tsunami. SID(M) was the first company that reached Penang with voluntary workers and medicine. It collected and donated 2.5 million RM as tsunami fund and another 30,000 RM to the victims. SID(M) wishes it can reach to more people in trouble.

:: Tianjin
TSDI moved the target for environment cleaning activities from Tianjin to Wuqing. It appointed the large Yuntong square in Wuqing as Samsung square and cleaned the square regularly. TSDI has 8 community service groups, and they clean roads around the plant, schools and nursing homes as well as Samsung square. The Tianjin city also supports free eyesight recovery project for poor people. TSDI grants scholarship to students in schools for the blind. It sometimes helps students to visit a science museum and history museum in the hope that they can feel the world out of schools.

:: Tianjin MD
Zhuwang is a village in sisterhood with TSDIM. The plant buys their produce and donates TVs, books, and DVD titles. New employees of TSDIM participates in the park-caring activity to learn volunteerism. New employees in 2005 cleaned the Tianjin city here and there and shared pains of tsunami victims with matching grant. TSDIM wants to come closer to hopes with you.

:: Shenhzen
Wudong, the highest mountain in Shenhzen has native plants suffering from thick alien ivy. SSDI participated in an activity to get rid of ivy, protecting eco-system of the Wudong mountain park. Every year employees of SSDI walk up the Wudong mountain to protect it from the vigorous ivy.

:: Dongguan
Shiliukeng is upcountry, located 2.5 hours away from Dongguan by car. Shiliukeng and DSDI are befriended. DSDI harvests rice or repairs machines. It also donates TVs, books, school supplies, sports goods, and miscellaneous goods. DSDI cafeteria buys agricultural products from the village. DSDI has received an award and a plaque for support eye operations from the local government(Houjiezhen).

:: Shanghai
SSVD holds blood donation campaign every year. Any healthy employees participate, feeling pity of patients in need of blood transfusion. The company also donates money to help financially difficult families. It visits nursing homes and nursery schools to clean and give out necessities. Employees of SSVD develop sense of responsibility in the society through outreach activities including donation to Songjiang public welfare house.

:: Mexico
Chapas in Mexico was hit hard by hurricane Stan. SDIM reached the victims with supplies. It goes to orphanages to repair buildings and give presents. It has provided school supplies and furniture to San Bernardo elementary school. SDIM dreams of a world full of warm hearts.

:: Brazil
Wives of Korean expats. in SDIB organized charity events with the company. The company visits orphanages and day-care centers regularly and takes care of children. Foods and clothes are also donated. In 2005, they visited an orphanage in Monti Salem and another in Aqua Viva in fall and winter and shared warm hearts. SDIB tries to help as many children as possible.
:: Continuing its original intention: Busan
The Busan plant has been in sisterhood relation for 10 years with Sangchun village. When it met with Sangchun residents, it was asked to fix the children's play yard. The Busan plant not only fixed the play yard, but fumigated the village. The Busan plant cleans Shangcun stream and Zakchun pavilion. It helped party hosting of the Ulju municipality for the elderly and extended financial supports for heating cost during winter time. The Busan plant shares with the community, reminding it of the original intention.

:: We take photo of love: Suwon
Seokwang school for the disabled in Suwon has never made graduation albums not even once for 41 years since its opening. The Suwon plant makes albums for the graduates of schools for the disabled in upcountry and islands. The activity began to give the graduates good and beautiful memories of school days in albums. Besides, the Suwon plant tries to support graduation tour of schools in remote area and students skipping lunch.

:: SDI Moving Together: Cheonan
The Cheonan plant helps Cheonan citizens and foreign workers in need of help to move jointly with the Cheonan city government and civic groups. It papers walls and fixes floors 2-3 days before moving. On a moving day, the plant transports goods and furniture and buys them what they need. Besides, the plant walks up a mountain holding hands with the visually challenged and creates study room for children.

:: Show your heart: Seoul
The H.Q. comforted sick children and their parents with treatment by painting. CEO Kim participated in the event held in October 2005. Children draw pictures and receive professional treatment with consultation. Children met with guide dogs of Samsung SDI. The H.Q. is planning more community activities. They try to show a more brighter society with more social contribution activities.
Announcing sustainability

- Incorporate requirements of stakeholders and decide topics, and publish the report written according to the standardized manual.
- Endeavor to capture voices of stakeholders during the reporting process, and have the third party verify the report.

In opening the sustainability report

Samsung SDI has been thinking two things in preparing the report. What to report and how to report? We got answers by seeking advice from you.

:: What to report?
The report carries mixed positions of different stakeholders. Samsung SDI listened to them and analyzed them. Voices of stakeholders are reviewed after being categorized into strategy and organization, economy, environment, society, dialog with stakeholders, design and layout of the report, and distribution. We decided topics based on requirements of stakeholders and sustainability management results. The SWOT analysis was employed to refine actual management activities.

:: How to report?
Samsung SDI tries to make preparation of reporting more transparent and effective. When we listen to voices of stakeholders, they told us three important things; set criteria for reporting process and follow them; have more dialog with more stakeholders; make the report accessible for anyone. Samsung SDI created a manual as to how to report in what process. We discussed all processes from looking at the company strategy to distributing the outcome. This note captures our extensive discussion on how to have more dialogs with more stakeholders and to make the report easily accessible. The manual is subject to continuous revision. We will also keep thinking about ways to produce the report in a more transparent and effective manner.

:: More dialogs
When developing the report, employees from different departments get together and talk. After repeated discussions, we decide a topic. We get together again to review the report after completing it. The reviewed report internally is sent to an independent verifier for independent review. It verifies if the reported contents are correct and accurate. Samsung SDI set a new plan to listen to voices of stakeholders more systematically. It is to polish the way we communicate with stakeholders. We hope that the next edition can carry more stakeholders’ voice.

![Diagram]

- Must be: Standardization of reporting procedure
- One Dimensional: Participation of more stakeholders
- Delighter: Easy to read for anyone
**Communication with stakeholders:** Samsung SDI talks with stakeholders through various programs all year around. Voices of stakeholders are reflected in all processes of reporting. The sustainability report itself is an important means to talk with stakeholders.

<table>
<thead>
<tr>
<th>Planning</th>
<th>Writing</th>
<th>Verification</th>
<th>Publishing</th>
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<tr>
<td>A topic is set based on analysis of a company strategy and external conditions. This process incorporates voices of stakeholders. The reporting coverage like sites to report and metrics to be used are discussed.</td>
<td>According to the plan, data of all parts are collected and analyzed. Data are collected through IT system and site visits. Contents are packaged in effective and communicable design for audience.</td>
<td>The report goes through internal and the 3rd party verification. Context analysis, site audits and interview are conducted to verify accuracy. Verification raises accuracy and objectivity levels of the report.</td>
<td>Korean, English, and Chinese version are published for global stakeholders. Hard copies are distributed to stakeholders. Making the internet edition is planned, which is more accessible.</td>
</tr>
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</table>

:: Web-page upgrade

Making the report available for anyone to read the report and find any sections they want is to increase access to the report. There are two ways to increase access to the report. One is to publish a summary report and the other is to use web-page.

Until the last year, Samsung SDI uploaded the report in PDF to increase access. This year we have two plans including it. The additional idea is to summarize the main points of the report in the beginning of relevant pages and upload onto the web-page. We will try to have more accessible internet edition on our web page before fall.

:: Together: Voices of NGO

Samsung SDI wants to talk with all. NGOs are partners who live the same age and create the future together with Samsung SDI. As Samsung SDI has to listen to different stakeholders, we can not afford to give attention to one specific stakeholder. But we do our best to capture as much your opinion as possible in the report with more pages.

- **Following Citizens’ Action Network / The Center for Corporate Social Responsibility / Citizens’ Movement for Environment Justice**

  Samsung SDI is developing its stakeholder engagement and response to stakeholder issues. The company was able to respond to issues raised by these three NGOs in the report with the following actions and hopes to add further response in future years. Samsung SDI worked hard to capture the whole company data covering overseas sites. Mid and long term environmental goals were opened. Some social data were added to show, for example, how much welfare cost was spent per employee. Corporate governance was covered in more detail and examples of labor-management council's activities are carried. What efforts are being made for customer satisfaction was carried in lower level.

- **Green Fund**

Independent Assurance Statement

Samsung SDI 2005 Sustainability report

Introduction

Dear Samsung SDI stakeholders,

BSI and Sd3 have teamed up to create a multi-disciplinary assurance team with a broad range of skills and depth of experience providing a high level of competency for assurance engagements. Samsung SDI commissioned us to provide independent assurance of the 2005 Samsung SDI Sustainability Report.

The assurance followed the AA1000AS standard, based on the following principles:

- Materiality: Is Samsung SDI publishing sustainability information that enables its stakeholders to make informed judgments about the company’s management and performance?
- Completeness: Are the reporting systems sufficiently well developed to deliver the required information?
- Responsiveness: Has Samsung SDI responded appropriately to the expectations and perceptions of its stakeholders? Is each material issue being covered adequately?

Additionally, the GRI index on pages 129-131 was checked to ensure it accurately referenced GRI reporting guideline indicators.

Scope:
The assurance covered the whole report and focussed on systems and activities during the 2005 calendar year at Samsung SDI sites in Korea with the following exceptions:

- The content of pages 18-41 is not included in the assurance scope as it is added for the purpose of promoting products.
- The statement on page 58 is outside the scope of the assurance.

Assurance level:
The assurance provided is limited, as defined by the scope and methodology described in this statement.

Responsibility:
The sustainability report is the responsibility of Samsung SDI. Our responsibility is to provide an independent assurance statement to stakeholders giving our professional opinion based on the scope and methodology described.

Independence:
The assurance was carried out in line with the BSI Fair Trading Code of Practice http://www.bsi-global.com/Fair+Trading/index.xalter and Sd3’s code of conduct www.sd3.co.uk/assurecode.html

Methodology

We assessed over 300 assertions and data sets included in the report and the systems and processes used to manage and report these using the following methods:

- Reviewed report, internal policies, documentation, management and information systems
- Site visits in Korea: the headquarters in Seoul, manufacturing sites in Pusan, Chunan and Suwon and the Corporate R&D centre.
- 61 Interviews with staff involved in sustainability management, report preparation and provision of report information at Korean sites
- Checked systems, initiatives and documents referred to in the report, with particular emphasis on the Sustainability Management (SM) Committees and SM Initiative System (SMIS)
- Followed data trails to initial aggregated source and checked sample data to greater depth during site visits
- Confirmed that financial data was consistent with the Consolidated Financial Statement
- Independently checked materiality using the AccountAbility five-part materiality test, including a brief check on media coverage.

Our Opinion

Based on the activities undertaken, we found the report to be a true and fair reflection of Samsung SDI’s sustainability policies, strategy, management systems and performance. As well as our findings and recommendations given here, we have provided a management report to Samsung SDI which contains additional detail.

Materiality

In our professional opinion the report covers Samsung SDI’s material issues. We recognise that the company is still developing its stakeholder engagement and its use in identifying material issues. With the currently limited stakeholder dialogue, it was not possible to confirm fully that consideration had been given to all stakeholder issues. Samsung SDI have committed to increased engagement with stakeholders. We strongly support this commitment and recommend the outcomes be incorporated into management decision-making processes and used to systematically identify material issues for future management and reporting.

1 The team of seven assurors included experts experienced and trained in a range of sustainability, environmental and social standards including AA1000AS, ISO14001, SA8000, GHG EV, OHSAS 18001 and ISO 9001. BSI is a leading global standards and assessment body founded in 1901. Sd3 is a leading sustainability consultancy with over 10 year’s experience in reporting and assurance.
Completeness
Samsung SDI has effective systems capable of measuring, monitoring and managing sustainability issues. We found the SMIS provided a good integrated system for measuring and monitoring sustainability issues. The SM committees were actively involved in management at site level and at the corporate level. We also identified commitment and competency among employees involved with these systems and processes. The issues currently covered by the SMIS are limited to mainly environment, health and safety and we recommend these be expanded to cover the broad range of sustainability issues, particularly social issues, with appropriate Key Performance Indicators (KPIs) and targets. We also recommend stronger linkage between the SM committees, the board of directors and business planning activities. Further strategic development recommendations are:
- Develop a sustainability vision and strategy aligned to the business plan
- Put greater emphasis on aligning community investment at a local level with business strategy.
- The LCA system should be linked to business planning and the sustainability strategy while at the same time being used to its full capability to assess all products throughout their lifespan (cradle to grave).

Responsiveness
With limited stakeholder engagement, we were not able to completely assure responsiveness. Based on the information available and our independent checks on materiality we consider the report has responded appropriately to material issues. We identified the need for improved responsiveness on labour relations and recommend additional information provision and further stakeholder communication in this area. Responsiveness could also be enhanced with further information on the Samsung DNA and how this is implemented by Samsung SDI. We also recommend that in future the report should outline the sustainability impacts of the business growth strategy (page 57) and plans to deal with these.

GRI reporting
We have confirmed that the GRI indicators referenced in the GRI Index on pages 129-131 are reported either partially or fully. We recommend that Samsung SDI move to ‘in accordance’ reporting in future or an equivalent level as defined by the upcoming GRI G3 reporting guidelines.
GHG Emissions Verification Opinion

Samsung SDI Co., Ltd.
Pusan Plant, Suwon Plant, Chunan Plant,
and Kiheung Corporate R&D Center
located in Korea

Scope:
The physical scope is within the boundary of the four sites mentioned above.
GHG emissions for SCOPE 1 (Direct-emissions from the plant), SCOPE 2 (Indirect-energy related) and partially SCOPE 3 (Indirect-emissions from outsourced activities) as defined in WBCSD/WRI GHG protocol Chapter 4 ‘Setting Operational Boundaries’

Data Verified:
The Green House Gas Emissions for the periods of 2002, 2003, 2004 and 2005 calendar years as follows:

<table>
<thead>
<tr>
<th>Calender Year</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>tCO2e</td>
<td>583,446</td>
<td>622,184</td>
<td>724,963</td>
<td>730,043</td>
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</tbody>
</table>

GHG Criteria & Protocols used for Verification:
The verification was carried out at the request of the Samsung SDI Co., Ltd. using:
- The GHG Protocol of the WBCSD/WRI - Revised March 2004
- IPCC Guideline for National Greenhouse Gas Inventories- Revised 1996
- ISO14064 Part 1 & 3 - Issued 2006
- BSI GHGEV Global Best Practice - Issued September 2003
as the principal reference documents.
BSI Management Systems standard confidentiality arrangements were in force for all of the activities that were part of the verification.

Verification Opinion:
As a result of carrying out verification in accordance with the protocols and best practice mentioned above and principles of ISO/IEC Guides 65, EA-6/01 and Guide 66, it is the opinion of BSI that:
- No material misstatement in the calculations was revealed, good record keeping was demonstrated and
- Data quality was considered acceptable in meeting the key international principles for greenhouse gas emissions verification.

Signed:

JK Cheon, President
BSI Korea

Date: 22 May 2006

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MC4401/ISSUE1/SA/0102/UK/DP
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Recognition

Silver Tower Order of Industrial Service Merit on the Day of Taxpayers granted by National Tax Service  Mar.2000
Excellent Research Lab Award given by prime minister granted by the Ministry of Science and Technology  Mar.2000
Best Listed Company of 1999 in disclosure granted by Korea Stock Exchange  May.2000
Solar cell’s being selected into ten new technologies by Korean Agency for Technology and Standards  Oct.2000
Korea Technology Award given by President granted by the MOCTE  Nov.2000
National Quality Award, the Presidential award, granted by Korea Standards Association  Dec.2000
New Industrial Culture Award given by President granted by the Ministry of Labor  Dec.2000
Best Company Award for Shareholder-Centered Management granted by Korea Economic Daily and the Ministry of  Aug.2001
Finance and Economy
2001 National Quality Award, a Bronze Tower Order of Industrial Service Merit, granted by KSA  Nov.2001
Best Award for Knowledge Management in Organization and Focus fields, granted by Maeil Business Newspaper  Nov.2001
Best Award for E-biz given by President granted by E-Commerce Promotion Agency  Nov.2001
Being selected as a leading part and material exporting company with the highest score hosted by the MOCTE  Nov.2001
Presidential Award in Single PPM quality Innovation Competition granted by the Small and Medium Business  Apr.2002
Administration and Korean Chamber of Commerce and Industry
Best Award for Environmental Management given by the Minister of Environment granted by the Ministry of  Jun.2002
Environment and Maeil Business Newspaper
Best Award for Transparent Accounting granted by Korea Accounting Academy  Jun.2002
Korean Technology Award (for 2.2” CMOS OLED) given by President granted by the MOCTE and Korea Industrial  Oct.2002
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* Those that are not specified here are not relevant to us or items that we didn’t report in detail.
Samsung Business Principles

Principle 1: We comply with laws and ethical standards

1-1 We respect the dignity and diversity of individuals
   • We respect the basic human rights of everyone
   • We do not, under any circumstances, permit forced labor, wage exploitation or child labor
   • We do not discriminate against any stakeholders, including customers and employees, on the basis of nationality, race, gender, religion, etc.

1-2 We compete fairly, complying with laws and business ethics
   • We comply with the laws of the countries and communities in which we conduct business and we respect business competition standards and practices
   • We do not take any profits from unethical business practices
   • We do not permit the exchange of gifts, entertainment or any other form of bribery as an inducement to engage in unfair business practices

1-3 We maintain accounting transparency by keeping accurate records
   • We accurately record and maintain all business transactions to provide objective information on business activities for all stakeholders
   • We abide by accounting rules of relevant countries and internationally accepted accounting standards
   • We disclose material business matters such as major financial changes, corporate information as prescribed by law

1-4 We do not intervene in politics and we maintain a neutral stance on all political issues
   • We respect the political rights and opinions of the individual. However, political activity should be kept outside of the workplace
   • We do not use company resources for political purposes
   • We do not provide illegal political donation

Principle 2: We maintain a clean organizational culture

2-1 We draw a strict line between public and private affairs in all business activities
   • When the interests of the company and the individual conflict, the legitimate interests of the company should take precedence
   • We do not use company assets or the position within the company for personal interest (including embezzlement and misappropriation of company assets)
   • We do not allow securities transactions such as trading in the company shares utilizing internal business information

2-2 We protect and respect the intellectual property of the company and others
   • We do not divulge internal intellectual property and classified information without prior permission or approval
   • We respect the intellectual property of others by avoiding acts of infringement such as copying, distribution, modification or use without permission

2-3 We create a healthy organizational atmosphere
   • We foster positive working relationships by prohibiting harmful practices such as sexual harassment, violence and inappropriate monetary transactions between colleagues
   • do not allow favoritism or private groups based on external affiliations that is detrimental to the harmony within the company
● We establish win-win labor-management relations based on mutual trust and open communication

**Principle 3: We respect customers, shareholders and employees**

3-1 We value customer satisfaction the top priority in our business activities
- We provide products and services that meet customer demands and expectations in a timely manner
- We treat our customers with sincerity and kindness, and attend to their proposals and complaints
- We respect and protect our customers’ reputation and their personal and proprietary information

3-2 We focus on shareholder value
- We strive to provide long-term benefits to shareholders through rational investment and efficient management
- We strive to make stable profits and increase the market value of the company with robust business operations
- We respect the rights, opinions and reasonable requests of shareholders

3-3 We endeavor to improve employees’ quality of life
- We provide equal opportunities to all employees, and treat them fairly based on their abilities and performance
- We encourage all employees to pursue continuous self-development and we actively support the improvement of their capabilities for better business performance
- We strive to provide a workplace environment that fosters personal initiative and creativity

**Principle 4: We care for the environment, health and safety**

4-1 We engage in environmentally friendly management practices
- We observe global standards, related laws, and internal regulations related to conservation of the environment
- We endeavor to protect the environment in all business operations, including product development, manufacturing and sales
- We strive to implement activities that use resources efficiently such as recycling

4-2 We value human health and safety
- We observe global standards, related laws, and internal regulations related to safety
- We strive to prevent accidents by complying with safety regulations and fostering a pleasant work environment
- We take every precaution not to supply products and services that could harm human health and safety

**Principle 5: We are a socially responsible corporate citizen**

5-1 We actively perform our duties as a corporate citizen
- We endeavor to raise public trust in our company by fulfilling our responsibilities and duties as a member of local communities
- We strive to generate stable employment and fulfill our responsibilities to pay taxes faithfully

5-2 We respect the characteristics of local custom, culture, and society, and strive to prosper together with local communities
- We respect the laws, cultures and values of the countries in which we do business, and we contribute to the quality of life of local residents
- We lead the improvement of societies through the support of public activities such as education, art, culture and sports
- We actively participate in public services such as volunteer activities and disaster relief services

5-3 We build win-win relationships with business partners
- We form reciprocal relationships on the basis of mutual trust with our suppliers, and treat them as strategic partners
- We reinforce our suppliers’ competitiveness with legitimate support in order to achieve co-prosperity
Environmental Data by Site

Suwon

Location
It is situated within an industrial area, 150m away from residential areas. Wonchun stream runs along the site.

Contact: Sung Daegye
Tel: 82-31-210-7231
Fax: 82-31-210-7161

Cheonan

Location
The plant is situated within the Cheonan industrial complex 3, 200m away from residential areas. At 2.2km away are Upsung reservoir and Notae mountain.

Contact: Bae Jongseok
Tel: 82-41-560-3273
Fax: 82-41-560-3219

Busan

Location
It is situated within an industrial complex technically. Residential areas are nearby. Final water discharge joins Sangchun stream, a branch of Taewha river. Mt.Sinbul is in the back of the site.

Contact: Song Dongju
Tel: 82-55-380-1212
Fax: 82-55-380-2239

Input and output

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<tr>
<td>SOx</td>
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<td>Dust</td>
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<td>Water pollutants(ppm)</td>
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<td>SS</td>
<td>30</td>
<td>2.3</td>
</tr>
</tbody>
</table>

Level of compliance(2005)

<table>
<thead>
<tr>
<th>Category</th>
<th>Requirement</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air pollutants(ppm, mg/m³)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NOx</td>
<td>200</td>
<td>4.79</td>
</tr>
<tr>
<td>SOx</td>
<td>500</td>
<td>1.11</td>
</tr>
<tr>
<td>Dust</td>
<td>100</td>
<td>2.65</td>
</tr>
<tr>
<td>Water pollutants(ppm)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BOD</td>
<td>60</td>
<td>9.01</td>
</tr>
<tr>
<td>COD</td>
<td>70</td>
<td>16.00</td>
</tr>
<tr>
<td>SS</td>
<td>60</td>
<td>1.84</td>
</tr>
</tbody>
</table>
R&D

Total area 50,097m²

- Building: 10,046m²
- Road: 21,357m²
- Green: 34,881m²

Contact: Ha Suchang; soochang.ha@samsung.com
Tel. 82-31-288-4154
Fax. 82-31-288-4157

Shenzhen

Total area 241,325m²

- Building: 111,325m²
- Road: 137,004m²
- Green: 12,996m²

Contact: Yin Delong; delong.yin@samsung.com
Tel. 86-7-55-8335-7000
Fax. 86-7-55-8336-7008

Tianjin

Total area 434,220m²

- Building: 99,908m²
- Road: 48,412m²
- Green: 480,000m²

Contact: Fang Zhongye; zhongye.fang@samsung.com
Tel. 86-22-8212-9971
Fax. 86-22-8211-1394

Location
It is situated within greens of a urban area technically. At 1.2 km away is Shingal reservoir and residential areas. Road 23 runs in front of the site. At 2km are Khung I.C and Shingal IC.

Location
It is situated within Fu Tian Qu, Shenhzen. Residential area is 1km to the south and 100m to the west. 200m to the east is Mt.Bi Jia park. At 1km to southwest is Mt.Lian Hua park and Fu Tian stream is 1km away.

Location
It is technically situated within the TEDA industrial development area. It is 1.5 km away from residential areas.

<table>
<thead>
<tr>
<th>Category</th>
<th>Requirement</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air pollutants(ppm, mg/m³)</td>
<td>200</td>
<td>0</td>
</tr>
<tr>
<td>NOx</td>
<td>500</td>
<td>0.03</td>
</tr>
<tr>
<td>SOx</td>
<td>100</td>
<td>5.95</td>
</tr>
<tr>
<td>Water pollutants(ppm)</td>
<td>80</td>
<td>3.47</td>
</tr>
<tr>
<td>BOD</td>
<td>90</td>
<td>4.37</td>
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<tr>
<td>SS</td>
<td>80</td>
<td>0.93</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Category</th>
<th>Requirement</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air pollutants(ppm, mg/m³)</td>
<td>400</td>
<td>152</td>
</tr>
<tr>
<td>NOx</td>
<td>1000</td>
<td>2</td>
</tr>
<tr>
<td>SOx</td>
<td>150</td>
<td>2</td>
</tr>
<tr>
<td>Water pollutants(ppm)</td>
<td>30</td>
<td>9</td>
</tr>
<tr>
<td>COD</td>
<td>130</td>
<td>39</td>
</tr>
<tr>
<td>SS</td>
<td>100</td>
<td>11.2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Category</th>
<th>Requirement</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air pollutants(ppm, mg/m³)</td>
<td>300</td>
<td>32</td>
</tr>
<tr>
<td>NOx</td>
<td>50</td>
<td>8</td>
</tr>
<tr>
<td>SOx</td>
<td>30</td>
<td>9</td>
</tr>
<tr>
<td>Water pollutants(ppm)</td>
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<tr>
<td>COD</td>
<td>150</td>
<td>142</td>
</tr>
<tr>
<td>SS</td>
<td>150</td>
<td>85</td>
</tr>
</tbody>
</table>
Environmental Data by Site

Tianjin MD

Location
Located in Mi electronic industrial complex, 3.4m high above sea level, and 2 km away from residential areas.

Total area: 12,900m²
- Building: 5,100m²
- Road: 4,575m²
- Green: 3,225m²

Contact: Bian Yenji
Email: Yenji.bian@samsung.com
Tel: 86-22-2380-8552
Fax: 86-22-2380-8282

Shanghai

Location
It is situated in Shingwagi industrial complex, Dongguan, Guangdong province. It is located in industrial complex at 2km away from the entry of Guangzhou-Shenzhen highway.

Total area: 134,477m²
- Building: 39,034m²
- Road: 29,069m²
- Green: 66,374m²

Contact: Zheng Jifeng
Email: zheng.jifeng@samsung.com
Tel: 86-769-558-2000
Fax: 86-769-582-1600

Dongguan

Location
It is situated in Songjiang industrial complex, 3km away from residential areas.

Total area: 48,813m²
- Building: 20,219m²
- Road: 13,409m²
- Green: 22,003m²

Contact: Zhu Dongxuan
Email: dongxuan.zhu@samsung.com
Tel: 86-21-5774-6000
Fax: 86-21-5774-4040

Input and output

<table>
<thead>
<tr>
<th>Category</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy(TJ)</td>
<td></td>
<td></td>
<td>67</td>
</tr>
<tr>
<td>Water(10^4ton)</td>
<td></td>
<td></td>
<td>122</td>
</tr>
<tr>
<td>CO2(10^4ton)</td>
<td></td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>Waste water(10^4ton)</td>
<td></td>
<td></td>
<td>112</td>
</tr>
<tr>
<td>Recycling(ton)</td>
<td></td>
<td></td>
<td>221</td>
</tr>
<tr>
<td>Incineration(ton)</td>
<td></td>
<td></td>
<td>54</td>
</tr>
<tr>
<td>Landfill(ton)</td>
<td></td>
<td></td>
<td>0</td>
</tr>
</tbody>
</table>

Input and output

<table>
<thead>
<tr>
<th>Category</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy(TJ)</td>
<td>263</td>
<td>316</td>
<td>326</td>
</tr>
<tr>
<td>Water(10^4ton)</td>
<td>1,010</td>
<td>1,117</td>
<td>1,133</td>
</tr>
<tr>
<td>CO2(10^4ton)</td>
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<td>35</td>
<td>36</td>
</tr>
<tr>
<td>Waste water(10^4ton)</td>
<td>210</td>
<td>388</td>
<td>465</td>
</tr>
<tr>
<td>Recycling(ton)</td>
<td>494</td>
<td>656</td>
<td>562</td>
</tr>
<tr>
<td>Incineration(ton)</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Landfill(ton)</td>
<td>7</td>
<td>33</td>
<td>32</td>
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</tbody>
</table>

Input and output

<table>
<thead>
<tr>
<th>Category</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy(TJ)</td>
<td>95</td>
<td>94</td>
<td>105</td>
</tr>
<tr>
<td>Water(10^4ton)</td>
<td>187</td>
<td>145</td>
<td>279</td>
</tr>
<tr>
<td>CO2(10^4ton)</td>
<td>11</td>
<td>11</td>
<td>13</td>
</tr>
<tr>
<td>Waste water(10^4ton)</td>
<td>154</td>
<td>83</td>
<td>213</td>
</tr>
<tr>
<td>Recycling(ton)</td>
<td>131</td>
<td>135</td>
<td>327</td>
</tr>
<tr>
<td>Incineration(ton)</td>
<td>148</td>
<td>93</td>
<td>88</td>
</tr>
<tr>
<td>Landfill(ton)</td>
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<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Level of compliance(2005)

<table>
<thead>
<tr>
<th>Category</th>
<th>Requirement</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air pollutants(ppm/m³)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NOx</td>
<td>300</td>
<td>152</td>
</tr>
<tr>
<td>SOx</td>
<td>20</td>
<td>7</td>
</tr>
<tr>
<td>Dust</td>
<td>10</td>
<td>8</td>
</tr>
<tr>
<td>Water pollutants(ppm)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BOD</td>
<td>30</td>
<td>28</td>
</tr>
<tr>
<td>COD</td>
<td>150</td>
<td>145</td>
</tr>
<tr>
<td>SS</td>
<td>150</td>
<td>48</td>
</tr>
</tbody>
</table>

Level of compliance(2005)

<table>
<thead>
<tr>
<th>Category</th>
<th>Requirement</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air pollutants(ppm/m³)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NOx</td>
<td>400</td>
<td>193</td>
</tr>
<tr>
<td>SOx</td>
<td>500</td>
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<td>Dust</td>
<td>80</td>
<td>51</td>
</tr>
<tr>
<td>Water pollutants(ppm)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BOD</td>
<td>20</td>
<td>17.2</td>
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<tr>
<td>COD</td>
<td>90</td>
<td>70.6</td>
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<tr>
<td>SS</td>
<td>60</td>
<td>5.3</td>
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</table>

Level of compliance(2005)

<table>
<thead>
<tr>
<th>Category</th>
<th>Requirement</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air pollutants(ppm/m³)</td>
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<td></td>
</tr>
<tr>
<td>NOx</td>
<td>240</td>
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<tr>
<td>SOx</td>
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<td>-</td>
</tr>
<tr>
<td>Dust</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Water pollutants(ppm)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BOD</td>
<td>150</td>
<td>35</td>
</tr>
<tr>
<td>COD</td>
<td>300</td>
<td>74</td>
</tr>
<tr>
<td>SS</td>
<td>300</td>
<td>13</td>
</tr>
</tbody>
</table>
**Malaysia**

- **Total area**: 210,384m²
- **Building**: 79,269m²
- **Road**: 61,100m²
- **Green**: 149,993m²

**Location**

It is situated in industrial areas, 3km away from residential area. Mt. Angsi is 2km to the east and River Simin runs to the west.

**Input and output**

<table>
<thead>
<tr>
<th>Year</th>
<th>Energy (TJ)</th>
<th>Water (10^3 ton)</th>
<th>CO₂ (10^3 ton)</th>
<th>Waste water (10^3 ton)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003</td>
<td>1,279</td>
<td>3,276</td>
<td>1,370</td>
<td>3,767</td>
</tr>
<tr>
<td>2004</td>
<td>1,370</td>
<td>3,767</td>
<td>1,236</td>
<td>3,185</td>
</tr>
<tr>
<td>2005</td>
<td>1,236</td>
<td>3,185</td>
<td>1,259</td>
<td>2,647</td>
</tr>
</tbody>
</table>

**Level of compliance(2005)**

<table>
<thead>
<tr>
<th>Category</th>
<th>Requirement</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air pollutants (ppm, mg/m³)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NOx</td>
<td>1,700</td>
<td>100</td>
</tr>
<tr>
<td>SOx</td>
<td>200</td>
<td>100</td>
</tr>
<tr>
<td>Dust</td>
<td>400</td>
<td>300</td>
</tr>
<tr>
<td>Water pollutants (ppm)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BOD</td>
<td>50</td>
<td>24</td>
</tr>
<tr>
<td>COD</td>
<td>100</td>
<td>65</td>
</tr>
<tr>
<td>SS</td>
<td>100</td>
<td>4</td>
</tr>
</tbody>
</table>

**Contact**

Thiannam Lim : thiannam.lim@samsung.com
Tel. 60-6-670-1705
Fax. 60-6-677-9334

---

**Hungary**

- **Total area**: 322,911m²
- **Building**: 75,877m²
- **Road**: 11,211m²
- **Green**: 235,003m²

**Location**

It has GOD on the North, forest on the South, highways on the east, and field on the west. Danube river is 2.5-3km away to the west.

**Input and output**

<table>
<thead>
<tr>
<th>Year</th>
<th>Energy (TJ)</th>
<th>Water (10^3 ton)</th>
<th>CO₂ (10^3 ton)</th>
<th>Waste water (10^3 ton)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003</td>
<td>293</td>
<td>1,332</td>
<td>49</td>
<td>867</td>
</tr>
<tr>
<td>2004</td>
<td>476</td>
<td>845</td>
<td>52</td>
<td>2,647</td>
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<tr>
<td>2005</td>
<td>418</td>
<td>1,277</td>
<td>48</td>
<td>6,394</td>
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</table>

**Level of compliance(2005)**

<table>
<thead>
<tr>
<th>Category</th>
<th>Requirement</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air pollutants (ppm, mg/m³)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NOx</td>
<td>407</td>
<td>-</td>
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<td>SOx</td>
<td>35</td>
<td>-</td>
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<tr>
<td>Dust</td>
<td>150</td>
<td>-</td>
</tr>
<tr>
<td>Water pollutants (ppm)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BOD</td>
<td>500</td>
<td>45</td>
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<tr>
<td>COD</td>
<td>1,000</td>
<td>65</td>
</tr>
<tr>
<td>SS</td>
<td>2,500</td>
<td>903</td>
</tr>
</tbody>
</table>

**Contact**

Seo Pyeongsu : pyeongsu.seo@samsung.com
Tel. 36-27-530-808
Fax. 36-27-530-850

---

**Brasil**

- **Total area**: 80,113m²
- **Building**: 57,984m²
- **Road**: 47,110m²
- **Green**: 68,006m²

**Location**

It is situated within an industrial complex, and 100m away from residential areas. A small stream runs in front of the site. Amazon river is 2.5km away in straight line.

**Input and output**

<table>
<thead>
<tr>
<th>Year</th>
<th>Energy (TJ)</th>
<th>Water (10^3 ton)</th>
<th>CO₂ (10^3 ton)</th>
<th>Waste water (10^3 ton)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003</td>
<td>423</td>
<td>1,332</td>
<td>419</td>
<td>6,897</td>
</tr>
<tr>
<td>2004</td>
<td>418</td>
<td>1,277</td>
<td>419</td>
<td>6,394</td>
</tr>
<tr>
<td>2005</td>
<td>48</td>
<td>829</td>
<td>49</td>
<td>2,879</td>
</tr>
</tbody>
</table>

**Level of compliance(2005)**

<table>
<thead>
<tr>
<th>Category</th>
<th>Requirement</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air pollutants (ppm, mg/m³)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NOx</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>SOx</td>
<td>5,000</td>
<td>1,399</td>
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<tr>
<td>Dust</td>
<td>350</td>
<td>348</td>
</tr>
<tr>
<td>Water pollutants (ppm)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BOD</td>
<td>-</td>
<td>39</td>
</tr>
<tr>
<td>COD</td>
<td>-</td>
<td>102</td>
</tr>
<tr>
<td>SS</td>
<td>-</td>
<td>90</td>
</tr>
</tbody>
</table>

* SOx unit: mg/Mcal
Environmental Data by Site

Location
It is situated within an industrial complex technically and 80m away from residential areas. A small stream runs in front of the site.

Contact Terry Lee : terry69.lee@samsung.com
Tel. 1-619-671-6212
Fax. 1-619-671-6226

Input and output

<table>
<thead>
<tr>
<th>Year</th>
<th>Input Energy(TJ)</th>
<th>Input Water(10^3 ton)</th>
<th>Output CO2(10^3 ton)</th>
<th>Output Waste water(10^3 ton)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003</td>
<td>450</td>
<td>903</td>
<td>49</td>
<td>246</td>
</tr>
<tr>
<td>2004</td>
<td>510</td>
<td>1,096</td>
<td>55</td>
<td>280</td>
</tr>
<tr>
<td>2005</td>
<td>555</td>
<td>1,174</td>
<td>58</td>
<td>639</td>
</tr>
</tbody>
</table>

Recycling(ton)  | 10,373 | 13,506 | 11,569
Incineration(ton) | 29     | 36     | 50
Landfill(ton)    | 2,283  | 2,042  | 1,623

Level of compliance(2005)

<table>
<thead>
<tr>
<th>Category</th>
<th>Requirement</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air pollutants</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NOx</td>
<td>190</td>
<td>156</td>
</tr>
<tr>
<td>SOx</td>
<td>2,100</td>
<td>0</td>
</tr>
<tr>
<td>Dust</td>
<td>50</td>
<td>0</td>
</tr>
<tr>
<td>Water pollutants</td>
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<td></td>
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<tr>
<td>BOD</td>
<td>75</td>
<td>43</td>
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<td>-</td>
<td>-</td>
</tr>
<tr>
<td>SS</td>
<td>75</td>
<td>7</td>
</tr>
</tbody>
</table>

1. CO2 volume
- For Korean sites, we followed IPCC 1996 guideline in investigating and accounting for the volume of CO2 generation. The same activity is planned for overseas sites in 2006.

2. Level of compliance
- As for SDIHU, air pollution is required to be measured every five years so that measurements are not taken in 2005. Countries have different criteria for air pollution management. Because of that measurement was not taken, which left no data in this report.

3. Water consumption
- Recycled water consumption was included in water consumption data of the previous reports. In this report, recycled water consumption is excluded. Consumption of water only from outside of the premise is reported for water consumption.
Financial Report

Consolidated Balance Sheet
Consolidated Statement of Income
Consolidated Statement of Cash Flows

This consolidated financial statements are the summary of data verified by PriceWaterhouseCoopers which performed audit. For details, you can go to the electronic disclosure system of Financial Supervisory Service and ask for information through the VOC system of the Samsung SDI web page.

*The electronic disclosure system of Financial Supervisory Service: http://dart.fss.or.kr
## Consolidated Balance Sheet

<table>
<thead>
<tr>
<th>Items</th>
<th>36th Fiscal Year (Current)</th>
<th>35th Fiscal Year (Previous)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Amount</td>
<td>Amount</td>
</tr>
<tr>
<td><strong>Assets</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I . Current Assets</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(1) Quick Assets</td>
<td>2,176,558</td>
<td>2,064,869</td>
</tr>
<tr>
<td>(2) Inventories</td>
<td>601,946</td>
<td>696,942</td>
</tr>
<tr>
<td>II . Non-current Assets</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(1) Investment and Other assets</td>
<td>1,081,892</td>
<td>767,900</td>
</tr>
<tr>
<td>(2) Tangible Assets</td>
<td>2,759,498</td>
<td>3,105,792</td>
</tr>
<tr>
<td>(3) Intangible Assets</td>
<td>80,720</td>
<td>86,869</td>
</tr>
<tr>
<td>Total Assets</td>
<td>6,700,613</td>
<td>6,722,372</td>
</tr>
<tr>
<td><strong>Liabilities</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I . Current Liabilities</td>
<td>1,503,241</td>
<td>1,803,321</td>
</tr>
<tr>
<td>II . Long-term Liabilities</td>
<td>499,087</td>
<td>437,503</td>
</tr>
<tr>
<td>Total Liabilities</td>
<td>2,002,328</td>
<td>2,240,824</td>
</tr>
<tr>
<td><strong>Equity</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I . Capital Stock</td>
<td>240,681</td>
<td>240,681</td>
</tr>
<tr>
<td>II . Capital Surplus</td>
<td>1,291,600</td>
<td>1,281,431</td>
</tr>
<tr>
<td>III . Retained Earnings</td>
<td>3,252,794</td>
<td>3,122,955</td>
</tr>
<tr>
<td>IV . Capital Adjustment</td>
<td>(213,199)</td>
<td>(334,650)</td>
</tr>
<tr>
<td>V . Minority Interests in Consolidated Subsidiaries</td>
<td>126,407</td>
<td>171,131</td>
</tr>
<tr>
<td>Total Shareholders’ Equity</td>
<td>4,698,285</td>
<td>4,481,548</td>
</tr>
<tr>
<td>Total Liabilities and Shareholders’ Equity</td>
<td>6,700,613</td>
<td>6,722,372</td>
</tr>
</tbody>
</table>
### Samsung SDI Co., Ltd and its subsidiaries

#### (Unit: million won)

<table>
<thead>
<tr>
<th>Items</th>
<th>36th Fiscal Year (Current)</th>
<th>35th Fiscal Year (Previous)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I . Sales</td>
<td>7,882,777</td>
<td>9,321,770</td>
</tr>
<tr>
<td>II . Cost of Sales</td>
<td>6,763,837</td>
<td>7,645,168</td>
</tr>
<tr>
<td>III . Gross Profits</td>
<td>1,118,940</td>
<td>1,676,602</td>
</tr>
<tr>
<td>IV . Selling, General and Administrative Expenses</td>
<td>810,682</td>
<td>901,146</td>
</tr>
<tr>
<td>V . Operating Profits</td>
<td>308,258</td>
<td>775,457</td>
</tr>
<tr>
<td>VI . Non-operating Income</td>
<td>233,255</td>
<td>229,082</td>
</tr>
<tr>
<td>VII . Non-operating Expenses</td>
<td>269,498</td>
<td>256,319</td>
</tr>
<tr>
<td>VII . Ordinary Profits</td>
<td>272,014</td>
<td>748,219</td>
</tr>
<tr>
<td>IX. Extraordinary income</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>X. Extraordinary Loss</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>X I . Net Income Before income Taxes</td>
<td>272,014</td>
<td>748,219</td>
</tr>
<tr>
<td>X II . Income Tax Expenses</td>
<td>6,560</td>
<td>(8,883)</td>
</tr>
<tr>
<td>X III . Net Income After Income taxes</td>
<td>265,454</td>
<td>757,102</td>
</tr>
<tr>
<td>X IV . Minority Interests in Earnings of Consolidated Subsidiaries</td>
<td>25,381</td>
<td>15,353</td>
</tr>
<tr>
<td>X V . Net Income</td>
<td>240,074</td>
<td>741,749</td>
</tr>
</tbody>
</table>
### Samsung SDI Co., Ltd and its subsidiaries

#### Consolidated Statement of Cash Flows

<table>
<thead>
<tr>
<th>Items</th>
<th>36th Fiscal Year (Current)</th>
<th>35th Fiscal Year (Previous)</th>
<th>(Unit: million won)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>I. Cash Flows from Operating Activities</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Net Income</td>
<td>756,376</td>
<td>1,311,348</td>
<td></td>
</tr>
<tr>
<td>2. Addition of Expenses Not Involving Cash Outflows</td>
<td>240,074</td>
<td>741,749</td>
<td></td>
</tr>
<tr>
<td>3. Deduction of Revenues Not Involving Cash Inflows</td>
<td>839,005</td>
<td>960,089</td>
<td></td>
</tr>
<tr>
<td>4. Changes in Assets and Liabilities Resulting from Operations</td>
<td>(44,151)</td>
<td>(74,345)</td>
<td></td>
</tr>
<tr>
<td><strong>II. Cash Flows from Investing Activities</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Cash inflows from Investing Activities</td>
<td>(278,552)</td>
<td>(316,145)</td>
<td></td>
</tr>
<tr>
<td>2. Cash Outflows from Investing Activities</td>
<td>(278,552)</td>
<td>(316,145)</td>
<td></td>
</tr>
<tr>
<td><strong>III. Cash Flow from Financing Activities</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Cash inflows from Financing Activities</td>
<td>(355,513)</td>
<td>(1,174,602)</td>
<td></td>
</tr>
<tr>
<td>2. Cash Outflows from Financing Activities</td>
<td>(355,513)</td>
<td>(1,174,602)</td>
<td></td>
</tr>
<tr>
<td><strong>IV. Net Increase(Decrease) from Foreign Currency Translation</strong></td>
<td>(24,144)</td>
<td>(31,312)</td>
<td></td>
</tr>
<tr>
<td><strong>V. Increase(Decrease) with Change of Subsidiaries Consolidated</strong></td>
<td>-</td>
<td>36</td>
<td></td>
</tr>
<tr>
<td><strong>VI. Net Increase(Decrease) in Cash and Cash Equivalents (I + II + III + IV + V)</strong></td>
<td>(13,029)</td>
<td>59,342</td>
<td></td>
</tr>
<tr>
<td><strong>VII. Cash and Cash Equivalents at the Beginning of the Year</strong></td>
<td>750,525</td>
<td>691,183</td>
<td></td>
</tr>
<tr>
<td><strong>VIII. Cash and Cash Equivalents at the End of the Year</strong></td>
<td>750,525</td>
<td>691,183</td>
<td></td>
</tr>
</tbody>
</table>
Terminology

6 Sigma activities
Management initiative implemented to secure 6 sigma level quality (0.00034% which means, 3.4 occurrences out of 1 million opportunities). 6 Sigma was first adopted by Motorola in 1987 and by Samsung SDI in 1996 for the first time in Korea.

Barrier ribs
Barrier ribs in PDP are the structure to uniform discharge space with consistent width and height and to prevent electric and optical cross talk, being placed in the lower glass sub- strate panel of a PDP.

Internal control
For accurate and reliable financial reporting, compliance with related regulations and procedures, and effective job execution, the company checks processes of all parts, calculates risks, and manages risks by system to enable continuous control.

Multi-panel technology
Technology that enables multi-panel production from one glass substrate.

Manbun Club
It is the name of the group of companies that contribute some proportion of sales for environment fund to invest for people, society, and the earth of the future. The name refers to 1/10,000 in Korean. As the name indicates, the members contribute 1/10,000 of their sales.

Return on sales
A measure of a company’s profitability and overall efficiency, equal to current net income divided by sales.

Matching grant fund
An idea to encourage donation of employees. A company donates relative to its employee’s donation at a certain ratio.

Back light
A feature that beams white lights from the back of a display that is not illuminating by itself like an LCD.

Debt ratio
Debt capital divided by total assets. This will tell you how much a company relies on debt to finance assets.

Inter-industry relations table
It is a matrix containing inter-industry transactions of goods and services for a year in a national economy. It is also called input-output tables.

Viewing angle
When you look at a display like an LCD that uses back light, transmissivity changes depending on where you look at it. As you move toward sides, the display looks darker. Viewing angle is the angle at which you can see the display.

Chassis
It is a basic circuit board of a display. It is installed with minimum mechanical devices to power a display.

Current ratio
An indication of a company’s ability to meet debt obligations, equal to current assets divided by current liabilities.

ROE: Return On Equity
A measure of how well a company used reinvested earnings to generate additional earnings. It is used as a general indication of the company’s efficiency, equal to current net income divided by book value.

Voluntary Agreement, VA
It is a non-binding institution designed to achieve goals for energy saving and greenhouse gas emission cut, grounded on mutual trust of enterprises and the government who produce, supply, and consume energy. A company sets up a goal in its context, and the government provides fund and incentives such as tax benefits to help the company to meet the goal.

Top emission
This is a technology to emit light on substrate by making light of organic layers to bypass TFT substrate. When this technology is applied, light-emitting areas are expanded, saving power and extending product life cycle.

SM: Sustainability Management
Business management activity and philosophy. SM is introduced for a company to take leadership and responsibility in triple bottom lines of economic, environmental, and social aspects, and eventually secure competitive advantage, enhancing corporate values.

SR: Sustainability Report
A sustainability report is issued to open a company’s economic, environmental, and social performances and their impact to stakeholders.
Leverage ratio
Level of dependence on debt. A measure of a company’s soundness, equal to debt divided by common shareholders’ equity.

ROA: Return On Assets
A measure of a company’s profitability, equal to fiscal year’s earnings divided by its total assets.

Pixel
The complete image is a rectangular array of pixels.

Brightness
A measure for luminance of a display.

AMOLED(Active Matrix Organic Light Emitting Diode)
OLED with active driving method. Unlike PMOLED, independent RBG driving is applied, which lowers power consumption and allows fine display presentation.

Class Material
Ozone layer depleting materials such as CFC and Halon.

BOD (Biochemical Oxygen Demand)
Oxygen requirement for underwater microorganisms to decompose pollutants in water. Higher BOD means more pollutants in a sample of water.

CG(convergence)
It is CRT technology jargon, meaning focus.

CO2(Carbon Dioxide)
Gas produced when carbon compounds are burned, being believed to be contributing to global warming.

COD(Chemical Oxygen Demand)
The quantity of oxygen required when pollutants in water is oxidized by oxidant like KMnO4 or K2Cr2O7. The higher COD is, the worse water quality becomes.

Cradle-to-gate
This is a word to scope LCA. Cradle-to-grave covers from raw material collecting to final scrapping. Cradle-to-gate covers from raw material collecting to product manufacturing for LCA analysis.

CRT (Cathode Ray Tube)
It is a general term for CDT and CPT.

EA(Environmental Accounting)
As a traditional accounting does not reflect environmental aspect too well, EA is developed and support decision-making for environmental management by analyzing environmental investment, benefits, and results.

ED(Eco-design)
Design for Environment. A company’s product development strategy to design, produce and sell products excellent in both environment and economic terms as cost, quality, and environmental aspects are considered.

EIO LCA(Economic Input-Output LCA)
A way in a macro perspective to get products’ energy consumption and their environment burden by making use of the economic input-output tables. It enables to count in indirect energy consumption and environmental burden completely.

EuP(Energy using Product)
A regulation effective from August 2005. It forces eco-design for products using power to be circulated within EU.

FED(Field Emission Display)
It is very similar to CRT in terms of operation, using phosphor coatings as the emissive medium. Electrons emitted from many but small electronic guns hit phosphors, and light is emitted to display images.

Fuel Cell
A kind of power generator. Similar to other chemical batteries in using oxidation and reduction reactions, but different in that reactants are continuously supplied from the outside and products are continuously removed from inside. Reactants are hydrogen, gas fuel, and methanol, liquid fuel.

GJ
Gigajoule. 1GJ=10^9 J. Giga is a metric prefix indicating 10^9 times base unit(1 followed by 9 zeros). 1 Joule is equivalent to 0.24cal or amount of work done when 1W of electricity is consumed for 1 second.

GRI (Global Reporting Initiative)
A non-permanent institution under UNEP established in 1997 whose mission is to develop and disseminate globally applicable Sustainability Reporting Guidelines.
HD (High Definition) TV
Compared to ordinary TVs, picture quality and clarity are superb. A conventional TV has 525 ~ 625 in the number of scanning lines, while an HD TV has twice as many from 1,050 to 1,250, bringing in remarkable touch of reality.

HPL (High Power Lithium-ion Battery)
High power rechargeable battery for HEV. In hybrid electric cars, the motor is on for start-up, rolling up a hill, and acceleration. When the motor is on, lithium ion battery has to provide energy to the motor instantly, which requires five times higher power than batteries for mobile phones.

Hybrid LCA
LCA methodology in combination of EIO and Process LCA.

ILO (International Labor Organization)
The UN specialized organization established in 1919 to improve working conditions and promote worker’s social positions.

ISO (International Organization for Standardization)
An international institution established in 1946 to coordinate and unify industrial standards and promote cooperation in Science and Economy. ISO 9000 series is for quality management, while ISO14000 series is for Environmental Management.

ISO14001
International standard that forms the basis for setting up, auditing and certifying environmental management systems.

ISO/TS16949
Quality system requirements for vehicle products. It is a global specification valid in Europe and the US.

LCA (Life Cycle Assessment)
An objective process to evaluate the environmental burdens associated with a product, process, or an activity by identifying energy and materials used and wastes released to the environment, and to evaluate and implement opportunities to affect environmental improvements.

Lead-free soldering
Instead of lead soldering, tin-copper alloy and tinsilver alloy are used in soldering.

LITI (Laser Induced Thermal Imaging)
A color-patternning technology by beaming laser on donor films coated with phosphors. It enables high-definition patterning and makes full-color OLED bigger.

MDC (Market Driven Change)
A business management activity to accommodate changing requirements of customers and markets. The CEO is at center for all areas of doing business from environment analysis for product planning to technology development to product release.

NOx (Nitrogen Oxide)
These gases (NO, NO₂, NO₃, etc.) contribute to the greenhouse effect and possibly to the deterioration of the stratospheric ozone layer. Also they are causes of smog and acid rains.

OHSAS18001
This is an international occupational health and safety management system specification.

PCB (Printed Circuit Board)
A thin board on which electric parts are soldered. Circuits used for most of electronic products are installed on to a PCB.

PI (Productivity Incentive)
Group incentive offered by half-year based on level of achievement of business goals.

PL (Product Liability)
When consumers or a third party has their life, body, and property damaged due to defects of products, the manufacturers or the sellers become liable and compensate for the damages.

PMOLEDI (Passive Matrix Organic Light Emitting Diode)
PM-type OLED. Manufacturing processes are relatively simple and cost less. But the products require high power consumption.

Process LCA
It is a typical LCA methodology to investigate how a product is made and disposed in each part such as manufacturing process and material. Process LCA moves from assessment to analysis to improvement.
Sustainability Report 2005

PS (Profit Sharing)
Profit distribution by a company to employees apart from wages, calculated by a formula agreed between the company and workers.

QVGA (Quarter Video Graphics Array)
Resolution of 320 x 240 = 76,800 pixels.

RoHS (Directive on Restriction of the use of certain Hazardous Substances in electrical and electronic equipment)
A directive banning the use of six hazardous materials of Lead, Mercury, Cadmium, Chromium VI, PBB and PBDE in products to be sold in the EU market effective from July 2006.

SOx (Sulfur Oxide)
These gases (SO₂, SO₃) are created when sulfur in fossil fuels reacts with oxygen, contributing to the acid rain effect.

SCEM (Supply Chain Environmental Management)
A management technique designed to minimize environmental footprints in upstream activities involving selection of part suppliers, sourcing of materials, and management of suppliers. On top of conventional focuses for SCM managements such as quality assurances of supplied products, cost minimization, and stable delivery, environmental aspect is added.

S-PPM (Single PPM)
Defect control with aim of producing perfect products free of defects and defectives. This is quality innovation activity to eventually contribute to financial performance by satisfying customers with quality improvement, cost reduction, and shortened lead time.

SS (Suspended Solid)
Particle solids over 0.1 in diameter that are floating on the surface of, are suspended in sewage or other liquids.

Technology Driven Company
A strategy of Samsung SDI to secure global competitiveness.

TJ
1TJ = 10¹² J. Tera is a metric prefix indicating 10¹² times base unit (1 followed by 12 zeros).

VOC (Voice of Customer)
The system on the Samsung SDI web page where customers express opinions about product and service quality.

VOCs (Volatile Organic Compounds)
Substances like paints, cohesive and petro-chemical products. VOCs form optic chemical ozone, doing harm to human bodies with cancer risks and potentially damaging on genes.

WEEE (Directive on Waste Electrical and Electronic Equipment)
A directive enforcing recycling of all electrical and electronic products disposed within the EU market to be placed under responsibility of producers, effective from January 2007.
We capture your valuable opinions in Samsung SDI Sustainability Report.
We collect opinions from audience, use them to correct management activities of Samsung SDI and give feedback.
We hope that we can meet you with better contents.

Which of the following best describes you or your affiliation?

- [ ] Samsung SDI employee
- [ ] Shareholder
- [ ] Institutional investor
- [ ] Individual investor
- [ ] SR investor
- [ ] Public officer
- [ ] NGO representative
- [ ] CSR expert
- [ ] Media
- [ ] Academic
- [ ] Others

What do you want to find out in Samsung SDI Sustainability report?

- [ ] Samsung SDI's Company profile
- [ ] Investment information
- [ ] Sustainability management
- [ ] Environment-friendly management
- [ ] Social contributions
- [ ] HR management and working environment
- [ ] Customer satisfaction management
- [ ] Win-win management with suppliers
- [ ] Communication with stakeholders

Tick in the box you find most relevant.

<table>
<thead>
<tr>
<th>Terminiologies are clear and easy to understand</th>
<th>Very much</th>
<th>Agree</th>
<th>So-so</th>
<th>Not really</th>
<th>Not at all</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sufficient and useful information is provided on important issues</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contents are reliable</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>The design is easy to read and helps understanding of the contents</td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

Which part did you find need improvement?

- [ ] Company profile and investment information
- [ ] Economic part
- [ ] Environmental part
- [ ] Social part
- [ ] Communication with stakeholders

Please give us any opinions, impression, requests, and etc.
Don’t hesitate

Please feel free to communicate with us about anything related to the report. Samsung SDI values every single opinion of stakeholders about the report. Contact us now.

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* VOC System is also available.
Go the Samsung SDI website and click ‘here VOC’ on the bottom of the main page.

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