



Sustainability Report 2003

True Leader for Sustainable World

# I SEE SDI

[www.samsungsdi.com](http://www.samsungsdi.com)



## About Sustainability Report...

### The concept of sustainability

For a company to sustain and develop, it has to increase revenues and profits through continuous technology development and exploration of new markets, and deliver value added products to customers, while minimizing the usage of nature and pollution emissions. Every business activity should be done in a transparent and fair manner. Recognizing that it is also a member of the society where it operates, the company must manage good and healthy relations with all members of the society. This is a sustainability to which Samsung SDI commits itself.

### Purpose of this sustainability report

Samsung SDI has introduced sustainability management as a new management philosophy and put it into practice. Through this sustainability report, we want to communicate various activities undertaken and corporate performance to all stakeholders in a transparent manner, as well as our vision, goals and commitment to sustainability that we identified in formulating the master plan.

This report is the first sustainability report produced by Samsung SDI, and we will continue to publish updated sustainability reports.

### Reporting principles

Samsung SDI has referenced the 「Global Reporting Initiative(GRI) 2002 Sustainability Reporting Guidelines」 in compiling the 「Sustainability Report 2003」. The report coverage of GRI indicators is provided in GRI Content Index on the Contents page.

### Scope of this report

This report provides information for the 2002 fiscal year, running from January 1, 2002 to December 31, 2002. The information in this report comes from the headquarters, three domestic sites(Suwon, Cheonan and Busan) and the Corporate R&D Center of Samsung SDI. Overseas plants and SNMD, the joint venture with NEC, are not reported.

# I SEE SDI

True Leader for Sustainable World

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## Message from the CEO



### **Sustainability is our commitment to a better future.**

When I first came across the concept of sustainability, it left a strong impression on me.

Samsung SDI rose to the top in the display industry through continuous technology development and business innovations over the last 33 years. As results of our strenuous efforts for transparent management, ethical management and environmental management, we received the best award for economic justice, the best award for transparent accounting and the best award for environmental management, making presence not only as a company that makes profit, but a company that is respected by the society for its contribution. As CEO of Samsung SDI, I have taken pride in such great achievements. When thinking about the concept of sustainability, however, it dawned on me that all of our current efforts today are just beginning. We must move forward with greater efforts in order to reach the goal of sustainability. In a sense, the whole system needs to be 'purified' to realize sustainability management true to its name.

Sustainability is a task set before those of us who live here today, for the benefit of generations to come.

As we respect our management philosophy of contributing to the development of the human society with technologies and products that are essential in life, we promise to all stakeholders and future generations that the task will not be taken as a burden but rather as our goal, and we will deliver on it with integrity.

**As we respect our business philosophy of contributing to development of the human society with technologies and products that are essential in life, we promise to all stakeholders and future generations that the task will not be taken as a burden but rather as our goal, and we will deliver on it with integrity.**

**First, we will pursue shareholder-oriented management and continuous economic growth.**

With continuous efforts for technology development as a Technology Driven Company, we will improve our company value continuously as being a world leader in the display and mobile energy industries. With such continuous corporate growth, we will lay a firm foundation, on which we can deliver to our shareholders more value and fulfill the environmental and social responsibilities given to us.

**Second, we will help reduce environmental pressure for a sustainable earth.**

We will do what is needed for environmental management at plant level to prevent pollution and for development and production of environment-friendly products. To this end, we will try to reduce environmental burden from the part production stage by promoting environmental management of suppliers and further, contribute to building a sustainable earth for generations to come.

**Third, we will strengthen our partnership with all stakeholders for win-win.**

Samsung SDI will try to formulate partnership, with all stakeholders including shareholders, suppliers, customers, and the community where it operates for further developments to achieve a better future for all. We are also committed to becoming the most beloved and trusted company in society by fulfilling corporate responsibilities with more active community service and by managing businesses in a fairer and more transparent way.

This report contains Samsung SDI's will to sustainability management. We open our sustainability activities thoroughly on this report. We hope that we use this report as a tool for further development by promoting more active communications with all stakeholders.

Samsung SDI, 'Windows for Digital', would be 'Windows for Corporate Sustainability.'

Samsung SDI's employees will work hard to get there. This report is a small first step on the road.

President & CEO



## Samsung SDI is...

What does SDI stand for?

**S** means Samsung,

**D** means Display and Digital,

**I** means Interface and Internet Component.

The C.I. indicates a company image of operating in hi-tech industries with key businesses for 21st century centering around internet components such as digital, display, and rechargeable batteries.



## Company Profile

Starting as a vacuum tube producer in 1970, Samsung SDI has grown to be a company with triangular business structure; the digital display business including large PDP and advanced CRT production, the mobile display business including OLED and LCD production, and the energy business including rechargeable battery production at each apex.

Samsung SDI operates 12 production sites in seven countries around the world and sales arms in Los Angeles, the U.S., and Hong Kong, China. Domestically the company has the headquarters in Seoul, plants in Suweon, Busan and Cheonan, and the Corporate R&D Center in Giheung. The number of employees at the end of 2002 totaled 7,368. Sales was recorded at 4,579 billion won in 2002.

		Korea	Global Consolidated
Total assets	(2002 fiscal year)	4,506 billion won	5,725 billion won
Revenues	(2002 fiscal year)	4,579 billion won	6,634 billion won
Current net income	(2002 fiscal year)	587 billion won	589 billion won
Employees	(at the end of 2002)	7,368	23,767

## Global Network



## Highlights of the Last 33 Years

### 1970 Lay a solid ground for business with vacuum tubes and black and white CRTs.

Initially Samsung SDI started as Samsung-NEC Inc. on January 20, 1970. As a manufacturer of major electronic parts such as vacuum tubes, CRTs and Discharge Display Tubes, Samsung SDI jumped into the absolutely undeveloped domestic electronics business, in particular, parts and components business, which was complicated and required greater facility investments. Later such a bold move

### 1970

led the company to spearhead advancement of the Korean electronic part industry.

The vacuum tube, the first product of Samsung SDI, was out on May 16, 1970, which became the foundation day of the company. Since then, businesses have gone on passing through making black and white CRTs and developing the 「Quick Start CRT」 in 1974 'for the first time in Korea and third time in the world', which paved the way to rapid growth.



**1970** First products of a mount for a vacuum tube and a vacuum tube



**1970** 12" black and white CRTs

### 1980 Move forward with the goal of building ten million color CRTs

Upon building the Suweon plant in 1978, Samsung SDI started the color CRT business, opening up the color TV era in Korea. Under the target of making ten million units of color CRT set in 1984, Samsung SDI has concentrated all capabilities in order to meet ten percent of global demand by producing ten million units of color CRTs since. As a result it successfully reached the target in 1988,

### 1980

which served the company as a turning point to take off as a world-class company.

Along with the CRT business, Samsung SDI took serious interest in flat panel displays from the mid 1980's. Indeed it started new display technology research and development for such as LCDs and VFDs. Samsung SDI already started business diversification as early as from the mid 1980's.



**1979** Development of 20" color CRTs



**1988** Successful PDP development

## 1990 Grow to be a world leading display maker through globalization

Samsung SDI's strategy in the 1990's was globalization by expanding production bases. It planned to increase global market share up to 25 percent by securing and linking production bases in Malaysia, Germany, Mexico and Brazil. The target was met and even exceeded. In the meantime, as a digital and mobile era came along rapidly, the company focused on small displays for mobile

phones, which worked just right with sharp growth of the mobile phone market. With the VFD business armed with maximum productivity and quality, Samsung SDI was able to become the number two VFD maker in the world.

In 1995, when ground was broken for the Cheonan plant, the company started to concentrate on new businesses such as secondary batteries and PDPs. The move was intended to push forward with potential cash cow businesses, for example, flat panel displays, in preparation for post-CRT times. Since its inception, the Cheonan plant has continued its growth and is now recognized as the Mecca of Samsung SDI new businesses.



**1993** Development of VFD with Korean displayed for the first time in Korea



**1998-99** Li-ion and Li-polymer battery development

## 2000 Rise high as a digital · mobile leader as Technology Driven Company

Samsung SDI flies even higher in the 2000's. Samsung SDI developed the 70" PDP for the first time in the world, the 37" PDP with world best clarity, the Li-ion battery with the largest capacity in the world, the world-first full-color OLED, UFB-LCD with motion picture producing capability for the first time in the world and world-first UFS-LCD, and placed the LCD for mobile phones in the first place in

terms of market share. It was successful in all of diversified business areas. Samsung SDI added more overseas bases to ensure global competitiveness. It has new plants in Shanghai and Dongguan, China, and in Hungary up and running, and forged strategic R&D networks with various R&D centers in Germany, Yokohama, Japan, the U.S, Russia and China, resulting in global R&D projects underway. On the other hand, Samsung SDI was selected as the best company to join by Korean youngsters in 2002, and won the Best Economic Justice Award and the Best Award for a Great Place to Work in Korea in 2003.



**2002** Development of full-color OLED for the first time in the world



**2003** World-first 70" PDP development



**2002** World first 260,000 color UFB-LCD development



**2003** World-first 260,000 color UFS-LCD development



**2003** Development of 37" PDP with world-highest definition

1990

2000

## Samsung SDI, leading a digital and mobile world

### PDP (Plasma Display Panel)

Plasma Display Panel, or PDP, was first developed in the late 1960's. Plasma is super-ionized gas, which can conduct a large and sustained electric current. A PDP is a display that produces visible rays, when ultraviolet rays that are emitted when inactive gases like Ne and Xe filled between two closed glass plates are electrically charged, stimulate the phosphors on a panel. The mechanism is the same as the one for a fluorescent lamp.



**70" PDP**  
is the biggest PDP ever produced that can deliver HD digital images. It led Samsung SDI to be globally recognized for its PDP technologies

### CRT (Cathode Ray Tube)

This is generally known as a Braun Tube. CRTs have been widely used for over 100 years after its first development in 1897 for TVs, computer monitors and other industrial purposes. The electron gun generates a narrow beam of electrons, which stimulate red, green and blue phosphors coated in the back of the screen. The RGB combination displays various colors. Samsung SDI produced first black and white CRTs in 1970. Now



**34" AF**  
is the slimmest CRT in the world and the advanced tension mask technology is applied

A PDP is like a set of extremely small fluorescent lamps. Samsung SDI succeeded in developing a PDP on its own in 1988. Having a full line-up for PDPs of namely 42", 50" and 63", Samsung SDI built the most efficiently working PDP lines in the world by adding creative ideas to superior manufacturing capability including multi-panel technology, which enables to yield more than one panels from one glass substrate. What's more, In 2003 Samsung SDI showed its powerful technological edge to the world by developing the 70" PDP for the first time in the world and the 37" PDP with best clarity in the world.

it produces a 34" AF CRT(Advanced Flat CRT) with superior quality and 385mm in thickness, which is the slimmest in the world, and an MDT(Multi Display Tube), the CRT for a flat monitor with optimum brightness and definition for digital broadcasting.

## LCD (Liquid Crystal Display)

The liquid crystal phase exists between the solid and the liquid phase. A liquid crystal is a fluid like a liquid but has a certain degree of molecular structure like a solid. LCD is made with two glass plates with liquid crystals inserted in between. When electric current is sent to the liquid crystals, the molecules spin and light penetrates into the molecules and becomes visible. Since 1986, Samsung SDI has produced LCDs for mobile

positioning itself as a true leader in the mobile world, Samsung SDI started research and development activities for secondary batteries in 1991.

Currently Samsung SDI produces cylindrical Li-ion batteries with the largest capacity in the world(2,400mAh), prismatic Li-ion battery packs for mobile phones with 4mm thickness, and cylindrical Li-ion batteries. In addition, it also manufactures Li-polymer batteries, which are as thin and light as paper, pliable enough to make any form and safer than other batteries.



**UFS-LCD**  
has excellent color expression in 260,000 colors



**Cylindrical Li-ion battery pack**  
is slim and light but has higher capacity, suitable for small and light mobile phones



**CIG(Chip-In-Glass) VFD**  
has built-in chips, which make it easy to assemble and have excellent brightness, considered suitable for displays for cars

displays such as PDAs. In 2003 it succeeded in developing UFS-LCD(Ultra Fine & high-Speed LCD) for the first time in the world, which consumes less power, responds faster and has better display quality than STN-LCD(Super Twisted Nematic LCD) and UFB-LCD(Ultra Fine & Bright LCD), proving its competence as the steadfast leader in the LCD area.

## Secondary battery

The secondary battery is rechargeable unlike most batteries. Recognizing that displays and energy businesses are the key to

## VFD (Vacuum Fluorescent Display)

VFDs are basically similar to CRTs in working mechanism. It exhibits very clear and eye-friendly colors. It can be customized in various types and is widely used for displays for audio, videos, and DVDs and dashboards for cars.

Samsung SDI first released VFDs in 1989 and currently supplies 35 percent of global demand, becoming the second largest VFD manufacturer.

## Business Philosophy

**“We contribute to the human society by creating the best products and service while leveraging the best talents and technologies”**

Based on the business philosophy of contributing to the human society, Samsung SDI does its best to satisfy customers by leveraging talents with global competitiveness, excellent technologies and products that lead the digital · mobile display businesses.

**We epitomize the Technology Driven Company with the best digital technologies.**

In the digital era, creativity and aggressiveness count the most in terms of competitiveness. Samsung SDI will not stop in its drive to build a new digital world that is beyond your imagination.

**Change starts from people.**

Samsung SDI is active in securing and developing the best talents based on the belief that the talents of people open up a bright future. Samsung SDI, which respects people, was selected as ‘the company that young Korean minds want to join most’ in 2002.

**We care for the customer, and 6 Sigma is always there.**

6 Sigma is our corporate culture to think and work from the customer’s perspective. Samsung SDI creates unchallenged competitiveness by making use of 6 Sigma as a growth engine for global businesses.

## 7 Values

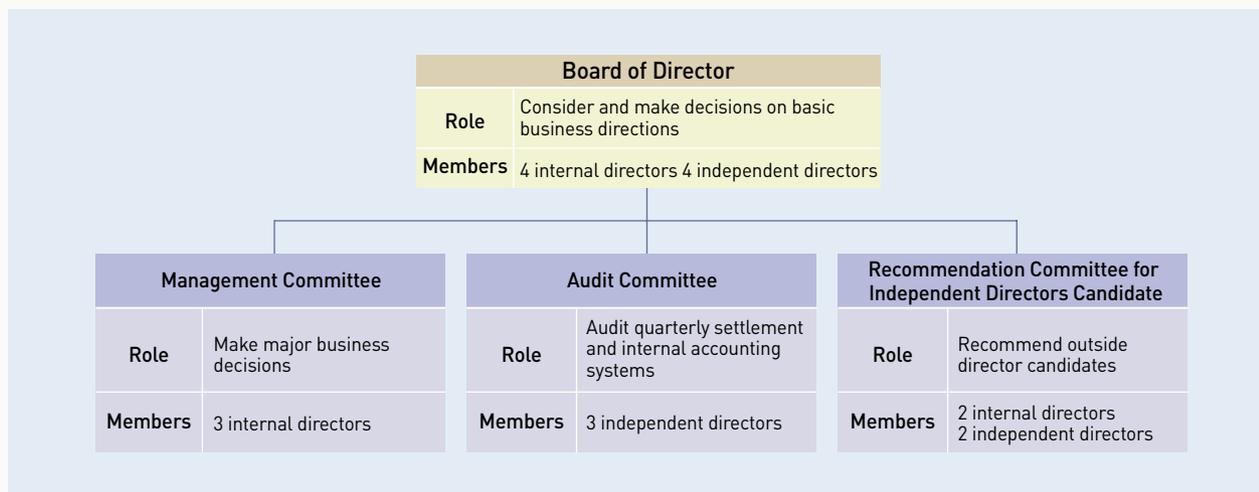
- Vision** | We always strive to realize our vision through specific and strategic focus. We are proud of devoting ourselves to the creation of future values.
- Customer** | A customer is our raison d’etre. We, with integrity and enthusiasm, better satisfy customer needs than our competitors.
- Quality** | We take product quality as our lifeline. We seek for quality improvement in all processes, organizations, financial performance and people.
- Innovation** | The spirit of challenge and creativity are the source of our endless efforts for innovations. We accept new ideas and trials, and encourage constructive discussion.
- Communication** | We treat each other with trust and respect, open our ideas and opinions, and refuse any barriers in the way of exchanging information.
- Competency** | Individuals build up their own competency and an organization leverages its member’s competency to the fullest, creating culture, where one’s capability and competency are respected.
- Integrity** | Our integrity rules the way we behave and judge. Morality and strong work ethics constitute who Samsung SDI people are.

## Governance Structure

Samsung SDI fully satisfies legal requirements concerning corporate governance. For example, the proportion of outside directors and the composition of audit committees, which Commercial Laws and Securities Exchange Acts dictate. Samsung SDI has eight directors including four independent directors. Our CEO chairs the Board of Directors, which considers important issues on basic management directions and makes final decisions through regular and special sessions. In 2002, four regular and eleven special sessions were convened.

Under the BOD are the Management Committee, the Audit Committee, the Recommendation Committee for Independent Directors Candidate.

The Management Committee is composed of CEO, CTO, and CFO, making decisions on major business activities. The Audit Committee has three independent directors who meet quarterly. They conduct audits for quarterly settlements and internal accounting management systems. Lastly the Recommendation Committee for Independent Directors Candidate is attended by two inside directors and two outside directors and recommends outside director candidates.





## Sustainability Vision and Goal

# True Leader for Sustainable World

We established the vision of sustainability, accepting sustainability management, a new business paradigm, as a new business philosophy and putting various sustainability activities into context. Our sustainability vision is;

### True Leader for Sustainable World

The vision embodies a Samsung SDI that we want to shape with sustainability management.

Declaring to be a true leader for a sustainable world means Samsung SDI is committed to sustainable development of the world by taking leadership not only in the financial aspect but also in the environmental and social aspects.

Samsung SDI established goals for triple bottom line of economic, environmental, and social aspects to be a true leader for a sustainable world.

The goal for the economic aspect is Sustainable Growth. We will make sustainable growth and profits through the Technology Driven Company initiative and customer delight.

The goal for the environmental aspect is Eco-Value Creation.

By adding more values in all processes for products and service, we would contribute to improving quality of life for all.

The goal for the social aspect is to build Win-Win Partnership with all stakeholders.

We aim to build a mutually reinforcing, trusted and balanced partnership with different stakeholders.



## Sustainability Management Structure

As Samsung SDI drove forward with sustainability management in 2003, it newly installed the 'Sustainability Committee' under the direction of CEO. The Committee is attended by the head of the Corporate R&D center, the Management Support team leader, and the HR team leader, who checks into progress of sustainability management quarterly. And under the Committee are sub-committees by focus program, for example, the Green Product Development Working Committee and the Ethical Management Working Committee. An executive of a department in charge of a specific focus program serves as a committee of the concerned sub-committee and leads it.

The Sustainability Management Office('SM Office') is established. The Office conducts planning, strategy setting, information dissemination, performances and targets management at corporate level largely on the environment and social areas. It is also responsible for publishing sustainability reports.

The environment part within the Office deals with matters about

environmental sustainability of Samsung SDI. At each plant, work related to sustainability was added to duties of environment departments. The Corporate R&D Center has newly established the Future Environment Technology Center, under which existing departments such as material development, energy development, and advanced technology development are to be placed that are deemed related to development of environment-friendly products. Such rearrangements will be made to create synergy effects.

The social part within the Office deals with matters about social sustainability of Samsung SDI. Since various programs for human resource management and social contribution are already put in place, the Office plays the role of planning and coordinating such activities to help them increase SDI's corporate values.



## New Global Business Philosophy "Sustainability Management"



CEO Kim Soon Taek had an interview with Ahn Byong Hun, Professor at KAIST (Korea Advanced Institute of Science and Technology) on April 29, 2003 to discuss sustainability as a new business philosophy for Samsung SDI.

**Ahn Byong Hun:** What is your understanding of sustainability management?

**Kim Soon Taek:** Sustainability management is a prerequisite to be a world-leading company. I am confident to say that Samsung SDI is as sustainable as any other leading companies in Korea, which has been proved by winning 'Best Award for Transparent Management', 'Best Award for Environmental Management', and 'Best Economic Justice Award'. However guarding against complacency, we decided to implement sustainability management to add more values. When I first came across the concept of sustainability, I thought, 'we need to purify our system.'

**Ahn:** What is your plan for sustainability management?

**Kim:** Given that sustainability management is quite a new business philosophy, I hope we can set a benchmark for sustainability management for Korean companies. Disseminating the triple-bottom line concept throughout the whole company including overseas locations would still be very difficult, but we will start with drawing up a framework or a big picture and then take a step-by-step approach in implementation.

**Ahn:** What is important is that sustainability management should be done in a way to increase corporate values. In other words, it is needed to add long-term values to a company and to increase competitiveness. As a missionary for sustainability management, we expect a lot from you.

**Kim:** Sustainability management is also one way of helping make a business successful. I am sure my efforts to shape out a leading company with sustainability management will be demanding but rewarding.

A man in a white shirt and tie is speaking to a group of people in an office setting. He is gesturing with his hands as he speaks. In the foreground, a woman in a light blue shirt is talking on a mobile phone and smiling. Other people's hands are visible, suggesting an interactive meeting or presentation.

## Sustainable Growth

# Toward sustainable growth...

We exist for customers. We believe in technology. Making sustainable growth and creating sustainable profits starts from our belief in technology and customers. The strategic priority for us is to secure leadership through technological innovation. Technology leadership can be built when we make bold investments in R&D and develop an excellent human resource pool armed with global competitiveness. In addition, Samsung SDI will further strengthen production technology capability, one of the sources of its competitiveness. The second strategy is customer relations management. By realizing customer delight - management, we will identify customer needs in advance and satisfy them, keeping good relations with customers. And also we will concentrate more on attracting new customers by leveraging global networks.

With technology leadership and customer relation management strategies, we will further consolidate leadership in technology, quality and markets. Samsung SDI will be able to grow with revenues quadrupling by 2010 from the current level.

“Value of a company is determined by how good products it sells and how much money it makes. But there is more than that. Is the company capable of making money steadily five years, 10 years, and 100 years from now? Only the company that can say ‘yes’ to this question can be called a company with true values and command higher shareholder values. Sustainability management in Samsung SDI begins with this question.”



# Economic Growth and Value Creation through Technological Breakthroughs

## Sales

In 2002 Samsung SDI posted 4,579 billion won in sales, almost a 13% increase from 2001. Despite unfavorable business conditions caused by global economic slowdown, and fiercer competition within the industry, Samsung SDI broke new records on business performance for three consecutive years by shaping up the company with such activities as innovating business structures and enhancing product competitiveness. PDPs, in particular, secured strong competitiveness in the global market, rechargeable batteries started to make a profit, and LCD's commanded the largest market share backed by UFB-LCD's release. Continued new product development and release including world-first full color OLEDs consolidated Samsung SDI's leadership position in the digital · mobile display industry.

The CRT took up 38% of the total sales, down about 17 percentage points from 55% in 2000, while share of the LCD to the total sales stood at about 36%, up around 17 percentage points from 19% in 2000. That can be attributed to mobile display market expansion backed by explosive growth of the mobile phone market. However real driving force for such a successful increase of LCD sales came from Samsung SDI's technological competency and investment in

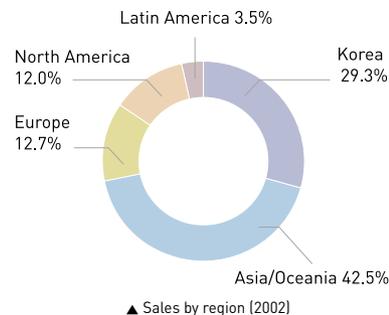
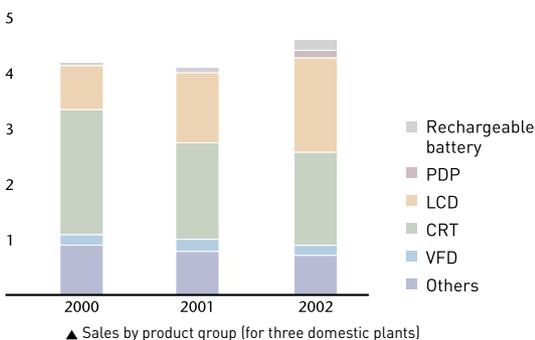
mobile displays represented by development of a 3.5" color STN-LCD in 2000, a color UFB-LCD in 2002, and an UFS-LCD in 2003. All the developments enabled Samsung SDI to proactively respond to increased market demand for color display and motion picture capability. In the meantime, sales of PDPs and rechargeable batteries increased by 60-fold and 5-fold respectively, brightening the future of these two businesses.

Samsung SDI maintains twelve production bases in seven countries including Korea. The consolidated sales of these global locations including three plants in Korea for 2002 amounted to 6,634 billion won.

## Customers

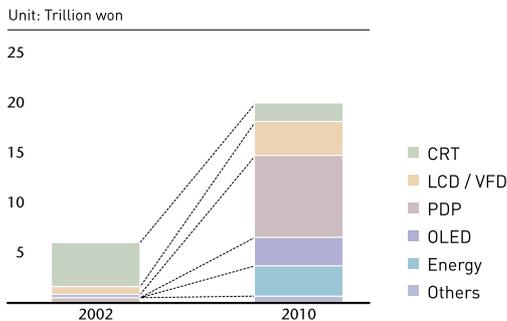
World-renowned electronics makers such as Samsung Electronics, LG Electronics, Sony, Philips, HP, JVC, Toshiba, Nokia, and Motorola are our customers. 71% of products that Samsung SDI makes are exported in terms of sales. Regionally 43% of the sales occur in Asia and Oceania except Korea, and 12%, each in Europe and North America. The reason that products are exported to the Asian region the most is that plants of most of our customers are distributed across the region.

Unit: Trillion won



### Sustainable products portfolio

Samsung SDI is now changing its business portfolio quickly from CRT-focus to a more diversified product group including LCDs, PDPs, OLEDs, and rechargeable batteries. Currently CRT products from twelve locations in seven countries take up about 72% of the total sales. The figure will be down to 9% by 2010 according to our plan. On the contrary, we will raise the share of PDP products up to 40% by 2010 from 2% in 2002 and the proportion of the energy business dealing with rechargeable batteries to 15% by 2010 from 3% in 2002. In addition, the sales of OLEDs, which are welcomed as the next generation displays, would take up to 15% of the total sales by 2010.



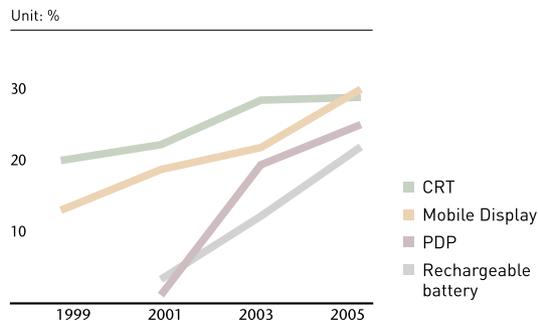
▲ Sales target by product group (for global consolidated)

### Unshakable market dominance

Out of many different Samsung SDI products, LCDs for mobile phones and CDTs, a type of CRTs for monitors, rank top in terms of market share. Both CPTs, a CRT for a TV, and VFDs have the second largest market share in each of their categories. PDPs and rechargeable batteries have their market shares visibly increased in just couple of years of market presence.

We aim to reach 30% in market share for CRTs and LCDs, and 25% each for PDPs and rechargeable batteries by 2005.

We will not stop moving until being rated globally as the unshakable No.1 display & energy company.



▲ Products' global market share trend by product group  
(From 2003 and on, goals are displayed on the graph)

## Technology Driven Company

Consumers want a larger, slimmer, and clearer display with better quality. They also want a smaller battery with higher capacity that can power electronics anytime, anywhere. To cater to such needs, we at Samsung SDI push ahead with the development of new products that will shape the future of Samsung SDI.

Samsung SDI reinforces R&D for innovative displays such as an FED and Digital Paper with a 2,500-strong R&D force, or 34% of 7,300 employees in total as the so-called digital and mobile era nears. The vision for technology development in Samsung SDI is to be a pioneer in display and energy areas. By leveraging high-caliber men and women and core technologies, we strive to realize the Technology Driven Company.

## Growing with customers- 6 Sigma

Innovation activities enable a company to respond to changes in business environments and move ahead of others with stronger competitiveness. Samsung SDI has compiled all in-house innovation activities into 'Samsung SDI 6 Sigma Strategy' and implemented it across the whole company.

In 2002 alone, 4,666 projects were carried out resulting in 360 billion won in financial effect, up 96% in terms of the number of 6 sigma projects and 44% in terms of financial effect, compared to the previous year.



- Look from the customer's perspectives
- Seek for changes continuously
- Aim at the highest quality level
- Do right things from the start
- Respect truth and practicality
- Improve, standardize and systemize

In December 2002, '6 Sigma festival' was held company-wide, which was followed by the '1st 6 Sigma Olympiad' in October 2003 in the Tianjin plant in China, attended by all global plants. It was part of our efforts to deploy 6 Sigma initiatives throughout our global network for management innovation.

Samsung SDI keeps moving to become a true No.1 leading a digital era with 6 Sigma-based management innovation.

### 'Last Saturdays are Champion Days'

Executives often work through nights as a Champion day comes near. With CEO Kim Soon Taek and all other executives from domestic sites in Seoul, Busan, Cheonan and Suweon on hand, an executive on the Champion Day has to report progress of 6 Sigma activities and quality innovation initiatives of the division under his or her charge, and get evaluation from the rest.

They must be thoroughly prepared to save themselves from a volley of questions. It is no wonder they are strained. On the day, all executives from CEO to Vice Presidents are in the same outfit, sit face to face and try to come up with ideas for company development. Sometimes they substitute humble brown bags for lunch and continue discussion well into evening, even into midnight.

Samsung SDI was the first Korean company that introduced '6 Sigma management' in 1996. Last year the company enjoyed benefits valued at about 250 billion won generated as the result of 2,400 6 Sigma projects undertaken.

Source: Kookmin Daily, February 2002.



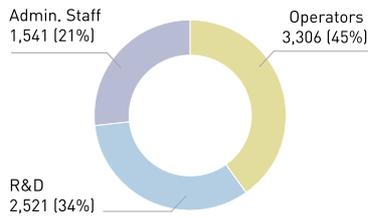
▲ Champion Day

*"Innovation activities of Samsung SDI have been focused on quality and cost. Now it is time to shift the focus to speed. If we are equipped with speed and competitiveness, we would be able to satisfy customer needs without keeping stocks high. This will create another competitive advantage for us."*

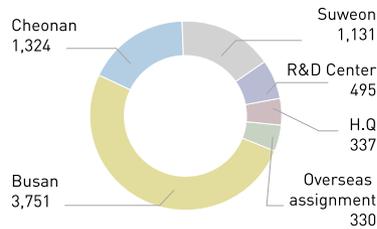
# Economic Responsibility for Stakeholders

## Employees

As of late 2002, the number of employees working in Korean sites of Samsung SDI was 7,368 in total. By job, operators took up 45%, R&D forces, 34%, and administrative staff, 21%.



▲ Employee distribution by job (in 2002)



▲ Employee distribution by site (in 2002)

## Suppliers

In 2002, Samsung SDI spent 2,840 billion won, or 62% of total sales in purchasing parts and services from the outside. The amount was a 70 billion won increase year on year.

## The Government

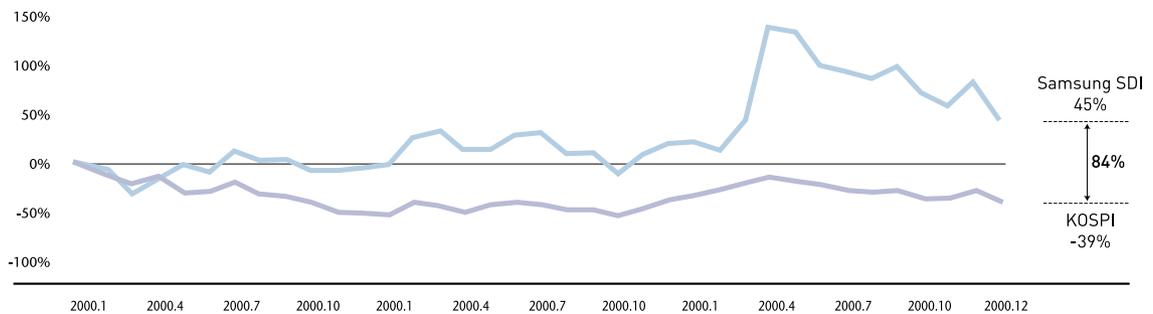
Samsung SDI paid 163 billion won in tax for 2002. Of the payments, corporate tax was 127 billion won and income tax of employees was 36 billion won.

## The public

Samsung SDI donates over 10 billion won every year to communities. In 2002 the total donation was recorded at 15.4 billion won in total, which were used to fund eye sight recovery operations, finance scholarship foundations and cultural foundations and help flood victims. (See page 53)

## Shareholders

Samsung SDI is listed in the Korea Stock Exchange. The KOSPI(Korea Stock Exchange Price Index) lost 39 percentage points at late 2002, compared to the level at the end of 1999, while Samsung SDI's stocks rose 45 percentage points during the same period. That was 84% higher than the market average for the last three years.



▲ Stock price movement (late 1999 as baseline)

# Major Economic Indicators

## Summary Profit and Loss Statements (in million won)

	2000	2001	2002
Sales	4,161,789	4,043,197	<b>4,578,728</b>
Gross profit	1,023,314	945,834	<b>1,017,619</b>
Operating profit	585,356	525,930	<b>506,273</b>
Ordinary profit	703,636	676,930	<b>713,678</b>
Net income	543,903	556,454	<b>586,534</b>

## Summary Balance Sheet (in million won)

	2000	2001	2002
<b>Assets</b>	<b>4,037,088</b>	<b>4,159,058</b>	<b>4,506,009</b>
Current assets	1,374,613	1,096,302	<b>1,604,464</b>
Fixed assets	2,662,475	3,062,756	<b>2,901,545</b>
<b>Liabilities</b>	<b>1,697,287</b>	<b>1,269,527</b>	<b>1,304,599</b>
Current liabilities	1,473,878	767,738	<b>764,483</b>
Non-current liabilities	223,409	501,789	<b>540,116</b>
<b>Equity</b>	<b>2,339,801</b>	<b>2,889,531</b>	<b>3,201,410</b>
Capital Stock	240,198	240,198	<b>240,672</b>
Capital surplus	1,241,277	1,244,409	<b>1,250,997</b>
Retained earnings	1,024,837	1,491,068	<b>1,962,309</b>

## Corporate Stability indicators

	2000	2001	2002
Current Ratio	93.27%	142.80%	<b>209.88%</b>
Debt Ratio	72.54%	43.94%	<b>40.75%</b>
Leverage Ratio	18.07%	12.14%	<b>8.42%</b>

## Profitability Indicators

	2000	2001	2002
Ratio of net income to net sales	13.07%	13.76%	<b>12.81%</b>
ROA	13.79%	13.58%	<b>13.54%</b>
ROE	24.99%	21.28%	<b>19.26%</b>
Earnings per share (in won)	11,617	11,889	<b>12,551</b>

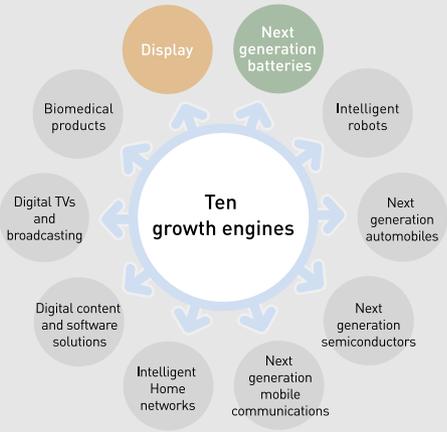
## Growth and Activity Indicators

	2000	2001	2002
Sales growth rate	14.25%	-2.85%	<b>13.25%</b>
Net income growth rate	188.34%	2.31%	<b>5.41%</b>
Net asset growth rate	4.77%	3.02%	<b>8.34%</b>

### 10 growth engines

On August 22, 2003, the Korean government announced '10 hi-tech products or technologies to serve as future growth engines' for the Korean economy. The government selected the ten growth engines, thinking that they would help concentrate the nation's capabilities and add its growth potential, eventually leading the country to achieve \$ 20,000 in per capita income.

Samsung SDI produces largely two product groups. One is displays including CRTs, PDPs and LCDs. The other is next generation batteries like rechargeable batteries. The ten growth engines involve displays and next generation batteries(rechargeable batteries) that Samsung SDI produces.



### Five new technologies that would bring changes to life

Products that Samsung SDI produces involve these 'Five new technologies' that NIKKEI Trendy introduced.



Source: NIKKEI Trendy, November 2000 edition

A photograph of two young children riding bicycles through a vast field of green grass and yellow dandelions. The child on the left is wearing a red hoodie and blue pants, while the child on the right is wearing a yellow hoodie and red pants. Both are on small, white bicycles with orange accents. The field extends to the horizon, creating a sense of depth and natural beauty.

Eco-Value  
Creation

# To create environmental values...

Samsung SDI has five strategies for the environment to reduce the impact throughout the life cycle of all products and services and to maximize the values.

An integrated system will be built to take into account environmental values of the whole value chain including all functions and work processes. Environmental consideration will be newly reflected into existing business systems as well as the whole value chain. We are also committed to fulfillment of environmental leadership over the whole value chain. We will help suppliers increase their environmental performance and produce environment-friendliest products in the environment-friendliest way. Customers and end users are to be provided with products and services with higher environmental values. We will fulfill our role until they are disposed after use. Lastly, we will work to increase environmental values continuously by sharing environmental information and knowledge with the public and cooperating with the community where we operate. These are the five environmental strategies for environmental sustainability.

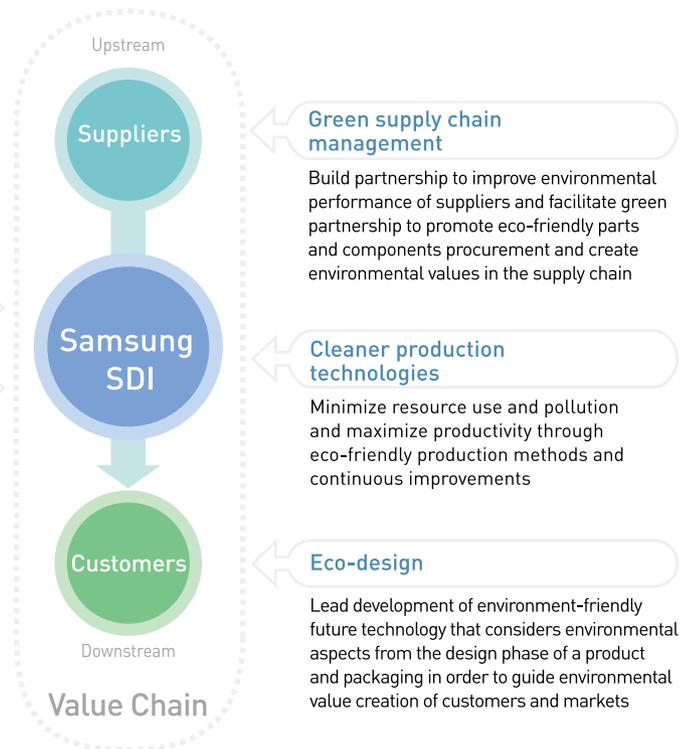
“A business that creates environmental values...it is a tall order, indeed, because we just took a first step on the road toward environmental sustainability. We may not get there overnight and will have a lot of trials and errors during the journey. But what is important is that we will walk the talk and are ready to take the bumpy road. We have a consensus on where to go and the next step is to go the direction.”

## Integrated environmental management system

Build an integrated environmental management system and work processes for continuous improvement of environmental values in the whole organization and pursue environmental leadership to respond to global environment issues

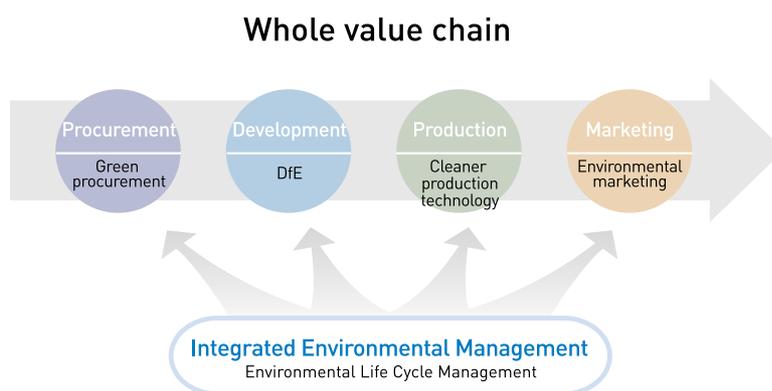
## Interactive communication

Build green networks based on trust and leadership through opening environmental information to stakeholders and various forms of cooperation



# Integrated Environmental Management Considering the Whole Value Chain

Samsung SDI is set to conduct proactive and strategic environmental management with environmental vision and goal. Life Cycle Management we pursue represents our commitment that we would fulfill our responsibilities by reducing environmental impacts of products throughout their life cycle spanning from raw material sourcing to production and product use, to final disposal. LCM is about combining business processes and environmental consideration, and integrating the whole value chain covering customers and suppliers, Samsung SDI products, and production processes in an organic way.



## Environmental Management Systems

In 1994, we introduced BS7750, the predecessor of present ISO14001, a move never found in the Korean display industry before. That catalyzed nationwide spread of a brand new concept of environmental management. All domestic sites including plants in Suweon, Cheonan and Busan are ISO 14001 certified now, and are officially selected as an Environmentally Friendly Company by the Ministry of Environment. All plants and offices of Samsung SDI continue their efforts to reduce environmental footprints of overall operations according to procedures set by ISO. Continuous improvement has been made for the Environmental Management System within the framework of PDCA(Plan-Do-Check-Act) and with DMAIC(Define-Measure-Analyze-Improve-Control) of 6 Sigma as a tool. Later the EMS will be fully combined with the Quality Management System and the Health and Safety System, resulting in complete integration of business management and environmental

management.

## Environmental Audit

Each plant is subject to regular environmental audits from an independent auditing agency twice a year and also internal environmental audits more than twice a year. 33 internal auditors in Samsung SDI make cross auditing for plants in Suweon, Cheonan and Busan. Cross auditing prevents the environmental audit from being perfunctory and offers an opportunity for plants to learn environment improvement ideas from each other. Items found to be inappropriate and in need of watch are taken care of by departments in charge and necessary actions are taken for improvement. Our plan is to expand the environmental audit coverage company-wide to include administrative staff and develop an electronic system to share findings of environmental audits.

## Integrated Environment and Safety Support Systems

To conduct environment and safety activities across the company and make them more efficient, Samsung SDI continuously updates and develops IT systems. And it also sets a plan to put together separate and different support systems for company-wide and consistent use.

### Environment and Safety IT systems

- Construction Safety Management System - Provides progress of ongoing constructions
- E-energy Management System - Shows status of energy use
- Open Procurement System - Shares purchase information and environmental information of suppliers
- EHS System - Shares information on environment, health and safety



## Risk plan

Samsung SDI puts in place two systems to hedge various risks existing in workplaces. One is the Pre-Environmental Impact Assessment System for minimizing potential environmental impacts and getting rid of risks. The other is the Risk Management System for quick and correct response to unexpected accidents and for minimization of pollutions.

## Pre-Environmental Impact Assessment System

The Pre-Environmental Impact Assessment System is intended to promote legal compliance and put down possibilities of accident occurring. It is about shifting focus from end-of-pipe actions to preventive actions. The System is applied to activities in workplaces that impact environment, for example, building and expanding plants and facilities, and introducing and changing substances.

## Risk Management System

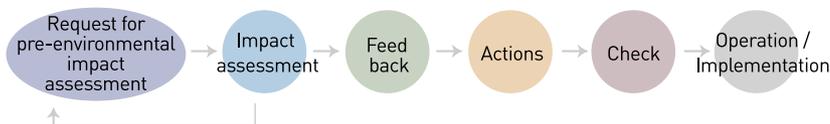
Although preventive measures are taken, accidents can still occur unexpectedly. If accidents actually occur, rapid and correct response is needed. Recognizing that, Samsung SDI puts in place a contingency control team and each plant is equipped with needed infrastructure such as a fire control team, a rescue team and a medical clinic. In addition, accident scenarios are prepared by possible accident type and drills for emergency are conducted regularly.

### Scenario by risk type

- Waste water release
- Air/water quality control facility breakdown
- Emission of in-house pollutant concentrations beyond control limits
- Chemicals leakage
- Waste release
- Fire
- Storms and floods
- Power failure
- Hygiene failure including food poisoning



▲ Fire Center



▲ Structure of Pre-Environmental Impact Assessment System

# Products and Technologies with Higher Environmental Values

Environmental value creation begins with development of environment-friendly products, because products are an interface for suppliers, Samsung SDI, customers, and consumers. In 1997, Samsung SDI conducted Life Cycle Assessment(LCA) for CRTs and in 2002, it built Life Cycle Inventory(LCI) for 42" PDPs supporting its customer Samsung Electronics to get Type III certification. The directions we head for is 'design for the environment, or DfE'. We plan to build a system enabling us to consider products' environmental performance from the product development stage. All efforts will be targeted at developing products that do not contain

hazardous materials, are easy to recycle, require less energy, last longer, and use less resources.



▲ Samsung SDI Corporate R&D Center

## World-top quality PDPs

Technological competency held by Samsung SDI is represented by development of the world largest PDPs(63" and 70"). In terms of quality, we achieved world best level of 1000 candela in brightness and 3000 to 1 in contrast. Not being content with that, we go after another goal; making 'larger, brighter and eco-friendlier' products. 42" displays we developed in 2003 consume 10% less power, are 5% slimmer and 10% lighter than previous products. We are confident that our PDP products would maintain competitive advantage over rival product lines for CRTs and LCDs in energy efficiency, product life span, and resource requirements with superior quality.



▲ PDP

## UFS-LCD

UFS-LCD(Ultra Fine & High Speed LCD) that Samsung SDI developed in 2003 is expected to bring about a big change in the display industry. Color, resolution and brightness are improved in a revolutionary way, while power consumption and resource requirements are down. It was possible because the company discontinued the use of color filters that had been deemed essential for LCDs and realized natural color expression enabled by development of a high-efficiency RGB LED chip that optimizes operation of an UFS-LCD. Not only that, the company was able to reduce the number of parts and dramatically improve the performance by developing a high-performing controller. Consumers want a larger and clearer display. We fully appreciate that only technological innovation allows us to meet customer demand and enhance our environmental performance.



▲ UFS-LCD module

## 2-Way Backlight System

A dual folder mobile phone where a Samsung SDI's LCD module is used has only one backlight. Previously two backlights for both inner and outer displays were needed. However Samsung SDI's two-way backlight and advanced optical technology that can control transmittance made it possible that only one backlight can illuminate two displays at the same time. With the technology, mobile phone display became 30% slimmer and 80% more efficient in electricity use than before.



## LCD module without soldering

Lead is used for soldering usually. However lead causes pollution and is harmful to a human body. That's why customers increasingly demand lead-free soldering and even products with no soldering at all. Listening to customers' requirements, Samsung SDI produces and delivers an LCD module where spring pin connectors are applied instead of soldering. In an effort to remove lead from LCDs completely, development of products with lead-free soldering is underway.

## Lead-free VFD

Samsung SDI, the second largest VFD producer, developed products(ex.panels) with lead-free soldering in 2001 and started delivering them in 2002.



▲ Lead-free VFD Panel

## 29" MST CRT

Samsung SDI's 29" MST(mini skirt & tint) CRT is a revolutionary product, compared to previous ones in terms of quality and environmental performance. The new CRT weighs 10% less by optimizing its volume, and the coating process, where a lot of toxic chemicals have been used, is bypassed by changing materials.

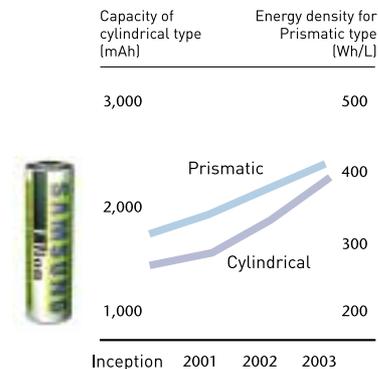


▲ 29" MST CRT

MST CRT performs better environmentally than existing CRTs, and has shorter lead time. It also has better quality on the whole including brightness and focus. MST CRTs are expected to be the name of an environment-friendly and high quality CRT.

## Li-ion battery

A Li-ion battery is considered the environmentally friendliest commercial battery. It doesn't contain hazardous materials such as mercury or lead and does have high energy density, allowing large charge and discharge capacity. Since 1991, when it started the battery business, Samsung SDI has conducted continuous R&D activities and investment, which paid off with the Li-ion battery with world-best quality. What's more, product quality improvement is being made by annual rate of 10%.



## AMOLED

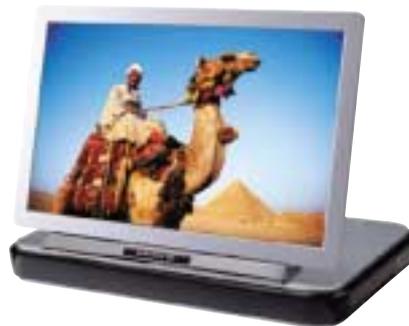
Since 2000, Samsung SDI has committed 120 billion won and 240 researchers to developing AMOLED. Unlike LCD, it is operable with lower voltage. It has far better viewing angle performance and response time than LCDs. Its self-light emitting property makes redundant color filters and backlights, which were essential for LCDs. Module simplicity made possible by COG(Chip on Glass) minimizes resource use. In the future, resource use minimization will be realized because SOP(System on Panel) technology is applied so that mounting a module becomes redundant and a display can be operable with only the power switch turned on.

## Li-S battery

Li-S(Lithium-Sulfur)battery is a product that Samsung SDI has put forth all its energy and is able to generate twice as much energy density per unit weight as existing Li-ion batteries. Li-S batteries are light, use inorganic sulfur and lithium, which are environment-friendly, and operate at as low as 2.1V. It is expected that this new battery can be used for existing laptops and next generation mobile equipment that consume much power, and can applied for HEV(Hybrid Electric Vehicle).



▲ Transparent 2.2" QCIF AMOLED



▲ 15.5" WXGA - AMOLED



▲ Li-S battery

*"Samsung SDI will be a pioneer in future displays and energy businesses. Being a Technology Driven Company... It is where Samsung SDI's business heads. We know that when we say a technology, it means a 'Green Technology' . It is not an exaggeration to say that most of mid and long term projects of our R&D center are related to environment. We will do our best to develop revolutionary and eco-friendly products and contribute to the human society"*

## Fuel Cell, Solar Cell

Samsung SDI gives spurs to fuel cell development, aiming at commercialization by 2007. A solar cell is planned to be released in 2010. Fossil fuels generate not only energy but pollutants too. Moreover natural resources and energy sources become exhausted. Under this circumstance, Samsung SDI exerts efforts to develop eco-friendly energy sources with long-term vision although they are not profitable today.



▲ Solar cell-powered house model

## Development of eco-friendly materials

Development of new materials is one of the focus areas of Samsung SDI. New materials are mostly associated with environment protection. We succeeded in replacing rare earth elements used in phosphor for PDPs and developing lead-free and Cd-free phosphors. Ongoing projects for development of pigment-responding solar cells and nano-phosphor are all conducted in the context of environmental stewardship.

## Getting rid of hazardous materials within products

Samsung SDI already adopted Cd-free phosphors for CRTs back in 1990 and has worked hard to prevent hazardous materials from being contained in other products as well. By 2005, six hazardous materials in RoHS will completely disappear from all Samsung SDI products. In addition, the company will voluntarily create a harmful material list for continuous control.

## KOLAS-certified analysis lab

The analysis lab in the Corporate R&D center in Giheung, Gyeonggido, the mid-west part of Korea, has been highly recognized for having the best analysis technology in the country. Approximately 30 experts conduct organic and inorganic analysis work. The lab obtained KOLAS(Korea Laboratory Accreditation Scheme) certification granted by the Korean Agency for Technology and Standards under the Ministry of Commerce, Industry and Energy for its assessment and sample testing capabilities.

The lab monitors not only currently available products and parts but also products under development to see if they contain any hazardous materials, and opens the findings. For more accurate and precise analysis and assessments, it ties closely with other research institutions at home and abroad.



# Productivity Maximization with Least Environmental Burden

## Closed Loop System

A closed loop system. A system to produce goods with no pollutant outputs and least resource input. This is the production method that Samsung SDI aims.

We are committed to;

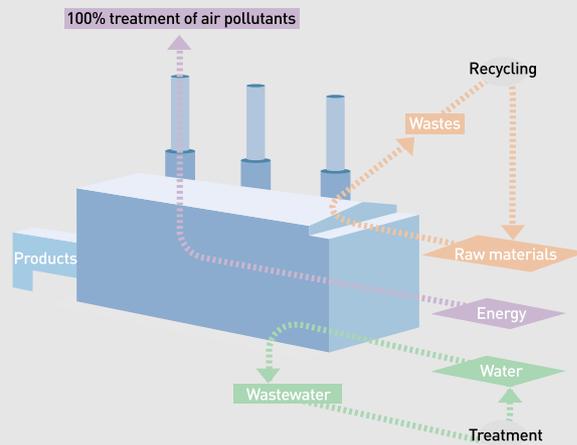
minimizing waste generation during production, and recycling the waste as much as possible;

using clean energy that generates no emission and recyclable energy, and making efforts to treat any pollutants generated perfectly;

not using water more than we need and building a recycle system for 100% treatment of industrial water needed for production;

staying alerted to minimization of our plants' impacts on nearby environments and the earth, and improving their environmental performances.

To this end, we will closely monitor all material inputs and outputs of our plants.

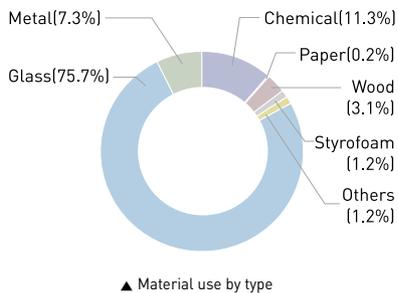


*"Samsung SDI keeps pollutant emission from production processes to a minimum through development and application of a cleaner production technology. Also with various environmental improvement programs in place, the company optimized resource use, and saved energy and water. Our efforts will continue through eco-efficiency improvement to conserve natural resources and protect environment from being polluted."*

### Resource efficiency

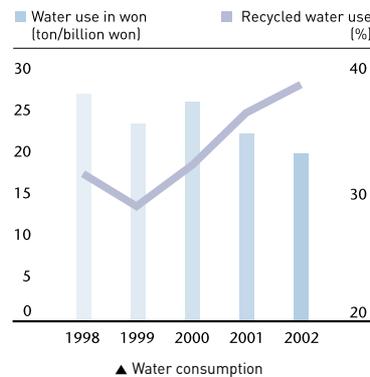
Samsung SDI uses glass, steel, synthetic resin and other chemical substances as raw materials in manufacturing, and woods and paper for packaging. In 2002, 264,723 tons of materials in total were used. The most frequently used were glass, which accounted for 75.7% of all materials. Recycled glass took up about 40% of the glass input. Samsung SDI strives to recycle byproducts and maximizes production efficiency to inputs. Along with this, design for environment is adopted to reduce input. Not to confine environmental performance assessment and environmental activities only to manufacturing sites, we analyze and quantify environmental impacts of product life cycle from raw material sourcing, transportation, production, use, and disposal.

Our efforts to increase eco-efficiency and minimize by-product generation will not stop until efficient use of resources is fully reached.



### Water saving

Plants in Suweon, Cheonan and Busan are supplied with industrial water generated by Paldang dam, Daechung dam, and Daeam dam respectively. Water use amounted to around 9.5 million tons in 2002. Externally supplied water goes through purification in Samsung SDI sites, and then is used for cleaning, coating, and chemical treatment processes. By nature, Samsung SDI uses a lot of water because more than 30% of productions processes are about cleaning. Given that, Samsung SDI takes serious efforts to reduce water use and to increase water recyclability. Today recycled water use takes up 40% of the total waste use.



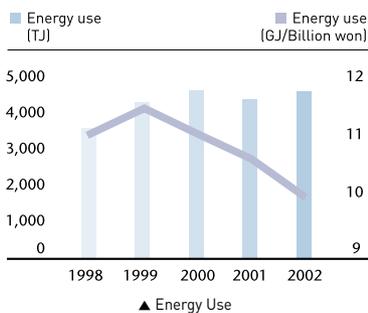
### PDP multi-panel technology

With the multi-panel technology, you can fabricate a number of PDP panels from one glass substrate. After strenuous efforts to develop advanced production technologies for a long time, the company finally came at the multi-panel technology, with which more than three PDP panels are produced from one glass sheet and the technology has been applied since 2003.

Fabricating only one panel at a time generated a lot of wastes. While Samsung SDI's new technology brings about not only economic benefits through revolutionary improvement in productivity, but enormous environmental performance improvement as a result of minimizing raw materials, energy, and wastes.

## Energy efficiency

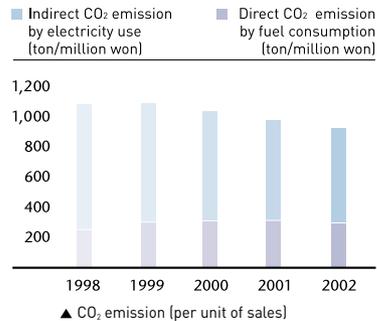
Samsung SDI, through proactive energy saving activities and auditing for energy control by expert organizations, tries to save energy, avoid pollutions and promote all employees to conserve energy. It has positively responded to the five-year plan for energy saving led by the government, which has been rewarding. The company for ten consecutive years from the first year of the campaign has been designated as an excellent workshop for energy saving. It also forged a voluntary agreement with the government and set mid and long term energy saving targets for itself. Along with them, various energy saving projects have been explored and being deployed to effectively deal with the climate change convention. Energy use in Samsung SDI in 2002 slightly increased to 4,580TJ, compared to 2001, but energy use against revenues moved downward for three consecutive years. In order to minimize environment degradation caused by energy use, Samsung SDI now replaces B-C fuel oil with much cleaner LNG for boilers. 99% of total energy in use comes from electricity and LNG, which are cleaner fuels.



Samsung SDI is also seriously interested in renewable energy such as solar energy and waste heat from incineration. For example, the Pusan plant used solar energy and waste heat from incineration to supply three percent of total energy needed and would increase the proportion even further.

## Activities to reduce CO<sub>2</sub> emissions

With respect to the international climate change agreement for curbing global warming, which is an international environmental issue, companies are more and more responsible for reducing greenhouse gas emissions including CO<sub>2</sub>. Samsung SDI emitted 433,490 tons(including indirect CO<sub>2</sub> emissions from electricity use) of CO<sub>2</sub> in 2002, which was up from 402,210 tons in 2001. But taking production increase into account, emissions to revenues are decreasing year on year. Samsung SDI is committed to joining global efforts for global warming prevention by cutting down greenhouse gas emission through shifting to cleaner energy sources and process improvements.



## Climate change convention and Kyoto protocol

Climate change convention was adopted in the Earth Summit in Rio de Janeiro, Brazil in 1992 to prevent climate change caused by global warming. It was signed by 154 nations including Korea and became effective on March 21, 1994. Kyoto Protocol rules ways to respond to the UN framework for climate change convention and was adopted at the third session of the Conference of Parties to the UNFCCC. The Protocol would commit 38 developed nations including the EU, the U.S and Japan to a target of reducing greenhouse gases by 5.2% below 1990 levels during a commitment period between 2008 and 2012. (The US withdrew from the protocol in March 2001 for protection of its industry). Korea was classified as a developing nation so that the country was expected to be tied with the reduction obligation during 2013-2017 timeframe. Therefore, the government and companies now try to reduce greenhouse gas emissions through a voluntary energy use limitation pact. Three factories in Samsung SDI signed the pact, joining national efforts to cut greenhouse gas emissions.

### Water pollution prevention

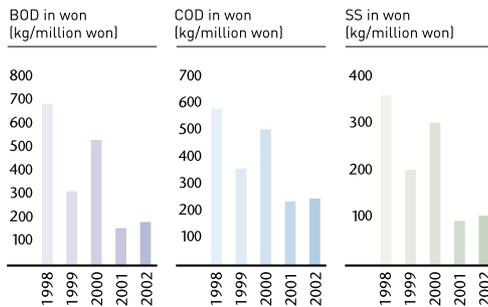
The cleaning process is a major source of wastewater in Samsung SDI. To treat wastewater, the company operates sewage and wastewater treatment plants. And to reduce environmental burden in a fundamental way, it develops eco-friendly products, designs processes eco-friendly, lowers concentration of chemicals in use, promotes recycling of used substances, and recycles and reuses water used in processes.

Discharges from Samsung SDI's sites are controlled 20% stricter in quality than the legal standard and then flow down to nearby rivers or end points for disposal. The discharged water has so little pollutants that it is used to prevent nearby waters from being dried up and even for agricultural purposes.

#### Pollution reduction with waste separation treatment

The Pusan plant treats wastewater in a system that sorts it by type, then recovers and treats the wastewater. The biological wastewater treatment system which consists of 'SBR + Biofilter + Fenton Oxidation' processes, properly treats water polluting materials discharged from production processes, and improves organic discharge concentrations, therefore, saving costs.

※ 2000 saw an increase of water pollutants emission because the Cheonan plant started to operate new lines in addition to existing color filter lines. But in 2001, the color filter lines were transferred to Samsung Electronics, thus the data being not covered in this report.



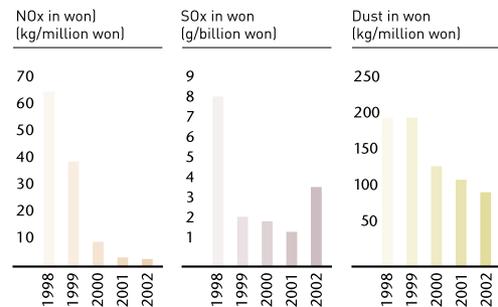
▲ Emitted water pollutants (per unit of sales)

### Air pollution prevention

Air pollutants that Samsung SDI generates are largely from the acid and alkali cleaning process and phosphors mixing process for glass surface treatment, and from spraying and painting facilities that are to formulate layers on glass surfaces. In order to cut back air polluting materials, Samsung SDI conducts thorough examinations on the whole emission and prevention facilities regularly, checking for any abnormalities. By conducting pre-environment impact assessment, the company confirms any changes within processes in advance, then changes configuration of prevention facilities accordingly and expands such facilities or establishes new ones, controlling the emission concentration below 30 percent of legal requirements. Recently the company works hard on cut-back of odor and VOCs(Volatile Organic Compounds) emission. Already prevention features have been placed on VOCs-emitting and transferring facilities in and out of lines. Various analysis has been conducted to keep VOCs prevention facilities reliable and efficient.



▲ VOCs prevention facilities in the Cheonan plant



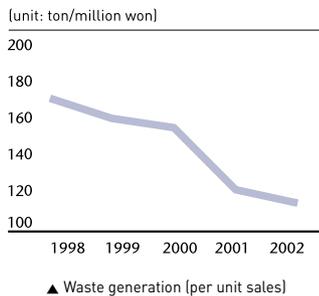
▲ Emitted air pollutants (per unit of sales)

## Waste minimization

Wastes created by Samsung SDI are reused, recycled, incinerated and landfilled. With a recycling-based society in mind, our first priority is on reuse and recycling. We also try to minimize landfill and incineration. As a result, 71% of all wastes in 2002 were either recycled or reused.

In 2002, 52,506 tons of wastes were generated, which was an increase from a year earlier in an absolute term due to total production output increase, but emission to revenues showed clear downward trend.

Samsung SDI, in order to control secondary pollution generated from waste treatment processes, proactively drives forward with waste reduction activities. With the 4R initiative (Reduce, Reuse, Recycle, Replace), each department sets up and implements green management program plans every year, contributing to cost saving and environment-friendly management through waste recycling.

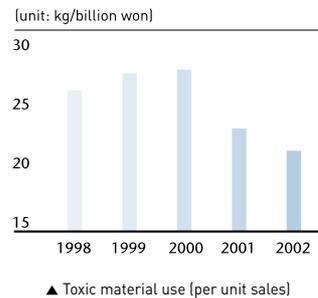


### Using wastewater sludge as resource

The Cheonan plant uses wastewater sludge as one of raw material for cement, which previously went straight to landfills. It significantly reduced waste disposal costs, which brought 100 million won in economic benefit, and delivered meaningful environmental performance by recycling 2,000 tons of sludge, which had been discarded as wastes.

## Hazardous chemicals control

Out of many chemicals used in Samsung SDI, 25 substances are classified as toxic materials. We undertake technology development research to substitute such toxics used in processes with safe substances or cut down their use. In practice, we conduct a TRI (Toxic Release Inventory) program, investigate amount of toxics in distribution, and set and implement plans to cut emissions. Storage and use of toxics are thoroughly controlled, and continuous safety training and drills are carried out to be better prepared for any emergency. In such way, we assure that environmental accidents caused by toxics are fully prevented.



# Green Products Start from a Green Supply Chain

## Supplier selection and assessment system

Samsung SDI carries out environmental performance assessment of suppliers to motivate their environmental management and implement LCA by helping them improve environmental performance of their products. The environmental performance assessment covers legal compliance, management and measurement of preventive facilities, accidents records, safety and health education, workplace management, and fire prevention. In an effort to improve environmental performance of suppliers, which are largely small and medium sized companies, Samsung SDI provides environment and safety audits and trainings. The offerings will be expanded to include support for ISO14001 certification, LCA adoption, and various training and information sharing to help them move forward with environmental management.

## Green procurement

Samsung SDI is poised to introduce a green procurement system to look at environmental performance of raw materials, which are the basis for eco-friendly product development. Today companies can't afford to ignore importance of environmental performance review for

raw materials when making purchase as issues including increased pressure on hazardous material use in products, call for recycling, and preferential tariffs on eco-friendly products emerge internationally. Samsung SDI will reset internal processes, analyze products and materials, motivate suppliers to do environmental management, create a green procurement strategy, and set up a target for hazardous material reduction to develop differentiated green products that can fit into the changing circumstances. The Green Procurement System is directly linked to Life Cycle Assessment, Eco-design and DfE, contributing to development of green products.

## Hazardous chemical list for control

Samsung SDI designates hazardous chemicals for control, sets targets for control according to importance of each material, and acts accordingly. The purpose of doing so is to proactively respond to domestic and international environment regulations which get stricter and to develop innovative products. To be prepared, in particular, for EU-laid stricter regulations such as RoHS and WEEE, we preemptively banned the use of six materials of Lead, Cadmium, Mercury, Chromium VI, PBB, and PBDE, and rated other chemicals by severity of environmental impact, cutting back the usage.

*"We believe that what is most needed to produce green products is to build a green supply chain."*

### Environmental regulations and trade barriers

'Less than SO<sub>x</sub> 100ppm', 'Less than BOD 10ppm'. These are often heard. Any pollutant generators in Korea should abide by these environmental regulations. So far if companies comply with domestic regulations only, their activities have not been bothered. These days, however, we watch new environmental regulations emerge in developed nations. Such regulations are mainly about products. The EU passed the Restriction of the use of ceration Hazardous Substances in electric and electronic equipment(RoHS) that bans the use of six hazardous materials including lead, mercury, and Cd for products that are traded in the EU market effective from July 2006. Also Waste Electrical and Electronic Equipment Directive(WEEE) was passed to make producers reliable for collection and recycling of all electronic products that are disposed within the EU market effective from January 2007. Not only in the EU, but also in Japan and the U.S, similar forms of regulations are being laid down. Such regulations would place heavy burdens on the shoulders of Korean companies. According to the Korean Chamber of Commerce and Industry, products worth 12.4 billion dollars, or 70% of all exports valued at 19.6 billion dollars to the EU in 2001 would be affected by environmental regulations. When restrictions of the use of hazardous materials take effect, for instance, a VCR maker would have to spend 1 trillion won in developing a substitute material and replacing related facilities. We don't have enough time. To remain competitive, Korean companies should pay proactive interest in international trend of environment regulations. In practice, they should remove hazardous materials from all products, and consider recyclability from the design stage. Samsung SDI is committed to satisfying international environmental regulations as well as domestic one.

# Green Communication

## Eco-System protection program engaging stakeholders

Samsung SDI conducts various environment protection programs including the 'One mountain, One river and One company campaign' and the 'saving fireflies campaign'. The programs will be further specified and diversified in the future.

## Monitoring the surrounding environment

In an effort to understand their impact on surrounding areas, plants and offices of Samsung SDI have carried out regular environmental impact assessments on air, water, land and noise in nearby areas. As the company replaces fuels with LNG, a cleaner fuel, potential land contamination has been cut off that might be caused by air pollutants and oil leakage otherwise. In cases of the Suweon and Busan plants that release wastewater into streams after treatment, thorough monitoring is being done and regulations are strictly observed. This enables the company to keep its environmental impact to a minimum and to maintain good water quality so that the released water can be used to prevent near rivers from being dried up and for agricultural purposes.

## Compliance

Samsung SDI's environmental control activities are conducted according to internal environment criteria, which are five times stricter than national regulations. Contingency plans and prevention systems are prepared for all imaginable emergencies, and facilities are attended by personnel all year around to check operations. Regular trainings are offered in bracing for contingencies. As a result, not even one environmental accident and complaint has occurred and been heard for last three years.

*"Samsung SDI tries to become an environment-friendlier and more reliable company by taking environmental information to the public in a transparent and proactive way, and implementing eco-system protection programs engaging stakeholders."*

### Wonchun Stream preservation activities

The Suweon plant took part in the creation of 'Citizens' Networks to Save the Wonchun Stream' with Suweon Environment Movement Center, the City of Suweon, Action Committee for Green Kyungki 21, Samsung Electronics and other Samsung companies. Samsung SDI supports various events for saving the Wonchun Stream, and conducts basic research to define the level of pollution of the Stream with a local university and to know hydrosphere of the Stream. It also offers environmental technology supports for near mid and small sized companies. All these activities are part of environmental management for co-existence and co-prosperity, intended to pass down clean environment to next generations.

### One mountain, One river and One company campaign

To preserve eco-systems in areas where Samsung SDI sites are housed, the company leads local water saving campaigns including cleaning, analyzing quality, and stocking with carps. And for local mountains, employees are engaged in feeding wild animals during cold seasons and placing bird nests. For nearby farming areas, the company provides clean discharged water for agricultural purposes during dry seasons. All these are intended to preserve local eco-systems.

### Voluntarily joining government-led environmental programs

Samsung SDI takes part in various programs that the government leads in an effort to promote companies to voluntarily improve their environmental performance and thus level up national environmental performance.

Three domestic sites obtained environmentally friendly company certification, which was granted by the Ministry of Environment, being recognized as an environment-friendly company. They also join the environmental management pilot project, an MOE led-government project, adopting a new environmental management technique.

They also signed a voluntary pact for energy saving and greenhouse gas reduction that the Ministry of Commerce, Industry and Energy leads, and have conducted such activities actively on a voluntary basis.

Samsung SDI was recognized for such efforts and honored with the Best Environmental Management Award granted by the Ministry of Environment in 2002



▲ Receive the Best Environmental Management Award in June 2002

### Forging sisterhood with schools

The Cheonan plant forged a sisterhood relation with a local elementary school and has offered students chances to feel the importance of environment. The Suweon and Busan plants as well open their environmental facilities to children as places for them to raise environmental awareness and get education.



A photograph showing three people in a meeting. A woman in a pink sleeveless top is leaning over a white table, looking at several smartphones. A woman in a brown jacket is sitting on the left, looking at a smartphone. A man in a grey polo shirt is sitting on the right, also looking at a smartphone. The background is a wood-paneled wall.

**Win-Win  
Partnership**

# For Win-Win partnership with all stakeholders...

Samsung SDI mapped out a six-point strategy to fulfill its corporate social responsibility by strengthening partnership with stakeholders. First, our employees will be provided with programs that help improve work environment up to global standards and diversity within the company, and that help raise their own values. Second, we will work out a strategy that would bring best quality products and services for customer satisfaction, and promote sustainability management and deliver more benefits for customers. Third, we will reinforce supplier management systems for suppliers to build up capabilities through long term partnership and conduct sustainability management. Fourth, we will firmly establish a transparent and ethical management system to be loved and trusted by the public. Fifth, we will duly raise our profile by enhancing leadership and social contribution activities in the communities where we operate. To put this strategy into practice, we focus on active communication and cooperation with all stakeholders.

“A company holds its value when it fulfills corporate citizenship as a member of the society it belongs to. We do keep in mind that corporate citizenship was behind Samsung SDI’s growth and will still be the best strategy for growth in the future.”



# The Most Invaluable Asset, Employees

## New labor and management culture

### Trust and cooperation

Amicable labor and management culture! With the Labor and Management Council, Samsung SDI has been able to build a trusted and cooperative labor and management relation, run an excellent welfare package for employees, and maximize productivity. Such that, true win-win culture took root in the company. Trust and cooperation are maintained through open dialogs and transparent management. Samsung SDI holds monthly management briefing sessions to open current situations to all employees. Besides, bimonthly labor and management talks, talks with CEO by job position three times a month, Ombudsman session run jointly by labor and management, labor and management seminars, and labor and management council members' workshops, are up and running to promote continuous dialogs and cooperation for mutual prosperity. In 2000 Samsung SDI won a presidential award, which is the best award for new labor and management culture granted by the Ministry of Labor. In 2001 when economy slowed down, the Labor and Management Council voluntarily let the company unilaterally decide wages and other benefits for the year. At the end of the year, as a result of collective efforts of all employees, the company was able to share business results through Profit Sharing(PS). This harmonious labor and management relation has been behind the tradition of 'a strike-free workplace.'

## Participation and communication

We respect every single opinion of all employees. Samsung SDI's suggestion program has been highly participated by employees.

	2000	2001	2002
Number of suggestions	439,718	417,991	323,146
Per capita suggestion	55	53	43

Samsung SDI has various ombudsman programs for employees. Each site runs an ombudsman office, which is open to any employees for consultation. For more convenient and easier access, it additionally runs hot lines and ombudsman boxes. The results of ombudsman activities are recorded and managed, and employee complaints and problems are classified and studied to prevent same problems from recurring.

Samsung SDI has run a hotline linking between CEO and employees since 1996. Named 'Dear CEO', the hotline system lets CEO listen issues raised by employees first hand and take care of them. Since January 2002, CEO has sent 'CEO's message' out through intranet on current issues to all employees every month.

### Labor and management share one body

"Unless labor and management escape from conflicting relations, share common problems, then resolve them and maximize productivity, no company can survive. A company's development and prosperity is a prerequisite for my development and further for happiness of my family."

[Kim Young Gwan, Chairperson of the Labor and Management Council]

"A global company with competitiveness has culture of valuing employees embedded. Such a company that fulfills corporate social responsibility is beloved by the society where it belongs to. Competitiveness and love that we enjoy originated from our belief that labor and management share one body"

[Park Young Woo, team leader of HR development]

### Best company to join

In September 2002, online recruitment information provider Job Korea surveyed 6,400 job seekers. The findings showed that Samsung SDI was the company they want to join the most. Not only that, in 2002 it received a second best Korea Economic Daily-Levering award for great place to work, which was followed by an honor of winning the best award in 2003, being recognized for its training programs and the compensation system for employees. Overall turnover rate of Samsung SDI remains at only 1.5% ~ 2%. The PDP department, in particular, showed as low as 0.98% in turnover rate, showing a higher level of employee satisfaction with the company.



### Sharing business results

Samsung SDI as an employer shares business results with employees. From 2000, the PS system linked to EVA(Economic Value Added) was put in place. The Stock Option system is in place as well as a long term compensation scheme for excellent performance. Ensuring objectivity and transparency is important in operating an evaluation and compensation scheme. 'Evaluation and compensation

committees' has been installed at corporate level and each business unit level. 15% of EVA of the company is allocated to each business team proportional to its performance once a year.

Rewarding productivity, financial incentives tied to the PS system are paid twice a year up to 300% of one's base salary. All these systems helped create culture, where employees think, "let's get rewarded further by creating more profits." Such atmosphere contributed to constructive cooperation between labor and management.



▲ Win-Win marathon race in Busan

*"We try hard to make Samsung SDI the best place to work. In that regard, we aim at being the best in Korea in terms of job satisfaction by expanding opportunities for self-development through distinguished employee benefits, compensation schemes and training opportunities."*

## From joining the company to retiring

### In-house college - building up technological capacity

We have an in-house technology college and a business technology college as programs being run jointly with Samsung Group to nurture key technology forces for manufacturing sites. For overseas sites, Global Technology Center(GTC) was established and has been contributing to localization of technologies and technology improvement by running training technique and technology communities for manufacturing engineers and managers at home and abroad. The GTC had rolled ten waves of a four-week course by the end of 2002, during which trainees boarded together. In total, 175 key manufacturing engineers have received trainings from GTC

### Key resource nurturing program

Samsung SDI runs two-year MBA programs to develop management officers and technology officers and supports long-term academic researches spanning from two to five years to develop a master and doctor degree holders pool and key R&D forces.

Our regional expert program has been operated since 1990 to groom executives, overseas expatriates, as well as regional experts. So far 161 regional experts have been trained, who completed a 6 to 12-month course in overseas for regional study.

Under Global Exchange Staff System(GESS), one of global talents development programs, employees of Korean sites and overseas sites are exchanged for three to six months. Competent local senior managers are selected and get trained as candidate leaders to facilitate localization of overseas sites.

## Vision for management by talents

*"A key strategy for Samsung SDI is to secure and retain top-tier human resources. This strategy is supported by first, attracting best new talents and second, reinforcing existing resource capabilities. In order to attract best new talents, we reach out to universities and research institutions in other countries as well as in Korea. In order to reinforce capabilities of existing human resources, we try to build upon capabilities with cumulative development experiences and build up leadership with training programs."*

## Cyber training programs

SDI Campus, a cyber training program, is open to any employees. In 2002, a global cyber training system was set up for 8,000 local employees at China sites and started to offer training in Chinese ranging from innovation activities like 6 Sigma to manufacturing technologies. The system will be expanded to other overseas sites. The cyber training has been effective in improving capabilities of local employees and contributed to increasing competitiveness of individual and company's competitiveness alike because it activates knowledge management in Korea and overseas sites. Individual performances in cyber training classes and training history are tracked and reflected in the HR system. Outstanding performers receive incentives.



▲ Global Technology Center

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## Career development and management - from entering to retiring

Samsung SDI started 'early settlement system' for the new recruits in 1999. The new members get one on one lessons from senior managers with more than five years of practical experience on how to incorporate academic learning to actual work. For engineers there is the Mentor system, in which new engineers prepare 'self-development scheme' containing project leadership training, job training in areas of their interest and language training, and senior engineers take responsibility for new entrants' growth. Ten bachelor and master degree holders are sent to well-known universities under an academic training program. Those who take graduate and Ph.D. courses can build up expertise for two and four years respectively in their interest areas. The 'Visiting Research Program' is under consideration for employees with Ph.D. to study for one year in universities and research institutions at home and abroad. Outplacement training is provided for those soon to retire and the business start-up programs are also available for them to prepare for living after retirement.

## Work - life Balance

A welfare system considers housing, health, education, and leisure parts of life to help employees balance work, family and leisure life. For housing support, those who yet to own a house can seek for financial support from the company. To promote health of employees, indoor and outdoor workout facilities are available at each site. Employees and their spouses are financially supported for illness and injury treatment and delivery. In

particular, when such diseases as cardiac disorder and leukemia, which incur serious financial burdens, are concerned, patients are actively supported by the company to concentrate only on treatment. All employees get yearly medical check-ups. Employees to be assigned to hazardous processes receive medical examinations before actual placement, and extra medical check-ups to find out any noise, particles, and certain chemicals-related problems. Each site has a clinic, an adjacent recovery room and a physical therapy room for diagnosis and treatment, medication, health consultation after medical check-ups, various examinations, and medical consultation. Education of employees' children is partly financed by an in-house welfare fund. For disabled children of employees, education is fully supported by the company. Employees can take maternity or paternity leaves, if needed. In addition, we open urchin classes and little rugby classes to offer them chances to understand their mother and father's company and respect their parents. The company bought membership of major condominiums and resorts nationwide in an effort to support leisure life of employees. By running an individual pension insurance scheme, the company supports employees to lead stable retirement, and tax and legal advisory offices are available for employees in legal trouble to work out their problems.



▲ Little Rugby Class

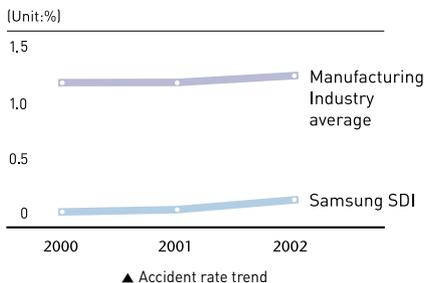
## Health and safety

For the sake of well-organized health and safety management, the Industrial Safety and Health Committee equally participated by both management and labor and the Green Management Committee are established at business unit level. And Chief Risk Officer position and the global environment safety task force are set up. OHSAS18001 health and safety structure are also built up at each site.

Safety and accident avoidance in overseas sites are audited, domestic sites are cross-examined and best practices are spread across the whole company. In September 2002, the SDI cyber environment and safety education course was opened for manufacturing process supervisors and staff.

Each plant tracks and records safety educations, potential risks, safety check-up results, and protection feature management performance, and rewards departments and in-house communities with excellent performance according to quarterly assessment results.

Thanks to such preventive health and safety activities and thorough safety checks by both employees and management, the accident rate of Samsung SDI remains lower than the average of the manufacturing industry.



## Philosophy of environment and safety

1. In the case of facility failure, you can fix the facility or replace it with new one, but in the case of safety failure, the result is not reversible.
2. In plants, environment/safety is given the top priority. Without it, all other performance and successes mean nothing.
3. All managers are required to devote 30 minutes a day to environment and safety matters.

## Diversity and human rights

The issue of diversity in a company emerges visibly as the society changes. We have WorkmanShip Training Course(WSTC), a diversity promotion program, to nurture senior female managers. When recruiting females with Ph.D. we offer incentives such as company mortgage service and continuously support them to grow as key resources. To raise awareness of the importance of female workforce and create wholesome organization culture, the company offers education on manners at work and sexual harassment prevention. An ombudsmen channel for female workers was opened within the Labor and Management Consultative Body. Building on such efforts, we will further expand female workforce especially in R&D and administration.

We launched the P-project to promote cooperation with partner companies within the company, enhancing their own competitiveness and close partnership. Samsung SDI seeks for mutual benefits by conducting safety and education together, for which partners alone are not able to do so.

Abiding by ILO regulations, Samsung SDI bans human rights violations such as child labor and forced labor, and the same standards are applied to overseas plants.

# Customer Satisfaction Increases through Sustainability

## Customers and sustainability

Sustainability is accepted as a key management value not only by consumers but also by customers who buy Samsung SDI's products and technologies. Our customers such as Samsung Electronics, Philips, and Sony call on sustainability for us. We at Samsung SDI will do our best to deliver responsible and fair sustainability values as well as best quality products. We believe we can level up customer satisfaction in that way.

The recent survey on customer satisfaction for partnership with Samsung SDI found that Samsung SDI marked 3.8 out of 5. In the same survey, our customers gave 3.8 marks for importance of sustainability, while their perceived level of sustainability of Samsung SDI was 3.6, meaning that we met customer expectations on sustainability to a degree.

## Customer safety and information protection

Our efforts for customer satisfaction began from thinking in a customer's position. Samsung SDI strictly abides by the Product Liability law and operates the whole processes from planning, development, manufacturing, inspection, marketing, and service to ensure product safety and stewardship. A contingency system and

plan covering reparation, recall, and insurance has been in place. The system is based on a hot line, allowing quick contacts and comprehensive response. The same information security system is applied to protect customers' information and Products. That proves our commitment to preventing health and safety accidents at customer sites and customers information leakage.

## Voice of customers

Samsung SDI developed the VOC system to quickly respond to customer complaints and needs and make fundamental improvements. Samsung SDI receives on-line(Internet, phone or fax) complaints and compliments from customers through the VOC system. The staff who received VOC should reply within five minutes from contact and run global service networks to provide best service. Results of VOC activities are dissipated across the whole company to prevent same problems from occurring. Finally Happy Call, a customer satisfaction survey, is conducted on improvement activities of Samsung SDI. Samsung SDI's customer-centered mindset motivated by 6 Sigma activities is embodied in the VOC system and response time to customer request is down from 30 days to one day, pushing up the level of customer satisfaction.



▲ VOC system (<http://www.samsungsdi.com> >support >VOC)

## Sustainability, new competitiveness to win “customer satisfaction”

*“As customers pursue sustainability management, our efforts for sustainability management would be welcomed. We become able to build differentiated products with it, which will further enhance our competitiveness. Then Samsung SDI will be recognized as a value-oriented company, rather than as a price-oriented company, building long-lasting relationship.”*

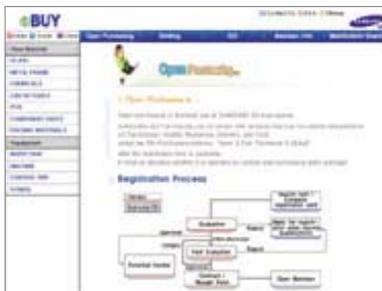
# Stronger Sustainable Partnership, Suppliers

## Supplier selection and evaluation based on sustainability

Samsung SDI has taken into consideration morality, labor and management relations, and welfare system before selecting suppliers. Furthermore, social and environmental responsibility matters concerning green procurement, human rights, and discrimination will be factored in to further enhance sustainability capability of suppliers.

## Long-term partnership

Basic principles for supplier management are to make them professional and the finest. We maintain stable relationship with existing suppliers with caliber, while continuing our search for new and competent suppliers. Meanwhile, Samsung SDI helps suppliers become able to deal with its new strategic products so that they get least impact from changes in Samsung SDI' s business portfolio.



▲ Open Procurement System(SDIBUY)

## Cooperation to strengthen supplier competency

Samsung SDI has the SDI Good Partner(SGP) system. All suppliers are rated into five levels from A to E.

Out of A grade-suppliers, some are given higher priorities. They are designated as SGPs for more active cooperation. Currently there are 34 SGPs.

Samsung SDI conducts 6 Sigma trainings to deliver innovative capabilities to suppliers. So far, representatives from over 100 suppliers have completed the 6 Sigma champion training. The five-week Black Belt training and 5-day Green Belt training are offered for SGPs. When suppliers invest in facilities for production and automation, Samsung SDI helps them decide when and how big such investment should be through purchase planning consultation.

## Fair and open procurement

Samsung SDI takes care of suppliers in a fair and transparent manner. Every new transaction is registered in the 'open procurement system', a procurement information system. Frequent internal audits into procurement are conducted to see if undue outside pressure has been working in supplier selection and evaluation, and if bribing and corruption have been involved or not.

## Sustainable supply chain management

*"A company's competitiveness greatly depends on capabilities of suppliers. When sustainability management spreads over the whole supply chain, sustainability management we are seeking would become true to its name. We are seeking for mutually benefiting partnership with suppliers via sustainability. Samsung SDI asks for suppliers to comply with sustainable supplier management policies and supports those who won compliance to build upon capabilities continuously, keeping them as our long-term partners."*

# A Clean Company, Transparent and Ethical Management

## Promise with shareholders

Building a transparent and clean company is our backbone value. Samsung SDI won the 2002 Best Award for Transparent Accounting (by the Accounting Society) and 2003 Economic Justice Award (by CCEJ). We were able to achieve them because we have taken outside opinions from independent auditors, nothing wrong has been found in audits by the Financial Supervisory Commission, monthly consolidated accounting system was developed to enhance transparency of accounting information of overseas sites, and an audit committee comprised of independent director was up and running. Four out of eight board members are independent from the company. Samsung SDI has been strengthening its framework for improvement of corporate transparency, for example, refining activities of the audit committee, conducting US-GAAP based accounting, inviting an accounting firm for quarterly auditing, and disclosing honest and accurate information to investors on a continuous basis. In 2000, 70 disclosures were made. Samsung SDI honestly opens accurate information at right time to investors, though it is not a compulsory requirement. Samsung SDI was one of five that had distributed interim dividends for four consecutive years by 2003, and the dividend rates were as high as 50% (for 2002). In August 2001, Samsung SDI was honored to receive the Best Shareholder-centered Company Award from the Minister of Finance and Economy. Samsung SDI's shareholder-oriented management is about, for example, realization of benefits coming from competitive advantage and expansion of net assets by exploring potentially profitable businesses and by reinvesting returns in them. In other words, we return values to shareholders through consolidating a foundation to enhance shareholder values based on profitability and growth, then providing dividend, purchase and retirement of its treasury stocks and proactive IR activities.

## Vision of a 'clean company'

*"If a company is corrupt and not transparent, the members can not trust the company, which would threaten the very existence of the company. That means building a trustworthy, clean and transparent company is a prerequisite for sustainability. My company is the very trustworthy and clean company. What we pursue is being clean internally and being socially responsible externally."*

## Promise with suppliers and customers

Samsung SDI runs a purchase portal SDIBUY ([www.sdibuy.com](http://www.sdibuy.com)), sharing all information concerned with transactions with suppliers. It is our effort to realize a fair and open purchase. Those who contact suppliers are given purchase ethics educations twice a year. And signing a 'written oath for clean transactions' is compulsory for them before opening transactions. Fair transactions are also encouraged by the 'Secrete Inspection System for Clean Purchases.' For customers, we send out Samsung SDI letters regularly on ethics policies as a way to maintain good cooperative relationship with them.

## Self-commitment

Each site conducts regular education on handling gifts from suppliers, solicitation for a job, monetary and non-monetary kickbacks from sellers, and information security violations. In monthly performance briefing sessions hosted by heads of plants, employees receive educations on corporate ethics. The Suweon plant wages a campaign of 'B2B' meaning Back to the Basics, the Cheonan plant, 'Do the right things,' and the Busan plant, 'Yes I Can.' We plan to introduce the 'Self-compliance programs for fair transaction' to perfect our clean company system.

## Best Economic Justice Award Samsung SDI practices 'clean company' spirit, resulting in transparent management



Founded in 1970, Samsung SDI is now one of the largest display makers in the world, with 30,000 employees at twelve bases in seven countries.

Its businesses range from a CRT, a PDP TV module, a display for a mobile phone, a secondary battery for a laptop computer and mobile devices, and to an OLED, a next generation display.

Despite the slowdown in the IT industry, Samsung SDI last year posted 4,579 billion won in sales and 587 billion won in net income excluding overseas plants, and 6,634 billion won in sales including overseas plants, up 17% year on year, breaking its own records every year for four consecutive years. Debt to equity ratio was as low as 40.8% and over 80% of major products were exported, which was a significant contribution to the national economy.

Samsung SDI adopted four codes of conduct such as shareholder-centeredness, transparent management, social contributions and environment protection. The display maker reinforced framework for corporate transparency by bringing in outside directors, institutionalizing an audit committee, and conducting quarterly audits by accounting firms. In addition, it makes voluntary disclosure on business performance and management issues, and pays high dividend of 40% of par value, and purchases its treasury stocks on a continuous basis. For fair procurement activities, representatives of suppliers were brought together for a procurement policy briefing session. And an online portal site is in operation for procurement. In addition, ethics education is also provided.

True to its business nature, which is about 'light and image', Samsung SDI has provided ophthalmic treatments and operations for free to the visually challenged who could not afford such treatments since 1995. 65,300 have been benefited so far including 2,000 who went on an eyesight recovery operation.

Environment is also an area of interest. 15% of total investments is used for environment. Waste disposal with generator's name tag, and a volume based waste disposal system, replacement with cleaner fuels, installation of solar panels and recycling waste heats are their activities to make workplace greener.

Source: The Hankyoreh Daily, February 20, 2003

## Social Contributions and Community Service

### 'Another good neighbor'

We fully recognize our responsibilities and duties for social contributions and community service as a corporate citizen. And we do our best to assume that role. We spent 15.4 billion won, or 2.6% of net income for social contribution activities in 2002.

### Give brightness to the visually challenged...

Samsung SDI products are mostly displays and energy-related ones, which are like eyes and the heart of a human body. Sharing convenience generated by such products is our core value. With the idea of living together in a better world with the visually challenged, we allied with the Siloam Eye Clinic in 1995 and have provided 'eyesight recovery operations' for free to blind people from low income families and the underprivileged. So far 2,100 have received the operation, and 100 of them, in particular, went on operation in a limousine, the mobile eye clinic, in an attempt to get them lights more quickly. In 1999, a cyber doctor room was opened on the Samsung SDI web page to give free eye disease consultations. Samsung SDI sponsored the 'International academic convention on education and rehabilitation for the blind' from the 4th convention in 1996 through to the 10th convention in 2002 in conjunction with the International education and rehabilitation exchange foundation. The convention is an international academic gathering to promote self-reliance and rehabilitation of the blind through sharing new knowledge and technologies.

In association with the Good Neighbors, an NGO, we financially support as well as conduct volunteer activities for the blind confined to home, helping their rehabilitation. Employee volunteers take them to amusement parks and artistic performances. They also run a bowling school, and retype novels, essays, and English textbooks that the blind would not have an easy access in raised type for them. From 1997, Samsung SDI covered college tuitions fully for blind college freshmen via 'scholarship project for college students with visual impairment'. Not only that, such students are invited to cultural events like concerts and given opportunities to enjoy outdoor activities such as forest walking.



▲ Eyesight recovery operation

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### Matching Grant - Light of Love Fund

One of funding programs that Samsung SDI operates is 'Light of Love Fund,' a matching grant. This is common in leading companies in the world. Employees donate money out of their pockets, and the company donates exactly the same amount of money and forms a fund to support public utility groups and welfare facilities. As of October 2003, 6,616 employees, or 85% of all employees participated in the program. Total deposits and the particulars of their usage are open to participants through bulletin boards.

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### Encourage volunteer activities of employees

It is said that volunteers are benefited more than recipients. We hope to grow as a truly mature corporate citizen, serving more people around us. To do so, each department engages in community outreach more than once a month, for example, visiting a welfare facility in sisterhood. A mileage system was introduced and pegged to volunteer activities. One's annual mileage is compiled and added to personal training scores. The CEO inspires volunteer team leadership by granting the appointment certificate to the leader of a team in person. High-performing teams are awarded and rewarded annually.

### From communication to social contributions

*“Social contribution activities are meaningful by themselves and should be connected to the outside naturally. True social contribution activities require strenuous, rather than on-off, efforts and communication. Samsung SDI is going to build an image of living together with the society by having employees participation in such activities culturally embedded and communicating as it is.”*

**Community service to remind of company foundation motto**

Samsung SDI has the community service festival twice a year. One is the May festival marking the foundation day to remind employees of the company philosophy of contributing to the human society. The other is the October volunteer festival led by the Samsung Group. In May festival of 2003, 5,254, or 68% of the total employees from 143 teams participated in volunteerism. Besides, employees of each site organize field meetings and regularly visit families on government subsidy and old loners, and go to gathering places of the elderly and playgrounds for children for various volunteer services including installation of heating and maintenance and facility repairs. Such activities are also joined by executives, who put together 'One Love Team,' taking the lead in outreach. Their programs include going to spa with the blind, getting on board in an excursion ship together, serving them with free-meals, and enjoying traditional activities. In May 1996, wives of employees were pulled together as a 'One-Love Housewife Charity' team and began activities such as free-meal service, bathing service, relief supplies delivery, cleaning, and a charity bazaar service.



**'Light of Love, Star of Sharing'**



Visualize Samsung's commitment to social contribution to share with and help community members as a corporate citizen, with a star, a symbol of Samsung.

**Our commitment to social contribution**

- We at Samsung pledge to serve corporate citizenship with humanity and morality, contributing to the human society.
- We will do our best to build a health society and raise quality of life with those who want to shape a better future.
- We will help create a friendly earth to live on by promoting exchanges with other countries and leading environment protection.
- We, Samsung men, women and families, will share happiness and find fullness of practicing volunteerism together with the whole society.

	1998	1999	2000	2001	2002
No. of participation per person in a year	2,2	2,2	1,9	2,2	4,4
No. of teams	108	109	115	121	137

▲ Volunteerism by year

## Communicating with local communities

Each local site maintains closer relationship with the community where one operates through support for the local economy, volunteer activities, immediate response to local complaints, and M-VOC system (a sub-VOC system) for external stakeholders. According to the recent survey, local communities were found to be highly satisfied with the level of sustainability of Samsung SDI and partnership, giving it scores of 4.4 and 4.3 out of 5.0 respectively. In terms of sustainability, in particular, local communities gave 4.4 to a question asking importance of sustainability and 4.1 to a question asking the perceived level of sustainability of Samsung SDI. The result indicated that they were relatively happy with the company's efforts for sustainability.



▲ Outreach for community slammed by typhoon Maemi-tie up sheaves of rice

## Symbiosis of the Busan plant

The Busan plant with Mt. Shinbul behind agreed to use water from the mountain valley as industrial water in agriculturally off-season and provide used water after treatment for near farming families during a dry season with the local community. It was literally symbiosis between a company and the local community.

In 2000, when severe drought swept through the country, the Busan plant watered nearby farmlands containing drought damage. Also the plant sourced rice locally, helping the local agricultural economy.

Not stopping there, leftover from plant cafeterias were collected and fertilized and provided as feed to near farms. Also it runs a fire station on its own to control fires and to respond quickly to other accidents occurred in the community. It will continue to find out ways for co-existence with the local community.

# Listening to Voices of Stakeholders

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Samsung SDI carefully listens to voices of stakeholders to come up with ideas of what they want and how to generate a win-win situation. This year we conducted a survey for all stakeholders to know about what they expect from Samsung SDI, what they think of Samsung SDI and how much they are satisfied with us. The stakeholders subject to the survey included employees, customers, suppliers, municipal governments and offices, central government agencies and officials, investors and NGOs. Samsung SDI is going to take such survey regularly for self-assessment and take it as a chance to make improvements.

---

## More active communication

Central government agencies and NGOs regarded Samsung SDI less highly than other stakeholders did. The company was marked higher than other companies, but the result indicated that there was much

room for improvement. We admit the result and take it as an opportunity to better serve as a corporate citizen, strengthen cooperation with NGOs and central government agencies and better communicate ourselves in order to make sure that the next survey will show improved results.

“ We started to take a company as a party for cooperation to save environment, not as a target for criticism. There should be programs and networks for both companies and NGOs to know and understand each other. Keeping each other in check and blaming do not help ensure a better future of the earth and protect environment. The two have to sit together and define a new cooperative relation based on mutual trust for a sustainable earth. At this critical point, it is hoped that Samsung SDI’s efforts for sustainability management be exerted in the context of corporate social responsibility with a long-term perspective, defying short-sighted interest seeking, and serve as an opportunity to spread the concept of sustainability in Korea.”

Director Lee Tae Il, Korean Federation for Environmental Movement

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# Independent Verification Report

<b>Scope</b>	The Center for Green Management and Policy('the Center') at KAIST Graduate School of Management has been asked to verify 'the Samsung SDI Sustainability Report 2003'('the Report') by Samsung SDI in October 2003. The Center looked at the reliability of data in the report and internal processes for verification. And the Center particularly focused on if the report is in accordance with procedures of GRI Guidelines.
<b>Data reliability</b>	The Center studied to see whether the data opened in the report were accurate and correct. In doing so, the Center verified that there has been nothing abnormal in factors and conversion formula used when collected raw data were converted into meaningful information. Due to time constraint, the Center could not fully review the accuracy of raw environmental data, but the Center was able to verify the data reliability after referring to the analysis results of public institutions and environmental documentation required by law. Reliability of financial data was verified by referring to various accounting reports that were already audited by accounting firms.
<b>Confirmation of existence of internal processes</b>	The Center paid particular attention to whether various processes, activities and management policies that were opened in the report were actually in place or not. To confirm that, we at the Center visited sites, had interviews with executives and leaders of functions, reviewed materials for management strategies, standardized internal documentations, and other open sources, and conducted surveys for employees. After all these activities, we concluded that internal processes and activities, and management policies that were included in the report were truly in place.
<b>In accordance with GRI guidelines</b>	The Center reviewed if the report was in accordance with the 'GRI 2002 Sustainability Reporting Guidelines.' We at the Center checked out if the report contained vision and strategy, and company profile that the GRI recommends companies to open, and reflected 141 GRI indicators covering economic, environment and social aspects. The result is published in the contents page of the report
<b>Recommendations</b>	The Center found that Samsung SDI produced a satisfactory report in terms of accuracy and reliability by refining it through internal audit on contents and data contained in the Sustainability Report. Since the report was the first sustainability report of Samsung SDI, the company did not have refined or well structured processes for reporting. Because of that, Samsung SDI needs to establish a more structured reporting process for periodic publication of reports. I also recommend that Samsung SDI make more proactive use of readily available materials such as media articles on the report contents and external evaluations in order to enhance objectivity of the report. Samsung SDI introduced sustainability management at a corporate level this year. Regarding that, I recommend the next report would deal with achievements and various results against goals that the company set this year, further activating communication with stakeholders and implementing consistent sustainability management.

**KAIST**

**Professor Ahn Byong Hun**

Chairman of the Center for Green Management and Policy  
KAIST Graduate School of Management



# Environmental Data by Site - Suweon



Address | 575, Shin-dong, Youngtong-gu, Suweon

Foundation | May 1978

Products | CRT

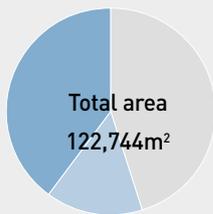
Workforce | 1,131 employees

1993-2000 Best company for energy saving  
 Feb. 1996 Environmentally Friendly Company  
 Dec. 1996 ISO 14001 Certification  
 Dec. 1998 Best health and safety company certification  
 Jan. 2000 Self assessment company for working environment  
 Dec. 2000 Autonomous eco-company designated by the Gyeonggi province  
 Nov. 2002 Safety Management Award

## Geographical features

Around the Suweon plant, there are Gyanggyo mountains in the north, Mt. Yeogi in the west, and a plain in the southeast. The Suweon plant is housed within the Samsung Digital Complex (Samsung Electronics, Samsung SDI, Samsung Electro-Mechanics, Samsung Corning) and Wonchun Stream runs along the site. The plant works together with other Samsung companies for community environment protection

## Area



Building | 55,394m<sup>2</sup>  
 Road | 18,410m<sup>2</sup>  
 Green | 48,940m<sup>2</sup>

## Contact

Management Support Team | Sung Dae Gye  
 dg.sung@samsung.com  
 TEL : 82-31-210-7231 | FAX : 82-31-210-7161

## Input

### Resources

	Raw material (ton/year)	16,772
	Packaging (ton/year)	465
Energy	Electricity (MWh/year)	122,875
	LNG (10 <sup>3</sup> m <sup>3</sup> /year)	6,690
	Gasoline (kL/year)	5
Water	General (10 <sup>3</sup> ton/year)	1,287
	Recycled (10 <sup>3</sup> ton/year)	22

## Output

### Products

CRT (ton/year)	51,573
----------------	--------

### Air emission

CO <sub>2</sub> (ton/year)	18,558
NO <sub>x</sub> (kg/year)	1,330
SO <sub>x</sub> (kg/year)	179
Dust (kg/year)	16,490

### Water discharge

Sewage(10 <sup>3</sup> ton/year)	163
Waste water (10 <sup>3</sup> ton/year)	917

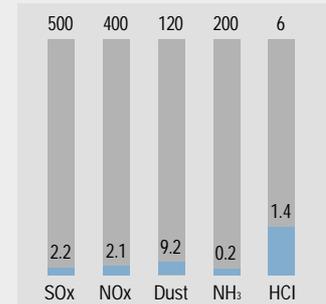
### Waste

Recycling (ton /year)	4,009
Incineration (ton/year)	594
Landfill (ton/year)	259

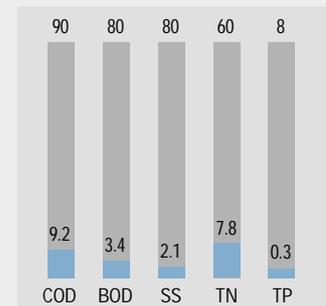
## Level of compliance

Legal requirement  
 Suweon plant performance

Air (mg/m<sup>3</sup>)



Water (mg/L)



# Environmental Data by Site - Cheonan

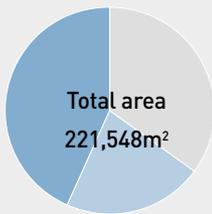


Address		508, Seongseong-dong, Cheonan, Chungnam	Jun. 1998	ISO 14001 Certification
Foundation		August 1995	Jun. 1999	Environmentally Friendly Company
Products		PDP, Rechargeable battery	Mar. 2001	OHSAS 18001 Certification
Workforce		1,324 employees	Apr. 2001	KOSHA 18001 Certification
			Nov. 2002	Excellent plant in Chungnam
				Fire Protection & Safety
			Dec. 2002	Safety Culture Award by Chungnam Province

## Geographical features

The Cheonan site is located in the outer block of the Industrial Complex 3 of Cheonan. Because of the unique location, the plant is surrounded by greens, fields, and farming areas and is only 200 meters away from residential areas. Such that, the plant does its best to protect surrounding environment.

## Area



Building		77,490m²
Road		48,019m²
Green		96,039m²

## Contact

Management Support Team | Kim Jong Woo  
 jongw99.kim@samsung.com  
 TEL : 82-41-560-3272 | FAX : 82-41-560-3279

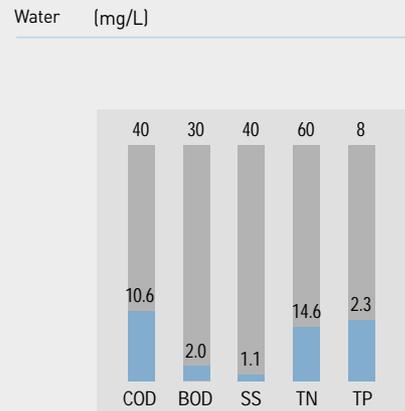
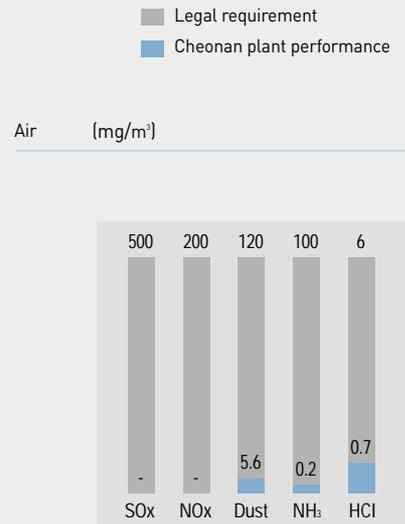
## Input

Resources		
	Raw material (ton/year)	6,347
	Packaging (ton/year)	416
Energy		
	Electricity (MWh/year)	127,530
	LNG (10³ m³/year)	6,505
	Gasoline (kL/year)	2
Water		
	General (10³ ton/year)	656
	Recycled (10³ ton/year)	183

## Output

Products		
	PDP (ton/year)	1,601
	Rechargeable battery (ton/year)	1,507
Air		
	CO₂ (ton/year)	18,035
	NOx (kg/year)	0
	SOx (kg/year)	0
	Dust (kg/year)	1,497
Water discharge		
	Sewage (10³ ton/year)	84
	Waste water (10³ ton/year)	434
Waste		
	Recycling (ton/year)	1,076
	Incineration(ton/year)	643
	Landfill (ton/year)	715

## Level of compliance



## Environmental Data by Site - Busan



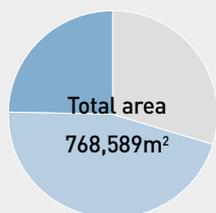
Address		818, Gacheon-ri, Samnam-myeon, Ulju-gu, Ulsan
Foundation		January 1970
Products		CRT, LCD, VFD
Workforce		3,751 employees

1991-95	Model company for Environmental Management
Dec. 1995	ISO 14001 certification
Apr. 1998	PSM certification
Jan. 1999	OHSAS 18000 certification
Feb. 1999	Environmentally Friendly Company
Oct. 2000	Excellent plant in new management and labor culture, Publicly certified calibration institute
Nov. 2001	Voluntary pact for energy saving, Excellent company for energy saving
Jun. 2002	Green Management Award

### Geographical features

The Busan plant is backed by Mt. Shinbul and faced with the clean Taewha river. Near the site are ten-century-old temple Tongdo, the Enyang spa, and an amethyst mine. The Busan plant is in the general industrial area. Final discharges flow through the stream Sangchun into the East sea. This has put the top priority on environmental protection in the Busan plant.

### Area



Building		228,254m <sup>2</sup>
Road		350,747m <sup>2</sup>
Green		189,588m <sup>2</sup>

### Contact

Management Support Team | Kim Hyun Ok  
 kimhyunok@samsung.com  
 TEL : 82-55-380-1212 | FAX : 82-55-380-1115

### Input

#### Resources

Raw material (ton/year)	226,445
Packaging (ton/year)	11,709
Energy	
Electricity (MWh/year)	478,056
LNG (10 <sup>3</sup> m <sup>3</sup> /year)	27,984
Gasoline (kL/year)	51
Water	
General (10 <sup>3</sup> ton/year)	3,708
Recycled (10 <sup>3</sup> ton/year)	3,493

### Output

#### Products

CRT (ton/year)	214,806
LCD (ton/year)	1,256
VFD (ton/year)	1,986

#### Air

CO <sub>2</sub> (ton/year)	77,716
NOx (ton/year)	230
SOx (kg/year)	6,920
Dust (kg/year)	27,500

#### Water discharge

Sewage (10 <sup>3</sup> ton/year)	400
Waste water (10 <sup>3</sup> ton/year)	3,194

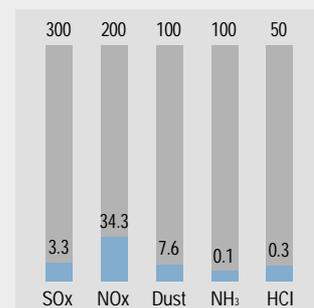
#### Waste

Recycling (ton/year)	32,020
Incineration (ton/year)	587
Landfill (ton/year)	12,279

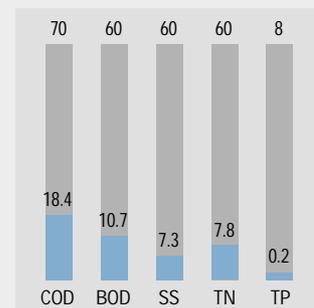
### Level of compliance

■ Legal requirement  
 ■ Busan plant performance

Air (mg/m<sup>3</sup>)



Water (mg/L)



# Environmental Data by Site - Corporate R & D Center



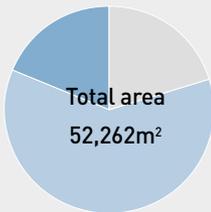
Address | 428-5, Gongse-ri, Giheung-eup, Youngin  
 Foundation | June 1983  
 Products | AM OLED, FED, Li-Sulfur battery  
 Workforce | 495 employees

Apr. 2002 | Move to Giheung from Suweon  
 May. 2002 | Construction completed

## Geographical features

The center is located in residential suburbs. The Shingal Reservoir and the Korean Folk Village are only 1.2 km and 2km away respectively.

## Area



- Building | 10,573m<sup>2</sup>
- Road | 31,895m<sup>2</sup>
- Green | 9,794m<sup>2</sup>

## Contact

Technology Planning Team | Park Do Hyeong  
 dh1304.park@samsung.com  
 TEL : 82-31-288-4155 | FAX : 82-31-288-4157

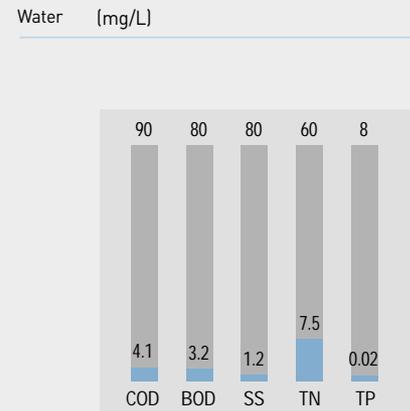
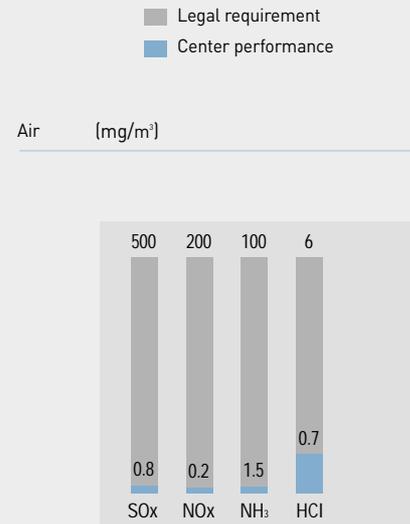
## Input

Resources		
	Raw material (ton/year)	-
	Packaging (ton/year)	-
Energy		
	Electricity (MWh/year)	24,416
	LNG (10 <sup>3</sup> m <sup>3</sup> /year)	1,316
	Gasoline (kL/year)	1
Water		
	General (10 <sup>3</sup> ton/year)	160
	Recycled (10 <sup>3</sup> ton/year)	-

## Output

Products		
		-
Air		
	CO2 (ton/year)	3,650
	NOx (kg/year)	84
	SOx (kg/year)	1,175
Water discharge		
	Sewage (ton/year)	- ※
	Waster water (ton/year)	125
Waste		
	Recycling(ton/year)	50
	Incineration(ton/year)	149
	Landfill (ton/year)	125

## Level of compliance



※ (Treat sewage and waster water together)

# Ethics Policy

## Ethics Charter

1. Customer satisfaction is our top priority. We will strive to meet customer needs and expectations, create values for them and maximize return on their investments through efficient management.
2. We offer fair opportunities to all suppliers and create conditions that enable transparent transactions, thus promoting a win-win relation on an equal footing.
3. We respect national and social values, observe related regulations, and conduct sound business activities to contribute national development. And also as a global company, we respect values of host countries and communities, and abide by regulations with integrity.
4. We create organization culture, in which the company respects dignity of every single employee, never treats them unfairly, provides opportunities appropriate to their capabilities and aptitude, and rewards them based on fair and just evaluations.
5. We as SDI men and women, have pride with humanity, morality, civility, and etiquette, keep dignity, and perform in the company with integrity and fairness.

## Ethics Code of Conduct

### Chapter 1. Customer respect

Keeping in mind that customers are the foundation for company growth and profitability, we should provide best products and services living up to customer expectations and needs.

We always listen to customers and strive to create values for them.

We know that providing products with best quality at right time is the best service and thus do the best to do so.

### Chapter 2. Shareholder respect

We pursue maximization of shareholder values by realizing honest profits through efficient management. We adopt generally accepted accounting principles, providing corporate information accurately and transparently to help shareholders' investment decision making.

We ensure equal treatment for all shareholders and listen to their reasonable demand. We always make efforts to enhance corporate values through active communications and IR.

### Chapter 3. Co-existence and co-prosperity with suppliers

When selecting suppliers, candidates' service quality, prices, and reliability should be considered against transparency criteria and selection should be objective and fair. We conduct transactions with suppliers on an equal footing and work together to create clean condition for transactions and keep transaction orders.

### Chapter 4. Coexistence with a nation and a society

#### 1. Healthy business activities

The company respects values of a country and a society, abides by rules and regulations, and conducts healthy activities, making growth of the company and contributing to national development. The company fulfills its obligations including tax payments imposed by governing bodies of communities such as the central government and municipal organizations, where the company operates. The company is against all improprieties undermining healthy business activities.

## **2. Contribution to social development**

The company encourages and supports employees' participation in sound social activities and volunteerism.

The company fulfills its obligations including tax payments imposed by governing bodies of communities such as the central government and municipal organizations, where the company operates.

## **3. Ban on political activities**

The company does not engage in political affairs. But it is allowed to express its position on a certain bill or proposal which is related to interest of the company. The company respects individual suffrage.

## **Chapter 5. Environment-friendly management**

We avoid pollutions to protect environment and do our best and observe environment protection laws and regulations to help improve environment.

## **Chapter 6. Responsibility as a global company**

The company promotes healthy corporate culture by respecting customs and values of countries and communities where overseas sites and offices are housed and keeps relevant rules and regulations.

We thoroughly abide by environmental standards of host countries and regions, nurturing the image of an eco-friendly company.

The company respects local employees' values and cultural features, seeking for co-prosperity based on mutual trust and understanding.

## **Chapter 7. Respect for employees**

### **1. Respect for employees**

The company deeply appreciates human dignity and values of employees and respects their basic rights.

The company tries to make workplaces, where employees feel rewarding, proud and fun in their jobs and solve their difficulties.

The company treats employees fairly according to their ability and contribution and does its best to improve health, education, quality of life of employees and their families.

## **2. Equitable human resource management**

Any kind of discrimination is not tolerated in the company. Sex, academic credential, religion, origin, physical disability, and marital status do not affect recruitment, promotion, and evaluation.

The company provides equal opportunities to employees. Objective criteria is applied to evaluation and rewarding.

## **3. Human resource development**

The company recognizes creativity and autonomous behaviors of employees as its intangible assets and provides training opportunities for self-development with a long term perspective.

The company comes up with measures such as systems, training and education to help employees perform in a legitimate way.

Samsung SDI works on conflict prevention and creativity promotion through working communication channels.

## **Chapter 8. Basic ethics of employees**

### **1. Basic ethics**

Samsung SDI's men and women observe the Samsung Constitutions (humanity, morality, civility, and etiquettes) and always keep honor and pride.

Samsung SDI men and women are just and honest, and behave with pride and dignity as employees of Samsung SDI.

They keep ethical standards high and make efforts to keep individual dignity and prestige of Samsung SDI.

### **2. Principled working**

Employees perform their jobs with principles and integrity and always try to build transparent and clean corporate culture.

Employees protect the employer's physical and intellectual assets and trade secret. They do not use company properties for personal purposes in any circumstance.

Employees do not perform anything illegal nor unethical in their daily life and professional life.

Employees do not make false reports to protect particular individuals or departments and conceal or monopolize important information.

### **3. Mission fulfillment**

Employees agree to vision and business philosophy and do their best to carry out assigned work.

Understanding fully their duties and roles, they make own judgments to achieve company goals and behave accordingly.

With active cooperation and open communication between employees and between departments, employees do their best to increase effectiveness and efficiency of work.

Employees do not engage in other work in other company without prior permission of the employer nor profit making businesses to seek personal interests.

### **4. Self-development**

Employees set an ideal image of a worker in a global competition era, and make strenuous efforts to enhance competitiveness through self-development.

### **5. Prevention of sexual harassment**

Employees are aware that sexual harassment not only violates human rights and hurts workplace atmosphere, but undermines work morale and productivity. Therefore they behave with decency and act to prevent sexual harassment.

### **6. Information security**

Confidential information should not be released without prior consent and approval.

Sensitive documents should bear the author's name and confidentiality rating and be prevented from being released to other companies and persons.

Usage of illegal software should not be allowed in the company.

### **7. Safety and risk management**

All employees are obliged to safety and risk management of the company. Employees should be on alert to prevent safety failure and if one detects a sign of a potential safety failure, it should be immediately reported out for appropriate actions.

Safety rules and instructions should be kept in any circumstances regardless of time and place.

## **Chapter 9. Compliance obligation for ethics code of conduct**

### **1. Coverage**

'The whole company(overseas sites and offices included' and 'all employees' are subject to ethics code of conduct

### **2. Compliance obligation**

All employees are requested to observe ethics code of conduct.

Executives and division heads are responsible for the compliance within the organizations under their charge.

Violation of ethics code of conducts is subject to punitive actions.

When one notices such violations, he or she should dutifully report to the head of his or her organization, the HR team, or the Audit team

When ethics code of conduct is applied to work and the interpretation is not clear enough for practical application, he or she should consult with the executives of the department and ask for authoritative interpretation to the HR team and the Audit team.

## Recognition

- Mar. 2000** Silver industrial decoration for the day of taxpayers granted by National Tax Office
- Mar. 2000** Excellent research lab award given by prime minister granted by the Ministry of Science and Technology
- May 2000** Best listed company of 1999 in disclosure granted by Korea Stock Exchange
- Oct. 2000** Solar cell's being selected within ten new technology granted by the Agency of Technology and Standard under the Ministry of Commerce, Industry, and Energy (MOCIE)
- Nov. 2000** Korea Technology Award given by President granted by the MOCIE
- Dec. 2000** National Quality Award, the Presidential award, granted by Korea Standard Association
- Dec. 2000** New management and Labor Culture Award given by President granted by the Ministry of Labor
- Aug. 2001** Best Company Award for shareholder-centered management granted by Korea Economic Daily and the Ministry of Economy and Finance
- Nov. 2001** 2001 National Quality Award, a Bronze industrial Decoration, granted by Maeil Business newspaper
- 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 MOCIE
- Apr. 2002** Presidential Award in Single PPM quality innovation competition granted by the Small and Medium Business Administration and Korea Chamber of Commerce and Industry
- Jun. 2002** Best Award for Environmental Management given by the Minister of Environment granted by the Ministry of Environment and Maeil Business newspaper
- Jun. 2002** Best Award for Transparent Accounting granted by Korea Accounting Academy
- Oct. 2002** Korean Technology Award(for 2.2" CMOS OLED) given by President granted by the MOCIE and Korea Industrial Technology Foundation
- Nov. 2002** Safety Management Award given by the Minister of Labor granted by the Ministry of Labor and Maeil Business newspaper
- Dec. 2002** Digital Knowledge Management Award given by the Minister of Information and Communications granted by the MOIC, the Federation of Korean Industries and the IT Research and Consulting
- Feb. 2003** Best Economic Justice Award granted by the Citizens' Coalition for Economic Justice
- Jun. 2003.** Industrial Technology Innovation Award granted by the MOCIE, the Seoul Economic Daily and the Korea Science and Engineering Foundation
- Oct. 2003** The Best Award for Korean Economic Daily-Levering's great place to work granted by Korean Economic Daily and ELTeck Trust Management Institute
- Nov. 2003** The Best Global CEO Award granted by Korean Academy of International Business and Maeil Business newspaper

## 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

### Back light

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

### BOD (Biochemical Oxygen Demand)

Oxygen requirement for underwater microorganisms to decompose pollutants in water. Higher BOD means more pollutions in a sample of water.

### Brightness

A measure for luminance of a display.

### BS 7750

World first Environmental Management System rule that BSI(British Standards Institution) announced in 1992. It led to creation of ISO14001.

### CDT(Color Display Tube)

A CRT for a computer monitor. Definition is improved because users sit closely to a computer monitor.

### CIG(Chip In Glass)

A technology to place operating chops in a panel.

### CO<sub>2</sub>(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 oxidated by oxident like  $KMnO_4$  or  $K_2Cr_2O_7$ . The higher COD is, the worse water quality becomes.

### COG (Chip On Glass)

A technology to place display operating chips on a panel.

### Color filter

A feature that changes white lights into colors. It consists of Red, Green and Blue. Various composition of RGB creates colors

### Contrast

The apparent difference in brightness between light and dark areas of an image.

### CPT (Color Picture Tube)

A CRT for TV sets. It has higher brightness because users look at it at a distance.

### CRT (Cathode Ray Tube)

It is a general term for CDT and CPT

### Current ratio

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

### Debt ratio

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

### Debt/equity ratio

Level of dependence on debt. A measure of a company's soundness, equal to debt divided by common shareholders' equity.

### DfE (Design for Environment)

Eco-design. 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.

**EVA (Economic Value Added)**

After-tax cash flow generated by a business minus the cost of capital it has deployed to generate that cash flow.

**GJ**

Gigajoule. 1GJ=10<sup>9</sup>J. Giga is a metric prefix indicating 10<sup>9</sup> 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.

**HEV (Hybrid Electric Vehicle)**

A vehicle that can be powered by both a gasoline engine and an electric motor.

**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.

**KOLAS (Korea Laboratory Accreditation Scheme)**

It provides accreditation service for testing and calibration laboratories as well as inspection bodies. It is placed under the Agency of Technology and Standards of the Ministry of Commerce, Industry, and Energy.

**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.

**LCI (Life Cycle Inventory)**

Data about input and output materials over the whole cycle of a product. It is the basis for LCA.

**Lead-free soldering**

Instead of lead soldering, tin-copper alloy and tin-silver alloy are used in soldering.

**Multi-panel technology**

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

**M-VOC System**

Management-Voice of Customer. VOC relevant to HQ staff and corporate business support activities in sites.

**Nano-Phosphor**

Phosphor with nano sized(10-9m) pigments.

**NOx (Nitrogen Oxide)**

These gases (NO, N<sub>2</sub>O, NO<sub>2</sub> and 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.

**Pigment-responding solar cell**

Unlike existing solar cells, high-molecular pigments absorb solar rays.

**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.

**PS (Profit Sharing)**

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

**Return on sales**

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

**ROA: Return On Assets**

A measure of a company's profitability, equal to fiscal year's earnings divided by its total assets.

**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.

**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.

**SD: Sustainable Development**

The concept of Sustainable Development was first conceived in the Brundtland Report in 1987 issued by the World Commission for Environment and Development. The report defined Sustainable Development as 'meeting the needs of the present generation without compromising the ability of future generations to meet their own needs.'

**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.

**SOP (System on Panel)**

A technology that operates a display without modular installation.

**SOx (Sulfur Oxide)**

These gases (SO<sub>2</sub>, SO<sub>3</sub>) are created when sulfur in fossil fuels react with oxygen, contributing to the acid rain effect.

**SR: Sustainability Report**

A sustainability report is issued to open a company's economic, environmental, and social performances and their impact to stakeholders.

**SS (Suspended Solid)**

Particle solids over 0.1  $\mu\text{m}$  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=10<sup>12</sup>J. Tera is a metric prefix indicating 10<sup>12</sup> times base unit(1 followed by 12 zeros).

**Type III (Environmental product declaration)**

ISO14025. Environmental product declaration is a description of the aspects and impacts of a product, system or service over its entire life, from raw material extraction, through manufacturing and use, to end-of-life disposal or recycling. Type III is one of three types of environmental labeling.

**US GAAP (Generally Accepted Accounting Principles)**

The US accounting principle.

**Value chain**

Value creating activities done by a company covering development, purchase, production and marketing.

**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. Visual angle is the angle at which you can see the display.

**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.

## Voice of Audience

Samsung SDI published the sustainability report to enhance the transparency of triple bottom lines covering economic, environmental, and social aspects, and to communicate better with stakeholders. In that regard, we are interested in your opinions concerning the Report and request your feedback to produce better reports in the future.

We greatly appreciate your help in filling out the questionnaire on the following page and sending it to the Sustainability Management Office of Samsung SDI.

(Fax 82. 2. 727. 3399, Tel 82. 2. 727. 3366)

Samsung SDI Sustainability  
Management Office

**Fax: 82. 2. 727. 3399**

※ You may just fill out the questionnaire below if you don't wish to identify yourself.

Name: \_\_\_\_\_ F / M

Affiliation: \_\_\_\_\_

Address: \_\_\_\_\_

E - mail \_\_\_\_\_

TEL \_\_\_\_\_

FAX \_\_\_\_\_

1. Which of the following best describes you or your affiliation?

- ① Investor/shareholder ② Business partner ③ Community residents ④ NGOs ⑤ Company ⑥ Academic ⑦ Public officer  
⑧ Journalist ⑨ Samsung SDI employees ⑩ Others(                    )

2. How did you know about Samsung SDI sustainability report?

- ① Samsung SDI web page ② IR/seminar/lecture/exhibition ③ Newspaper/Magazine ④ Other web pages  
⑤ Samsung SDI employees ⑥ Others(                    )

3. Which section was of the most interest to you?

- ① Company Profile ② Sustainability Vision and Goal ③ Economic part ④ Environmental part ⑤ Social part

4. Which part did you find need improvement?

- ① Company Profile ② Sustainability Vision and Goal ③ Economic part ④ Environmental part ⑤ Social part

5. Please give us any opinions, impressions, request, etc.



**For questions and inquiries, please contact:**

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