DEEP CHANGE

2017 SK holdings SUSTAINABILITY REPORT

SK holdings

About This Report

Overview

Since 2012, SK holdings has been publishing a sustainability report annually, thereby communicating with its stakeholders in a transparent way. The sustainable business activities mainly include the economic, social and environmental sectors, which were considered to be important for our stakeholders, as key report issues. In particular, in 2017, SK holdings announced the current status of its business, future strategies for growth and aggressively expanded the scope of information to be disclosed. Furthermore, the report covered in detail, the strategy of creating social values and activities linked to the UN's Sustainable Development Goals (SDGs).

Period and Scope

This report contains the financial and non-financial performance of SK holdings with regard to its major activities in sustainable business management from January 1, 2016 to December 31, 2016. In terms of quantitative performance, it also includes the most recent three-year performance from January 1, 2014 to December 31, 2016 to identify trends.

Standard

This report has been prepared in compliance with the GRI G4 Comprehensive requirements and the Global Reporting Initiative (GRI) that was announced in May 2013. We confirm that the company has met these requirements through third party verification. SK holdings also observes the principles of the UNGC's Communication on Progress (COP).

Boundary

The key boundaries of the report on quantitative and qualitative performance are limited to SK holdings, subject to separate IFRS standards, considering the Company's actual control and the impact of the individual operations on the occurrence of major issues. However, financial performance such as revenue is based on the consolidated financial statements for better understanding of stakeholders. Furthermore, considering that the merger took place on August 1, 2015, the data in 2015 indicates the sum of the business unit(C&C) of the holding company from January 2015 to December 2015 and that of the holding unit (holdings) from August 2015 to December 2015, respectively. Information on criteria other than those used herein was specified within the report separately.

Assurance

To ensure the credibility of the report, this report has been assessed by DNV-GL, an internationally accredited registrar with sustainability reports. The assurance results are provided in this report on pages 82 to 83.

2017 SK holdings
SUSTAINABILITY REPORT

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CHAIRMAN'S LETTER

SK has clearly stated "happiness of all stakeholders" as the core value in the SKMS (SK Management System), which is the backbone of the business philosophy and corporate culture of the SK. SK will continue to grow as a company that satisfies the stakeholders by generating both economic and social values.

The SK Group, which celebrates the 64th anniversary this year, has created financial values as it has led Korea's industrial development focusing on national basic industries such as energy, chemicals, information communication, semiconductors, etc. In addition, SK has been fully dedicated to creating social values by participating in solving various issues facing our society such as unemployment, polarization, environment issues, etc. In the years ahead, SK will strive to grow further, contributing to the Korean society by realizing both economic and social values.

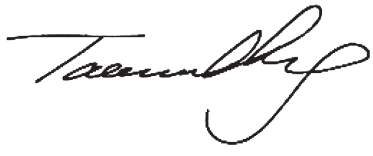
Amid the uncertain business environment of 2016, SK Group created meaningful economic values. It made KRW 199 trillion in sales, operating profits of KRW 9.3 trillion, and pre-tax profits of KRW 8.1 trillion. This is the result of all affiliates and employees working hand in hand for changes and innovations. Moreover, this achievement has been possible thanks to support by its stakeholders. We express deep appreciation to all of you.

A company inevitably has to take corporate responsibilities of both seeking stability and growth on a constant basis. However, at the same time, it cannot survive independently because the company coexists within the environment that consists of all interested parties such as society, customers, shareholders, etc. Accordingly, all employees of SK share the belief that, if a company is to be sustainable, it should put happiness of the stakeholders concerned ahead of its own corporate stability and growth.

As the core value, SK has clearly stated "happiness of all stakeholders" in the SKMS (SK Management System), which is the backbone of the business philosophy and corporate culture of SK . It recently reflected this value on articles of incorporation of key affiliated companies. It was the commitment of SK to become a company that pursues all happiness of all stakeholders. So far, SK has been consistent in conducting business activities in order to keep this promise. In the past, it concentrated mainly on corporate philanthropic activities in the environment and education sectors, including forestation and scholarship projects. These days, SK has made concrete goals by creating social values that contribute substantially to solving social problems. SK focus on recently revitalizing ecosystems of social enterprises specialized in solving social issues is based on this goal.

SK has actively pursued sustainability management which is in line with this goal. In the process of finding problems that our society is troubled with and resolving them, SK intends to improve the sustainability of the company by sharing their infrastructure and efficient management skills with society. Therefore, SK ' sustainability management is not just confined to profit, job creation, and materialistic social contribution activities. SK dreams of a big picture in which the company's innovative business model leads to creating social value. To this end, it has simultaneously engaged in identifying and measuring the social values generated by social enterprises as well as SK and its partner companies, and furthermore, to share them with society. SK believes that it could become a "sustainable company" only when innovation in this direction is completed.

The SK will strive to be a trustworthy and reliable company and remain as a company that coexists and cooperates with the Korean society. We deeply appreciate the continued unwavering support of our stakeholders.
Thank you.



Chairman & CEO of SK holdings
Chey Tae-won

CEO MESSAGE

SK holdings is confident that it will play a leading role in the Fourth Industrial Revolution and drive further growth through new breakthroughs. All employees of SK holdings will wisely go through the era of limitless competition by promptly executing works based on their enthusiastic attitude, cool-headed judgment, and coordinated teamwork.

Dear SK holdings Stakeholders,

It is a great pleasure to introduce our 2017 SK holdings Sustainability Report to you.

Since SK holdings started as an operational holdings structure in 2015, all employees have prepared for the future by addressing constant challenges and making bold decisions. In order to become a globally competitive holding company, it has explored new growth portfolios and brought innovation to the existing portfolio. Furthermore, SK holdings focuses on securing fundamental competitiveness in order to explore and promote new growth portfolios such as bio, pharmaceuticals, global LNG, modules of semiconductor materials, technology-based ICT, ICT convergence, etc.

In the biotechnology and pharmaceutical sectors, SK Biopharmaceuticals has entered the third phase of global clinical trials for new epilepsy medicine developed on its own, which was a great accomplishment. The medicine was highly recognized by the FDA for its superior efficacy. SK Biotek, a manufacturer of raw material medicines, has shown great growth, with its sales exceeding KRW 90 billion last year, and plans to secure about 800,000 litres of production scale by 2020.

In the LNG sector, SK has taken a leap forward as a global operator by securing value chains that encompass mid and downstream areas and developing overseas gas fields. It has also started commercial operation of a 1,800 MW high-efficiency power plant in Paju Province, Korea by directly importing the US shale gas and utilizing it as fuel for the first time in Korea.

In the sectors of semiconductor materials and modules, SK holdings has newly added SK Materials, SK Air Gas, SK Trichem, and SK Showa Denko. Especially, SK Materials made tangible results such as an increase of 37% in performance compared to last year after SK holdings' acquisition. Moreover, SK holdings has accelerated its business expansion by successfully acquiring LG Siltron, a manufacturing company of semiconductor wafers, at the beginning of this year.

In the technology-based ICT sector such as cloud and A.I (artificial intelligence), SK holdings has achieved high recognition in terms of its excellent ICT technologies and operational competence by developing A.I service platforms applicable to domestic medical, financial, manufacturing and entertainment areas and opening a cloud data center in Pangyo province, Korea. It has also been increasing and strengthening its roles to drive additional growth by evolving into a more profitable business model.

In the ICT convergence sector, including smart factories and logistics, SK holdings acquired SMC, which is a company specialized in a smart factory, thereby securing business competitiveness and establishing a foothold to enter the market at home and abroad. In addition, along with Foxconn, SK holdings has built FSK L&S, a joint corporation of smart logistics with the aim of promoting logistics business in China and globally. It has made various efforts to take the lead in the new ICT market that is expected to grow rapidly in the future.

SK Encar, Korea's largest used car dealer, has transformed itself with innovative business models in the used car distribution business, with a 23% increase in sales in 2016 compared to last year by diversifying used car business models and entering the global market.

As a result, SK holdings posted KRW 83.6 trillion in sales and KRW 5.3 trillion in operating income in 2016 based on the IFRS. In addition, it has been included in the Dow Jones Sustainability Index (DJSI) World for five consecutive years and won the Presidential Award in the sustainable management sector at the Korea National Quality Management Convention. Based upon these achievements, SK holdings has gained competitiveness that enhances corporate values and helps it to get abreast of other global top companies.

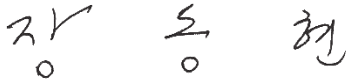
In 2017, amid uncertain internal and external business environment, SK holdings predicts that we will face the Fourth Industrial Revolution faster than expected due to information and communication convergence such as Big Data, Artificial Intelligence, and the Internet of Things. Under the stable governance, SK holdings will enhance corporate value by making continued innovation such as discovering new businesses and investments. To this end, SK holdings will create economies of scale and increase operational efficiency by drawing up and implementing measures to deep-change portfolio and changing its business model. In addition, we will strengthen our new business pipelines that can go global.

In the biotechnology and pharmaceutical sectors, SK holdings will take the dominant position in the new medicine industry, not only by the development of innovative drugs but also by global marketing and sales. In the semiconductor material sector, SK holdings will prepare for the surge in material demand arising from the Fourth Industrial Revolution and plans to expand cooperation with global companies.

SK holdings will make tangible achievement in the areas of artificial intelligence (A.I) and cloud business, all of which SK holdings has prepared in order to create better performance for digital innovation. And it will expand the scale by bolstering each industry-specific business models. In addition, we will achieve remarkable growth in the ICT convergence sector such as smart factories and logistics by shifting to high value-added business, mainly related to digital business. SK holdings will continuously increase mid and long-term R&D to improve our technical capabilities.

SK holdings will do its best to take more corporate social responsibility. In March, SK holdings revised some of its articles of incorporation, concentrating on corporate value and corporate governance. Through this, the company will consider the satisfaction of its stakeholders both in the present and future to help them provide a balance and harmony among the parties concerned and make the community sustainable in the long term. At the same time, as there have been growing demands for the information on corporate social responsibility, SK holdings will expand the scope of the information to be disclosed in the fifth sustainability report this year, and will show our achievements and enthusiasm for sustainable management in a transparent way to stakeholders.

SK holdings is confident that it will play a leading role in the Fourth Industrial Revolution and drive further growth through new breakthroughs. All employees of SK holdings will wisely go through the era of limitless competition by promptly executing works based on their enthusiastic attitude, cool-headed judgment, and coordinated teamwork. SK holdings, a representative company in Korea, will build a new growth business portfolio and lead the ICT innovation to become a global top player. We look forward to your continued interest in the wave of innovation that SK holdings will make in the future.



President & CEO of SK holdings
Jang, Dong Hyun

MAJOR BUSINESS AND GROWTH STRATEGY

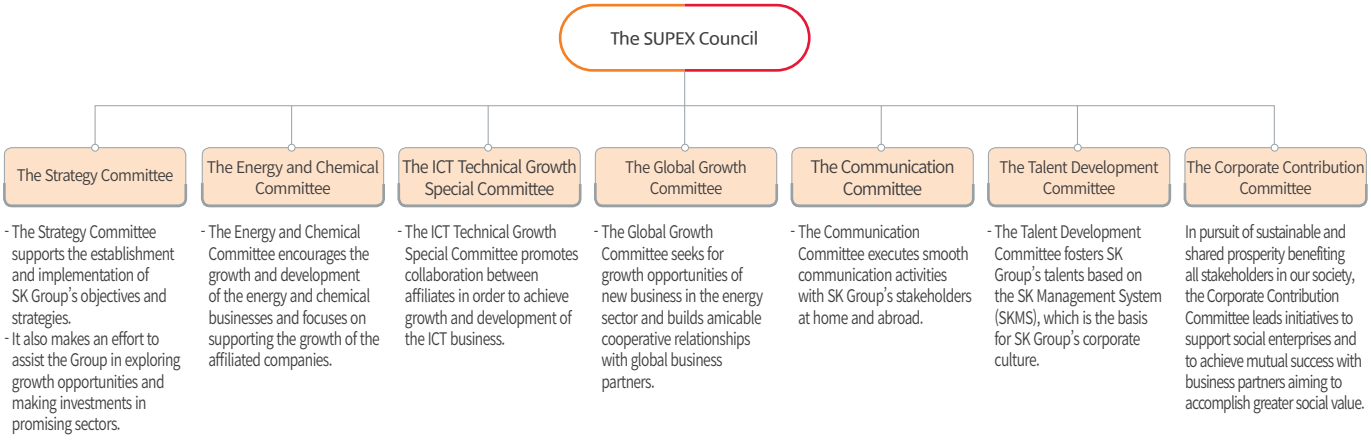
SK, Creating Bigger Happiness

Introduction of SK

SK has continued to grow and develop based on the independence and cooperation of affiliated companies. Each affiliated firm enhances competitiveness of its own business with independent management, and pursues maximization of corporate value. At the same time, it creates greater value through voluntary mutual cooperation among affiliated companies. SK keeps challenging and making innovation continuously and has become the driving force in the national development, through advancements in technology and management. This will be possible with our technological development that surpasses limitations with new insights on the future. Ranging from energy and chemicals to the information technology sectors, which are fundamental to the nation's economy as well as the semiconductor industry, SK has achieved greater success in wider geographies with passion and ability that has enabled the Company to help make Korea an energy exporter and a global IT powerhouse. The ultimate value that SK pursues is the happiness of our stakeholders. SK has been committed to making a happier future for all of us. SK will strive to fulfil its social responsibilities and roles as an exemplary corporate citizen, not just focusing on creating profits with a short-sighted approach, and will create a future in which all stakeholders could live in greater fullness.

The Deliberative Body of SK Group Management - SUPEX Council

The SUPEX Council acts as a supreme deliberative body of SK Holdingated such as the Strate'agreements' made by major affiliates in order to take mutual cooperative measures for effective execution of 'Independent Yet United'. Under the SUPEX Council, specialized committees in each sector are being operated such as the Strategy Committee, the Energy and Chemical Committee, the ICT Committee, the Global Growth Committee, the Communication Committee, the Talent Development Committee, and the Corporate Contribution Committee. Under the SUPEX Council and each committee in accordance with its own necessity and decision-making, each affiliate further revitalizes collective intelligence and mutual cooperation, and enhances the power of execution related to 'Independent Yet United'.



SKMS (SK Management System), Foundation of SK 's Management Philosophy and Business Culture

SKMS, which stands for SK Management System, is SK 's own unique management system, which was established in 1979 through agreement and consensus among all the members of SK . It contains SK 's own management philosophy and know-hows in a systematic way and has become a foundation in building the corporate culture of SK. SKMS has been greatly helpful in making constant development and growth up to now. Through the establishment of SKMS, it became possible to take another leap forward, thereby becoming a global leader, and to enhance the level of effectiveness of management amid rapidly changing business environment. As a basis of SK 's management philosophy and corporate culture, SKMS has been continuously upgraded and improved, and all employees follow SKMS with a firm belief in the system.

Happiness of Stakeholder	SK believes that a company must maintain stability and growth on a constant basis so that it can make further progress in the years ahead, and by doing so, it must provide greater happiness to its customers, all employees, shareholders and, furthermore, society. SK has a core value of making people happy, which in turn uplifts the company.
Pursuing SUPEX	The ultimate goal of SK is to create happiness for stakeholders and all people concerned. SK has set up SUPEX, an ultimate level that people should aim for (SUPEX refers to Super Excellence) and has strived to achieve this goal.
Ambition	SK has a strong belief that the goal of SUPEX can be attained through voluntary and proactive engagement of all members of SK, as the main agents in corporate management, with their utmost efforts. When employees participate voluntarily and actively, they show an ambitious attitude. Ambitious employees boldly take on high goals, strive to develop necessary competencies, and demonstrate teamwork to achieve higher performance. SK places an emphasis on people with such ambition, and creates an environment in which ambitious people can exercise their full potential.

SK Highlight History

2016
- Acquiring shares to secure competitiveness in semiconductor and bio- business through SK Materials, SK Biotek, etc.

2015.08
- **Establishment of an integrated holding company (SK C&C and SK holdings were merged)**

2012.05
- Expansion of Global IDC business for overseas business of SK Broadband

2011.11 / 2011.04
- Acquisition of Hynix Semiconductor (now referred to as SK Hynix) for a new leap forward
- Established SK Biopharmaceuticals for life science business

Opening the new era of SK Group (SK Way) to become a global leading company

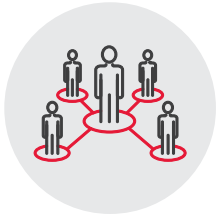
2010

2009.12 / 2009.09
- Establishment of SK Smile Microcredit Bank for the economically vulnerable classes
- Establishment of "Primary School of Happiness" to provide hope to people in Sichuan that was affected by the severe earthquake.

2008.08
- Opening of "SKMS Research Centre" for a more well-established corporate culture

2007.04
- **Transition to a holding company structure in order to establish transparent corporate governance structure i.e. SK holdings**

The Third Foundation, Shifting to a holding company structure



2006

2006.11 / 2006.04
- Establishment of the SK Happiness Sharing Foundation to help the underprivileged neighbours
- Completion of Ulsan Grand Park to improve the quality of citizens' life and to promote development in local community

2005.12
- Acquired Incheon Oil Refinery (now SK Incheon Petrochem)

2004.07
- Creation of SK Volunteer Group to set up a milestone for a better world

Starting a new era by providing growth and happiness

2002

2002.12
- SK Telecom introduced the world's first 3G mobile communication service

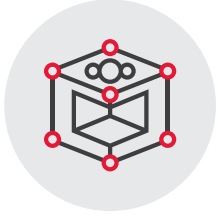
1999.12
- Merger of SK Telecom and ShinSegi Telecom, Inc.

1998.12 / 1998.04 / 1998.01
- Launch of SK C&C, a comprehensive information technology company
- Establishment of SK Telink as a response to the internationalization of telecommunication market
- Declaration of the Group's New CI

1996.01
- Korea Mobile Telecommunications Corp. commercialized CDMA for the first time in the world

1994.07
- Starting the information and communication business: Acquisition of Korea Mobile Telecommunications Corp. (now SK Telecom)

Opening up a well-connected society with information and communication



1991

1991.12 / 1991.06
- Taking over Taepyoungyang Securities (now SK Securities) to advance into the financial industry
- Completion of vertical integration from raw materials to products, with the completion of Ulsan Complex Plant

1984.06
- With the establishment of Yukong (now SK Gas), it advanced into the LNG and LPG industries.

1980.12
- Acquired Korea National Oil Corporation (now SK Innovation)
- Videotape development

1978.10
- Development of polyester resin with its own technology

Becoming the major artery of the Korean economy with energy and chemistry

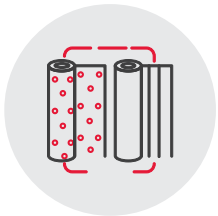
1973

1973.02 / 1972.11
- Helped nurturing talented students for the future through contests for scholarships
- Promoted business diversification through acquisition of Walker Hill

1959.12 / 1958.11
- Production of polyester fabrics
- Started production of nylon fabrics

1953.10
- Foundation of Sunkyoung Textile

Upgrading Koreans' lifestyle



1953

Major Subsidiaries of SK holdings

Energy and Chemicals

SK Innovation

SK Innovation is Korea's representative energy and chemicals company. It maintains world-class technology leadership in battery for electric cars and new energy solutions based on its diverse successful business models, ranging from direct exploration and operation of oil and LNG fields to their production, transportation, investment and sales.

SK E&S

SK E&S carries out energy projects overseas for LNG, electric power, community energy, and new and renewable energy in order to grow into a global gas and power company.

SKC

SKC, Korea's first developer of polyester film and a global producer of polyurethane(a base raw industrial material) is growing into a 'Global Specialty Material Company' leading the market of next-generation advanced materials through diversification of its product range.

ICT and Semiconductor

SK Telecom

SK Telecom is Korea's leading mobile phone service operator that occupies roughly 50% of the domestic market in 2016. And it leads Korea's ICT ecosystem with world-class and trend-setting technologies and services.

SK Hynix

SK Hynix is a company that produces system semiconductors focusing mainly on memory semiconductors. SK Hynix has enhanced its technological leadership by introducing innovative semiconductor chips of the highest speed and lowest voltage for the first time in the world after its trial production of 16KB S-RAM for the first time in Korea back in 1984. It has continued profit-oriented management and quality-based growth with its market-leading technologies.

SK Infosec

SK Infosec has grown into Korea's best information security service provider for ICT industries inheriting SK management philosophy of 'Pursuit of Customers' Happiness' since it was founded in 2000.

Marketing and Services

SK Networks

Since it started out as a fabric weaver, SK Networks has been engaged in energy distribution business focusing on petroleum products, information-communication distribution business mainly around mobile phones, and trading business based on its strong competitiveness such as network base at home and abroad, good customer relations and logistics capabilities. Furthermore, SK Networks carries outgrowth business such as car-life business including car rental service and automobile repairs, in addition to other growth businesses including hotels based Walker Hill, etc.

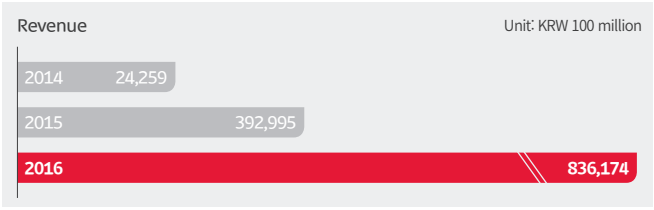
SK Biopharmaceuticals

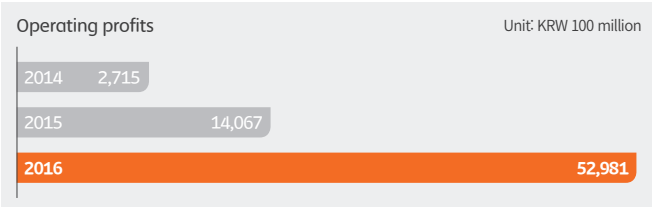
SK Biopharmaceuticals has grown into a new drug developer having a pipeline of many products currently in clinical trials. The products look promising enough to be successful in the global market since it started its new drug development in 1993 for exploring new growth engines for the next generation. It will further develop into a Global FIPCO (Fully Integrated Pharma Company) with all value chains in new drug development, production and marketing.

Introduction of Integrated SK holdings

On August 1, 2015, SK C&C merged with former SK holdings with the aim of securing a new growth engine for the future and enhancing shareholders' value through improved corporate governance. The new holding company changed its name to SK holdings Co. Ltd. and has gained further strengthened competitiveness by combining the ICT-based growth capabilities which the previous SK C&C held, with the resources and management capabilities of the former SK holdings.

In March 2017, with regard to its corporate values, SK holdings partially changed the state of the articles of incorporation, "the Company shall increase the value of its stakeholders and generate sufficient profits consistently for the future growth of the Company" into "the Company shall be committed to achieving harmony and balance among stakeholders and at the same time, it shall consider happiness both now and in the future for long-term sustainability." By revising the statement, SK holdings has strengthened its management system on the assumption of the happiness of all stakeholders such as customers, shareholders, and society.





* The above financial information is based on consolidated financial statements.
* The result of 2015, the performance data in 2015 indicates the sum of SK holdings (former SK C&C) from January 2015 to December 2015 and that of the former SK holdings before merger from August 2015 to December 2015.
* The result of 2014 is the performance before the merger of former SK holdings.

Overview of SK holdings Business

SK holdings consists of the holding unit (holdings) and the business unit (C&C). The holdings unit has business portfolios in various sectors and manages the SK brand while making investment in potential business for new growth. The business unit (C&C) engages in system integration and outsourcing that builds and operates IT system, and also involves in SK Encar, which sells and exports used vehicles.

1. Holdings Unit

Growth Strategy

SK holdings will be dedicated to increasing corporate values by simultaneously making investments in the business for new growth that is expected to have higher future value, based on value-oriented portfolio management.

Securing new growth engine of the Group

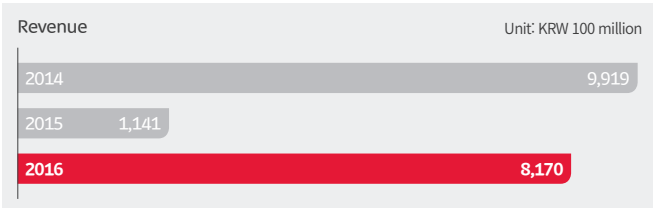
SK holdings has acquired a competitive business portfolio in various fields such as energy, chemical, telecommunication, and semiconductor, and has carried out long-term strategic investment for sustained growth and stability. To this end, SK holdings plans to invest and promote heavily in new growth fields, such as LNG, biotechnology, pharmaceuticals, and semiconductor materials, which are expected to have high growth potential in the future. SK holdings will not only obtain a primary competitive edge such as key technologies in each business area, but also actively attract investors strategically considering global expansion, and enhance value by cooperating with partner companies.

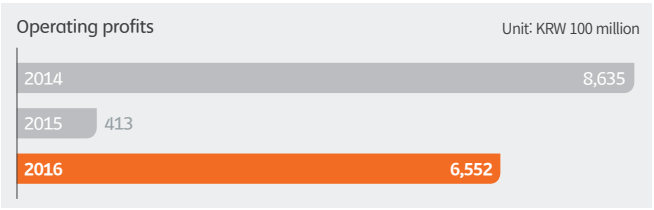
Bolstering the current portfolio management

SK holdings will continue to strengthen its value-oriented portfolio management in order to achieve substantial corporate governance with its focus on enhanced governance structure and financial stability. In particular, it will continue to enhance the value of SK holdings by promoting portfolio transformation into promising and high-growth sectors, through investment expansion focusing on the growth value and securing new investment resources through pre-emptive improvement in management and portfolio restructuring.

Financial Performance

The financial performance of the holdings division consists of dividend income, income coming from brand usage, and earnings from leasing that are received from subsidiaries and investment companies.





* The above financial information is based on separate financial statements.
* The results of 2015 are the sum of the five months from August to December of former SK holdings.
* The result of 2014 are the ones before the merger of former SK holdings.

Business Direction

LNG

Through its subsidiary SK E&S, SK holdings has Korea's best business competitive edge ranging from the upstream sectors of overseas gas field development to the downstream sectors of transportation, storage, power generation and gas service. It has also been dedicated to generating high profits stably and improving the competitive edge through the integration of LNG Value Chain. In addition, SK holdings plans to grow into worldwide LNG service operator by expanding its business globally, including China. In doing so, it will grow its LNG business to a five million-ton scale annually by 2020, based on plans to increase and integrate value chains into potential markets such as China, based on captive demand it currently has in Korea, along with competitive LNG sourcing service.

Bio-pharmaceuticals

SK holdings has nurtured the bio-pharmaceutical business part of the Group's key portfolio to create new values. SK holdings has invested in the development of diverse new drugs through its subsidiary, SK Biopharmaceuticals. It accelerates growth by adopting an independent system through the development of new drugs for the central nervous system, including those for narcolepsy (sleep disorder) and epilepsy. Additionally, SK holdings plans to grow SK Biopharmaceuticals into a global pharmaceutical company that integrates all value chains, from development of new drugs to production and marketing by 2018, as it deploys a consistent value chain concentrating on the production of medicines through SK Biopharmaceuticals.

Semiconductor Materials

Since SK holdings has a portfolio of SK Hynix, a world-class memory semiconductor company, the semiconductor materials sector has emerged as a key area for new business growth. Therefore, it is expected that SK holdings can bring about significant synergy effects in the value chain. Based on collaboration with SK Hynix, SK holdings aims to secure a high growth and a highly profitable portfolio by pursuing growth strategies that utilize the Group's global network. In order to do so, SK holdings will acquire a global top-tier technology company so that it can stably enter the semiconductor material market, enhance partnership with the existing semiconductor material firms, and expand into Taiwan and China by utilizing its broad global network.

2. Business Unit

Growth Strategy

SK holdings will become a leading company in the Fourth Industrial Revolution and accelerate its entry into the global market while expanding into the area of convergence services based on ICT.

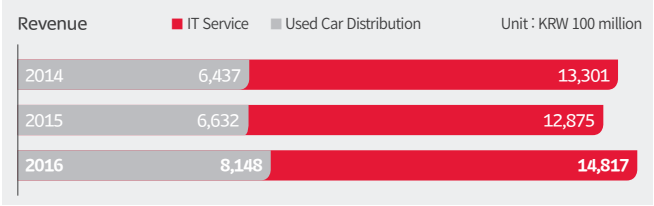
Strengthening tech-based ICT business

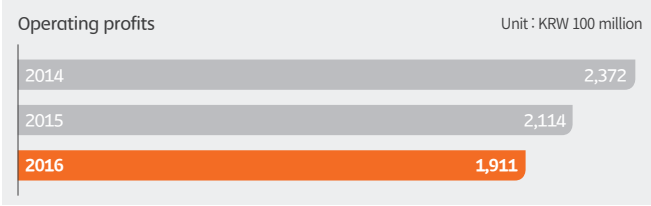
SK holdings aims to become a leader in the Fourth Industrial Revolution that is represented as IoT, Cloud, Big Data and A.I. To achieve this goal, it has expanded its business to promising technical sectors such as Cloud and A.I, and has made investments in these fields with our IoT and mobile technologies and strategic partnerships with global top-tier companies. Since 2015, SK holdings has been more aggressively pushing forward business by making Cloud Z in cloud sector and Aibril in the A.I sector since 2015.

Strengthening ICT convergence service business

SK holdings has accumulated competitiveness and know-how while operating and applying factory automation system to the companies such as SK Innovation and SK Hynix. Through the convergence of manufacturing and SK's ICT technologies, it will pursue Smart Factory business for a smarter and more efficient factory. To this end, SK holdings has made various partnerships with global operators such as Siemens and IBM, intensifying its core competitiveness in the smart factory business, and also plans to expand into other industries in the future.

Financial Performance





* The above financial information is based on separate financial statements.
* Figures for 2014 and 2015 show the records from January to December of SK holdings(former SK C&C).

Business Direction

ICT-based business

- Cloud Business : In December 2015, SK holdings secured domestic exclusive rights to IBM, and has now introduced our own exclusive brand "Cloud Z" based on our infrastructure, technologies and operational expertise, thereby providing the best possible cloud service to Alicloud and Amazon (AWS).
- A.I business : SK holdings obtained domestic exclusive supply rights for Watson, IBM's artificial intelligence platform in May 2016. And, it launched Aibril, its own A.I brand. Through this effort, SK holdings will preoccupy and lead the domestic cognitive computing market.

Industry convergence business

- Smart factory business: SK holdings has been currently doing business in a printer production line of the Chongqing factory owned by Hon Hai Group in Taiwan. We will continue to expand our smart factory business in China through close cooperation with Hon Hai Group. In this regard, SK holdings (former SK C&C) established FSK holdings, a joint venture (JV) company with Hon Hai Group in May 2015. Furthermore, FSK holdings acquired Maxnerva Technology Services Limited (formerly Daiwa associate holdings Limited), a listed company located in Hong Kong, as part of its growth strategy. Maxnerva is a manufacturer and distributor of IT components. We are planning to grow the company into a company specialized in industrial sensor and internet (IoT) related parts, based on based on IT service demand related to smart factories, which Hon Hai Group hopes to gain and additionally with SK holdings' proven IT capabilities and know-how.
- Smart logistics business : SK holdings established "FSK L & S", a global convergence logistics joint venture with JUSDA, a logistics subsidiary of Hon Hai Group Paxcon in November 2016. Through this, we plan to make full-fledged efforts in pursuing the logistics BPO business based on ICT technologies, starting from China and the Korean market in the future.

CREATING AND DISTRIBUTING ECONOMIC VALUES

Unit: KRW million

Total profits
3,135,368

Operating profits	3,113,719
Other profits	2,481
Financial profits	17,542
Profit and loss of investment of affiliated companies	1,626

Total cost
3,135,368

Total cost **2,493,674**

Operating costs	2,267,346
Other costs	23,507
Financial costs	160,567
Corporate tax expenses	42,254

Net profit during the term **641,694**

Reservation value	433,028
Dividend	208,666

Salary	324,047
Severance payment	27,293
Welfare benefits payment	53,070

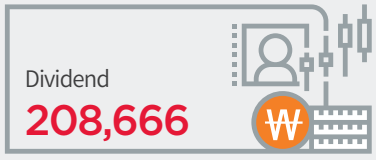
External order expenses	561,234
Material costs	989,820
Payment commission	30,645

Local community
15,768

Tax
42,254

Shareholders and investors
145,932

Other operational expenses
303,611
Depreciation + Telecommunication cost + Payment fee + Rental fee



Reservation value
433,028

MEETING WITH EXTERNAL STAKEHOLDERS

SK holdings holds annual stakeholder meetings to identify the current status and level of sustainable management, and to examine the future direction in the years ahead. This year, we invited experts in the fields of environment, CSV, sustainable development goals (SDGs), investors and experts in governance structure. All participants reviewed SK holdings' overall sustainability management in 2016, and provided opinions on its future direction.

Topics and Highlights

A review of the sustainability report and suggestions for SK holdings' future direction

Subject	Key Issues
Agenda 1. Review of SK holdings' Sustainability Management	• The report shows the strategy and the current status of the company as a holding company. • It transparently disclosed even negative issues such as violations of ethical management.
Agenda 2. Future Directions	• As a report of the holding company, it needs to manage and track data constantly and clarify the scope of the data management. • The report provides a long-term response strategy with regard to global megatrends. • It presents a specific direction for future growth businesses.

UN Global Compact

It is necessary to set up specific goals about the report issues before the review, and open them in the report for continued management.

Lee Eun-Kyung, Senior Researcher

I believe that the sustainability report issued in 2016 demonstrates well the strategies and current status of SK holdings as a holding company. However, it seems to be necessary to set up specific goals about the report issues before review, and open them in the report for continued management. In particular, when external investors review the holding company's report, there is a question as to whether it is appropriate to include data from all the business sites and affiliates. The reasonable scope of the report should be clearly designated by considering this matter.

In recent years, a lot of global companies have chosen issues for their reports within the framework of the sustainable development goals (SDGs) announced by the United Nations(UN). Since the goals of sustainable development reflect the issues that internal and external stakeholders have agreed on corporate social responsibilities, I hope that SK holdings' report will also reflect the status and performance of its sustainable development goals.

aSSIST

It would be good to present SK holdings' responses and strategy for the Fourth Industrial Revolution or urbanization, which have been presented as a global megatrend in addition to global GRI indicators from a long-term perspective.

Kim Jae-Eun Professor

Due to the report characteristics of the holding company, it will not be easy to select the scope of management of data. One possibility would be reporting with its focus on the personnel and environmental data that could be tracked over time continuously. In addition, it would be good to present SK holdings' responses and strategy for the Fourth Industrial Revolution, which has been presented as a global megatrend in addition to global GRI indicators from a long-term perspective. In other words, to sum up, I hope that SK holdings would suggest strategies in response to rapidly changing social issues in its sustainability report.

And finally, SK holdings is known for its excellent social contribution. Therefore, I believe that SK holdings will create a more advanced report if it shows the result of what output has been derived, rather than just the achievement side.

ECOSIAN

As to operating the data center where energy is mainly used, it is important to establish energy saving goals, and consider it as a top priority.

Joo, Jun-suk, Consultant

I believe that SK holdings needs to track and manage data over a long and continuous basis by specifying the data management system and its scope. In particular, since it is important to set and manage consistent data in the case of environmental data, it is necessary to improve and complement the internal management system to cope with issues that may arise.

Through this materiality assessment, “efficient use of energy and reduction” was selected as an important report issue regarding the environment. It can be said that the outcome eventually reflects the needs of external stakeholders in SK holdings. One example would be the data center, where energy is mainly used. The goal of energy saving should be considered as a top priority throughout the entire process from basic design to operation.

Sustainable Finance Center

I hope that future reports will show in detail the current status of business and future direction of new growth business.

Se Yeon Park, senior researcher

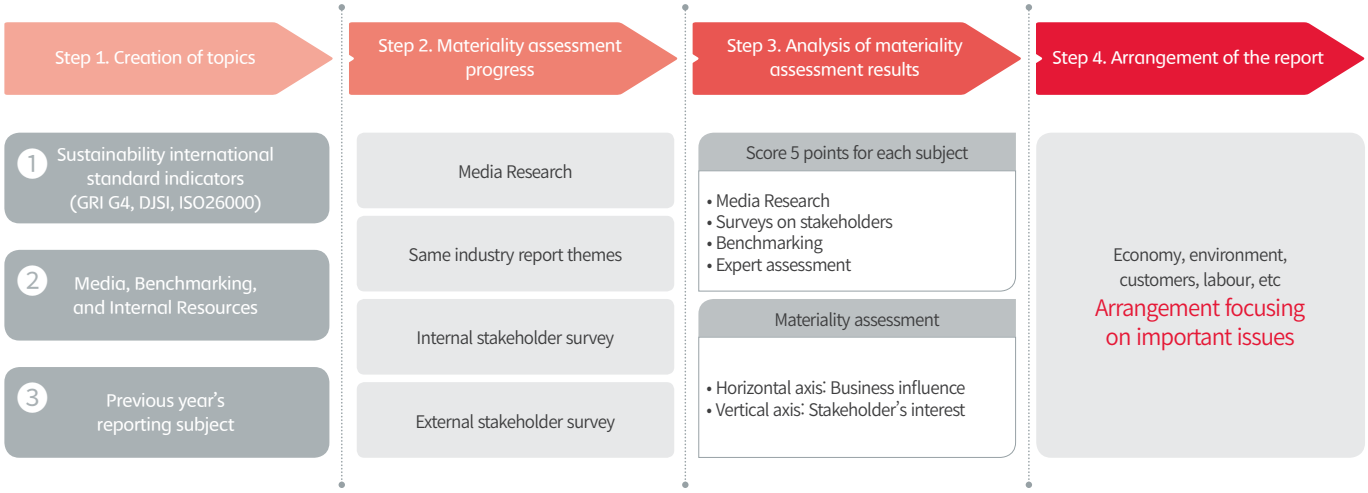
What impressed me in the 2016 SK holdings Sustainability Report is that the report made transparent disclosures of even ethical management violations. I believe that if violation cases in ethical management and follow-up measures are presented through continuous follow-up management in the future, it will become a meaningful report in terms of ethical management.

From an investor’s point of view, the most important consideration in the report is the new growth business. I hope that future reports will show the current status of business and strategies of the existing business as well as future direction of new growth business.

MATERIALITY ASSESSMENT

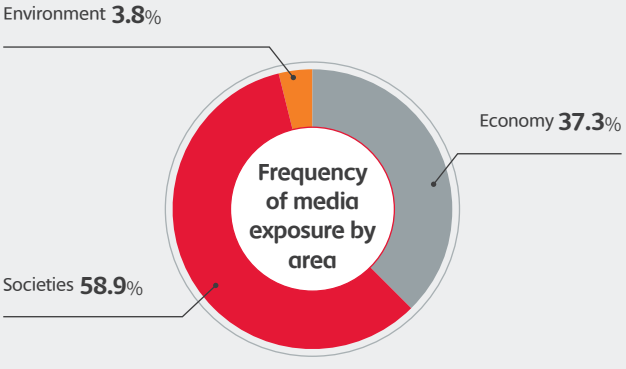
Materiality Assessment Process

SK holdings has assessed materiality to derive issues which our internal and external stakeholders regard to be important, and those that appear to have a greater influence on the business. A total of 10 important reporting issues were selected for this year's report, and the contents of the report were organized around important topics such as the economy, environment, and customers.



Media Research

From January 1, 2016 to the first half of 2017, we analyzed the media exposure of SK holdings, and found that social issues such as customer satisfaction service and mutual growth accounted for more than 58%. On the other hand, the environmental issues were less exposed, due to the characteristics of the ICT industry, and a number of positive issues such as eco-friendly projects and external awards related to greenhouse gas reduction were exposed.



- Economy: Starting new business such as "Opening cloud service portal site"
- Societies: Social Responsibility such as Service for Customer Satisfaction (SK Encar,), Reduction of North Korea Cyber Terror Damage, and Special Lecture for Partner Companies
- Environment: Partnership with eco-friendly car wash companies (SK Encar,), Award for GHG reduction, etc.

Industry Peer Group Benchmarking

We examined sustainability reports of foreign and domestic companies in the same industry and analysed major issues reported. As a result, R&D investment in ICT technology innovation, reduced emission of greenhouse gases and ozone destruction substances, and quality and service management issues for customer satisfaction were searched frequently as reporting issues.

Category	Report Topics
Economy	Creating economic value and fair distribution
	R&D investment in ICT technology innovation
Environment	Efficient use and reduction in environmental energy usage (electricity, oil, etc.)
	Decreasing emissions of greenhouse gases (CO_2) and ozone depletion materials (CFCs, etc.)
	Providing eco-friendly products and services from the customers' perspective
	Minimization of environmental impact between projects (expansion of video conferences, etc.)
Labour	Respect for employees' diversity (age, sex, and region)
	Strengthening the safety and health of all employees, cooperative employees, and dispatched employees
	Investment and support in terms of improving employees' capabilities
Accompained Growth	Selection and evaluation of transparent partner companies and compensation
Local community	Socially contributable investment for the local community and service provision
	Social contribution activities linked with the IT industry
Customers	Quality and service management for customer satisfaction

Survey of Stakeholders

We conducted surveys of internal and external stakeholders including all company's employees and experts in sustainability management. Major issues of interest for each stakeholder include the following issues : economic revitalization in the local community, improvement of work environment and organizational culture, and quality and service management for better customer satisfaction.

Internal stakeholders

Main topics

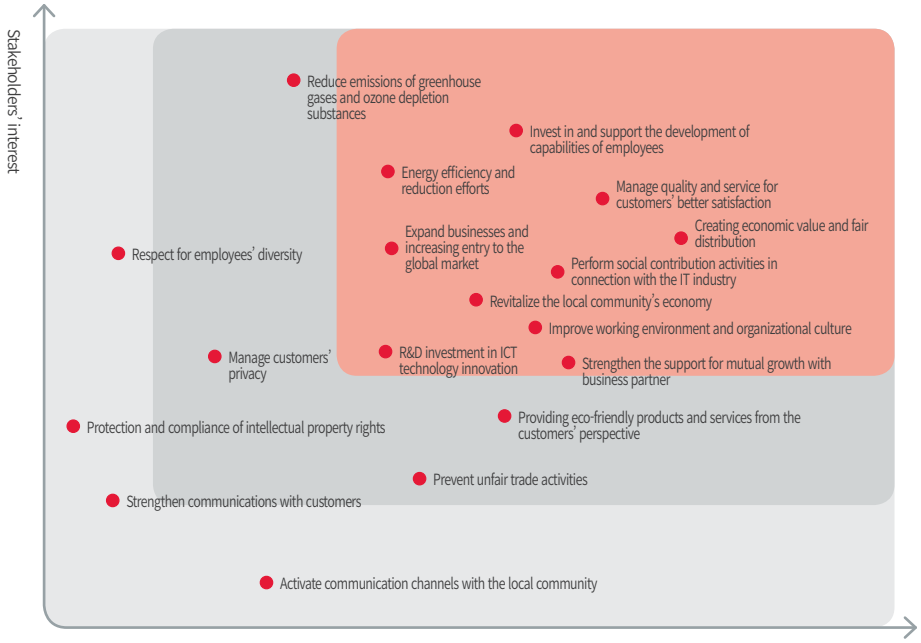
- Improve working environment and organizational culture
- Manage quality and service for customers' better satisfaction
- Perform social contribution activities in connection with the IT industry
- Strengthen business portfolio management system
- Providing eco-friendly products and services from the customers' perspective
- Revitalize the local community's economy
- Invest and support in terms of employee capacity development
- Creating economic value and fair distribution
- Strengthen the support for mutual growth with business partner
- Prevent unfair trade activities

External stakeholders

Main topics

- Reduce emissions of greenhouse gases and ozone depletion substances
- Energy efficiency and reduction efforts
- Revitalize the local society's economy
- Expand businesses and improve entry to the global market
- Invest in and support the development of capabilities of employees
- Improve working environment and organizational culture
- Manage quality and service for customers' better satisfaction
- Manage customers' privacy
- Participate actively in social contribution activities of all employees
- Strengthen support for mutual growth with business partner

Results of Materiality Evaluation and Main Report Topics



* Some topics were omitted.

Main Report Topics

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Strategic Focus Area

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02. Securing and Developing Talented Experts for New ICT 25

03. Improvement of Innovative Work Environment and Organizational Culture 30

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DMA

DISCLOSURE ON MANAGEMENT APPROACH

01. EXPAND BUSINESSES AND IMPROVE ENTRY TO THE GLOBAL MARKET

Background of Key Issue Selection

SK holdings has set a vision of "becoming a global holding company with a growth business-oriented portfolio". To this end, we have strived to enhance the competitiveness of our subsidiaries' portfolios, explore and nurture new growth businesses, thereby generating economic achievements as social value. By 2020, we aim to achieve KRW 200 trillion in sales and pre-tax profits of KRW 10 trillion. SK holdings has been fully dedicated to concentrating all our capabilities to meet the expectations of stakeholders. We will focus on five new growth areas i.e. bio -pharmaceuticals, global LNG, semiconductor materials and modules, tech-based ICT, and ICT Convergence so that it could become a global business holding company.

16 cases

Number of new drug trials that were approved

24%

The sales growth rate of ESSENCORE compared to 2015

Impact of Key Issue

The IT services industry included SK holdings has seen a slowdown in the overall growth as companies' computer systems become more universal, and the number of new investments and large-scale projects has declined. Since the revision of the Software Industry Promotion Act in 2012, regulations have been strengthened, and we have been facing a generally unfavourable operating environment; for example, the intensified monitoring of compliance with various systems such as participation of SI companies in the public market, and the tightened supervision of ordering organizations. To prepare for this, SK holdings will continue to enhance its portfolio value through strategic investment from a long-term perspective and will increase its entry into the global market, and expand its business utilizing new ICT technologies in order to aggressively promote digital transformation.

Our Achievements and Future Goals

	Classification	Goal of 2016	Performance in 2016	Medium and Long-term Goals (2020)
Businesses for New Growth	Pharmaceutical·Bio	Develop new drugs for intractable epilepsy	Succeed the phase 2 and entered the phase 3 of clinical trials of refractory epilepsy	Become the No. 1 Pharma Company globally in terms of epilepsy (achieve KRW 1 trillion in sales)
		Achieve growth by expanding sales and increasing raw drug material supply	30% increase in sales compared to 2015	Global Top 10 CMO (Achieve KRW 1.5 trillion in sales)
	Global LNG	Establish mid and downstream business structure in China	Negotiated and agreed on joint projects with China's largest state-run development company	Become a global LNG player with the scale of 5 million tons (Achieve KRW 8.2 trillion in sales)
	Semiconductor materials and modules	Expand the area of new materials based on semiconductor materials	Acquired and capacity building of SK Materials	Establish business portfolio of a globally top-tiered materials (Achieve KRW 1.5 trillion in sales)
		Expand the line-up of high value-added products	Sales growth by building up high value-added products and sales channels	Grow into global top 3 module house (Achieve KRW 2 trillion in sales)
	Tech based ICT such as Cloud, A.I	Create foundation for cloud business	Opened SK Cloud Portal and Cloud Center in Pangyo-province, Korea	Take a leap toward becoming Korea's No.1 cloud business operator (Achieve KRW 600 billion in sales)
		Make early entry into the domestic market by securing globally excellent A.I technologies	Delivered advisory service related to artificial intelligence antibiotics	Disruptive Player of all vertical areas (Achieve KRW 400 billion in sales)
	ICT convergence such as smart factory, smart logistics, etc.	Advance into the Chinese market and make M & A at home and abroad	Maximized production efficiency by building a smart factory in China	Become a leader in digital transformation in Korean and Chinese manufacturing industries(Achieve KRW 500 billion in sales)
		Establish the foundation for promotion of logistics business	Smart logistics JV (FSK L&S)	Become a BPO business operator in global logistics (Achieve KRW 1 trillion in sales)

Pharmaceutical · Bio

SK Biopharmaceuticals, a subsidiary of SK holdings, develops new drugs. Since its foundation in 1993, it has focused its capabilities on the central nervous system, and has developed innovative novel drugs with an aim of advancing into the global market. As a result of the continued investment in key tasks with a long-term perspective, SK Biopharmaceuticals has grown into a new drug development company with a number of promising clinical pipelines that are highly likely to succeed in the global market.

It is the first company in Korea that received the IND approval from the FDA. It has acquired approvals on 16 clinical trials, and has been highly recognized with its global competitiveness. The Institute for Drug Development at Pangyo Techno Valley located in Gyeonggi Province, Korea has been conducting basic research for the development of central nervous system drugs. Furthermore, the local subsidiary in the US directly performs global clinical developments, thereby building a solid business foundation for the overall development of new drugs from research to clinical development.

Research Project	Research Results and Expectations	Current Progress
Development of epilepsy drugs	Development of epilepsy drugs with superior efficacy and safety compared to the conventional drugs, and with therapeutic effects on a wide range of central nervous system diseases.	Clinical development is underway after the FDA clinical trial approval (IND Filing)
Development of chronic constipation & irritable colon syndrome treatment drugs	Development of effective new drugs compared to the conventional drugs, for chronic constipation and irritable bowel syndrome that have better efficacy compared to the existing drugs	
Development of cognitive disorder treatment drugs	Development of cognitive disorder-related schizophrenia treatment with excellent efficacy and safety from animal experiments	
Development of Parkinson-related dyskinesia treatment drugs	Development of ADHD drugs, which have superior drug efficacy compared to the conventional drugs and have low possibility of drug abuse	A primate experiment is in progress, following which we aim to apply for the FDA's clinical trial approval (IND Filing)

In 2016, the US Food and Drug Administration (FDA), approved the epilepsy medicines (YKP3089), which are being independently developed by SK Biopharmaceuticals. As a result, the Company is now able to pursue the development of new drugs without the 3rd phase clinical efficacy test which is the first time in the world in the case of epilepsy treatment drugs. Epilepsy is a disease in which nerve cells in specific areas of the brain are in an agitated state which causes repeated seizures. When the disease becomes chronic, it causes brain damage and physical and mental disorders. In the second phase of the test, our drug was administered to refractory patients who were not treated with the conventional drugs. As a result, the rate of seizure frequency reduction was 55%, which is twice as effective as the existing drug. Generally, the 3rd phase of clinical trials will be carried out for drug efficacy and safety testing. However, since SK Biopharmaceuticals' new epileptic medicine has excellent efficacy, it will only be tested for long-term safety. In 2017, we plan to apply for FDA's approval to sell the new drugs.

SK Biotek manufactures and sells APIs and medicinal intermediates with a wide range of scope, from clinical test materials to commercial phase drugs. SK Biotek has grown steadily on the basis of differentiated technologies in the raw material medicine market, and has grown into a global CMO company.

SK Biotek has developed efficient and differentiated production processes based on the capabilities it has accumulated in the petroleum and chemical businesses, and has produced APIs and medicinal intermediates. Since 1999, it has continued to widen its business scope with major global pharmaceutical companies, and has ample experiences in developing and manufacturing processes for various clinical and commercial raw material for medicines. In particular, SK Biotek provides fast and reliable services related to various raw material for pharmaceutical drugs and medicinal intermediates ranging from the volume of several kilograms to tens of tons. Through its high-level, innovative processing capacity and close communication with customers, it has met a wide range of customer requirements throughout the whole life cycle of the products, and based on the quality management system that meets cGMP standards, it provides a variety of services encompassing manufacturing of clinical test substances to process validation and CMC documentation.

In 2016, SK Biotek has optimized the main process factors of the pharmaceutical manufacturing process, developed a highly reproducible and economically competitive commercialization process for the treatment of multiple sclerosis drug intermediates, and plans to start production in 2017 by building an additional new plant in Sejong City, Korea.

Global LNG

SK E&S was launched as a holding company in an urban gas business in 1999, and has currently been expanding its business to LNG, electric power, group energy, renewable energy, and overseas energy business. SK E&S operates a natural gas power plant in Gwangyang province to supply electricity, and has contributed to the national power supply by introducing competitive LNG in terms of economy and efficiency. In addition, SK E&S has supplied eco-friendly, high-efficiency energy to homes and industries as a group energy business that simultaneously produces heat and electricity. Its seven subsidiaries of city gas located throughout the country supply urban gas by giving a top priority on safe management. Based on our accumulated experience, it has also focused on the expansion of the urban gas business in China. SK E&S has been leading environment protection policies and follows the national eco-friendly policy direction by promoting new and renewable energy projects such as photovoltaic power generation and fuel cell power generation, which are future energy sources.

SK E&S has vigorously promoted overseas business not only in Korea but also overseas with an aim of becoming a global gas & power company. In particular, in 2008, it invested in China Gas holdings (CGH), China's largest privately-owned urban gas company, and participated in the management through the board of directors, in order to respond quickly to the rapidly growing Chinese city gas market. In addition, it has been partnering not only in the area of the city gas providers, but also in the LPG and LNG areas in order to enhance the corporate value of its partners. Wuhan SK-Sino Gas Group Ltd. (previously, Wuhan SK E&S-SINO Gas holdings Co. Ltd.), a joint venture established in 2007, has a total of 16 corporations and four subsidiaries.

In February 2017, Paju Energy Service, a subsidiary of SK E&S, began commercial operation of a 1,800-megawatt (MW)-level, highly efficient natural gas power plant located in Paju, Korea. SK E&S's Paju natural gas power plant has used 66,000 tons of shale gas from the LNG terminal of Sabine Pass located in Louisiana, USA, and it is the first to introduce American shale gas into Korea. Unlike other natural gas power plants that supply fuel from the KOGAS, the Company produces electricity at a low price, achieving cost savings by directly bringing the shale gas at competitive prices, thereby contributing to the improvement of the welfare of the people.

Semiconductor Materials and Modules

SK holdings decided to acquire 49.1% of OCI Materials' shares from OCI, the largest shareholder, on November 23, 2015, in order to foster the portfolio for new growth through entry into the semiconductor special gas business. On February 16, 2016, OCI Materials changed its company name to SK Materials through the extraordinary general meetings of shareholders.

SK Materials manufactures and sells special gases (NF3, WF6, SiH4, etc.) used in semiconductor and LCD panel manufacturing, and industrial gases (O2, N2, Ar, etc.) used in various industries. Since its foundation in 1982, SK Materials has been continuously researching and developing to take a leading position by finding profitable businesses with high growth potential. Consequently, it has succeeded in localizing NF3 for the first time, and currently, it is the world's largest operator of NF3 in terms of production and market share. SK Materials has major production facilities in Yeongju and Ulsan, Korea and has sales subsidiaries in Taiwan and Japan, and production facilities and sales subsidiaries in China.

SK holdings acquired a 51.0% stake in LG Siltron Co. Ltd. from its largest shareholder, LG Corp., on January 23, 2017, in order to bolster its semiconductor material business by entering into the silicon wafer manufacturing and sales business.

In addition, SK holdings bought ISD Technology (currently, ESSENCORE), a semiconductor module company in Hong Kong, for the semiconductor module business in 2014, thereby securing global customers based on SK holdings' marketing capabilities and capital, and successfully entering a market previously dominated by companies in the Great China Region. ESSENCORE's main product lines include DRAM modules and flash memories, for which raw materials are sourced from the IDM (Integrated Device Manufacturers) both at home and abroad.

In 2016, ESSENCORE generated sales of $ 669.9 billion, a 24% increase over its 2015 performance. This is the result of focusing on the eco-system mainly in the Great China Region including Hong Kong, Taiwan and China. It plans to expand its sales channels to developed markets as well including America and Europe.

Tech-based ICT such as Cloud, A.I, etc.

Cloud

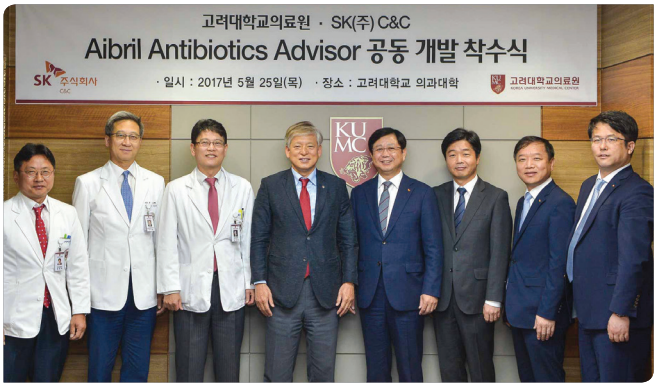
In recent years, companies are increasingly adopting Clouds in terms of IT cost reduction and IT resource efficiency. The global market grew by 16% from $ 175 billion in 2015, and is expected to have a market size of $ 368 billion in 2020. Korea's domestic cloud market is predicted to grow annually by 19% from KRW 800 billion in 2015, and to reach the market size of KRW 2 trillion by 2020. Major global cloud providers such as AWS and Salesforce are dominating the existing IT services market with a high growth rate of over 20% each year.

Accordingly, SK holdings' cloud business, through its own brand, "CloudZ", provides the best-possible cloud services such as Alicloud and Amazon (AWS) based on SK holdings' infrastructure technology and operational capabilities, starting from the acquisition of exclusive rights of IBM Softlayer in December 2015. Customers can receive the best solution optimized for their own business characteristics through the CloudZ service of SK holdings without any regional limit. Also, SK holdings provides "consulting, migration and customizing" services on the basis of infrastructure technologies and excellent operational capabilities, thereby reliably supporting customers' transition to Cloud.

In the future, SK holdings plans to continue to intensify partnerships with other companies home and abroad in the areas of infrastructure as a service (IaaS) and software as a service (SaaS) and platform as a service (PaaS). In addition, it will enhance its differentiated competitive edge of SK CloudZ by cooperating with Pangyo Cloud Centre and global cloud companies. In the mid & long-term, SK holdings will continue to boost its SaaS solution business, which is specialized to specific verticals, in line with the global expansion of its IT services, including A.I and smart factories, and the expansion of services to the core business area. This will help grow the sector into a business with sales of KRW 600 billion with the 1st ranking such as market share of 30 %.

A.I (Artificial Intelligence)

The global A.I (artificial intelligence) market is expected to grow faster than expected thanks to the rapid development of new technologies, investment of major companies, and an increase of technology introduction cases . To date, Korea's domestic A.I market is yet to become dynamic, and its full-scale growth is expected after 2020. Since it is predicted that the service and product intelligence through A.I technologies will become an important trigger of the Fourth Industrial Revolution in the future, SK holdings has further strengthened its investment in this field. SK holdings' A.I business secured domestically exclusive rights to Watson, IBM's artificial intelligence platform in May 2016, and launched Aibril, its own A.I brand in May 2016.



In 2017, SK holdings became the first in Korea in launching an open API-based artificial intelligence service, which enables the Company to obtain the predominant position in the domestic A.I field. Accordingly, it will prioritize the business of B2B intelligence integration such as unmanned call centres based on the existing customer base, financial asset recommendation and fraud detection service, etc. In addition, SK holdings will continuously strengthen its local-based A.I capability and expand its overall domestic A.I market by building own platforms and fostering start-ups.

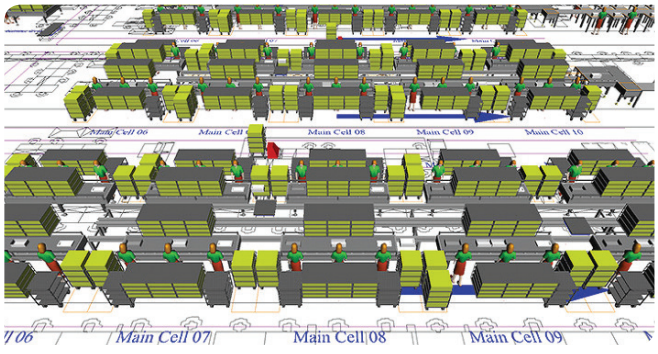
In the future, SK holdings will steadily explore additional business opportunities in the B2C area as well, and increase its investment in related fields such as robotics and smart devices in order to achieve sales of KRW 400 billion by 2020.

ICT Convergence such as Smart Factory, Smart Logistics, etc.

Smart Factory

The domestic market of the smart factory industry is expected to grow from KRW 4.1 trillion in 2016 to KRW 6.3 trillion by 2020. The key success factor in achieving competitiveness in the smart factory business is the convergence of manufacturing capabilities including automation and ICT competence. Since SK Group has outstanding capabilities in terms of manufacturing such as semiconductors, oil & gas as well as ICT, enabling it to become a complete operator, the key areas of the manufacturing process will be shifted from automation to ICT gradually, and this change will provide SK holdings greater strength in the IT and ICT sectors with a significant growth opportunity.

In 2016, SK holdings launched "Hon Hai Group's pilot construction of a smart factory in Chongqing, China", together with Maxnerva, an affiliate of Hong Hi Group. Based on its own "smart factory platform", SK holdings connected simulation-based printer production line design, making IoT process in production line and equipment, smart control of production line and robot-based logistics automation, big data-based production process analysis & diagnosis, SCM (supply chain management) & ERP system. As a result, the Company has achieved smart factory intelligence following the simulation-based factory line design. Through this, it has realized a smart factory that is intelligently operated with real-time monitoring of all production processes, analysis and prediction of production, prevention of equipment failures, and accidents.



In the future, SK holdings plans to transform one of its printer production lines of Hon Hai Group's Chongqing plants into a smart factory model line, and then expand it into the entire all production lines(24 line) in Chongqing factories. In particular, it will expand its smart plant business to other emerging global production bases such as India and Vietnam following China, and will also target the smart factory market for Korea's domestic manufacturing sector. By doing so, it will transform domestic manufacturing into advanced ICT convergence manufacturing sector, thereby contributing to the realization of Korea's national manufacturing innovation. SK holdings will expand its capabilities in process design and simulation, automated equipment design, and analytics, and with regard to specialized sectors such as PLC, it will continue to strengthen partnership with global leading companies, thereby positioning itself as a complete smart factory integration company in the mid & long term in Asia. SK holdings plans to generate KRW 300 billion by 2018, and KRW 500 billion by 2020 in terms of sales.

Smart Logistics

With the convergence and integration of ICT in the traditional logistics market, the economic impact of the logistics industry is expected to rise to KRW 1,900 trillion over the next 10 years. The core competitiveness of the smart logistics business is IT solution, and its key is to accumulate vast amounts of data generated from various devices and vehicles in logistics planning and execution areas and to create value through analysis. SK holdings has established a global top-level logistics platform and has pursued strategic partnership to secure business know-how that is required for better logistics business and to expand global business.

In 2016, a global convergence logistics joint venture established with JUSDA, a logistics subsidiary of Hon Hai Group Faxconn, officially launched with its company name as "FSK L&S" and introduced KEROL, an integrated solution brand of converged logistics. KEROL is a convergence logistics integrated solution that pursues the "Key of Convergence Logistics" which is a differentiated core competitiveness of the company which means the key to convergence of logistics. It provides specialized global logistics service by securing the visible whole areas of logistics through the logistics ICT platform that combines with consulting, IoT, artificial intelligence, robots, Big Data, etc.

Furthermore, it leads the digital transformation based on the integrated logistics platform through strategic alliances with global logistics companies and by utilizing the accumulated industrial expertise in the IT service business. It allows the customers to track, manage and predict the "flow of goods" through seamless communication and close cooperation among shippers and logistics companies in any region, and can support integrated logistics planning.

DMA

DISCLOSURE ON MANAGEMENT APPROACH

02. SECURING AND DEVELOPING TALENTED EXPERTS FOR NEW ICT

Background of Key Issue Selection

As a comprehensive IT service provider, SK holdings has contributed to maximizing customer value with its global top-level IT service technologies and know-how in all areas of IT services, including public, financial, energy, chemical and manufacturing sectors for many years. For this reason, it is true that the policy related to capabilities development and promotion has largely relied on expanding the ICT skills of employees. However, in order for SK holdings to transform into a technology-oriented company through digital transformation, it is crucial to secure and develop new ICT technologies. In particular, SK holdings will identify the new ICT technologies that are required and pursue strategies for securing talents and developing strategies to have such expertise as recent new ICT technologies require differentiated expertise from the existing ones.

Impact of Key Issues

If new ICT technologies such as Cloud and A.I cannot be secured, there could be an obstacle in the existing ICT business expansion and new business implementation. In particular, advanced technologies such as intelligent robots and deep learning must be secured as a technology since they will lead the Fourth Industrial Revolution in the future. However, since it is still in the research stage, we have focused on industrial-academic cooperation of domestic and overseas universities and research institutes. SK holdings has set recruiting new ICT specialists and investing in capabilities of employees as the most essential strategy in order to have competitiveness in the future business and technologies, and will take the lead in securing and developing human resources optimized for digital transformation.

Our Achievements and Future Goals

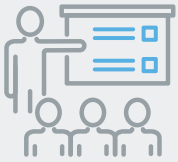
Classification	Goal of 2016	Performance in 2016	Medium and Long-term Goals (including 2017)
Recruitment of major talents for Digital Transformation	Changes in the HR system to become a technology-driven company	Introduction of technical expert member system	Recruitment of ICT major talents at home and abroad
		Global recruiting targeting 13 universities in the US	
		Employment of talented people through SNS channels	Diversification of talent recruitment channels
Establishment of educational system for Digital Transformation	Design and introduction of the leading new ICT training system	Establishment and implementation of training systems related to ICT technology competence	Monitoring and complementing of ICT education curriculum
		Design and pilot implementation of technology self-assessment	Advancement of tech assessment-based technology capability building system
Support of capability building for Digital Transformation	Support of self-learning for all employees	Establishment of new technology collaboration lab, and implementation of GSP and MOOC	Strengthening activities to improve employees' competency
		Implementation of open labs, D'talks, and Techie Chat	Activation of creativity, innovation and knowledge-sharing culture
		Implementation of CEO forum, team leaders' workshop, and training courses of business model innovation for team leaders	Strengthening technical capabilities for executives and directors
	Securing and developing competencies through internal and external exchanges	Introduction of industrial-academic joint research system and selection of scholarship students in the relevant field	Regularization of cooperation between industry and academics and expansion of the relevant areas with ICT-specialized universities and research institutes
		Implementation of SK Group's ICT Summit	Improving capacity through exchanges among ICT companies

13 universities

Number of Global Recruiting University

43 courses

Number of New ICT Training Courses



2,327 people

Number of Students Who Have Completed the New ICT Courses

Recruitment of Major Talents for Digital Transformation

Introduction of Technical Committee System

The New ICT area is new, experimental and has unlimited growth potential. As a result, new ICT talents have differentiated characteristics from those of the existing IT services. For this reason, there may be limitations in applying the current regular HR system for the recruitment of the new ICT personnel.

SK holdings has established a technical committee system of individual contract in order to implement a strategy for bold and competitive talents in the new ICT field. The technical committee members are the best technical experts who can fully satisfy our customers based on their unique expertise. They are leading the development of basic technologies and technology-led fields such as new ICT, solution, and BM development, thereby providing value to customers and the Company.

Global Recruitment

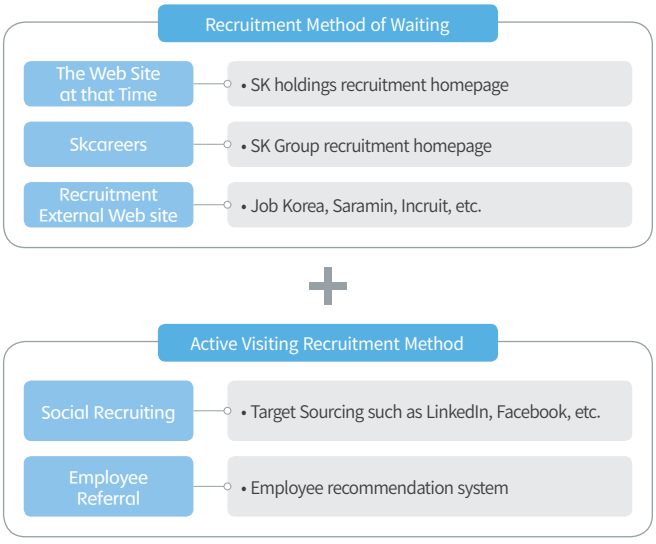
SK holdings believes that it is important to secure experts in the fields of Big Data, Deep Learning, Cloud Paas and Saas, who actively work in the ICT advanced countries and develop them at an early stage. Global recruitments have been conducted through on-site interviews. ICT field laboratories have also been established and recruitment presentations for talented experts have been held.

Through such global recruitment activities, we have secured TRM talents in the ICT field and have bolstered mid & long-term TRAM and increased efficiency of recruitment of global talents who are immediately required in the actual field, by establishing a network of key talents in the A.I and Data Science sectors. In addition, SK holdings contributed to raising corporate reputation as an ICT company by building an image of a global top ICT company targeting global talent.

Active Recruitment of Talents through Various Channels

In order for the corporation to continue to grow and develop continuously, there has been a worldwide fierce competition for the talented people to respond to the Digital Transformation. SK holdings has tried to recruit talents through social media by utilizing LinkedIn, Facebook, etc. to secure more talented people, since it is difficult to secure talents through the existing passive recruitment methods.

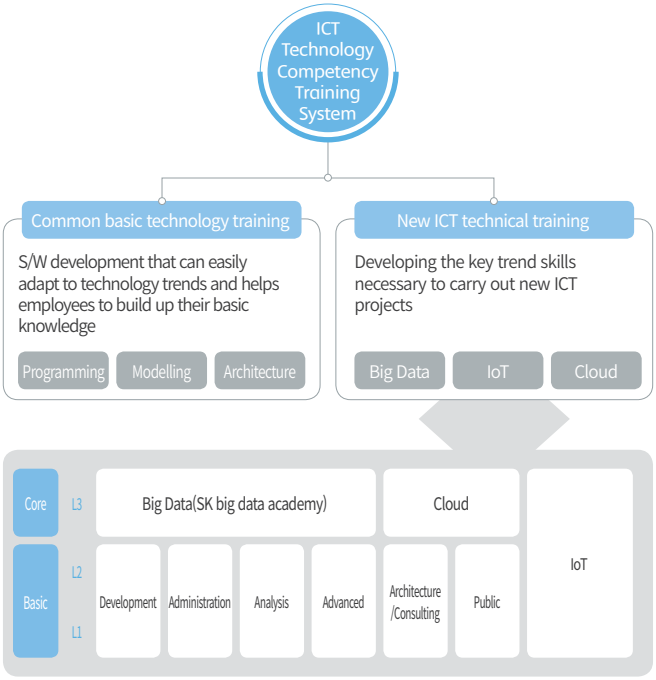
The recruitment methods of visiting talents have been actively utilized by other global ICT companies to secure talented people, and SK holdings will also continue to use the methods more actively to work with them.



Establishment of Educational System for Digital Transformation

Establishment and Implementation of ICT Technology Competence Training System

SK holdings has categorized ICT technology capabilities into common basic technology, new ICT technology, and advanced technology in response to rapidly changing ICT technology trends, and changes in the technology-based business environment. In addition, it has established the “ICT Skill Training System” in order to systematically utilize this system, focusing on strengthening business execution capabilities and supporting capacity development.



Implementation of Self-assessment in Terms of Technology

In order to motivate employees to become technical experts and to establish a training system based on their competency information, we need to first establish a framework for identifying the level of each employee and individual technology competencies. To this end, we defined the technical classification system for ITS-based technology and new ICT technologies (Cloud, Big Data, A.I, and IoT) considering our business direction, benchmarking of other global IT companies and internal and external expert participation, and so on. We designed a system of technology self-assessment for the relevant competency development. The benchmarking was pilot tested for some employees in 2016, and will be expanded to include all technical personnel in the future, to become a tool for supporting organizational and individual skill development.

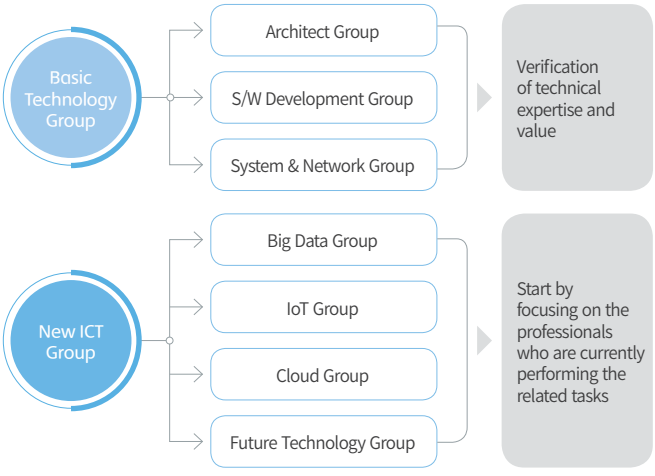
Supporting Strengthening of Ability for Digital Transformation

Tech Leading Board

SK holdings has established a system and infrastructure based on the development of learning programs including the training and expertise to secure and foster new ICT technology capabilities. In order for these activities to bring about substantial change and to be effective, SK holdings decided that active participation of the field operators and employees from the initial design stage were crucial, and created the "Tech Leading Board" centering on in-house technical experts.

The Tech Leading Board members have been selected through interviews, peer checks, and directors' reviews among the candidates who have technical competencies in each field. Board members have motivated them to act as technical experts and actively supported various internal and external activities to instill pride in them. The Tech Leading Board consists of 7 subgroups of 2 groups, including IT & ICT-based technologies (common competency) and the New ICT technology group that cover the ITS domain.

Structure of the Tech Leading Board



Tech Collabo Lab

SK has created and operated the Tech Collabo Lab to maximize the capacity of individuals through cooperation with technology experts, and to secure capacity through project implementation using New ICT technologies.

Research and development activities have been vigorously conducted at the Tech Collabo Lab since it started with 9 topics in 2016. Finally, the research and development of three topics were completed, and there were presentations regarding the same at the ICT Summit of SK Group. In addition, they have been shared at Techie Chat among employees and executives, and 586 people, or 17% of the employees, attended this event, drawing great attention.

Two cases of the two topics studied and developed at the Tech Collabo Lab are now being applied for patents. The Tech Leading Board and employees have been actively participating, thereby making it a workgroup activity that contributes directly to the new ICT business.

Tech English

SK holdings has introduced the "Tech English Learning Program" to enhance business & technology communication skills with global companies and foreign experts. This course consists of an e-learning course, a virtual class course (native speaker's lecture and group discussion) and a writing course (practicing and revising support). As of the end of 2016, 1,550 people, i.e. 44% of the total employees have joined the Tech English course.

Global expertise Sharing Program (GSP)

SK holdings has created the Global expertise Sharing Program (GSP) to give talented people with specialized competencies the opportunity to have a new Insight, and to motivate them to take new challenges based on creativity and enthusiasm. The GSP is a program that allows employees to participate in field trips in accordance with the plans and schedules that they have set up by themselves for the Global Forums & Seminars and Global Excellent Benchmarking.

In 2016, SK holdings increased the number of opportunities to participate in the program after reviewing opinions of participants in the year of 2015, and reflecting on the 2nd GSP operation. Now, employees are screened separately by setting an area which will be reviewed by individuals and groups, and a specific program based on the needs of participants has been developed so that their specific insight for the new ICT can be expanded.

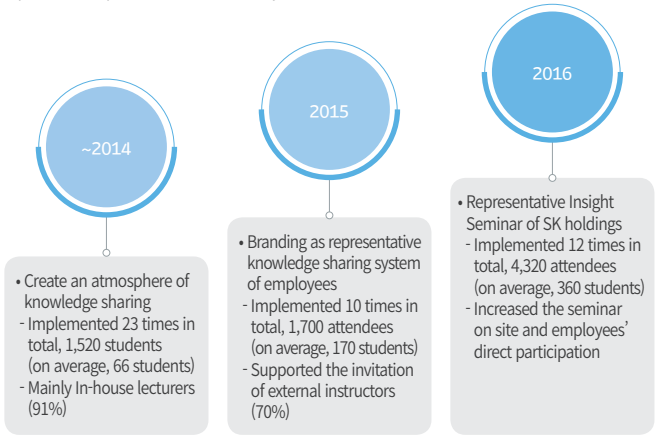
MOOC (Massive Open Online Course)

Although the need for specialized training for the new ICT has been increasing for the promotion of Digital Transformation, it has been difficult for employees to take the new ICT-related training courses due to lack of relevant experts and insufficient offline courses in Korea. Accordingly, SK holdings operates a MOOC course that enhances its employees' capabilities by supporting the latest on-line lectures on ICT technologies by experts from globally leading universities (such as Johns Hopkins, Stanford, Andrew NG, etc.). At the end of 2016, the total accumulated number of learners enrolled was 899. Of this, 25% of all employees did the course, and 109 of them were certified.

OpenLab

OpenLab is a representative knowledge sharing platform of SK holdings that voluntarily shares and learns individual knowledge and experience. The Open Lab, which was first launched in 2013, has been operated as theme-based seminars and is held monthly in a casual atmosphere on various topics. In 2016, SK holdings kept maintaining the company's strategic direction and the arranged themes, but the scale and scope of participations were expanded, becoming an Insight Seminar that represents the company.

OpenLab Implementation History



Techie Chat 15

Techie refers to a computer expert and a computer enthusiast. Techie Chat 15 is a place to communicate with colleagues and to have technical discussions with colleagues after a 15-minute TED-style presentation. The program is different from the previous seminars that were lengthy and focused on the conventional IT trend. In 2016, a total of 12 meetings were held with 33 presenters and a total number of attendees of 2,556. This is an increase of 75% compared to 2015, which implies that Techie Chat 15 has been firmly established as a corporate culture that shares technology freely, and not as a temporary event.

Developer Forum D' Talks

SK holdings has established and run D' Talks, a place of internal and external developers' networking to enable developers to be inspired by the external world and to help them to secure new ICT capabilities. D' Talks is run by a professional announcer and a technology expert in the format of a talk show with website & app live broadcasting, chatting, etc. along with a free session of networking attendees. It is operated for the ICT developers and engineers of Pangyo campus on a bi-monthly basis, and is also utilized as a recruitment channel for new ICT experts, contributing to building a technology-oriented culture through Digital Transformation.

CEO Forum

SK holdings conducted a CEO Forum for all executives to contemplate roles as a leader with regard to limits facing the IT service industry, and to share and establish leaders' implementation initiatives in accelerating innovation and growth. At this forum, SK holdings invited external experts to listen to lectures on the roles of leaders and to share the results after discussions by group and division. In May 2016, a total of 52 executives attended the meeting for six hours in total.

Biz Model Innovation Course for Team Leaders

In order to understand the cases of global players who are leading the era of digital transformation and to review the business model using the methodology applied to them, SK holdings opened the "Biz Model Innovation" course for the team leaders. The course consists of methodologies and case studies about innovative business models and workshops related to business model innovation. In 2016, there were 26 participants.

Introduction of Joint Academic-Industrial Research System and Selection of Scholarship Students

To secure technological competitiveness in a rapidly changing market environment, we need to cooperate with the outside world. Consequently, SK holdings has introduced a joint academic-industrial research system that enables the Company not only to secure recent technologies, but also to foster internal competencies and secure talents

As part of the efforts, in March 2016, SK holdings introduced a joint research program of industry-academia and created in-house regulations and processes. It also selected three research tasks for resolving current business issues through the industrial-academic deliberation committee.

In addition, SK holdings selected 10 academic-industrial scholarship students (8 students in Ph. D and 2 students in Master) by adopting the A.I scholarship System in order to secure excellent talents for growing technologies such as A.I. Furthermore, through the industrial-academic scholarship system, we have broadened cooperative relations with universities excellent in the A.I sector (9 universities and 17 laboratories) and contributed to raising the external image as a leading ICT company.

SK holdings will continue its efforts to solve the pending issues in business-related technologies and secure future technology capabilities through the joint research system of industry and academia. Moreover, SK holdings plans to provide the "Engagement Program" for industry-academia scholarship students to nurture their specialized skills and improve expertise fitting for our business.

Adoption of ICT Summit of SK Group

As the SK Group's ICT affiliates only conduct conferences separately, there have been increasing needs for SK Group-wide integrated conferences. Against this backdrop, the SK Group's ICT Summit was held, to create a place for internal technology exchanges and better synergy of SK Group affiliates.

SK Group's ICT Summit was held for the purpose of understanding and sharing the future R&D direction of the group, sharing technologies with each other, facilitating exchanges among developers, and sharing insight with external experts and role models. Participants were developers from SK holdings, SK Telecom, SK Hynix and SK Planet.

This seminar contributed to the development of exchanges and creation of networks among developers by having presentations with a total of 19 subjects including A.I, Big Data, IoT, and Cloud, and a total of 21 solutions and services were showcased. The SK Group ICT Summit is expected to provide a comprehensive understanding of the new cooperative models and to suggest the future technological direction at the SK Group level, bringing about synergies among related companies.

DMA

DISCLOSURE ON MANAGEMENT APPROACH

03. IMPROVEMENT OF INNOVATIVE WORK ENVIRONMENT AND ORGANIZATIONAL CULTURE

Background of Key Issue Selection

Employees are the key players who will play a leading role in achieving the digital transformation. SK holdings aims to become a “Happy Hompany (Home + Company)” so that talented people can dream inside the Company and lead happy life in the company. To this end, SK holdings have improved the work environment and organizational culture so that the quality of life of its employees can be improved by balancing work and family. In the years ahead, SK holdings will continue to create the optimal working environment for the employees, so that they can work voluntarily and proactively.

100%

The performance evaluation ratio

100%

The peer review ratio

83 points

The level of employee satisfaction

Impacts of Key Issues

It is important for SK holdings to secure professional talents that give customers trust by means of innovative thinking and breakthroughs, due to the nature of the industry. In order to do this, we must create a work environment and organizational culture that will not be limited to the existing methods and thinking, based on creativity. If SK holdings fails to create an innovative working environment and a flexible organizational culture, it will inevitably result in the outflow of key talents, which can cause a competitive disadvantage to the enterprise. SK holdings helps to maintain a balance between work and life, and creates a reliable organizational culture so that its employees can be respected and their competency levels are stretched to the maximum .

Our Achievements and Future Plans

Classification	Goal of 2016	Performance in 2016	Medium and Long-term Goals (2020)
Creation of innovative working environment	Growth-oriented workplace innovation	Innovative improvement of performance evaluation system	System design for innovation in working methods
		Introduction of self-directed peer review system	Upgrading frequent evaluation system
	Improvement of creative and innovative working environment	Extension of family-friendly excellent company certification	Continuous promotion of family friendly working environment
		Adoption of pregnant employee care program	
		Evaluation and improvement of external site work environment	Creation of a self-initiative work environment
		Improvement of development environment for technology-oriented culture	
Improvement of the corporate culture	Creation of an organizational culture based on participation, cooperation and trust	Strengthening the role and position of the management council	Building cooperative and reliable labor-management culture through communication
		Selection as an excellent labor-management culture company in 2016	
		Implementation of the Change Acceleration Program	Acceleration of innovation through exploration of specific changes within the organization

Creation of Innovative Work Environment

Acquired Re-certification of an Excellent Family-friendly Company

Since 2008, the Ministry of Gender Equality and Family has implemented the family-friendly enterprise system, which grants certification to the companies that carry out family-friendly systems such as childbirth and childcare support. After obtaining the first certification in 2013, SK holdings has introduced and operated various family-friendly programs and systems in Korea, such as the promotion of childbirth and the voluntary work system, so that employees can work harmoniously with an appropriate balance between work and home. As a result, it succeeded in re-obtaining certification as an excellent family-friendly company in 2016.

SK holdings has been dedicated to creating a "happy workplace for the family" through a variety of programs such as a baby-care program, a support system of school expenses for employees' children and mobile office. In particular, the support for employees' school expenses that were previously applied to junior & senior high school and university students is extended to children (5 to 12 years of age). Consequently, all employees' children are able to complete the entire education process without worrying about school expenses, thereby reducing the burden on the children's education expenses and contributing to solving the problem of the low birth rate.

Pregnant Employee Care Program

SK holdings has operated a pregnant employee care program for pregnant employees to help them, with an aim of overcoming social problems such as overcoming low fertility and discontinuation of women's careers due to pregnancy. It has also been committed to creating a healthy work environment so that employees can exercise to their full potential and work freely without having to bear childcare burdens.

SK holdings provides pink ID cards for pregnant women. This is to make it possible for other employees to recognize that they are pregnant employees. It encourages pregnant employees to wear pink ID cards at the beginning of pregnancy, when it is difficult to distinguish their pregnancy. At the same time, Team leaders and fellow employees take the utmost care during the work for the pregnant employees in the working environment such as night shifts or long-distance trips.

SK holdings also operates various programs such as encouraging the employees to leave work on time, having them take the maternity leave automatically, allowing for reduced working hours that can be applied within 12 weeks or after 36 weeks of pregnancy, providing a break system for those who have fertility issues, and operating in-house childcare centres. SK holdings believes that it is crucial to reduce the burden of pregnancy, childbirth and childcare, thereby creating a healthy work environment where female employees can demonstrate their full potential. SK holdings will be continuously committed to providing corporate supports to our employees so that they can feel happy both at work and home.

Innovative Improvement of Performance Evaluation System

SK holdings encourages all employees to receive reasonable and appropriate compensation for their individual abilities and performances by setting up clear goals and presenting specific performance according to their goals. To this end, performance evaluation has been made by making the employees set clear and concrete goals. This increases the possibilities of achieving the organizational goals and ensures that consensus is reached through full consultation on the level of their work objectives. In addition, SK holdings has devised performance management policies so that leaders and subordinates can actively communicate with frequent feedbacks focusing on improved work capability. It also helps the Company to have an objective and reasonable evaluation system through the capacity test linked to SK Values and Principles, and assesses employee's performance based on detailed achievement compared to their goals.

In 2016, SK holdings improved its performance evaluation system to foster a collaborative culture among employees and enhance performance. For those organizations that are required to take new challenges and collaborations, such as creating new businesses, SK holdings has applied absolute rating system, not relative evaluations to the relevant employees, to encourage business innovation through their bold action. In order to establish the foundation for mutual cooperative culture among employees, we have made it possible to share individual task goals and performance with colleagues in the team. In addition, it has made employees update the work performance that was recorded only twice a year, at any time of the year, and if necessary, encouraged them to request for intermediate feedbacks to the intermediate and final evaluators, thereby updating their performance in real time.

Implementation of Self-directed Peer Review System

SK holdings established peer review system, which provides peer opinions for the most accurate assessment of individual competence and organizational performance contribution in 2016. The system also aimed to encourage cooperation among colleagues and improve the objectivity and fairness of evaluation for all employees. Under the system, at least five peers who are deemed to be most able to judge their colleagues' competence and their organizational performance contribution for the year are selected as peer reviewers, and they are involved in the progress from the time of self-evaluation to the final evaluation. The peer review system ensures thorough anonymity, and reviewers' information is deleted from the database. Only peer review results can be searched by the final evaluators. The final evaluators will refer to the peer review results and determine the final feedback.

	Targets	Contents
Selection of peer reviewers	• Employees under evaluation (team members)	• The employees who are under evaluation directly assign a reviewer to evaluate them • 5 - 10 reviewers are required - Able to designate other team's members
Review on and approval of peer reviewers	• Intermediate evaluator / Team leader - Available to review and approve by interim evaluators depending on a team's circumstances	• Check whether the reviewer chosen by the evaluated employee is appropriate and then approve - If needed, assign additional reviewer
Choosing whether to proceed with the peer review	• Peer reviewer (team member)	• Check the team member who designates him / her as the reviewer and select whether to evaluate (accept or reject)
Creation of the peer review	• Peer reviewer (team member)	• Provide peer review based on observations of colleagues
Completion	• Team leader	• Refer the reviewed information for the final evaluation

Evaluation and Improvement of External Field Work Environment

SK holdings' employees do not always work at the headquarters, but work at external customers' sites in many cases. SK holdings has established and evaluated the optimal working environment standards to be created at the external site, described improvement measures and implemented them accordingly to create a working environment in which employees working in the field can fully engage in their work.

Considering ergonomic designs, we set the optimum working environment standard for external field workers as 3.96㎡ in dedicated size of area per person and 1.6m in distance between seats. SK provides the expected evaluation score for the office to be built, and supports CAD drawing maps for the office site of the external clients. An expert in the office building management conducts field inspection to establish the standards for creating the proper working environment in the external site. In addition, we provide simulation tools for estimating the work-environment-related budget. This ensures smooth budgets related to the proper working environment where the external field project is conducted, and reflects the obligation to secure the office environment budget for the project managers in the company regulations. SK holdings took the initiative and provided an environment where employees can work efficiently by establishing mobile office in Yeouido for external field workers, supporting rooms located outside to provide field service capable of accommodating more than 50 full-time employees, supporting the ice water purifiers and air purifiers for the external sites, and providing interior decoration for the outdoor rest rooms.

Category		Base-line
Size of Area	Private area per person	3.96㎡ (4.62㎡ recommended)
	Seating area (based on 1 seat)	1.78㎡
	Meeting room area (based on 100 seats)	9.9㎡
	Rest room area (based on 100 seats)	9.9㎡
	Corridor spacing	1.2m
	Spacing between seats	1.6m
Furniture	Chairs	6 functions available
	Desks	w 1.2m
Infra	Heating & cooling	Heating : 26 °C Cooling : 20 °C
	External windows	More than one

Improvement of the Environment for Development for Technology-oriented Culture

SK holdings has improved the development environment so that employees of the R&D department located in the office building in Bundang province can actively pursue digital transformation. With regard to the R&D department's office space, the meeting room's space was expanded, and a collaborative and creative space that reflects the work characteristics was created. Thus, we improved the office environment to encourage the creativity of the workers in the R&D department, and also established intensive work space and an open executive room. In addition, SK holdings introduced collaborative tools such as Jira and Confluence and adopted Scrum conferencing methods to foster more active culture. The Company also upgraded the PC specifications and improved the development environment by providing tools and equipment necessary for research and development in the ICT and R&D departments.

Improvement of the Corporate Organizational Culture

Bolstering the Role and Position of the Joint Labor-Management Conference

SK holdings runs a joint labor-management conference for the purpose of becoming a satisfactory company for the employees by pursuing mutual happiness through participation and cooperation among the management and the employees. The joint labor-management conference consists of the same number of members representing the management and employees. We hold regular meetings every three months (quarterly) to discuss various agendas.

At the 2016 regular meeting, SK holdings carried out meaningful activities such as improvement of support at the time of death of the employees, improvement of the treatment of employees working at external sites, implementation of campaigns for considering pregnant employees, and establishment of financial support for lower grade children of employees. In addition, the 4th joint labor-management conference was newly initiated through the election which was held with much interest of the employees because of the termination of the 3rd joint labor-management conference. Going forward, the management committee will actively listen to the opinions of its employees, and will continue to discuss with the management on their basis, and will have smooth interactive communication by swiftly relaying managerial opinions to employees.

The Joint Labor-Management Conference's Activities in 2016

Category		Main Content
The first (April 2016)	Voting	· Election of the joint labor-management conference was conducted under the initiative of the representative members
	Negotiation	· In case of employees' death, accidental death: provide 100% of the annual salary, Death while working: provide 200% of the annual salary · Lowering the home loan interest rate (3.0% → 2.5%) · Converting some of the welfare subsidies (school expenses, gifts for celebrating the foundation of the Company, etc.) to welfare funds
Second (July 2016)	Report	· Dismantling the employee association and amendment of in-house loan system (The limit of emergency living fund was raised by KRW 5 million)
	Negotiation	· Programs to boost employees' dedication to the Company (Conducted the management's MBWA, and other programs) · Improvement of office environment (ensuring the standards of minimum space, support for air-conditioning equipment and office fixtures, etc.) · Upgrade of PC standard specifications and various PC models for employees, and creation of space for training, practice and collaboration (The 8th floor at the headquarters, Lyceum Open) · Supporting campaigns for pregnant employees and support for baby care
Third (Oct. 2016)	Negotiation	· Supporting the school expenses for children in the lower grades (kindergarten and elementary school) · Extension of the coverage for group accident insurance · Paperless implementation of year-end settlement through the introduction of relevant solution

Change Acceleration Program

SK holdings has developed and operated a program for teams' positive change and more innovation (called "CAP") to boost changes and innovation throughout the company based on the improvement of team performance. The program identifies team-based issues by conducting a "Culture Survey" and establishes a team-led action plan for change and innovation based on this.

By using positive exploration techniques, we contribute to finding the beginning of change from the strengths and future plans of the team, and not through finding the organization's problems.

In addition, the program is also characterized by giving an opportunity to team members to search for their team's change and innovation in connection with the diagnostic questions of the Culture Survey (working style, organizational atmosphere, communication, and leadership & followership). C.I. (Change Initiator) leads the program operation and accordingly, takes the initiative in making the organizational change & innovation through the C.I., and serves as the facilitator of the team.

Retirement Support Program

SK holdings operates a pension fund and career counseling service to help its employees prepare for a happy and stable retired life. An internal counseling center provides a career counseling service to help the employees in exploring new jobs based on their aptitude after retirement. Furthermore, it has introduced a retirement annuity fund to help stabilize their retired life. The retirement pension fund is a system to guarantee stable retired life by paying the pension in a one-time payment or in annuity for their happy retired life and the fund is deposited safely at independent financial institutions. At the end of 2016, the total retirement pay was estimated to be KRW 205.9 billion. 76.7% or KRW 158.5 billion and is deposited in an outside asset management agency to ensure stable payment of pension or annuity satisfying the statutory minimum of 70% required to be deposited outside of the company.

DMA

DISCLOSURE ON MANAGEMENT APPROACH

04. MANAGEMENT OF QUALITY AND SERVICE FOR CUSTOMER SATISFACTION

Background of Key Issue Selection

SK holdings provides a variety of convergence technologies in all areas of IT and ICT with constant innovation and challenge. Moreover, it has improved service quality and customer satisfaction by having close communication with customers through various channels such as digital transformation support to improve customers' business value, customer value diagnosis, customer satisfaction survey, and customer VoC activity. By creating value through customer-oriented management, SK holdings will pursue the sustainability of our customers along with the sustainability of our business.

79.6 points

Customer satisfaction

11 Division

The number of organizations with a program related to customer-oriented activity management

Impacts of Key Issues

In order for the company to be sustainable and successful in business, securing and maintaining customers is a prerequisite. If the service provided fails to provide value and satisfaction to the customers, the customers are likely to ignore our service. Particularly, in the ICT business, the most important factor is to secure and maintain customers by implementing systematic service management system under strict quality management principles, and promoting service quality management and improvement activities. SK holdings has actively responded to customers' opinions through its customer-oriented management activities.

Our Achievements and Future Plans

Classification	Goal of 2016	Performance in 2016	Medium and Long-term Goals (2020)
Service quality management	Establishment of SLA system to secure objectivity of operation service	Operation of SLA management and integrated quality monitoring system	SLA revision to ensure service quality objectivity and visibility
Customer-oriented management activities	Increasing customer satisfaction through customer-oriented management activities	Improvement of customer satisfaction score compared to 2015	Promotion of innovative activities based on VOC and customer value diagnosis
		Introduction of customer value diagnosis and drawing out tasks for improvement	
	Communication activities to strengthen customer relations	Interviews with customers' CIOs and IT department managers	
		Operation of a consultation body to intensify customer-oriented management	
		Operation of the IT Subcommittee of SK Group	
	Digital transformation support for customers	Conducting DT Projects for two clients	

Service Quality Management

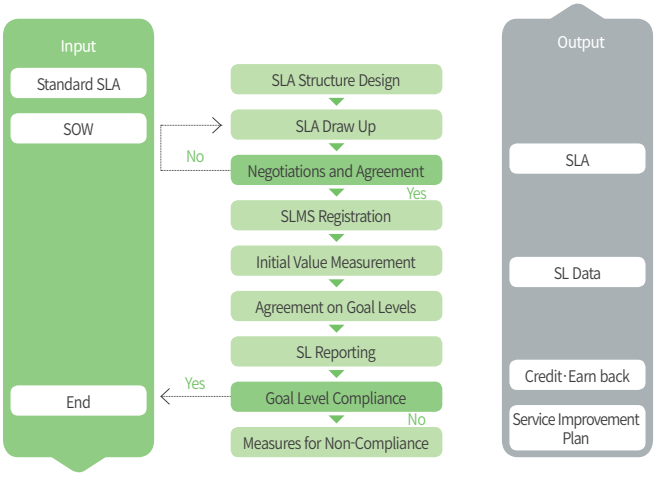
Management of SLA

To provide a high level of service with regard to its products, SK holdings concluded a Service Level Agreement (SLA) with its customers and operates monthly service evaluation meetings. In addition, SK holdings has created "Service Level Management System (SLMS)" that reflects the detailed standards of the ITIL (IT Infrastructure Library) for customers. The service level management (SLA) process presented by the ITIL is repeated according to the process of advanced preparation, SLA development, operation, and improvement stages and SK holdings implemented them in the SLMS. Service level management consists of four stages: SLA development (structure design, creation, negotiation and agreement), implementation of SL (Service Level) management system, SL reporting and devising service improvement plan. In the SLA creation phase, we gather customers' requirements, design an SLA structure, designate details through negotiations, and develop and operate the "SLM methodology". SK holdings then designs a Service Level (SL) management system and utilizes the service level management system to measure the management items and finally agrees on the target level. After delivering the service, we draw on key issues of service through SL reporting and review with customers through a service evaluation meeting. Depending on the results of the service evaluation meeting, we improve our service by selecting tasks for enhancement and grant financial compensation based on the specified standards, so that our employees can assume more responsibility for the customer service.

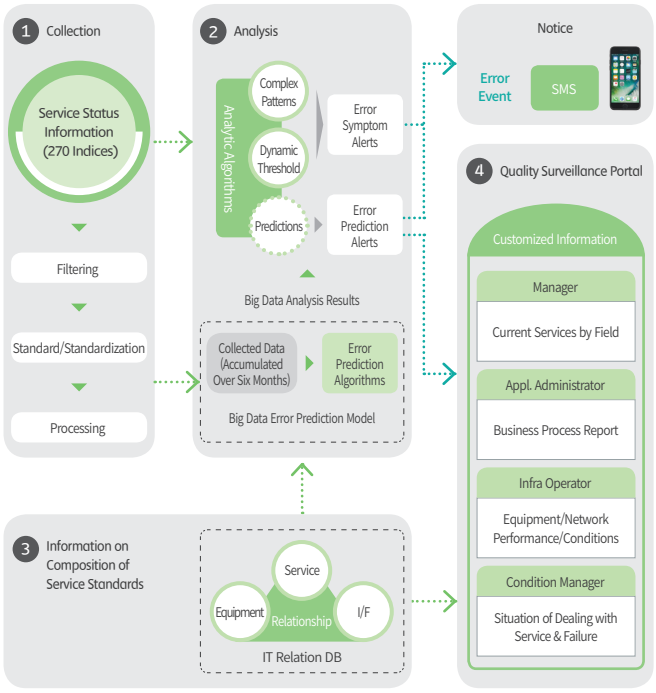
Operation of Integrated Quality Monitoring System

SK holdings has built and operated an integrated quality monitoring system with the aim of improving the continuity of IT service as the largest IT service provider in Korea and for quality control. The integrated quality monitoring system is a quality management tool that can detect the fault risk in real time by performing comprehensive monitoring focusing on our service, rather than individual monitoring based on the infrastructure, and can diagnose the service in the affected area using the IT related DB. In addition, it applies statistical analysis techniques, thereby enabling to identify dynamic threshold values (alert based values) reflecting the characteristics of each service. Going forward, we plan to improve the level of fault prediction and analysis by applying the Big Data algorithm, and will gradually expand and offer premium quality monitoring service to all customers.

Service Level Management Process



Structure Map of Comprehensive Quality Surveillance System



Customer-oriented Management Activities

Customer-oriented Management Activity & Performance Management Program

SK holdings implemented a program for customer-oriented management activity and performance management, so that it could increase customer-oriented management awareness and activities of the business organization that directly meets customers. This program consists of self-evaluation and comprehensive evaluation targeting for 11 headquarters in the IT service business sector. The self-assessment is to conduct self- review according to a designated format in terms of the customer-oriented management activity and outcomes, focusing on the performance (contribution) of the employees themselves. The Customer-oriented management department collects the results of the self-assessment, conducts comprehensive assessment that reviews the data such as interviews with a team leader in the IT planning team, interviews with the CIO, and minutes of the service evaluation meeting. The results are then reported to the management and are reflected to the next year's task for the customer-oriented management.

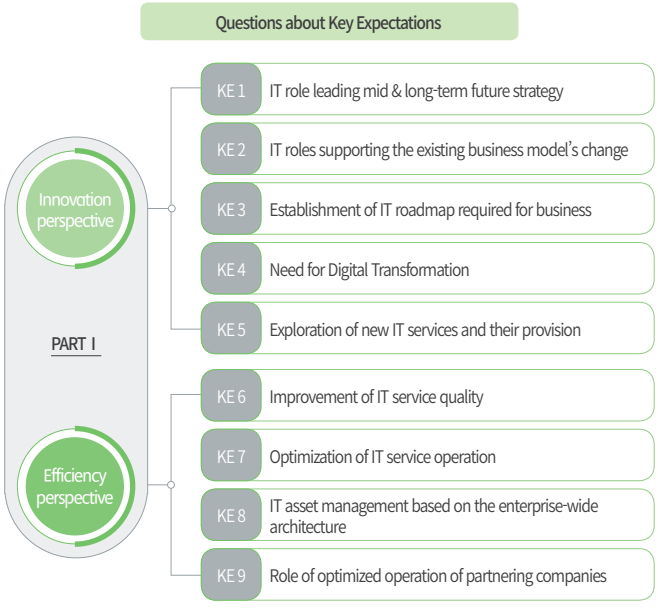
Customer Satisfaction Survey

Since 1999, SK holdings has conducted a research on the level of satisfaction with its overall IT service to its customers' end users every year. The customer satisfaction survey adopts a quantitative measurement and analysis of the customers' qualitative satisfaction by applying the methodology of social science survey. We have maintained a satisfactory level in terms of customer satisfaction index (more than 70 points) since 2003, and since 2013, we have conducted online surveys by including customers' overseas branch offices and local business sites. Thanks to the extended scope of the survey, we have been able to increase our service levels and have drawn out tasks for improvement. Consequently, from the results of the customer satisfaction survey in 2016, we have seen an increase of 1.2 points from the previous year, and overall satisfaction and factor-specific satisfaction also rose higher by more than one point.

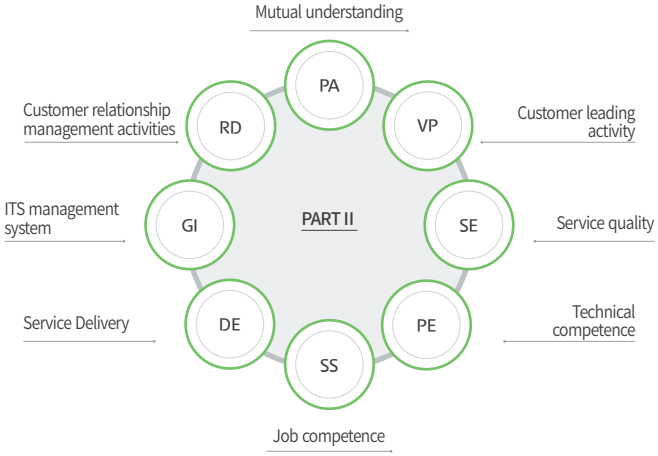
Making Customer Value Assessment

SK holdings conducted customer value diagnosis by using a globally used diagnosis tool in order to derive innovative tasks based on improved core competitiveness of services and diagnosed and analysed customer expectations and perceptions. The customer value diagnosis covers all employees of key persons of customer companies and all employees under the ITS business of SK holdings. The survey items are divided into IT service value areas, which are considered important to customers, and the service & capability level area, which is evaluated by customers. The survey is conducted online and its results are compared with global companies similar to customers' industries and IT providers. We then derive key findings and have in-depth interviews with key persons to determine the root cause and tasks for structural improvement. In 2016, we were able to draw out items based on customer value innovation frame when diagnosing customer value. We have also implemented tasks for changes by strengthening customer contact and support, upgrading quality control, and internalizing industry-specific expertise.

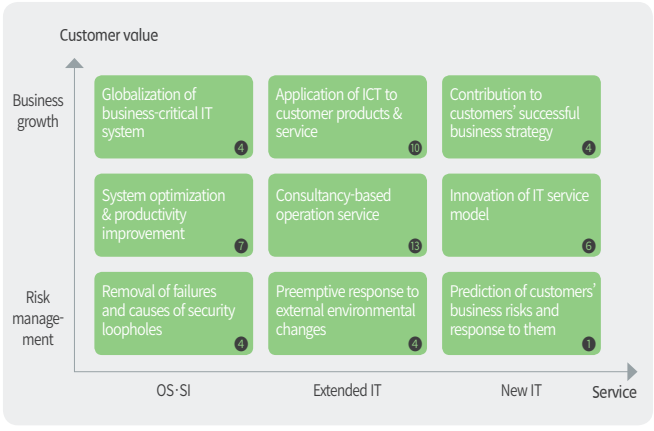
I. IT service value which customers want for SK holdings



II. SK holdings' service capability & level in providing customer value



III. 53 Derived Types of Value Offering Items



Interviews with the Chief Officers in the Customer CIO and the IT Departments

SK holdings regularly conducts interviews (VOC) with the chief officers in the customer CIO and the IT departments in order to meet customers' needs and to resolve their issues. Interviews may be in regard to IT service quality activities, improvement activities of customers' business value and customer contact activities. Through the results of the interviews, we have identified improvement tasks for each customer. Through regular customer interviews, we have been continually improving our activities such as insight exploration, business proposals and customer-oriented business management processes.

Operation of Customer-oriented Management Consultative Body

SK holdings operates a customer-oriented management consultative body to manage and resolve VOCs objectively from a third-party perspective, and to improve the issues of chronic VOCs on the enterprise-wide level. Related organizations participate in sharing, discussing, and executing task-related information in order to promote effective tasks, and the body consists of team leaders to strengthen task performance and to create substantial results. This consultative body is responsible for discussing major VOCs and follow-up measures, sharing customer-centric management practices, and operating a task-specific working group for resolving chronic VOCs.

Operation of the IT Consultative Body of SK Group

SK holdings operates an IT consultative body under the ICT Committee of the SUPEX Council to enhance business synergy effects among SK Group's ICT affiliates and to support ICT utilization for non-ICT affiliates. It operates the body by choosing goals of tasks such as digital-focused growth, enhancement of ICT insight in terms of the CIO and IT planning workforce, and continuation of group IT tasks and value protection, etc. In 2016, SK holdings formed a consultative body of Big Data & A.I, and conducted workshops for executives of Big Data & ICT affiliations and workshops led by the head of the commission of ICT, thereby contributing to strengthening the ICT competitiveness of SK Group affiliated companies and innovating the group's IT infrastructure.

DMA

DISCLOSURE ON MANAGEMENT APPROACH

05. IMPROVEMENT OF SAFETY, HEALTH AND ENVIRONMENT (SHE)

Background of Key Issue Selection

There have been frequent cases of high-temperature phenomenon and natural disasters all over the world. In the case of the Korean Peninsula, in particular, the average annual temperature has steadily increased over the past 10 years and water shortages due to drought are becoming increasingly severe. As a result, the demand for greenhouse gas reduction obligations, such as the Paris Agreement on Climate Change, has been rising globally. In order to improve the environmental performance of companies, the Korean government has increased electricity unit cost to control demands for electricity, adopted carbon trading system, and pursued a management system of GHG & energy goals, thereby encouraging companies to reduce the GHG. The impact of the IT industry in which SK holdings operates on the environment is minimal holdings as there is no manufacturing process unlike the other companies' normal manufacturing. However, GHG emissions management has emerged as an important issue in the case of a data center which is indispensable to the IT industry since the use of electricity and water will inevitably increase as demand for data center increases due to the development of new ICT such as cloud and IoT.

Impacts of Key Issues

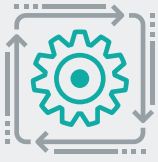
In 2015, the burden of the electricity bill has increased due to a huge increase in the electricity price. Moreover, in 2016, the Daedeok data center was designated as a target for energy reduction management. If designated as a target site for energy reduction, the target site should submit a statement, set a reduction target, and perform the reduction. Fines and non-compliance facts will be announced when the reduction target is not achieved. However, the importance of renewable energy such as photovoltaic power generation has been increasing due to climate change, and opportunities for green IT business have been increasing as well. SK holdings recognizes climate change as an opportunity for corporate growth, builds green office and eco-friendly data center to create environment-friendly business sites, and promotes social value-related activities such as eco-driving activities.

Our Achievements and Future Plans

Classification	Goal of 2016	Performance in 2016	Medium and Long-term Goals (2020)
Improvement of the Safety, Health and Environment of Employees	Practice and observe SHE management activities	3 cases of SHE change management campaigns	Continuous implementation of SHE change management campaigns
	Number of SHE major accident cases 0 cases	Number of major SHE accidents 0 cases	Maintains zero case of the major SHE accident
	Implementation of emergency response training in the company building	2 times of safety emergency response training in the company building	2 times of safety emergency response training in the company building
Reduction and Efficiency of Energy and Resource Usage	Compliance with new and existing energy systems such as greenhouse gas energy target management system	Conducting 2016 Climate WEEK climate change responses and being awarded by the Minister of Commerce, Industry and Energy for the excellent achievement of greenhouse gas reduction Maintaining the certification of a green data center	Implementation of emission allowance targets by sector and industry in the roadmap of national greenhouse gas reduction, and compliance with other environmental energy systems
	Measuring and reducing greenhouse gas emissions	Replacement of old facilities with low efficiency	Advancement of greenhouse gas emission monitoring system and development and application of self-reduction solution
Climate change response activities & performance	Creating business opportunities related to climate change	Business contribution through eco-driving	Continuing activities of Encar Eco Drive
	Creating social value related to climate change	Conducting Encar Eco supporters' activities	

0 cases

Number of SHE major accidents



3 cases

Number of SHE change management campaigns

13%

Total energy reduction per KRW 1 billion of sales compared with the previous year

Enhancement of Safety, Health, and Environment Levels of the Employees

SHE-centered Management System

SK holdings conducts safety, health, and environment (SHE) management to protect employees and the Company from major accidents and disabilities, and to ensure the stable service of the IT business. Under the SHE-centered management system, SK holdings has set up management targets as four sectors including injury, loss of property, environmental pollution, and IT accidents in order to prevent injury, damage or contamination risks to the employees, the environment, asset services and corporate images.

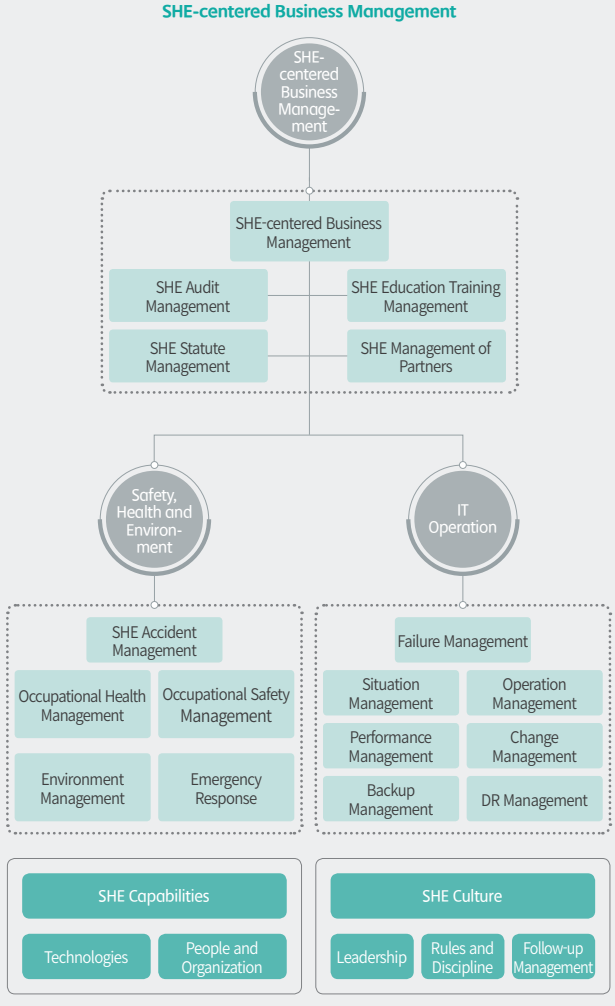
Value Pursued in SHE

The company pursues happiness of its stakeholders by upgrading the company's SHE-centered management system to a level that ensures sustainability and the trust and support of society.

SHE Management Principles

Human life must be protected above all and the assets, services and images of the company must be protected secondarily by setting the priority order in SHE risk management of the enterprise.

SHE Management System



SK holdings SHE Policies

SK holdings pursues safety, health and environment above all in all management stages based on its philosophy of human-oriented business management. It enhances the quality of the services, and it also provides and contributes to the sustainable development of the human race based on its accumulated technologies and experiences.

To practice such objectives, all of its employees discharge their respective responsibilities and duties concerning safety, health and the environment, including compliance with the factors listed below:

Compliance with Statutes related to Safety, Health and Environment

SK holdings steadily enhances its SHE management level by upgrading its SHE operational systems while adhering to the international conventions and local statutes concerning safety, health and the environment.

Risk Prevention Management

SK holdings identifies, assesses, and improves on risk factors concerning safety, health and the environment in all processes, products and services, ranging from planning to purchasing, design, development, repair and maintenance.

Improving the Ability to Respond to Emergencies

SK holdings minimizes damages with rapid systematic response when an emergency situation occurs while conducting SHE education and training programs with active participation of all of its employees, and the personnel of its business partners.

Transparent Communication with Stakeholders

SK holdings acquires an exemplary corporate image concerning its SHE management in society and industries in general, by transparently disclosing achievements and establishing safety, health and environment objectives.

SHE Activities Performed with Local Communities

SK holdings employees actively participate in local community activities for improving safety, health and the environment while greatly minimizing emissions of pollutants, realizing its corporate responsibility.

SHE Autonomous Inspection

To advance safety and health of the employees, SK holdings conducted autonomous inspections after periodically inspecting, diagnosing safety, health, and environmental risks and taking relevant measures. To this end, SK holdings has developed a SHE self-check list that enabled the Company to identify SHE risk factors for each organization and to establish risk assessment of detected SHE risk factors and SHE management improvement plans. We distributed a self-check list to QSHE Managers, who are in charge of safety, health, and environment in each department, and conducted self-assessment. For organizations where risks are detected after autonomous assessment, we encouraged them to establish a plan to identify SHE harmful risk factors and to improve management. Since then, SK holdings has implemented a SHE management improvement plan and reviewed the results so that it can identify SHE risk factors related to work and make self-reforms.

【Reference】 SHE Self Check List

1) Safety and Health Risk Assessment

Area	Hazard Risk Factors
Health measures	• Health checkups, disease response guidelines, first aid measures, working attitudes, etc.
Safety measures	• Safety precautions & measures, emergency response manuals, infrastructure, traffic safety, etc.
Office environment	• Temperature, air, noise, vibration, sick house syndrome, etc.
Electronics & office equipment	• Obstacles in the passages or channels of movements, private air-conditioning equipment, outlets, etc.
Safety and health management system	• Safety and health education & training, accident report, emergency response, etc.

2) Environmental Impact Assessment

Area	Hazard Risk Factors
Energy	• GHG & energy reduction and energy efficiency rating
Wastes	• Management of construction wastes, management of a waste treatment company, designated waste discharge, etc.
Noise and vibration	• Noise, vibration emission control facilities, establishment of relevant machines, etc.
Air	• Facilities emitting air pollutants, whether a project causes scattered dusts
Water quality	• Facilities emitting water pollutants, appointment of environment engineers, etc.
Environmental management system	• Environmental impact assessment related to new businesses, environmental inspection, etc.

3) Survey on the SHE Management Activity Awareness

Area	Hazard Risk Factors
SHE-centered management system	• Improvement of safety, health and environment level • Bolstering employees' participation in the SHE management activities through SHE management activities
SHE incident sharing system	• In case of an accident, recognize the role of the employees
Emergency response measures	• In an emergency situation, recognize the location of the exit and its preparation
Location and use of fire extinguishers	• When a fire occurs, location and usage of the fire extinguisher.

SHE Diagnosis

SK holdings conducted SHE diagnosis to have an in-depth check and improve the SHE risk factors of major departments at the overall company level. The target was infrastructure (building and equipment) and human resources (full time workers & workers from the partners) working in the business site. Safety diagnosis such as building, facility and equipment in the business site and diagnosis of harmful factors to the health of the employees were conducted under the collaboration among safety, health and environment related departments. The SHE diagnosis contributed to preventing and responding to SHE accidents by identifying in advance and managing the harmful risk factors that may arise in the business site.

SHE Change Management Campaigns

SK holdings has implemented a SHE change management campaign to prevent employees from accidents pre-emptively and prevent the spread of damages. We have produced and distributed guidelines such as prevention of traffic and water accidents during the summer vacation, and team workshop meeting accident prevention guides that explain safety rules and the SHE accident sharing system during outdoor activities. SK holdings conducted SHE fire safety and CPR training for QSHE managers of each team to strengthen emergency response capabilities with an aim of intensifying emergency response capabilities through training on fire prevention, evacuation tips, CPR, and artificial respiration training. In Bundang and Pangyo building, employees learned how to use fire extinguishers and the Company held a training session of using a fire extinguisher in order to help early fire-fighting.

Reduction of Energy and Resource Consumption and Efficiency

Eco-friendly Office

In order to create an eco-friendly office environment and to reduce greenhouse gas emissions, SK holdings has continuously promoted energy efficiency at the headquarters and Pankyo campus building. Its headquarters replaced general lighting with LED lighting, thereby contributing to energy saving and reducing greenhouse gas emissions. By replacing the lighting in the underground parking lot, emergency stairs, elevator halls, and all stairs with LED lighting, we saved KRW 28 million in annual expenses and 106.23t CO_2e of greenhouse gas emissions. Pangyo building has actively introduced eco-friendly facilities and uses 248TOE, which is about 1% of the total energy, as renewable energy. Geothermal heat pumps using geothermal heat coming from 150m underground have been installed and used for office cooling and heating. In addition, optical ducts that draw natural light into the indoor office were installed in the underground parking lot, and solar power generators were installed and used as parking lights.

Green Data Centre Construction and Performance

SK holdings was awarded the "Minister of Industry and Commerce Minister's Prize" in the "11th Climate WEEK 2016" for its excellent climate change response and GHG reduction. Organized by the Ministry of Commerce, Industry and Energy and hosted by the Korea Energy Corporation, the Climate WEEK is an event to find strategies for responding to climate change, and sharing representative cases of greenhouse gas reduction. SK holdings' Daedeok data center was selected as the recipient of the award for "outstanding response to climate change and reduction of GHG emissions" thanks to its commitment to reduce greenhouse gas emissions.

SK holdings' Daedeok data center is recognized as an exemplary case for energy saving and environmental conservation efforts using IT technology. By establishing and operating a greenhouse gas inventory system to detect and manage greenhouse gas in real time, it has established a basis to systematically respond to climate change policies and regulations. SK holdings has established a data center infra management system (DCIM) to allow integrated facility operation and efficient energy management system. By monitoring electricity, machinery, and security facilities in real time and maintaining optimal performance at all times, we are achieving efficiency, stability, and energy savings in the operation of data center facilities. Each server's rack in the computer room is equipped with a temperature sensor for remote control of the thermo-hygrostat in order to prevent unnecessary power consumption. An uninterruptible power supply (UPS) room was constructed based on a battery measurement system (BVS), thereby detecting and responding to abnormalities of the battery in advance and prolonging battery life, as well as contributing to power loss and industrial waste reduction.

In addition, the Daedeok data center separated equipment in the computer room into cold corridors and thermal corridors, and the cooling system was installed in the cold corridors to optimize the cooling. The old facilities with high power consumption were replaced with low power and high efficiency ones, thereby reducing power consumption. We installed rubber packing in the double floor halls where the power cables and communication cables pass to prevent cooling loss, and we are paying close attention to the small details. Through these efforts, SK holdings has reduced greenhouse gas emissions by 2,704t CO2 per year. Our employees voluntarily invented green equipment and patented them (4 cases). We have maintained the certification pf green data center annually thanks to our various attempts and achievements to realize a eco data center.

Activities and Effectiveness related to Climate Change

Eco-friendly Vehicle Consumer Survey

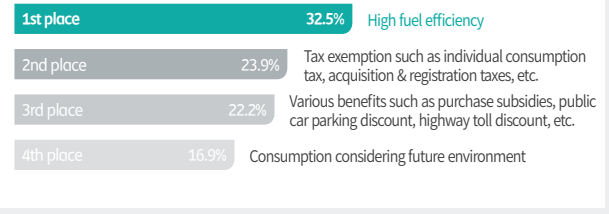
In January 2016, Encar of SK holdings conducted a survey of 415 people on eco-friendly cars.

Recently, the Ministry of Environment announced subsidies and various tax relief benefits for some models of eco-friendly cars in order to promote eco-friendly cars. However, the survey found that the most attractive purchasing factor consumers consider in eco-friendly cars is high fuel efficiency. On the other hand, the reason for the hesitation to buy eco-friendly cars was due to high cost of repairing the car. The eco-friendly car is not yet popularized in Korea, and hence consumers psychologically assume high repair costs and maintenance costs.

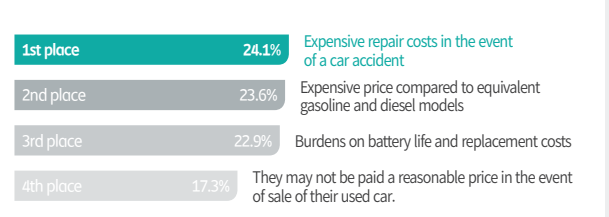
This survey is a careful analysis of the reasons for purchasing eco-friendly cars for consumers, and will be reflected in the business strategy of eco-friendly used cars so as to promote dissemination of eco-friendly vehicles and respond to consumers' interest in the future.

Consumer Survey Results related to Eco-friendly Vehicles

If you buy an eco-friendly car, what is the reason?



Why do you hesitate to buy an eco-friendly car?



Business Contribution through Encouragement of Eco-driving

SK Encar of SK holdings operates a used car purchasing service that allows customers to sell used cars quickly and safely anytime, anywhere. In 2017, the eco-driving event will be held in collaboration with the Home & Car service and T-map. In the eco-driving event, when a T-map user sells a car through the Home & Car service, the purchase price of the car increases depending on the driving habit score displayed in the T map. The T-map driving habit score is decided according to rapid acceleration, rapid deceleration, and fast speed. The higher the safe driving score, the higher the purchase price of their car under the service

If a person has a driving habit score of 1 - 50, he/she will get 50,000 won; for 51 - 70 scores, 100,000 won; for 71 - 90 scores, 150,000 won; for 91 - 99 scores, 200,000 won, and for 100 scores, 1 million won. For example, if you have a T map driving habit score of 85, you can get an additional 150,000 won from the car price calculated by SK Encar's car evaluator.

It encourages eco-driving by reminding people of maintaining safe driving habits, such as avoiding sudden start and sudden braking and abiding by economic speeds, and also by enhancing the value of used cars in future sales. Good driving habits soon lead to the purchase of used cars with excellent performance and condition, contributing to sales promotion.

SK Encar Eco Supporters

Eco Supporters, operated by SK holdings' SK Encar, is a consumer testing group that shares mileage, driving area (urban and highway), and driving habits by measuring the actual fuel mileage of their vehicles. During the activity period, they should drive more than 1,000 km per month in the city or at a high speed according to their usual driving habits, and submit the fuel consumption measurement data online at least twice a month. Fuel economy is measured by a method of calculating fuel consumption by filling fuel, running their car daily, and then filling the fuel once more.

Fuel consumption information accumulated through eco supporter's activity is posted on the fuel efficiency bulletin board of SK Encar's homepage to make it easy for consumers who purchase cars of SK Encar to refer to the information.

Eco Supporters, which started from the idea of creating and sharing the information that consumers need when purchasing a car, plans to expand opportunities to communicate directly with consumers.

SK Encar Fuel Economy Competition

SK Encar of SK holdings has awarded contestants with high fuel efficiency rates by checking the rate of increase compared to the certified fuel economy through the Eco-Encar Fuel Economy Contest. It collected data of actual mileage of each car type and shared the information with customers.

This competition invited 100 drivers and it has become a place to communicate with customers. The fuel economy competition adopted a full-to-full method that compares the actual fuel consumption and mileage while driving at a gas station at the starting point, driving on a designated course of about 200km, and then again refuelling the car at a gas station at the arriving point.

The SK Encar fuel economy competition is used as an event for many drivers to gain good driving habits that increase fuel efficiency. Every year SK Encar holds an eco-driver selection contest and shares the fuel mileage information with more consumers through its website to recognize the importance of eco-driving.

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GOVERNANCE

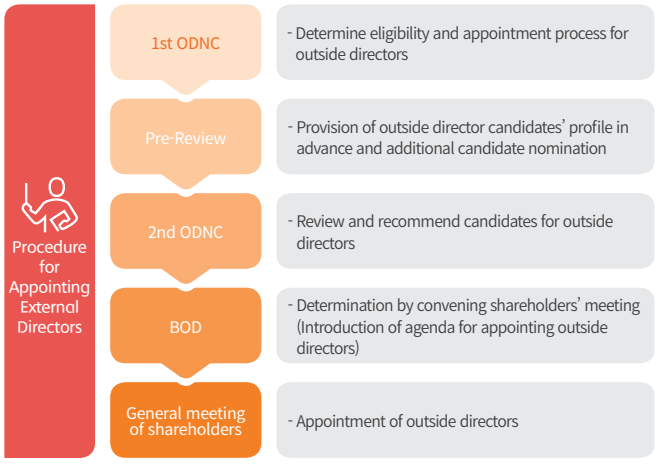
Efficient and Transparent Board of Directors

Composition of the Board of Directors

The Board of Directors has the authority to make major decisions (corporate governance, investment, planning, accounting, finance, etc.) of the company, monitors and advises on important strategic decisions and management activities of the company. The SK holdings' board of directors consists of seven directors in total including three executive directors and four outside directors such as independent directors. The directors shall be elected through a regular shareholders' meeting.

Appointment of Directors

Candidates for outside directors are recommended by the ODNC(Outside Director Nomination Committee) in accordance with relevant laws and regulations. Candidates with independence and objectivity are selected through thorough verification based on reasons for qualification, such as conflicts of interest with the company and concurrent positions. Those who are engaged in the business of the company, the largest shareholder of the company, and those who have an important interest in the company are not eligible as outside directors. Employees who have been in office for the past two years are also not allowed to become an outside director. In order to select fair and transparent appointment of outside directors, the ODNC specifies rules and procedures for nominating candidates for outside directors. Whenever we need to find candidates for outside directors, we try to receive recommendations from outside the company, such as shareholders and stakeholders.



*ODNC = Outside Director Nomination Committee

Performance and Compensation of the Board of Directors

The remuneration of executive directors is determined by reflecting the social and environmental performance based on the economic performance. In the case of outside directors, in addition to the basic salary, there is no additional remuneration such as incentive salary to guarantee independence. The level of compensation for directors is reviewed by the board of directors on the remuneration limit of directors in accordance with the provisions of the relevant law and is confirmed through the general meeting of shareholders. Remuneration and calculation methods are disclosed on the business report. To maximize corporate value through the mutual understanding of the management and shareholders, we have introduced stock options for executives and directly linked corporate value enhancement and compensation.

Independence of the Board of Directors

To maintain transparency and independence, SK holdings maintains a majority (57%) of the total number of outside directors. All outside directors are independent directors and are not in a special relationship with the management. In order to prevent conflicts of interest, directors shall not engage in transactions that fall under the business category of the Company by themselves or third parties without prior approval of the Board of Directors in accordance with the Commercial Act and the regulations of the Board of Directors.

Efficiency of the Board of Directors

Board meetings are held once a month but may also be held more often in certain circumstances. The convening of the Board of Directors shall be done by the chairman in principle, but if each director deems it necessary for the performance of his / her duties, the director may request the chairman to convene a meeting. The board and committee regulations allow directors to participate in resolutions by all means of communication, in which all or part of the directors do not attend direct meetings and all of the directors can take part in through communicational channels that transmit and receive their voice. This is to improve the accessibility by allowing the directors to participate in the board without restriction of time and place thanks to the development of information and communication. In addition, the Board of Directors enhances the efficiency of its operations through its own performance evaluation.

Expertise and Diversity of the Board of Directors

SK holdings has enhanced the efficiency of its operations by strengthening its ability to check on executives and by encouraging directors with various backgrounds and expertise to participate in the board of directors. The board consists of directors with expertise in various fields such as corporate management, macroeconomics, law, fair trade, risk management, and communication. In addition, SK holdings has appointed experts in the field of sustainable management as outside directors, so that it can consider the corporate social values within the board of directors. SK holdings pursues diversity when choosing the board members without a limitation of race, gender, age, nationality, educational background, religion, disability, or political orientation.

Responsible Management of the Board of Directors and Shareholder-friendly Policies

SK holdings organized a governance committee to strengthen the role of the board in protecting the rights and interests of the shareholders in Feb. 2016. This committee comprising only of outside directors, reviews in advance key management issues which have material impacts on shareholder value, including investments, mergers or division of the company, and matters related to finance. In particular, the board of directors is now able to periodically have in-depth discussion on themes related to sustainable management, including CSR, ethical management, and inspection of performance of programs for autonomous compliance of fair trading regulations. After the launch of the integrated holding company, SK holdings has developed a management structure that is transparent and friendly to shareholders, including steady increase of profit dividends.

Composition of the Board of Directors

As of March 31, 2017

Category	Name, date of birth	Position • Responsibilities	Specialty	Major career	Tenure term	Term expiration date
Executive Director	Chey, Tae-won (December, 1960)	Chairman & CEO	Mgmt., Economics, Global, Industry Expertise, and RM	- Ph. D. Economics, University of Chicago, USA - Current Chairman of SK Hynix - Current Chairman of SK Innovation	1 year and 8 months	2019.03
	Jang, Dong Hyun (Aug, 1963)	President & CEO	Mgmt., finance, industry expertise, Tech, RM	- M.A. Industrial Engineering, Seoul National University - CEO of SK Telecom	3 months	2020.03
	Cho, Dae Sik (Nov, 1960)	Executive Director	Mgmt., Economics, Global, Industry Expertise, RM	- M.A. Management Clark University, USA - CEO of SK holdings	1 year and 8 months	2018.03
Outside Director	Ha, Kum Loul (Dec, 1949)	Outside Director	Mgmt., industry expertise, administration, communication	- B.A. German Language and Literature, Korea University - President & CEO of SBS Media holdings - Chief of Staff of the Office of President at the blue house in Korea	2 years	2018.03
	Lee, Yong Hi (Oct, 1950)	Outside Director	Mgmt., Economics, Tech, RM, Administration, and Industry Expertise	- Ph. D. Economics, Konkuk University - Vice President of NICE - Visiting professor at Seoul National University	4 years	2019.03
	Ju, Soon Sik (Nov, 1953)	Outside Director	Economy, Global, Administrative, Fair Trade, Industry expertise	- Ph. D. Economics, University of Hawaii, USA - Member of the standing committee of the Fair Trade Commission - Corporate Lawyer at Yulchon LLC (Present)	5 years	2018.03
	Jang, Yong Suk (July, 1968)	Outside Director	Global, Administration, and Sustainable Management	- Ph. D. Sociology, Stanford University, USA - Professor of Sociology, University of Utah, USA - Current Professor, Administration major, Yonsei University	-	2020.03

Composition of the Committee

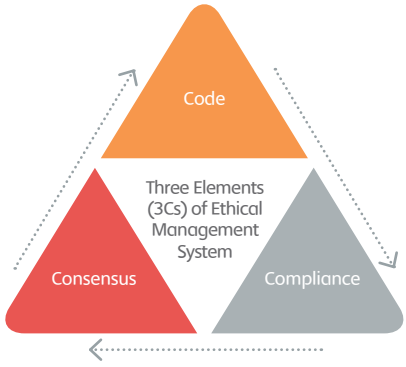
Committee name	Role	Composition
Audit Committee	The Audit Committee audits the Company's accounting and business activities in accordance with the laws and ordinances, or the provisions of the Board of Directors. In accordance with Article 6 (2) of the Audit Committee Act, the Committee reviews and approves matters concerning the General Meeting of Shareholders, matters related to directors and the Board of Directors, matters about audits, and other matters specified by other regulation or statues.	Outside Directors (3 persons) • Lee, Yong Hi, Outside Director • Ju, Soon Sik, Outside Director • Jang,Yong Suk, Outside Director
Outside Director Nomination Committee	The Outside Director Nomination Committee for outside directors to be elected at the shareholders' meeting. The committee makes the recommendation of candidates for outside directors in accordance with Article 6 (2) of the External Director Recommendation Committee Act, evaluates directors' activities, reviews utilization of directors, and reviews and approve other necessary matters for recommendation of outside director candidates as well as the matters delegated by the Board of Directors.	Outside Director (2 persons) • Lee, Yong Hi, Outside Director • Ha, Kum Loul, Outside Director Executive Director (1 person) • Jang, Dong Hyun, CEO
Governance Committee	By protecting shareholders' values and rights and strengthening the transparency of governance, SK holdings aims to realize more substantial board-based management principles. The committee's responsibilities are as follows: examining related party transactions that require the board's approval under the Monopoly Regulation and the Fair Trade Act and the Commercial Act, examining and developing sustainable management (social contribution and ethical management), monitoring and evaluating the fair trade compliance program, and reviewing and approving other matters such as the issues relevant to corporate management that have a significant impact on shareholders' value.	Outside Directors (4 persons) • Ju, Soon Sik, Outside Director • Ha, Kum Loul, Outside Director • Lee, Yong Hi, Outside Director • Jang,Yong Suk, Outside Director

ETHICS MANAGEMENT

Ethical Management System

SK holdings uses the SK Management System (SKMS) as the basis of its corporate management to pursue value creation and happiness for all stakeholders, such as customers, employees, shareholders, partners, and society. The Company has been dedicated to creating responsible and healthy corporate culture. Compliance with corporate ethics and laws is regarded as the basis for a company to remain as a responsible corporate citizen. As corporate responsibility and morality and social responsibility became increasingly important, SK holdings announced the introduction of ethical management on November 1, 2002, and implemented ethical management through systematic approach based on 3C (Code, Compliance, Consensus). We are constantly striving to make ethical management become a corporate culture.

Ethical Management System



Code of Ethics	Compliance	Consensus
· Ethics code · Examples of violations by key area (don'ts) · FAQ on practice of ethical management by SK leaders	· Operation of a dedicated ethics management organization · Operation of self-purification system · Internal reporting and consultation system and protection of informant	· Development and implementation of programs for ethical management training · Ethical Management Survey · Pledge by personnel to practice the Code of Ethics

Code of Ethics

The ethical rules are constantly being updated as SK holdings' employees consider ethical conflict situations that may arise during the course of their duties as criteria for decision-making and actions. All employees are responsible for compliance with ethical rules. If the acts are not clearly defined in the Code of Ethics, employees should judge and act on their own according to the principles of "legality, transparency and rationality". If they are not confident, they may follow the advice of an organization leader or ethics management department. Organizational leaders are also responsible for supporting and managing their employees and business stakeholders to ensure that they understand and comply with the company's code of ethics

Ethical management standards include ethics for employees, ethics for customers, ethics for society, ethics for the Company and shareholders, and protection for the informant

Category	Ethical policy practice items	Main content
Executives	Mutual respect among employees and prohibition of exchange of money or valuables, roles of leaders, etc.	Prohibition of discrimination and human rights violation, leader's initiative, etc.
Customer	Efforts for securing customers' trust, protection of their information, etc.	Prohibition of acceptance of money, protection of personal information of customers, business partners, and employees, etc.
Society	Adherence to statutes, prohibition of payment or receipt of money or valuables to or from stakeholders, fair trade with business partners, fair competition, etc.	Compliance with the Fair-Trade Act and the Improper Solicitation and Graft Act, bans on political involvement & illegal funds, compliance with environmental regulations, etc.
Company & Shareholders	Priority on the company's interests in case of conflicts of interest, corporate assets and information protection, reporting and business management, etc.	Pre-approval is required for external company & government organization activities, prohibition of transfer of company's technical knowledge, prohibition of false & delayed reporting, and protection for the informant
Protection of Informant	Operation of the internal reporting system, protection of the identity of the informant and prohibition of disadvantages	Protection of whistle blowers, prohibition of disadvantageous actions, etc.
Addendum	Rewards and disciplines, consultation and advice, relationships with other company rules, etc.	Consultation with ethics management department and advisory, prioritized ethics regulations, etc.

In 2010, SK holdings created and distributed ethical guidelines (Don'ts) by organizing various cases of violations of ethical management, so that employees can utilize them as guidelines for ethical activities in their daily business activities. Related internal regulations, existing issues, and laws that apply to the types of accidents were reflected so that the issues that employees should observe while carrying out their duties were established. In 2016, SK holdings changed the name of the ethics guide to "Don'ts" for violation cases in each major area.

Area	Violations by major area (Don'ts)
Unethical Acts	23 items including basic etiquette, sexual harassment, provision of money or valuables, treatment, or entertainment, conflicts of interest, protection of company assets and information, etc.
Security	14 items including PC security, information and document management, project security, etc.
Subcontract	18 items including determination, adjustment, and payment of outsourcing prices, failure in issuing documents, inspection and notice of results, unfair intervention in management, etc.
Tax·Fair Trade	23 items including issues concerning trade, unfair or illegitimate internal transactions, unfair common actions (rigging), unfair trading, etc.
Reporting· Management, etc.	33 items including risky business promotion, false, delayed or partial reporting, negligent business management, etc.

Furthermore, an independent and responsible management group under the SUPEX Council of SK Group has established guidelines of ethical management for SK leaders (FAQ) in order to strengthen the initiative of leaders in 2013 and shares the guidelines and conducts periodic checkups. Ethical management practice guidelines for team leaders include the following details: procedures for resolving conflicts of interest, prohibition of purchasing and personnel hiring based on personal request, criteria for judging corporate property use, matters concerning budget use and settlement, personal sponsorship, advertising, donation to a specific organization, prohibition of transferring business trip benefits to another person, the prohibition of acceptance of money, the example of relevant permission, and the criteria for giving gifts between the employees, etc.

Compliance System

Ethical Management Organization

SK holdings has been committed to encouraging its employees to recognize ethical management as part of corporate culture through Ethical Management Team under Chief Operating Officer

To this end, the ethical management team has designed and implemented a variety of systems and programs such as management diagnosis, report inspection and system management of self-purification, in addition to increasing employees' ethical awareness through training and campaigns. Furthermore, it operates diagnosis and support system so that subsidiaries and overseas corporations can conduct their own ethical management activities.

Whistle-blowing and Autonomous Report

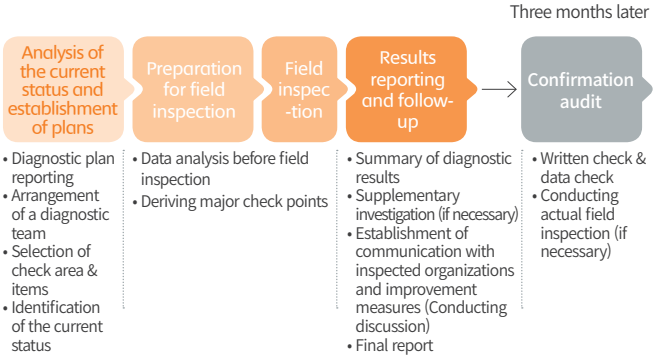
SK holdings operates a variety of channels for all stakeholders to report unethical behaviors. The contents of report and whistle-blowing are received and processed confidentially. The identity and information of the informant is thoroughly protected and the result of the investigation is provided after the check on the reported contents. We also provide guidelines on how to advise and report on ethics management related issues on the ethics management homepage (https://ethics.sk.co.kr), and there are also other various ethical management channels such as consultation on ethics management (https://ethics.sk.co.kr/advice/ethics.aspx), online report (https://ethics.sk.co.kr/advice/reportimportance.aspx), telephone report (+82-2-6400-6262), fax report (+82-2-6400-0613) report and suggestions box (in-house's Tioom etc.).

Ethical Management Consultation & Report

Self-purification System Operation (Risk Assessment and Ethics Management Practice Audit Activities)

To enhance autonomous ethics management practices in the field, SK holdings conducts risk inspections and evaluations regularly (once a year) with checklists appropriate to each task's characteristics in four areas: HR, purchasing, partner companies, and costs. In addition, the ethical management team conducts annual audits on a regular basis throughout the year on the basis of its own management diagnosis of each business site and reporting channels.

Management Diagnosis Activity Process



Confirmed Violations against Regulations & Disciplines and Their Related Measures

In 2016, 13 discipline violation cases were committed, including 4 cases of dismissals, 1 case of suspension, 4 cases of reduction in salary, 3 cases of reprimands, and 1 case of warning due to accepting bribery from business partners, infringement of human rights of employees, etc. Disciplinary grounds and contents are notified to all employees to prevent similar recurrence.

Risk Assessment related to Workplace Discipline Violations

Creation of Consensus

Ethical Management Training and Diffusion of Practical Culture

SK holdings conducts regular ethical management training annually as well as a variety of activities to create a common consensus among its employees in order to implement voluntary ethical management practices and spread related awareness among employees. In 2016, we fostered a culture of autonomous practice of ethical management led by leaders, thereby conducting workshops on ethical management practices at the divisions, and established ethical management guidelines for each organization based upon the result of discussions. Newly hired employees should take compulsory training courses on ethical management. All employees fully participated in online training courses on corporate ethics management in 2016, and SK subsidiaries also completed the same courses, thereby raising ethical management awareness. Moreover, we conduct ethical management surveys every year in order to comply with ethics codes and diagnose ethical culture level, which are all reflected in our management activities so that ethical management activities can be continuously advanced. Besides, we also run campaigns for employees' pledge on practice of ethics and a report center related to receiving holiday gifts.

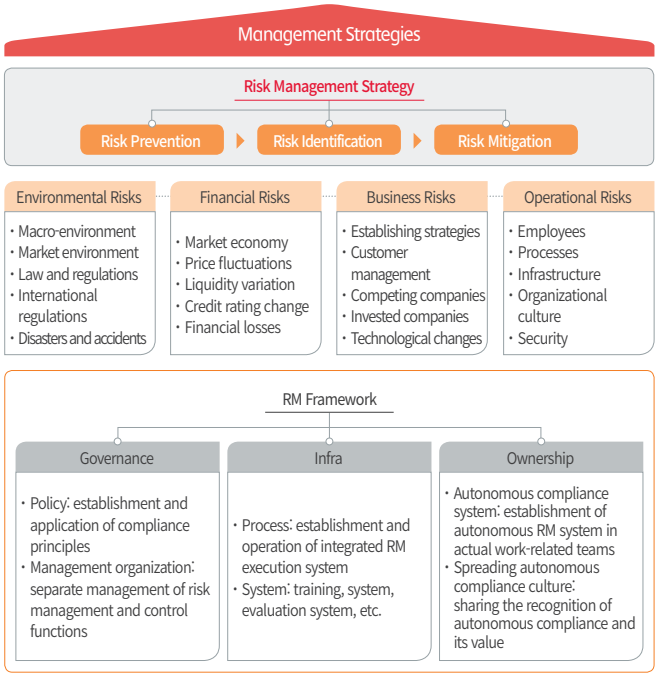
RISK MANAGEMENT

Integrated Risk Management System

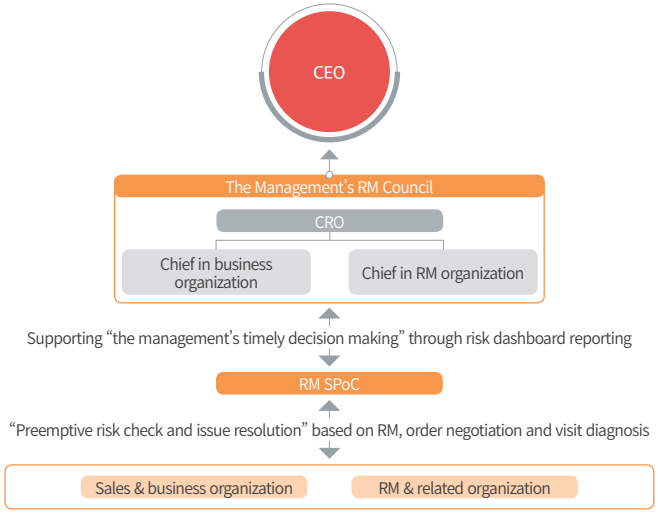
SK holdings performs systematic & integrated risk management to minimize changes or volatility in business values due to uncertainties in internal and external environments while identifying and preventing risk factors proactively which can adversely affect the company's attainment of its goals, including events, acts and conditions. Furthermore, SK holdings preemptively identifies and controls risks by defining as: financial risks such as sales, capital, credit, interest rate, liquidity, exchange rates, and investment; business risks such as strategies, customers, competitors, investors, and technological changes; operational risks such as employees, processes, infrastructure, organizational culture, and security; environmental risks from a macro perspective to respond to mid-long term corporate risks.

Furthermore, SK holdings has deployed various measures and systems to perform preventive risk-reduction strategies as well as to respond to risks by defining a risk management framework. In order to prevent these risks in advance, it has developed plans to address possible risks by identifying all circumstances and measuring their degree of impacts which can adversely affect the business. It responds to the newly emerging risks by analyzing them immediately and takes appropriate actions to prevent recurrence of similar risks through feedbacks. It also makes business decisions based on risk prediction and review by operating a council on enterprise-wide risk management. It assists all operational and risk management departments to share opinions naturally in such processes.

Integrated Risk Management System



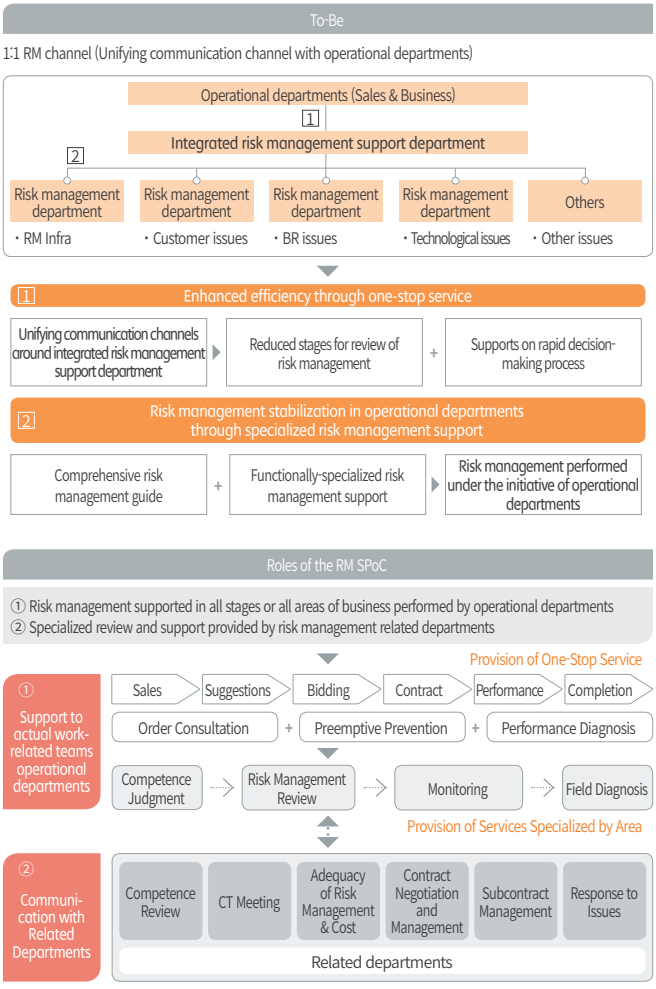
Risk Management Report System



Risk Management Process

Single Point of Contact (SPoC) System

SK holdings has introduced RM SPoC system exclusively responsible for each business unit by reorganizing the current RM system in 2015 in order to more effectively manage risks. The system provides one-stop service by integrating risk management and layered communication channels, fosters an efficient business environment, and supports instillment of RM system in operating departments through professional RM support system.

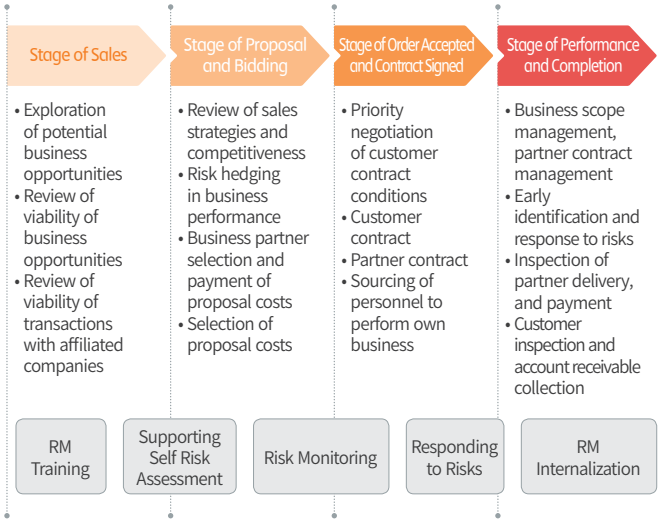


Risk Management by Business Stage

When undertaking investments and IT projects exceeding a certain scale, SK holdings identifies and manages risks occurring at all stages of project execution, including sales, proposals, contracts, and executions. The project manager identifies risks in advance by preparing a self-assessment checklist, conducts an internal audit, presents the potential risks at a risk review meeting, and conducts a risk review meeting with specialized teams responsible for fair trade, project support, contract, and legal affairs. As for the project discussed at the risk review meeting, the overall project risks are deliberated to determine the costs and price at a project evaluation meeting. Through such risk management process, the project manager can effectively execute a project, and the related teams regularly conduct risk monitoring works related to the project and manage possible risks.

The RM Self-Checklist identifies not only the domestic business but also the risks related to the global business, and decides whether to pursue the concerned business based on the result of the review. In 2016, SK holdings also developed a technical RM checklist so that the department of business promotion can conduct self-diagnoses to avoid potential risks.

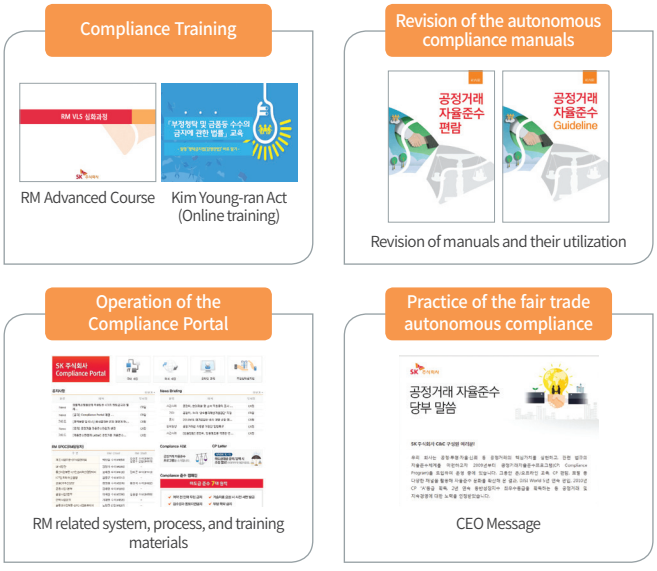
Risk Checklist by Business Stage and RM Support Areas



According to the enactment of the the Improper Solicitation and Graft Act (also known as the anti-graft law, aka “Kim Young-ran Act”) in 2016, the main contents of the Act and guidelines including instructions for employees were made available to all employees through online training.

Since 2009, SK holdings has introduced and operated a Compliance Program (CP) related to the fair trade, and has revised the fair trade compliance manuals every two years so that employees can well understand and follow fair trade regulations. By revising autonomous compliance manual in 2016, SK holdings prevents employees from violating the Fair Trade Act & subcontract related act.

In addition, SK holdings routinely publishes laws, institutions, internal policies and policy trends through its Compliance Portal. It also manages available compliance-related data in utilizing for business and provides information of the enterprise-wide RM systems and the personnel responsible for the risk management to employees.



Creating a Culture of Autonomous Compliance with the Fair Trade Regulations

SK holdings operates diverse compliance programs for creating a culture of autonomous compliance with the Fair Trade Act and regulations, including officers’ seminars, pledges, compliance training for employees, compliance campaigns, revisions of autonomous compliance manuals, operation of compliance portals, etc. Compliance training is segmented into contents differentiated by job group or position by defining systems of capabilities required or suitable to changes in environment for the relevant business. In particular, SK holdings has developed a training curriculum that identifies and responds to the potential risks of new business areas in advance, thereby collecting business needs and preventing legal violations in those areas.

R&D AND INNOVATION

R&D Direction

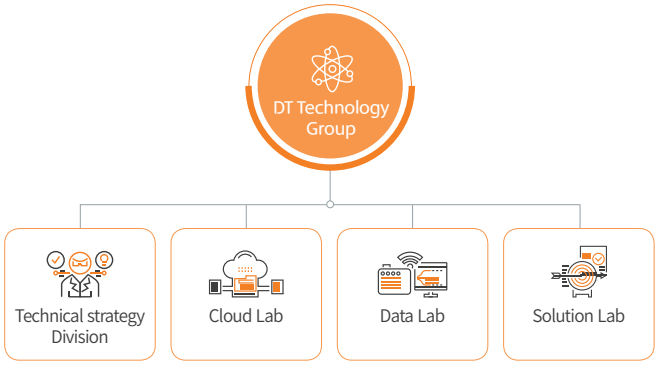
SK holdings is committed to supporting and innovating the current organizations and businesses by leveraging technologies such as cloud computing, big data, and artificial intelligence that are making significant changes not only to the lives of individuals but also to the way companies work with innovative business models. Furthermore, beyond that, we are creating new forms of innovation. SK holdings defines this as "Digital Transformation (DT)" and recognizes that the most important factor in accelerating such changes is technology, and searches for new changes to become an advanced technology-oriented company.

Organization and the Human Resources

SK holdings has expanded and reorganized its R&D organization into the "DT Technology Group", which is directly under Chief Operating Officer in 2017 from the previous ICT R&D Center, in order to drive a full-fledged DT growth through DT (Digital Transformation) efforts. The organization under the DT Technology Group consists of Technical Strategy, Cloud Lab, Data Lab and Solution Lab.

Technology Strategy organization is in charge of optimal R&D resource allocation and leading execution by establishing ICT technology strategies. Cloud Lab organization develops basic technologies and next-generation cloud technologies required for transition from the existing IT infrastructure & platform to cloud.

Data Lab organization focuses on the development of a Big Data Platform in the form of a cloud-based API and the development of data analysis algorithms and models for business sectors such as finance, manufacturing, and communication. The Solution Development Lab organization develops products related to application development and solution products for the IT service business while developing and advancing convergence services. The DT Technology sector creates and develops continuously core technologies for customers' successful digital transformation.



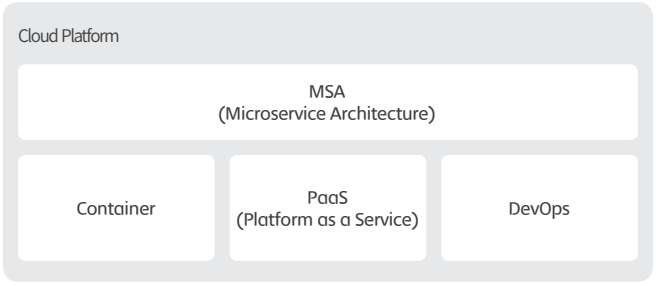
Major Activities and Achievements

As core R&D areas, SK holdings defines advanced ICT technologies such as Big Data and Cloud as well as technologies that advance the current IT service environment, with an aim of securing technologies that enable digital transformation of enterprise customers, thereby reflecting technology changes and market needs to expand the R&D sectors.

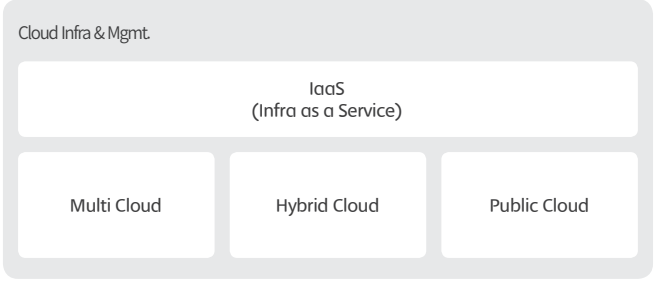
Cloud

Cloud computing has brought about revolutionary changes in the way IT services are developed and operated. Cloud services, which can reduce facility investment costs and increase rapid response and flexibility, require technologies that virtualize various hardware resources and interlock them and at the same time, manage these resources efficiently. SK holdings is committed to developing cloud platform and cloud infrastructure & management technologies that enable the Company to have greater flexibility and responsiveness in the cloud environment, thereby resulting in more value creation.

Cloud R&D Sectors



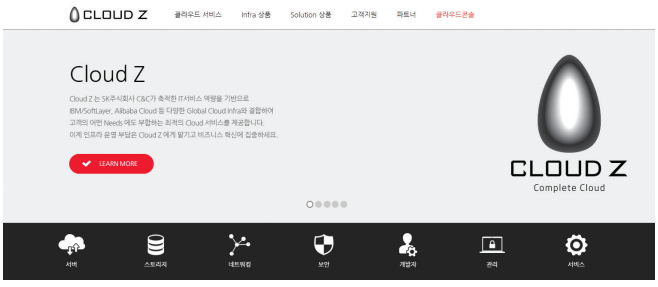
- MSA : technology that develops applications with small and simplified module structure based on independent business logics
- PaaS : platform for rapid development and deployment of applications optimized for cloud environment (Native)
- Container : technology that can quickly and efficiently expand and operate cloud resources by using Docker & Kubernetes technologies
- DevOps : technology that enables rapid and efficient SW developments by automating the process of development, testing, distribution and operation



- IaaS : technology that virtualizes servers, storage, and network resources to provide on-demand cloud services
- Multi Cloud & Hybrid Cloud : technology that provides a cloud optimized for customers' business, in connection with customer's private cloud and SK's public cloud or various 3rd party clouds

Cloud Portal Service - "CLOUD Z"

SK holdings launched "CLOUD Z Portal" for cloud business in June 2016. Based on SK holdings' cloud business brand, CLOUD Z provides the optimal cloud service that meets any customer's needs by partnering with various solution companies.



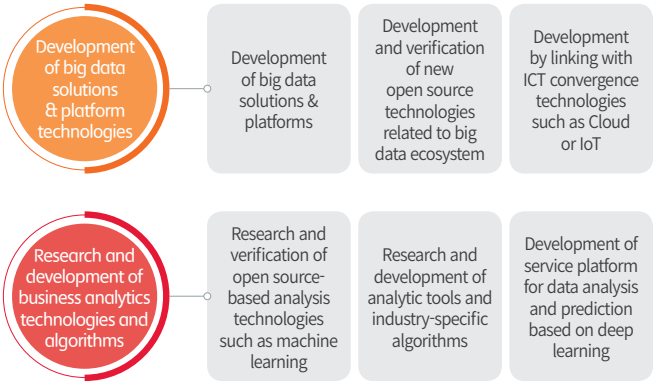
Cloud Z(https://www.cloudz.co.kr/)

Big data

SK holdings has developed a Total Big Data Solution Package, which consists of big data processing function with better monitoring & operation based on 2016's open source, statistical analysis function, real-time data processing function, and batch job management functions. We adopted key big data technologies such as Hadoop, Spark, and R to create new business opportunities and secure competitiveness. It is easy to respond to rapid technological changes based on open source and can save costs compared to commercial solutions. As of 2017, we are developing an API-type big data platform that enables customers to perform big data analysis more easily and faster in the cloud environment.

Big Data R&D Sectors

SK holdings develops stable solutions and platforms based on various open source-based new technologies that make up big data ecosystem, studies big data-based analysis and prediction technology, and industry specific algorithms. We also focus on securing the competencies and technologies that enable the Company to pursue DT by using big data in various industrial sectors.



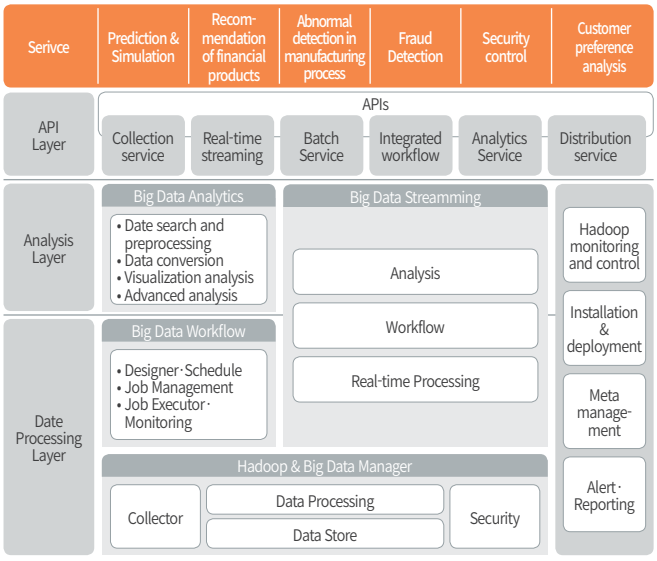
Big Data Solution - "QUTA"

Big data has been not only recognized as a base technology beyond the field of ICT new technologies, but has already being used for various services. "QUTA", developed by SK holdings, has evolved into a data processing engine that becomes not only a big data solution but also a data process engine for open API. QUTA helps business departments to pursue increased business scalability and more diversity by providing APIs that enable them to produce diverse their own unique service rather than just leveraging solutions for their business. Since APIs that are disclosed are modularized for direct services, they are oriented toward MSA (Micro Service Architecture) for easy-to-use of Cloud-based SaaS.

Structure of Big Data Solutions

Big Data API	A technology that enables customers to easily and quickly set up big data environment by utilizing API in cloud environment and helps them to conduct analysis
Hadoop & Big Data Manager	A solution for IT operators & infrastructure representatives who provide integrated resource monitoring, remote control, installation and distribution management of Hadoop-based systems
Big Data Analytics	A solution for analysts who work with R-based statistics, mining, and machine learning algorithms based on Web GUI
Big Data Streaming	A real-time processing and analysis solution that processes large amount of stream data in memory and visualizes them intuitively
Big Data Workflow	A solution for large volume batch job development and operation that provides workflow design, job scheduling and monitoring functions for Hadoop-based batch works

Big Data Solution Architecture



In 2017, SK holdings plans to reorganize "QUTA" modules and develop some new features in order to integrate them into data process engine APIs, which will increase service reusability and scalability. Customers will be able to more easily and quickly build an analysis environment on the new Big Data API Platform and perform business-critical analysis. Since we have followed the Micro-service Architecture, which is suitable for use in the cloud environment, and added necessary data processing technologies, it is possible to make faster and more flexible data processing and analysis at a lower cost than before.

Surveillance Platform

SK holdings has conducted researches dedicated to advanced image analysis technologies, large-capacity equipment integrated control technologies, and IoT platform interworking technologies along with the existing physical security technologies. We have also developed an intelligent integrated platform that is linked to cloud and AI.

R&D Sectors in Surveillance Platform

- Management of high-performance UI standard architecture and memory
- Exploration and development of standard operating procedures (SOPs)

- Security control research using facial recognition technology
- Study on deep learning-based objects & behavior recognitions
- 3D map study for spatial analysis

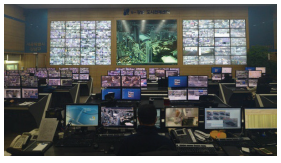
- Study Open IoT platform, which enables easy linkage with numerous devices and applications that conform to 'oneM2M' standard.

Integrated Control Solution - "Watz Eye"

Watz Eye is a multi-purpose physical security information management solution developed by SK holdings. After Watz Eye analyzes the events that are detected by various sensors and other devices in an integrated way and manages them, it provides physical security through fast and accurate processing according to predefined standard operating procedure (SOP). We opened the "Watz Eye" homepage (www.watzeye.com) in April 2017 and plan to use it for marketing to domestic and overseas customers.

Watz Eye Deployment Cases

Gangnam-gu, Seoul, Korea

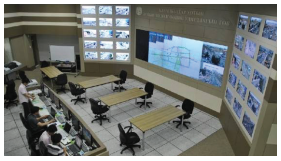


U-Gangnam Safe City Control Center

Vietnam & Mongolia

ITS solution for Freeway Traffic Management System (FTMS)

The Commonwealth of Independent States (CIS)



Ashkhabad Safe City (Turkmenistan)

Incheon International Airport

Integrated Security System of the Incheon International Airport

Social Values of Watz Eye

To Secure Cities

It is of utmost importance to maintain safety and security for citizens, visitors and businesses in order for a city to continue its success and progress. To ensure this, Watz Eye provides efficient dissemination of emergency situations, traffic control functions, cyber convoy service for citizens and other customizable services for crime prevention

To Safeguard Critical Infrastructure and Commerce

Critical infrastructure, such as airports, roads and telecommunication networks are important public assets that can have direct impact on the economy if not protected properly. In addition to this, protecting commerce that is built upon the infrastructure is just as important because lapse of which could cost organizations millions in brand and reputation damage alone. In order to safeguard them, Watz Eye provides diversified monitoring and analysis service through linkage with numerous devices and continuously evolving system that allows expandability and deep learning capability.

Watz Eye Subsystems

CCS

Stands for Command & Control System. Watz Eye's core module and common platform

Resolve & Report

VMS

Collects, analyzes and manages various live and previously recorded videos

Monitor the situation

VAS (Image Analysis System)

Intelligent video analytics system that detects unusual situations fast and accurately

LPR (Automatic License Plate Recognition System)

Analyzes numbers and letters on number plates to use them in traffic control, etc.

FRS (Face Recognition System)

Collects, analyzes and recognizes human faces for use in various situations

BR (behavior recognition system)

Collects, analyzes and recognizes human behavior patterns for use in crime prevention, etc.

CCS Mobile (Mobile)

Mobile application that can improve Watz Eye's on-site response efficiency

CCS IoT (IoT Platform)

Enables easy and stable linkage to increasing number and types of devices

GIS (Geographic Information System)

Uses satellite map to enable swift and appropriate response to any situation.

3D MAP · e-MAP

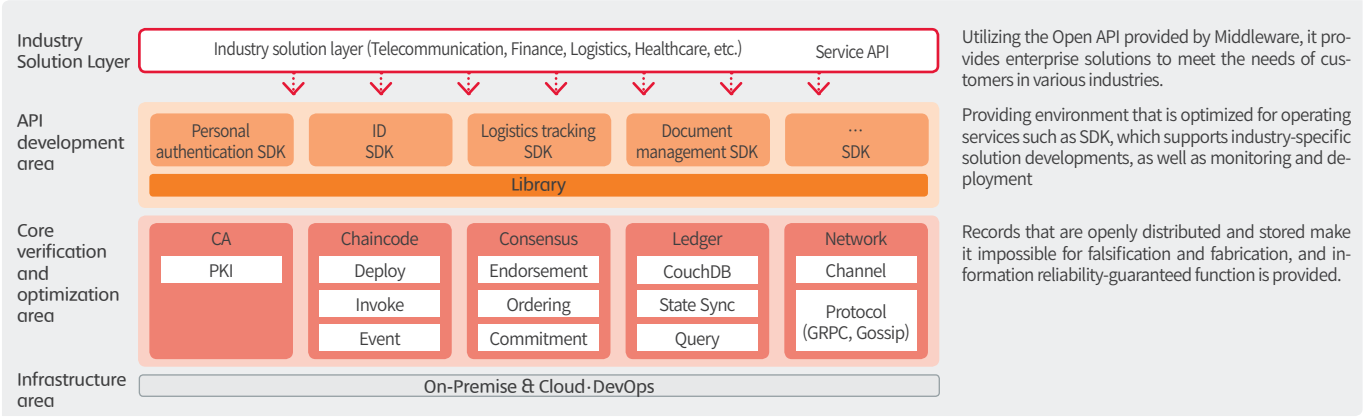
Used for sites, such as buildings and important facilities, where detailed map of both inside and outside is required

Block Chain Platform

SK holdings has developed a block-chain platform that can convert the existing centralized transaction structure into a decentralized transaction structure store by storing and managing various transaction information data with "P2P distribution method" and "transaction approval based upon participants' agreement." Block chains solve the problem of double payments in online transactions by eliminating the intermediary of transactions and thus drastically can reduce unnecessary costs in transactions such as finance. In addition, the platform's range and utilization potential are infinite in the area of finance such as banking, insurance, and securities finance as well as in the areas of real estate transactions such as precious metals and real estate, self-certification and sharing economy.

Block Chain R&D Sectors

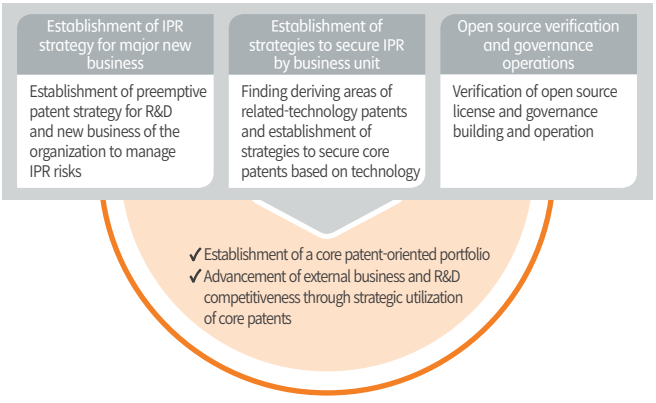
SK block chain platform consists of a core validation & optimization sector which is equipped with OSS-based technologies, a SDK-based API development sector to rapidly deploy services by each industry domain, and an infrastructure area for convenient deployment and operation. The platform provides services from On-Premise and Cloud Z.



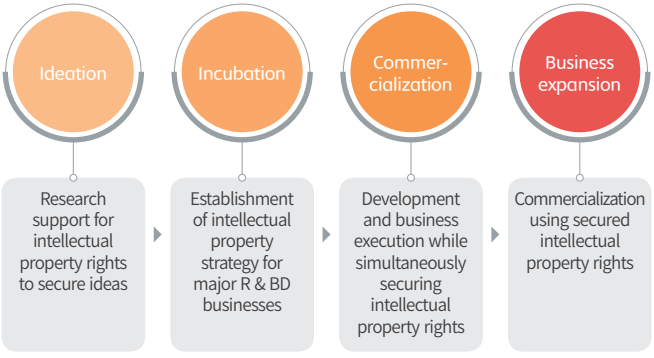
Management of R&D-related Intellectual Property Rights

SK holdings has a total of 210 patents as of 2016. This is the result of continuous efforts to increase the number of patents and to manage them stably through R&D. Based on these activities, SK holdings has established a support system for intellectual property rights (IPR) management at each stage of R&D and business operations and pursued licensing projects based on acquired intellectual property rights to establish a foundation for sustainable growth. In order to manage intellectual property rights, we have supported R&D project step-by-step, provided business exploration assistance, and pursued commercialization of secured intellectual property rights.

Intellectual Property Right Management and Promotional Direction Related to Research and Development



Intellectual Property Rights support plans for Each Stage of R&D



Patents Status

Unit : case

Business areas	Number of patent application & registration
ICT research & development	153
IT services (SI, OS)	53
Others	4
Total	210

ACCOMPANIED GROWTH

Strategies and the Current Status of Accompanied Growth

Purchasing Policy

SK holdings is dedicated to bolster accompanied growth with its partner companies, which is a key driver of its business development with the purpose of responding positively to changes and growing further, thereby securing superior competitiveness and utilizing it as a growth engine. SK holdings strives to build a sound CSR ecosystem by obligating partner companies to comply with corporate social responsibility (CSR) in order to build a sustainable ecosystem. Through these efforts, we have established business partners' code of conducts in four areas: labor human rights, safety and health, environmental friendly system, and ethical management. SK holdings requires its partners to comply with these obligations. We are making every effort to realize values such as mutual trust and mutual development by establishing a sustainable management system in all business sectors by restricting transactions with partners that violate them.

Purchasing Status of Domestic and Global Supply Chains

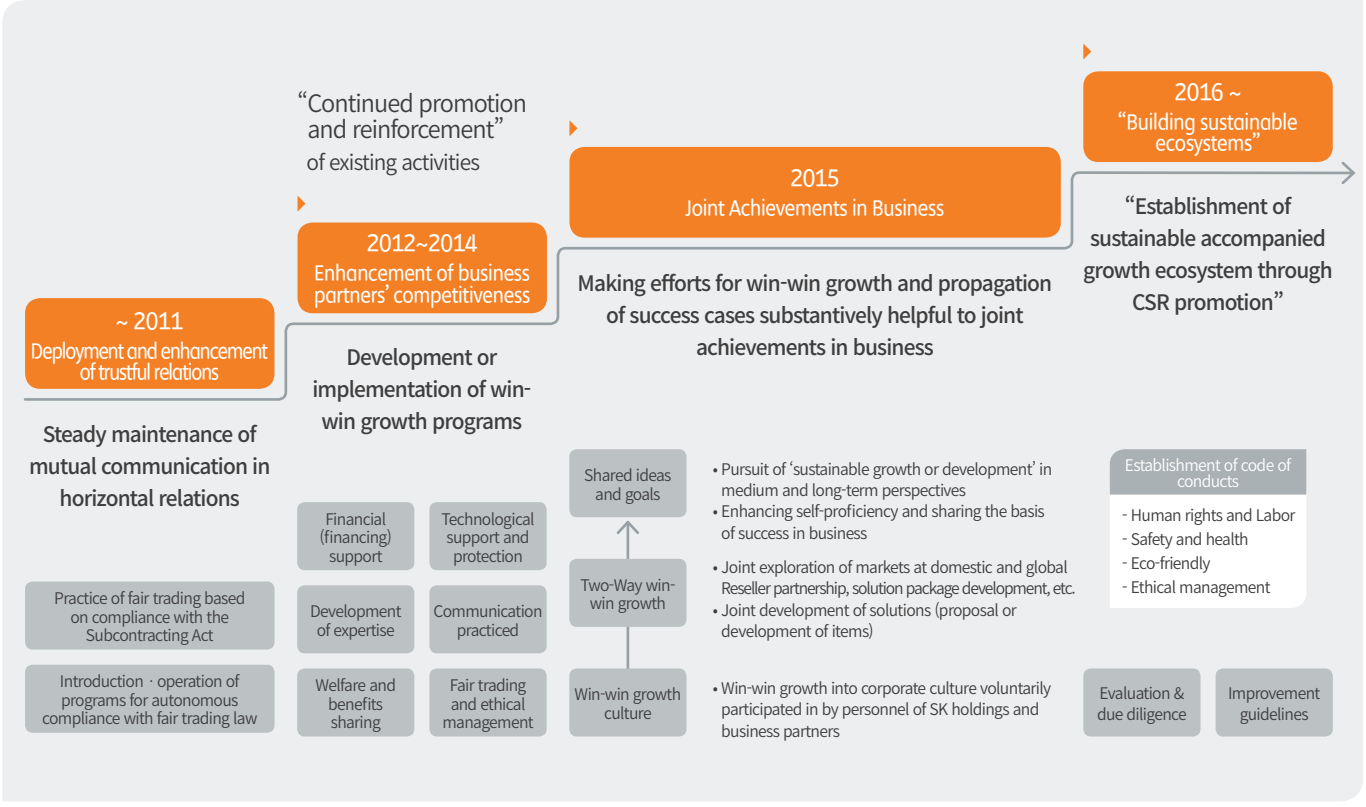
SK holdings, as one of the top IT service companies (business sector) in Korea, is engaged in solutions business such as AI, cloud, and big data in addition to OS business and SI business, which operate IT systems in various industries including SK Group affiliates and external finance and manufacturing. Through about 1,400 partner companies, SK holdings purchases a total of KRW1.2 trillion annually in various HW/SW, system & solution development personnel, etc. In addition, its local purchasing volume has continued to grow based on local procurement policies in order to contribute to the development of local production regions and social contributions in case of conducting overseas projects such as China and Malaysia.

Unit : KRW 100 million

Category		2014	2015	2016
Total purchase amount		7,052	7,145	12,373
HW·SW	Domestic purchase amount	2,933	3,246	4,286
	Global purchase amount	167	167	2,857
Outsourcing workforce	Domestic purchase amount	3,918	3,593	4,566
	Global purchase amount	34	139	664

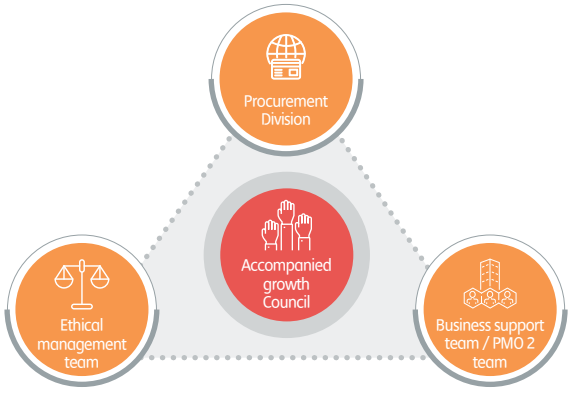
The global local purchase ratio of 28.5%

Accompanied Growth Strategy



Accompanied Growth Promotion Organization

SK holdings internally inspects the compliance of provisions under the accompanied growth agreement signed with business partners and holds meetings of accompanied growth consultation to enhance fairness and legality of subcontracting transactions by establishing a accompanied growth consultative body. The accompanied growth consultative body consists of a procurement department that oversees and manages business partners, an ethical management team that has expertise in fair trading and ethical management, a business support team that governs business supports, and a PMO2 team.



Supply Chain Risks

As the global business environment becomes more difficult to predict, risk management in the supply chain becomes essential elements for the corporate survival and enhanced competitiveness. SK holdings conducts periodic financial assessments of its business partners to prepare for financial risks. We have also evaluated our trading capabilities such as CSR and ethical management level of partner companies as well as sustainable management risks, thereby fostering outstanding partner companies capable of continued growth and promoting strategic partnership collaboration.

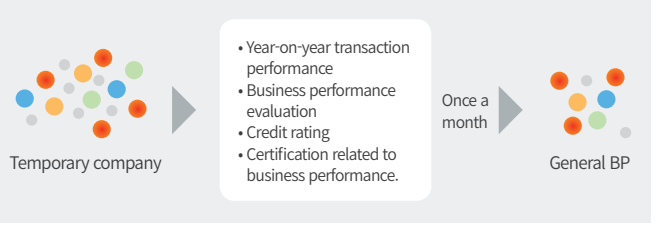
Since 2016, SK holdings has strengthened the competitiveness of SK holdings and its partner companies by developing and operating programs that are practically helpful for partner companies. At the same time, we are building a sustainable ecosystem. In 2017, we have established code of conducts and evaluated partner companies in order to enhance the sustainability of our business partners. In 2018, we will evaluate and due diligence all excellent and strategic partner companies, and will push forward joint improvement projects for vulnerable areas to cope with the ongoing risks.

Selection and Evaluation of BP(Business Partner)

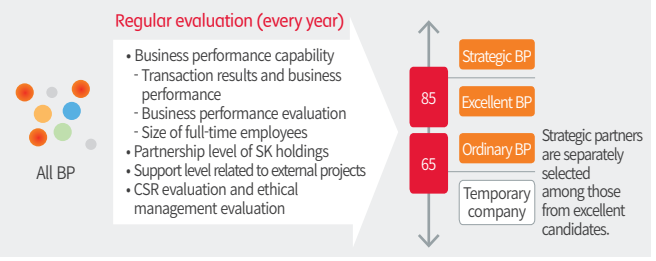
SK holdings strives to select BP(business partner) on the basis of mutual objective evaluations such as transparency and fairness so that it can co-exist with business partners. In addition, we have guided cooperative partners to enact the code of conducts and comply with them in order to follow social responsibility that has recently been strengthened and to deal with environmental issues (compliance with environmental laws).
Through these efforts, we have checked labor standards compliance, ethical management, and safety and health of workers.

SK holdings requires all BP who have made contract with SK holdings to faithfully follow the code of ethics through their “pledge of ethical management practices of partners”. In addition to that, to verify the sustainable capabilities of our BP in a rapidly changing business environment, we evaluate the financial status of our business partners through credit rating and select BP that meet or exceed a certain level. Moreover, SK holdings conducts annual evaluations of all BP companies in order to establish strategies for partnerships and jointly discover technologies and businesses to determine whether BP companies are appropriate for maintaining business with SK holdings.

Basic Qualifications of Becoming a BP(Criteria of key partner selection)



BP Level Adjustment based on Periodic Evaluation (implemented every April ~ June)



The Current Status of BP by Type and Grade

Type of Business Partners	Number of Business Partners		Ordinary		Excellent		Strategic	
	'15	'16	'15	'16	'15	'16	'15	'16
Purchase of Goods	222	153	195	132	27	21	-	-
Outsourcing	165	143	132	93	28	45	5	5
Total	387	296	327	225	55	66	5	5
BP available to sign a accompanied growth agreement	60	60	34	21	21	34	5	5

- Strategic BP : business partners who are in strategic partnerships with SK holdings and are classified as top-priority recipients of collaborative opportunities and accompanied growth partnership programs.
- The Excellent BP : partners with excellent BP assessment results with good partnership with SK holdings. These partners are also classified as priority recipients of accompanied growth partnership programs and are eligible to be promoted to Strategic BPs.
- The Ordinary BP : partners with a certain level of market competitiveness and financial soundness and are necessary for SK holdings to perform its business operations.

Accompanied Growth Programs

To enhance its relationships with its business partners and ensure their long-term sustainable growth by fostering their competencies, SK holdings has developed and operated unique accompanied growth programs aligned with the company's tasks in 8 core support areas, such as finance, technology, and business, and 21 subdivided areas.

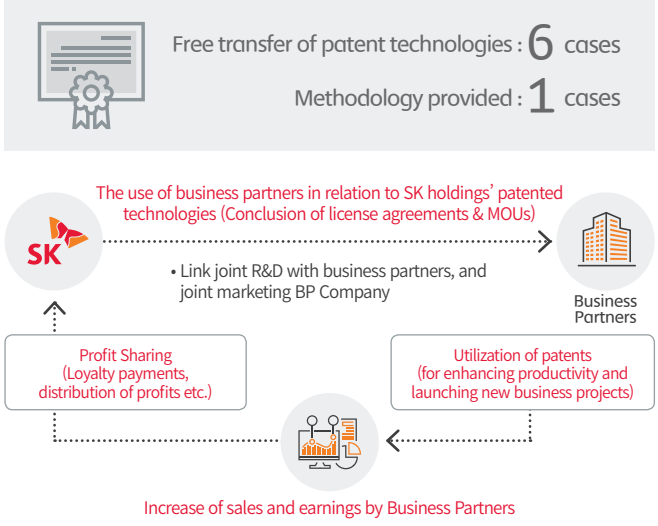
Free Support of Advanced Technologies and Protection of Technologies Belonging to Business Partners

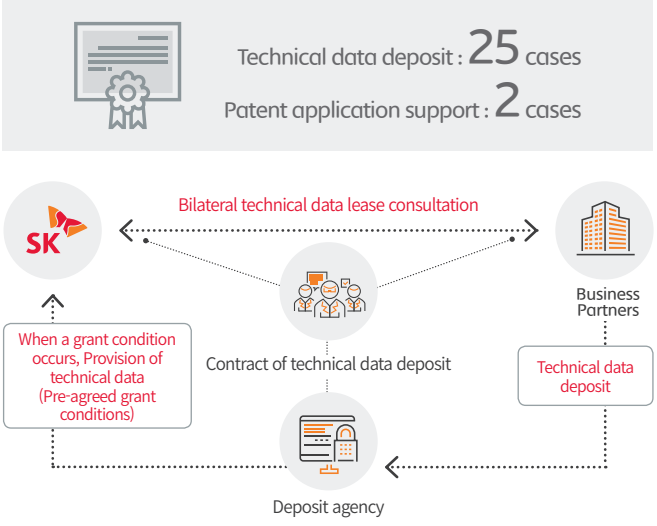
• Provision of the patented technology of SK holdings

SK holdings has been able to enhance business competitiveness, including enhanced productivity, development of new solutions, and advancement into new business lines, while enhancing the capabilities of business partners by granting licenses of SK holdings' patented technologies to business partners.

• Operation of technological data deposit system

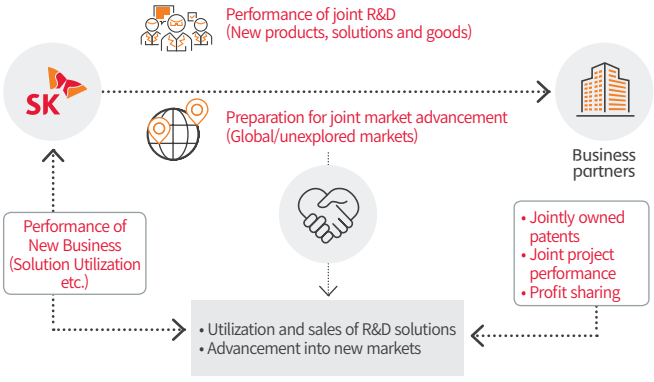
SK holdings and business partners jointly save technological data in a third-party agency to protect partners' core technological data. By doing so, SK holdings has been able to prevent illegitimate take-over of business partners' technologies, prove facts concerning development, prevent loss or leakage of technologies, etc. In addition, SK holdings could secure licenses and conduct stable R&D activities based on the technology deposit system.





• Technical support for joint R&D and joint market entry

Through joint R&D, SK holdings' technology and business know-how were transferred to business partners, thereby strengthening business partners' capacities. Based on this, SK holdings reduced resources through collaborations with professional business partner companies, shortened lead time for entering new markets. At the same time, business partners pursued stable market-based R&D and solved issues of limited resources and poor business environment.

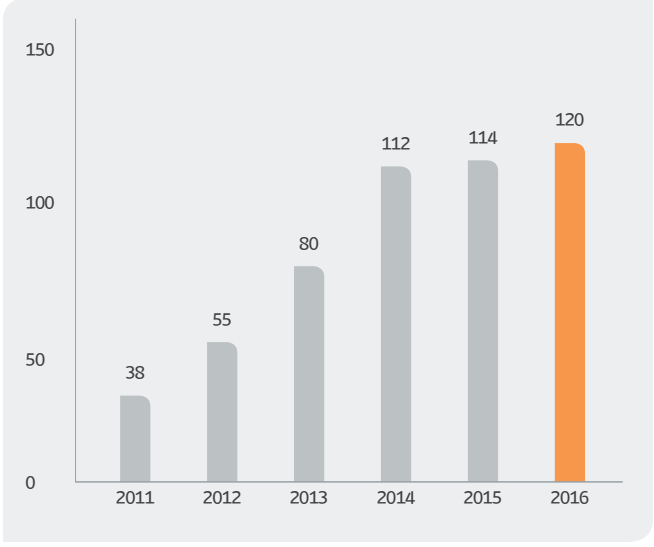


Support to Business Partners' Finance, Education, and Training

• Financial Supports

To support the financial soundness of business partners by helping secure liquidity and planned financial activities, SK holdings established a accompanied growth fund system, utilized network loans, paid for outsourced services and products in 100% cash and make payment once a week. Also, the Company makes early payment to subcontractors before major Korean holiday seasons like New Year or Thanksgiving. Furthermore, based on trustful relations with business partners, SK holdings has helped its business partners reduce expenses by exempting them from various guarantee bonds and insurances.

Size of financial support to business partners — Unit: KRW 100 million



• Technology and training support

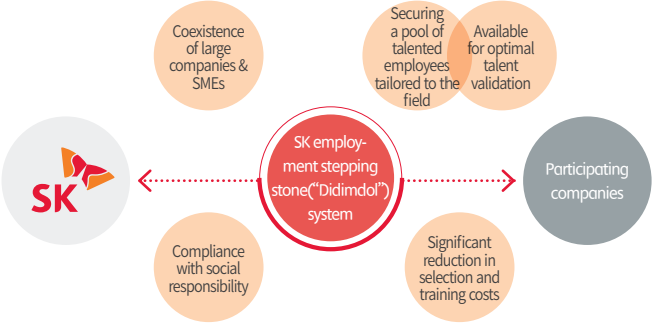
SK holdings supports technological training courses of business partners to enhance their productivity and also supports their stable technological development and utilization through joint development, free licensing of patents, and third-party deposit of technological data. It has also supported "SK win-win growth academy courses" and "specialized technology training courses" to help them to enhance technological workforce. In addition, SK holdings has helped young people to enhance their qualifications for employment by offering occupational training and internships. Since 2016, it has also implemented the "SK employment stepping stone("Didimdol") system" to help business partners develop outstanding workforces.

Classification	Program Name	Detailed Programs	2015 Results of Attendees (persons)	2016 Results of Attendees (persons)
SK Win-Win Growth Academy	Win-Win Growth CEO Seminar	Special lecture by experts once a month (management, humanities, history etc.)	41	50
	Win-Win Growth MBA	8-week mini MBA course (including global workshops)	8	8
	Win-Win Growth e-Learning	92 online courses offered on IT, OA, management, etc.	2,038	3,180
SK holdings	VLS	56 online courses offered on IT, management strategy, etc.	211	198
	Business Partner CEO Seminars	Special lectures on IT trends for CEOs of business partners once per quarter	366	436
	Support Attendance to Outside Training Institutes	Support attendance to multi campus, Korea Productivity Center education courses	12	12
	The Improper Solicitation and Graft Act	Online courses of the Improper Solicitation and Graft Act	-	118

Operation of SK Employment Stepping Stone"Didimdol" System

SK holdings has operated SK employment stepping stone("didimdol") system since 2016 to create jobs for the youth and to solve employment issues of SMEs which are social issues in Korea. Along with the system, the Company supports SMEs to secure talents by providing SK's systematic recruitment process and job training know-how.

The SK employment stepping stone system is a public-private partnership program promoted jointly by the Ministry of Employment and Labor and SK in order to resolve youth unemployment issues and SMEs' labour shortage. This is a win-win platform which allows SK business partners as well as excellent SMEs to participate in the program, supporting talents to these companies.



Through the SK employment stepping stone system that was implemented in 2016, 63% of the first-year students were employed and 73% of the students who were willing to work were successfully employed.

In particular, among the 63 employees employed through the SK employment stepping stone system, 43students, or 68% of the students recruited by our business partners under accompanied growth contract, which allowed us to improve trust between our company and partners and to increase competitiveness.

Sustainable Management Assessment of Business Partners

To foster collaboration with business partners and ensure their competitiveness in sustainable management, SK holdings assesses its BPs each year on "business performance capabilities and partnership level with SK holdings", in addition to sustainable management elements such as ethical management, human rights & labour, safety & health, environmentally friendly management, etc. The results of annual assessments become criteria for judging persistence in doing business with business partners. SK holdings applies a grading system to the benefits provided to its business partners based on their assessment results.

※ Regular evaluation criteria of partner companies: plus points (new business, joint growth and CSR practice), minus points (non-compliance with policies such as ethics management and security)

Evaluation Items

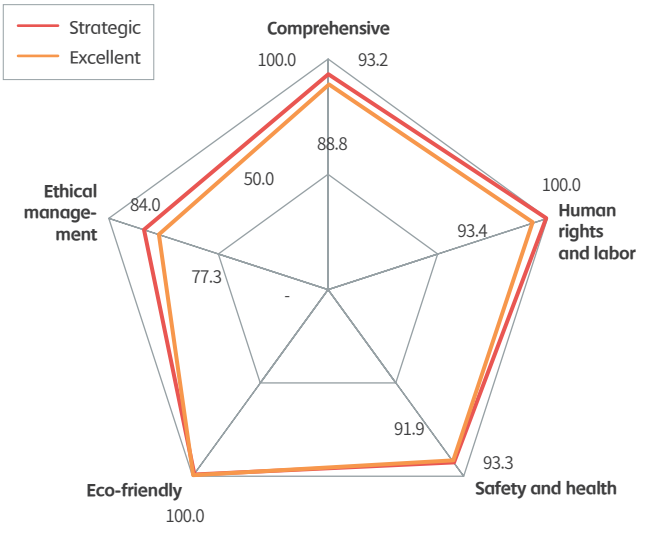
Classification	Details	Checklist by Item
Human Rights & Labor	Minority, forced labor	Are there internal regulations for the underage and forced labor protection?
	Labor standards compliance	Are there internal rules and processes for working standards compliance?
	Employment conditions	Are the terms of employment clearly documented and delievered?
	Human rights·discrimination prohibition	Are there any internal rules for human rights and non-discrimination?
Safety and Health	Worker safety and health	Are they conducting safety assessment of workplace safety or job security & health training?
	Industrial disaster status	Has there been any industrial accident in the last three years?
	Healthcare	Do they have a program for workers' health care?
	Violation of safety and health law	Are there cases of violations of safety and health regulations for the past three years?
Environment	Violation of the environmental standards act	Are there any violations of environmental laws and regulations for the past three years?
Ethical Management	Anti-corruption	Are there internal policies or training to prevent corruption?
	Social contribution	Are they doing social contribution activities (service, donation, etc.)?
	Customer satisfaction	Do they perform customer satisfaction surveys on the service?
	Customer information protection, etc.	Do they have customer privacy policies or relevant training programs?

2017 Sustainability Management Evaluation Results Related to Partners

The results of sustainability management evaluation for our business partners in 2017 are as follows.

- Out of outsourcing companies, number of excellent and strategic companies/ number of respondents among them: Excellent companies (35 companies / 45 companies), strategic companies (5 companies / 5 companies)

Unit : Point



- Strategic companies are showing higher sustainability than excellent companies in all areas.
- Relatively good results in the areas of human rights, labor, and environment-friendly management (compliance with environmental laws)
- The ethical management area appears to be somewhat vulnerable and needs to be improved with joint tasks.
  - Poor anti-corruption policies and insufficient operation of training programs

Tasks for Improvement

- As a result of the survey, establishment of a program or support system to raise awareness about the anti-corruption law which was a vulnerable part
- Sustainability questionnaire update according to domestic and overseas sustainability trends

Key Tasks for Supply Chain Management

Key Performance Indicators	Achievement Goal	Achievement Year
Implementation of risk improvement related to sustainability management of ordinary or above level business partners	100%	2018
Average score of sustainable management evaluation for business partners : 90 points	90point	2017
The rate of business partner as to sustainable management training implementation	100%	2017

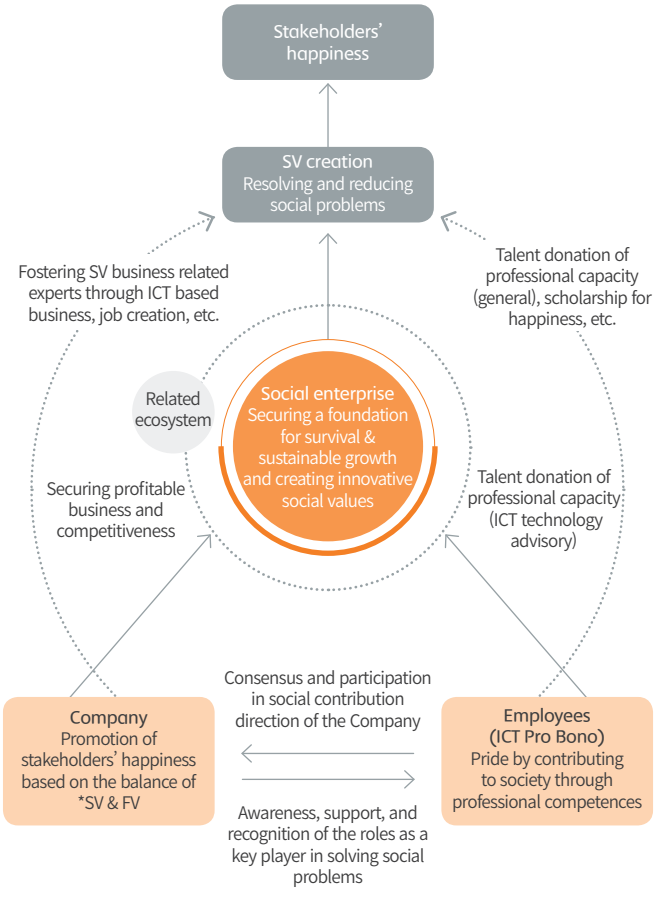
CREATION OF SOCIAL VALUES

Creation of Social Values in Connection with the UN SDGs

The Sustainable Development Goals (SDGs) is a follow-up agenda to the Millennium Development Goals (MDGs), which all countries will jointly pursue from 2016, and it aims to reduce poverty pursued by the Millennium Development Goals. Furthermore, the SDGs consists of comprehensive actions by nation and global cooperative agenda to simultaneously mitigate the threats to sustainable development common to all countries, such as the polarization of the economy and society, worsening various social inequalities, and the destruction of the global environment. SK holdings paid attention to the fact that the SDGs presented by the United Nations are in line with SK Group's corporate culture, which is the pursuit of the happiness of stakeholders. Consequently, we have pursued activities such as creating business opportunities and making social contribution linked to the SDGs.

Social Value Creation Strategy

SK holdings has established social value system linked with the UN's SDGs and practiced related activities in order to realize sustainable happiness with stakeholders based on its management philosophy that not only contributes to economic development but also grows with society by creating social values.



*SV : Social Value, FV : Financial Value

Ensuring a Healthy Life and Promoting the Welfare of All Generations

SK holdings has carried out various activities to improve the quality of life of local and overseas residents who are conducting business and to promote the welfare of all generations.

Relations with business	Business Goals	Social and environmental goals
• Increased corporate value with better corporate reputation by directly dealing with social issues • Creating new business opportunities by improving corporate brand awareness through social contribution activities in the developing countries (areas where the Company has not entered yet)	• Promotion of the humanity's health and creation of new business opportunities through the development of health-related IT solutions (artificial intelligence antibiotic advisor service)	• Improvement of quality of healthy and happy life and welfare of all people with project support on the vulnerable people at home and abroad

Sponsorship of the Project Supporting the Vulnerable Class

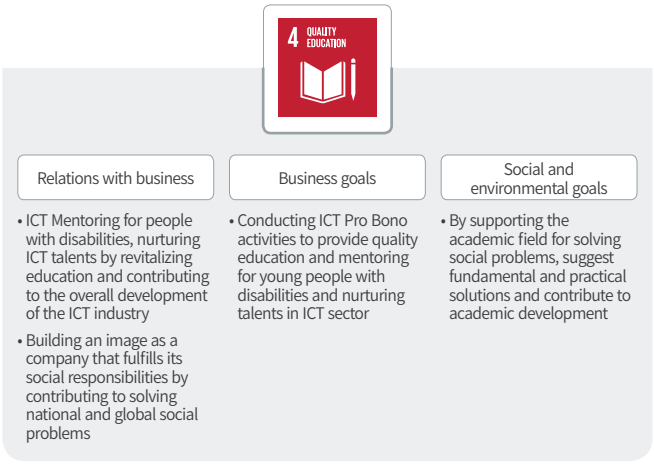
SK Group supports disabled people directly and indirectly to help them overcome obstacles and work as a dignified social worker even in difficult circumstances. We also carry out various activities to support social integration of vulnerable groups. In 2016, we donated about KRW325 million to a variety of businesses such as support for operation charges for the Vietnamese disabled children with facial deformation, sponsorship of the international exchanges for Asian disabled people, support for compliance education for the socially disadvantaged, and the business that supports the artists with disability such as Beautiful Vision Concert. In addition, to create a warm society for the year-end and New Year, SK Group annually participates in charity fund-raising campaigns that are organized by in the Community Chest of Korea to help the underprivileged neighbourhood. In 2016, SK Group donated KRW1.37 billion and with an aim of revitalizing the traditional market of the local economy, which has been suffering from recession and decreasing consumption, it purchased KRW 184 million won worth of "Onnuri gift certificates" and used the certificates for social contribution support projects.

Practice of Sharing Happiness for the Local Community

Employees of SK holdings are voluntarily sharing their happiness for the vulnerable class of the local community. We are committed to helping our neighbors in need by forming voluntary service teams for a variety of purposes, such as volunteer work for better teamwork among team members, voluntary service for fellowship such as the one consisting of female workers and club activities, and volunteering for the year-end party.
※ Making toys, woolly hats, snacks, and cakes for children, providing meals and massages for the elderly living alone, "Happy Tree Planting" of Gyeonggi garden exhibition for environmental protection, conducting environmental cleanup activities for the local society, opening happiness sharing bazaar, providing a voluntary service by making kimchi, etc.

Promotion of Quality Education and Lifelong Learning Opportunities

SK holdings is engaged in a variety of activities to ensure a comprehensive and equal level of education and to encourage lifelong learning opportunities for all.



"ICT Pro Bono", Employees' Talent Donation Program Utilizing ICT Competency

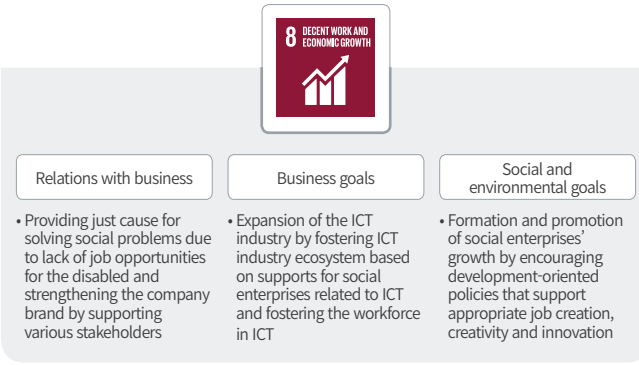
SK holdings operates the "ICT Pro Bono" program, which helps employees to promote social changes by utilizing their ICT capabilities. We conduct consulting activities in various ways, such as technical guidance and coaching for strengthening the IT capabilities of social enterprises, IT learning, career mentoring and education for young people with disabilities who hope to become an IT developer, and IT publicly beneficial projects with youth innovative leaders. Such ICT Pro Bono activities not only help to improving the capacity of consultants but also contribute to raising awareness of social responsibility through communication with civil society.

Academic Support for Solving Social Problems

SK holdings has supported various academic fields to expand the base of solving social problems. It is committed to presenting policy solutions to labour issues such as labour relations, labour economics and labour law through supporting NEAR, Korea-China-Japan Seoul Process, and the International Industrial Relations Association to discuss reconciliation, coexistence and co-prosperity of Korea, China and Japan. And SK holdings supported KRW 172 billion for the development of the academic field such as the Korean Political Science Association for the advancement and promotion of related scholarship such as political science, sociology, and administration.

Sustainable Economic Growth and High-quality Job Creation

SK holdings is engaged in a variety of activities to promote productive, full-employment and quality jobs, along with sustained economic growth for all.



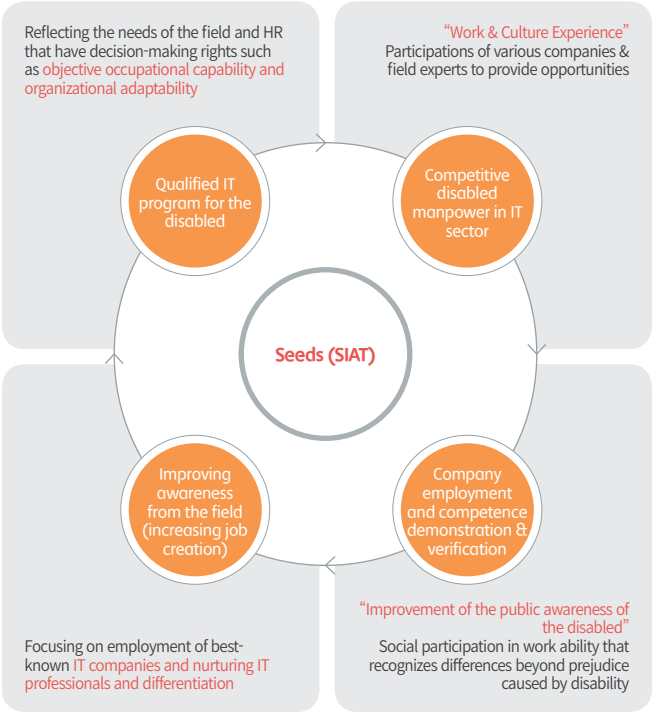
Establishment and Operation Support of Social Enterprise Related to ICT Competency

SK holdings established the Happy ICT Foundation to create IT jobs for the socially disadvantaged and to provide social services, thereby contributing to improving the quality of life of the marginalized people from information utilization and to enhancing social value. Since its establishment in 2011, the Happy ICT Foundation, with an aim of growing into Korea's best ICT social enterprise, which innovates ICT public service and employment of disabled people, has been certified as a social enterprise, a non-profit foundation and a standard workplace for the disabled and provides high quality jobs to people with disabilities. The foundation has been committed to creating new social values such as fostering disabled IT professionals by providing quality jobs to people with disabilities.

"SIAT", ICAT-based Job Competitiveness Enhancement Program for the Disabled

SK holdings combines the field-oriented know-how of ICT related companies with the systematic training of the Korea Employment Agency for the Disabled to create quantitative and qualitative jobs for the young disabled. Through the SIIT (SK holdings' IT Advanced Training) program, we help the disabled to become IT professionals and to have more employment opportunities.

"SIAT Program for Virtuous Circle of Creating IT Jobs for the Disabled"

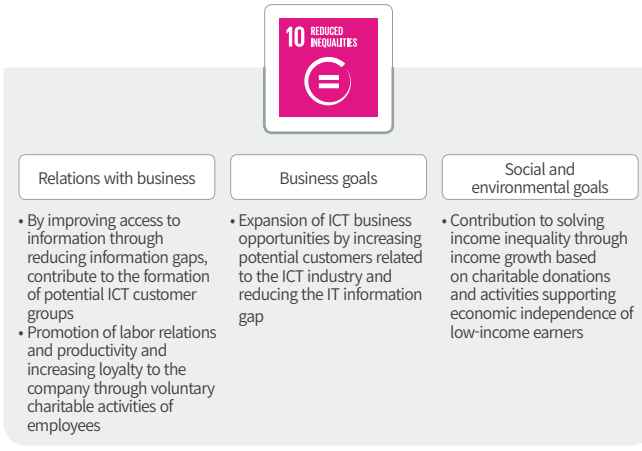


Ecosystem Support Activities of Social and Economic Enterprises for the Local Community

SK holdings has established and supported a "happy value store" for social economic enterprises without offline sales place to sell products, such as social enterprises and cooperatives in the local community. We hold daily "happy value market" for product introduction & sales and increased awareness of social economic enterprises, thereby supporting the simultaneous creation of social and economic values.

Reducing Inequalities within the Nation and between Contries

SK holdings is engaged in a variety of activities to alleviate the inequality of the vulnerable people groups and to reduce income inequality.



'Hope PC Donation' Project to Improve Information Accessibility of Vulnerable Groups

Since 2004, SK holdings has continued to donate used laptops free of charge to enable the underprivileged and social enterprise users and employees who have difficulty in purchasing PCs due to economic conditions to communicate with the society through IT. In 2016, we sponsored 250 notebook computers for elementary school students and low-income families.

Category	2013	2014	2015	2016
Donated used PCs	67 units	250 units	135 units	250 units
Beneficiaries	7 places	6 places	7 places	4 places

Employee Donation Campaign (Happiness IT Scholarship)

SK holdings conducts annual donation campaigns to boost donation culture and support learning for the vulnerable youth. We offer a variety of opportunities for employees to voluntarily participate in daily donations such as online payroll deduction, sharing snack fund, smoking cessation fund, and recreation facility usage fee in resting area. The collected funds are used for "Happiness IT Scholarship" for the disabled youth who dream of IT professionals. At the end of the year, we also carry out donation campaigns to help poorly-fed children and the elderly living alone.

Examples of Creating Social Value through Business

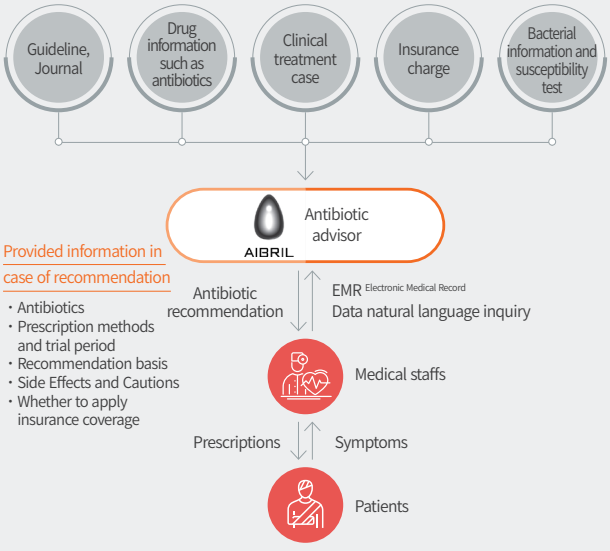
Advisor Service of Artificial Intelligence Antibiotics

Objective 3.5
Strengthened Prevention and Treatment of Drug Abuse

Antibiotics are drugs that treat infections caused by germs and account for the largest portion of the treatments for infectious diseases. However, the use of antibiotics in Korea is considerably higher than the OECD average. The reason for this is that antibiotics prescriptions have not been properly made due to lack of the infection medical specialists, and there are few solutions in the market that can guide this situation.

In Korea, there are only about two hundred infectious disease specialists who can prescribe antibiotics prescription professionally. In addition, there are few or very few infectious medical specialists in hospital-level medical institutions. Therefore, it is difficult to prescribe systematic antibiotics, and most of antibiotics prescribed are designated, which is vulnerable to antibiotics abuse. Accordingly, the Korean government has implemented various policies to induce the correct antibiotic prescription, and antibiotic prescription regulations are expected to be strengthened.

SK holdings' advisor service of artificial intelligence antibiotics is a service that recommends optimal antibiotics and prescriptions based on patient information that is sent through EMR (Electronic Medical Record) or natural language query. The service has a structure in which detailed information and supporting data for the implementation of the therapeutic methods are presented when the key attribute information necessary for antibiotic prescription is identified in connection with the patient's EMR information and the treatment method is selected. This service will be the starting point of a change to make a healthy society and a better future by utilizing artificial intelligence, creating a new medical industry based on artificial intelligence and serving as a foundation to become a global medical power.



Vietnam Intelligent Transportation System (ITS) Project

Detailed Goal 11.2
Providing a Sustainable Transportation System for All

Unlike in the past, when companies simply pursued profitability, today's companies have changed by creating social values based on businesses they operate and growing with society. Now, social value creation is becoming a core purpose, not a partial product of corporate activities. SK holdings focuses on this change in management paradigm and contributes to creating both economic values and solutions to social problems while promoting human happiness through ICT business that SK holdings has been conducting. SK holdings undertook a project to build an Intelligent Transportation System (ITS) on a 105km extension highway connecting Hanoi with Haiphong, Vietnam. The highway project that connects Vietnam's capital, Hanoi with the first port city, Haiphong is the national project of the Vietnamese government to complete the highways in the three major cities of Ho Chi Minh, Hanoi and Da Nang, and to construct the ITS infrastructure and traffic control center for highway system modernization.

SK holdings integrates the toll collection system, vehicle detectors, road signs, and closed-circuit TVs by applying its own solution "Nexcore-based ITS platform" within the Central Management Office of the Hanoi-Haiphong expressway traffic management center, thereby building a system for monitoring real-time traffic flows and traffic situation. From this business, SK holdings shared its advanced capabilities with local companies in Vietnam, and local companies naturally created a virtuous cycle structure that leads us to the Vietnamese local business environment and hidden business opportunities in Vietnam.

With these achievements, SK holdings will play a bridging role for further active entry into the Vietnamese market in the future. To this end, we have expanded our cooperation with ITD, a Vietnamese company in the fields of Electric Toll Collection System (ETCS) and Automatic Fare Collection (AFC), which are components of the ITS. SK holdings will work to improve the stable operation capability of the ITS by establishing supply route of ITS equipment in Vietnam in the years ahead. Furthermore, we will upgrade the functions of ITS integrated solutions built through this project, and will find additional application fields such as big data and IoT in order to follow the current trend, and enhance the utilization of these solutions in other businesses.

Sustainable Performance

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SUSTAINABILITY PERFORMANCE

ECONOMIC PERFORMANCE

Economic Performance

Unit: KRW million

Classification	2014	2015	2016
Current Assets	927,128	29,765,131	32,450,042
Cash and cash equivalents	246,017	6,995,224	7,086,957
Stock inventory	141,780	5,643,327	6,018,855
Other current assets	539,331	17,126,580	19,344,230
Non-Current Assets	4,379,911	66,868,678	70,597,295
Affiliated companies and joint ventures	3,314,585	11,157,775	11,559,899
Tangible assets	574,183	39,445,286	41,032,505
Intangible assets and business rights	101,737	9,749,429	11,772,390
Other non-current assets	389,406	6,516,188	6,232,501
Total Assets	5,307,039	96,633,809	103,047,337
Current Liabilities	640,529	25,919,322	28,716,610
Non-Current Liabilities	2,064,142	30,637,237	32,004,003
Total Liabilities	2,704,671	56,556,559	60,720,613
Controlling Interest	2,585,433	12,566,518	13,112,357
Equity	10,000	15,385	15,385
Other paid-in capital	(555,097)	4,773,965	4,741,139
Retained earnings	3,178,899	7,801,713	8,368,122
Other components of capital	(48,369)	(24,545)	(12,289)
Non-Controlling Interests	16,935	27,510,732	29,214,367
Total Equity	2,602,368	40,077,250	42,326,724
Liabilities and Capital Total	5,307,039	96,633,809	103,047,337
Number of Companies Included in the Consolidated Statement	14	277	290
	24th (2014.01.01~2014.12.31)	25th (2015.01.01~2015.12.31)	26th (2016.01.01~2016.12.31)
I. Revenue	2,425,966	39,569,775	83,617,494
II. Operating Income	271,542	1,403,264	5,298,179
III. Net Profit from Continuing Operations after Corporate Tax and Expenses	187,267	6,238,848	4,375,819
IV. Consolidated Net Profit from Continuing Operations	129,899	5,658,723	3,021,790
V. Net Operating Income	129,899	5,549,259	2,822,484
Net income attributable to controlling interest	127,294	5,345,978	765,580
Net income attributable to noncontrolling interest	2,605	203,281	2,056,904
VI. Profit per Equity Share Held by Controlling Company Owners (Unit:KRW)			
Earnings per share	2,891	107,921	13,676
Earnings per share from continuing operations	2,891	108,850	13,859

Environmental Performance

Energy Consumption

Category		Unit	2014	2015	2016
Total energy consumption (absolute amount, excluding Scope 3)		TJ	609	708	931
Gas (LNG)		TJ	9	9	12
Electricity		TJ	580	683	893
District heating		TJ	20	17	26
Total energy consumption (absolute amount, excluding Scope 3)	Per KRW billion in revenue	TJ	0.309	0.343	0.299
	Per employee	TJ	0.152	0.172	0.213
Gas (LNG)	Per KRW billion in revenue	TJ	0.005	0.005	0.004
	Per employee	TJ	0.002	0.002	0.003
Electricity	Per KRW billion in revenue	TJ	0.294	0.331	0.287
	Per employee	TJ	0.145	0.166	0.205
District Heating	Per KRW billion in revenue	TJ	0.010	0.008	0.008
	Per employee	TJ	0.005	0.004	0.006

* Recalculated energy consumption per KRW 1 billion due to revenue changes in separate financial statements in 2014

Greenhouse Gas Emissions

Category		Unit	2014	2015	2016
Scope 1		tCO_2e	452	472	612
Scope 1 Emission Intensity per Unit	Per KRW billion in revenue	tCO_2e	0.229	0.229	0.196
	Per employee	tCO_2e	0.113	0.115	0.140
Scope 2		tCO_2e	28,691	33,536	44,265
Scope 2 Emission Intensity per Unit	Per KRW billion in revenue	tCO_2e	14.534	16.240	14.220
	Per employee	tCO_2e	7.184	8.140	10.146
Scope 3		tCO_2e	2,935	4,439	4,323
Upstream	Fuel & energy not included in Scopes 1 & 2	tCO_2e	1,050	1,233	1,614
	Transportation & distribution	tCO_2e	10	9	10
	Waste generated from operations	tCO_2e	16	11	11
	Business trips	tCO_2e	566	1,063	566
	Employee commuting	tCO_2e	8	8	8
	Leased assets	tCO_2e	1,290	2,114	2,114

Water/Waste

Category		Unit	2014	2015	2016
Water	Total amount used	Ton	121,479	110,266	130,753
	Total amount of recycled or reused water	Ton	3,052	12,258	16,220
	Rate of recycled or reused water	%	2.5	11	12
Waste	General waste	Ton	134	95	121
	Specified waste	Ton	2.6	0	11
	Recycling	Ton	155	166	182
	Cost of emissions treatment	KRW	36,259,000	53,092,200	47,067,160

Return on Environmental Investments

Category	Unit	2013	2014	2015	2016
Capital investment	KRW	30,000,000	110,000,000	110,000,000	334,965,044
Operating costs	KRW	62,416,000	51,259,000	53,902,200	47,067,160
Total cost	KRW	92,416,000	161,259,000	163,902,200	382,032,204
Revenue and cost savings according to environmental investment	KRW	300,000,000	500,000,000	750,000,000	3,387,776,036
The scope of coverage that applies the ratio of relevant business sites	%	100	100	96	96

Environmental Violation

Category	Unit	2013	2014	2015	2016
Number of violations of legal obligations/ regulations	Times	0	0	0	0
Amount of fines/penalties related to the above	KRW	0	0	0	0
Environmental liability accrued at year end	KRW	0	0	0	0

Environmental Policy of SK holdings

SK holdings considers the environment as an important factor in its overall business activities SK holdings has established environmental policies based on its corporate regulations related to environmental management. Based on this, we will declare our commitment to environmentally friendly management and share it with the outside. So, We will take the initiative in environmental protection and contribute to happiness of all humanity.

1. Establishment of Environmental Strategy
SK holdings establishes the environment as a key strategy in its management activities and makes decisions based on the environment in the decision making process.

2. Establishment and Operation of Environmental Corporate Policies
SK holdings establishes and operates environment-related policies, and spreads and educates relevant personnel in relation to the established environmental policies.
Periodically, it shall evaluate the validity of related policies and reflect them by considering relevant laws, business structural changes, and stakeholders' requirements.

3. Scope of Environmental Policies
SK holdings shall implement environmental policies at all sites and apply environmental policies throughout its business activities, such as distribution, logistics, waste, and maintenance of facilities, as well as new products and services.

4. Environmental Policy for Partner Companies
When selecting suppliers, SK holdings shall evaluate its environment-related suppliers and select companies with superior environmental management performance to enhance partner companies' environmental management. Furthermore, SK holdings shall encourage non-managed business sites, third party manufacturers, joint venture partners, and outsourcing partners to recognize and participate in SK holdings' environmental policies.

5. Conducting Environmental Impact Assessment
SK holdings shall oversee company & field-related environmental risk assessments. The head of the department and the project manager shall carry out the environmental impact assessment for the relevant works and the project. In addition, before undertaking new operations, preliminary due diligence, or mergers and acquisitions, relevant department heads should review the environmental regulations, requirements for natural environment and ecosystem protection, and legal standards. If significant risks are found in the environmental impact assessment, an environmental management plan shall be established and implemented.

6. Measurement and Management of Environmental Performance
SK holdings shall establish environmental indicators and performance targets in accordance with environmental impact assessment, legal changes, and stakeholders' needs. Performance indicators related to enterprise environment are as follows.
- Energy usage: city gas, electricity and district heating
- GHG emissions: direct emissions, indirect emissions, and other indirect emissions
- Water consumption: water supply and recycled water consumption
- Waste generation: recycled, general wastes, designated wastes, and treatment costs

These environmental performances are systematized and verified by external third party institutions that have no interest in the company, and are constantly checked and improved.

7. Communication with Stakeholders
To raise environmental management transparency, SK holdings shall communicate with stakeholders by requesting to related departments such as media organizations and external cooperation when environmental issues arise.

Society

Category	Unit	2014	2015	2016
Total number of employees	Persons	4,111	4,174	4,432
Male	Persons	3,353	3,397	3,638
Female	Persons	758	777	794
Total number of full-time jobs	Persons	4,036	4,096	4,363
Male	Persons	3,309	3,344	3,581
Female	Persons	727	752	782
Total number of contracted jobs	Persons	75	78	69
Male	Persons	44	53	57
Female	Persons	31	25	12
Number of non-employees (dispatched employees)	Persons	51	75	126
Ratio of non-employees to total workforce	%	1.2	1.8	2.8
Male non-employees	Persons	17	17	34
Female non-employees	Persons	34	58	92
Percentage of people with social disabilities among the workforce	%	3	3	3
People with social disabilities among the workforce	Persons	116	115	138
The disabled	Persons	39	40	40
National veterans	Persons	77	75	67
Foreigners*	Persons	Reporting from 2016		31
The new recruitment rate	%	5	8	14
Number of new recruits	Persons	221	342	599
Male	Persons	182	241	472
Female	Persons	39	101	127
Employment type - Number of employed people by new recruits	Persons	Reporting from 2016		301
Types of recruits - Number of recruits with work experience	Persons			351
By age of employment (under 30)	Persons			290
By age of employment (30 to 50 years)	Persons			292
By age of employment (over 50 years old)	Persons			17
Turnover rate (for full-time employees)	%	4	6	4
Male turnover ratio	%	5	5	4
Femal turnover ratio	%	2	7	4
Number of employees by age (under 30)	Persons	Reporting from 2016		39
Number of employees by age (30 to 50 years)	Persons			164
Number of employees by age (over 50 years old)	Persons			2
Number of dismissals	Persons	0	0	2

* Based on foreigners in Korea

Returning from Parental Leave

Category	Unit	2014	2015	2016
Employees who were entitled to parental leave(male)	Persons	157	151	176
Employees who were entitled to parental leave (female)	Persons	53	47	50
Employees who took parental leave(male)	Persons	15	11	14
Employees who took parental leave (female)	Persons	49	64	72
Usage rate of parental leave(male)	%	10	7	8
Usage rate of parental leave (female)	%	92	145	144
Rate of those who returned to work after parental leave ended(male)	%	100	83	45
Rate of those who returned to work after parental leave ended (female)	%	100	92	73
Rate of retention over 12 months after return from parental leave(male)	%	100	82	58
Rate of retention over 12 months after return from parental leave(female)	%	100	87	93

No. of Female Managers

Category	Unit	2014	2015	2016
Executives	Persons	-	1	2
Team leaders	Persons	12	14	16
The ratio of female over manager or higher position	%	8	14	15
Female share of total workforce	%	18	18	18

The Ratio of Collective Bargaining Agreement

Category	Unit	2014	2015	2016
The participation rate of independent trade union	%	95.3	98.8	95.7

Health/Safety

Category	Unit	2014	2015	2016
Injury (male)	Cases	0	0	2
Injury (female)		0	0	0
Injury rate (male)	%	0	0	0.3
Injury rate (female)		0	0	0
Work days lost (male)	Days	0	0	172
Work days lost (female)		0	0	0

Education and Training

Classification	Unit	2014	2015	2016
Average hours of education/training per person	Hours	55	76	69
Male		56	79	69
Female		53	66	67
Associates		67	63	63
Assistant managers		69	90	90
Managers		48	72	73
Senior managers		51	78	65
General managers		47	70	54

Human Rights and Anti-Corruption

Category	Unit	2014	2015	2016
Employees who received anti-corruption education	Persons	905	5,175	4,630
Rate of employees who were notified of the anti-corruption policy and procedure	%	100	100	100
Security officers who received training on the human rights policy and procedure	Persons	57	63	64
Rate of security officers who received training on the human rights policy and procedure	%	100	100	100

Social Investments

Category	Unit	2013	2014	2015	2016
Hours of volunteer work per employee	Hours	10	8	7	-
Employee contributions	KRW thousand	95,023	98,298	95,742	110,828
Community investment	KRW thousand	2,418,569	2,806,202	2,928,173	2,477,677

* Limited to SK holdings' business sector (C&C)

The Local Community Investment Ratio

Category	Unit	2013	2014	2015	2016
Social investment	%	79.3	41	23	48
Commercial investment	%	16.9	27	35	32
Donations to charities	%	3.9	32	42	20

* Limited to SK holdings' business sector (C&C)

Employees' Donation Status

Category		Unit	2013	2014	2015	2016
Happiness Scholarship	Amount raised	KRW thousand	87,260	87,420	91,500	107,200
	Recipient students	Persons	72	75	53	70
Donations for helping poorly-fed children	Amount collected	KRW thousand	7,763	10,878	4,242	3,628

* Limited to SK holdings' business sector (C&C)

Donation Spending in 2016

Unit : KRW thousand

Category	Business Name	Recipients	Amount
1	Fund raising at the hope sharing campaign for the neighbors at the end of the year	The Community Chest of Korea	1,370,000
2	Supported the facial deformity surgery in Vietnam in 2016	Smile for Children	160,000
3	Program for the disabled to enhance IT job competitiveness (operational cooperation: the Korea Employment Agency for the Disabled)	The Happy ICT Foundation	64,490
4	Supporting the creation of social enterprise ecosystem	The Happy ICT Foundation, etc.	60,678
5	'Donating PC of hope' to enhance accessibility of information for the vulnerable class	The Republic of Korea National Red Cross, etc.	13,964

* Limited to SK holdings' business sector (C&C)

Amount Spent Related to Policy by Year

Unit : KRW thousand

Category	2013	2014	2015	2016
Political contribution	0	0	0	0
Related groups' association expenses	427,058	199,665	172,603	258,000

2016 Policy-Related Expenditures

Unit : KRW thousand

Category	Assocation Name	Position	Amount
1	Korean Information Technology Service Industry Association (ITSA)	Vice-chairman	33,000
2	Korea Software Industry Association (KOSA)	Vice-chairman	20,000
3	Korea Association of Cloud Industry (KACI)	Director	10,000
4	The Federation of Korean Information Industries (FKII)	Director	8,400
5	Korea Association for ICT Promotion Korea Association for ICT Promotion (KAIT)	Member	3,600

R&D Investments

Category	Unit	2013	2014	2015	2016
R&D costs	KRW million	19,744	25,830	29,577	41,211
Selling, general and administrative expenses (SG&A)	KRW million	9,555	15,614	12,334	22,785
Development costs	KRW million	10,189	10,216	17,243	18,426
Ratio of R&D Costs to Revenue [Research and Development Costs ÷ Revenue during the term × 100]	%	1.09	1.31	1.51	1.79

Government Support

Category	Unit	2013	2014	2015	2016
Total amount of support	KRW million	1,560	727	521	404
Subsidies	KRW million	86	0	0	0
Tax deductions	KRW million	1,474	727	521	404

Independence Statement of the Board of Directors

SK holdings defines the independence of outside directors in accordance with the Commercial Act of the Republic of Korea as follows, and announces the appointment ratio of outside directors within the Board of Directors.

1) Independence Requirement of Outside Directors

According to the Commercial Act, outside directors shall be those who do not perform their duties to the company and shall not be any of the following, and if any of them is applicable, they shall lose the position of outside directors. (Article 382 of the Commercial Act) SK holdings does not appoint a person as an outside director if the person does not meet the independence requirements of outside directors under the Commercial Act.

1. Directors, executive officers and employees engaged in the company's business affairs, or directors, auditors, executive officers and employees engaged in the business of the company within the past two years
2. If the largest shareholder is a natural person, the person, his or her spouse, and lineal ascendants & descendants.
3. If the largest shareholder is a corporation, the director, auditor, executive officer and employee of the corporation
4. Spouses and lineal ascendants & descendants of directors, auditors and executive officers
5. Directors, auditors, executive officers and employees of the Company's parent company or subsidiary
6. Directors, auditors, executive officers and employees of corporations with significant interests such as business relationships with the Company
7. Directors, auditors, executive officers and employees of other companies whose members are directors and executive officers, and employees of the Company

In addition, SK holdings has implemented its own policies to strengthen the independence of the Board of Directors. The board of directors of SK holdings maintains independence from the majority shareholders and the management, and a total of four outside directors occupy a majority of the board of directors. To ensure fairness and independence in appointing outside directors, the outside directors will be finally selected at the general shareholders' meeting after strict review by the Outside Director Nomination Committee. The directors are elected by the general meeting of shareholders and candidates to be elected at the shareholders' meeting are selected by the board of directors (Executive director) and the Outside Director Nomination Committee (Outside director) and suggested as an agenda during the general meetings of shareholders. If there is a shareholder proposal pursuant to relevant laws and regulations regarding the appointment of directors, the Board of Directors shall submit it to the general meeting of shareholders within the legal scope.

2) The Appointment Ratio of Outside Directors

Under the Commercial Act of the Republic of Korea, a listed company shall make at least 25% of the total number of directors as outside directors, taking into consideration the size of corporate assets. However, considering the size of the assets, the number of outside directors of listed companies determined by the Presidential Decree shall be three or more but shall be 50% of the total number of directors. (Article 542-8 of the Commercial Act) SK holdings' outside directors account for 57% of the total directors, exceeding 50% of the total number of directors, and therefore, we meet the condition of the ratio of outside directors in the Board of Directors under the Commercial Act.

Environment & Social Report Information

SK holdings reported performance data related to the environment and society, and the coverage was calculated as 96% for the environment and 100% for the society.

- Environment: In calculating energy consumption and greenhouse gas emissions, holding unit's business sites of SK holdings (which accounts for 4% of the total number of full-time employees) are not directly owned by SK holdings and take the form of leases. So, they are not included in emissions of Scope1 and Scope2 of SK holdings.
- Society: We have calculated data for all SK holdings sites. Some of the data such as donations have been calculated only for the business unit, which is annotated at the bottom of the data.

Category	2014		2015		2016	
	Persons	Ratio (%)	Persons	Ratio (%)	Persons	Ratio (%)
Holding Unit	-	-	178	4	168	4
Business Unit (IT service, etc.)	4,036	100	3,918	96	4,195	96
Total	4,036	100	4,096	100	4,363	100

SK holdings conducted verification of environmental data based on international standards such as the GHG & energy goal management system guidelines, IPCC Guidelines, and ISO 14064 greenhouse gas standards. Other environmental information and social information verifications were carried out based on the reliable standards of AA1000, VeriSustain™ and ISAE 3000. All environmental and social information was carried out by a verification expert who belongs to an external professional verification body in the form of a limited guarantee. The verification was performed by SK holdings and non-interested organizations independently, and the scope of the verification was clearly indicated in the verification statement.

Performance and Goals Related to Society and Environment

Category	Theme	Management Indicators	Unit	Goals in 2016	Achievement			Whether to meet the goal of 2016	Goals in 2017	Goals in 2020
					2014	2015	2016			
Society	Digital transformation response	No. of new ICT training courses	No.	20	-	10	43	●	60	70
		The number of persons who have completed new ICT courses	persons	1,000	-	941	2,327	●	2,500	2,700
		New ICT Revenues such as Cloud and AI	KRW 100 million	Conducted since 2016						10,000
	Pursuing a happy organizational culture with employees' satisfaction	Employee Satisfaction	%	80	62	86	83	●	85	85
	Quality and service management for customer satisfaction	Customer Satisfaction	points	79	76.1	78.4	79.6	●	79	80
Environment	Response to climate change through reduction of GHG emissions	Total energy consumption (Based on sales per billion won)	TJ	0.343	0.309	0.343	0.299	●	0.29	0.27
		The ratio of recycled water compared to water intake	%	11	2.5	11	12	●	12	15
		The proportion of eco-friendly solutions compared to the total sales	%	12	11	11.6	12.2	●	12.5	20

HUMAN RIGHTS REPORT

Under its philosophy, "A company should achieve its ultimate goal of sustainable progress by maintaining stability and growth, and it should create value for its customers, employees, and shareholders, thereby contributing to the happiness of mankind," SK holdings respects the basic rights of various stakeholders, such as customers, employees, business partners, and communities.
SK holdings will focus on the following human rights aspects, taking into consideration human-rights-related issues which are of high priority in the international community, impacts of the company's business, and the degree of operational control and influence of the company. In addition, through its sustainability report, the company discloses its human rights activities to its stakeholders.
Furthermore, SK holdings publicly declares its commitment to universal respect for human rights and freedoms as recommended by the UN's 'Universal Declaration of Human Right' and 'Guiding Principles on Business and Human Rights'. Along with commitment to preventing human rights violations, SK holdings will also promptly respond to incidents of violations to ensure that human rights are respected and protected.

Human Rights Management Strategy & Vision

Vision

Happy SK holdings where all stakeholders enjoy human rights

Strategy

- We strive for the human rights of all stakeholders.
- We protect all stakeholders' human rights without discrimination.
- We strive to raise human rights at the center of management activities.
- We realize human dignity and value in all management activities.

Implementation System

1) Declaration of human rights policy and establishment of procedures and complaint management system
2) Implementation of human rights management and complaint management system
3) Monitoring human rights management and communicating the process and results
4) Improvement of human rights situation and continuous human rights management (internalization)

Declaration of Human Rights Policy

SK holdings believes that as for implementing human rights management, it can be deemed to declare practical human rights management policy by enacting principles that guide practitioners and declaring them to the inside and outside of the company. Thus, we enacted the following declaration of human rights policy, thereby declaring it to the interested parties.

Labor

- Prohibit discrimination on the basis of gender, race, age, disability, religion, or education
- Prohibit inhumane practices such as violence and harassment at the workplace
- Create a safe and comfortable work environment
- Prohibit forced and child labor
- Respect freedom of speech, privacy, and protection against infringements of privacy

Business partners

- Comply with the recommendations of the International Labor Organization and the national labor policy
- Guarantee every company an equal opportunity to participate and be selected
- Foster a healthy and transparent trade culture and maintain fair trading order
- Conduct transactions on equal footing, rather than from a position of superiority

Services and products

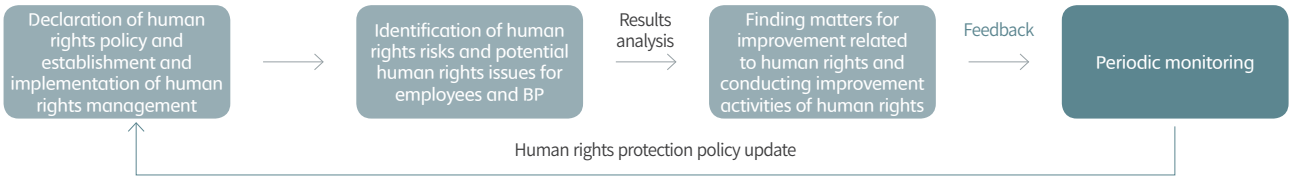
- Prohibit the use of technologies or services provided by the company for human rights violation and criminal purposes
- Respect customer demands and develop and provide premium services
- Make efforts to prevent security accidents through reinforcement of security management

Communities

- Make an effort to eliminate the digital divide of socially disadvantaged
- Participate in solving social problems in society
- Implement social contribution activities for the promotion of sociality improvement and convenience of people with disabilities

Human Rights Protection Process

SK holdings is committed to ensuring that human rights violations do not occur in the course of business as defined in the human rights statement. To achieve this goal, the UN Guiding Principles on Business and Human Rights are reflected in the overall business operations. In particular, the human rights protection process was formed in accordance with the principles of due diligence as outlined in the UN Corporate Activities and Human Rights Implementation Guidelines, thereby identifying risks related to human rights and mitigating the risks in case of detection. SK holdings establishes policies to protect human rights, and monitors compliance with human rights protection activities through various monitoring processes.



Human Rights Inspection and Monitoring Results

Based on the evaluation of the human rights situation of employees, SK holdings identifies the factors that are deemed to be vulnerable to human rights (by work and by business division). CSR evaluation of partner companies has been carried out to protect human rights throughout the overall business. SK holdings identifies human rights risk factors for services and products through risk reviews of the development and launch stages of the business. The results of human rights monitoring and monitoring conducted over the past three years are as follows.

Category	The Assessment Ratio of Human Rights Risk	Cases of Detected Risks	The Ratio of Improvement Measures
Employees	100%	1 case	100%
Business Partners	15%	zero	-

Human Rights Advancement Activities

In the 2015 and 2016 surveys conducted for employees, we conducted a training and consultation for improving the status of the business areas that showed risks to human rights through negative responses to basic etiquette such as discrimination. For partner companies, we evaluate the risks to human rights through CSR evaluation. Additionally, we will minimize the human rights risks that may arise in the course of SK holdings' business operation by gradually expanding the scope of limited partner companies that are subject to evaluation.

Efforts to Pursue Diversity among Employees

In order to foster a diverse and non-discriminatory corporate culture, SK holdings is committed to ensuring that all employees, including directors, are not discriminated against by race, gender, disability, religion, nationality, etc. We have a dedicated organization that manages global talents for the diversity of nationality. We also have a program called "Hope internship" to expand employment opportunities for the socially underprivileged such as the disabled. In addition, as female managers have doubled in number in 2016 to 15% among all managers from 2014, we continuously strive to nurture women managers.

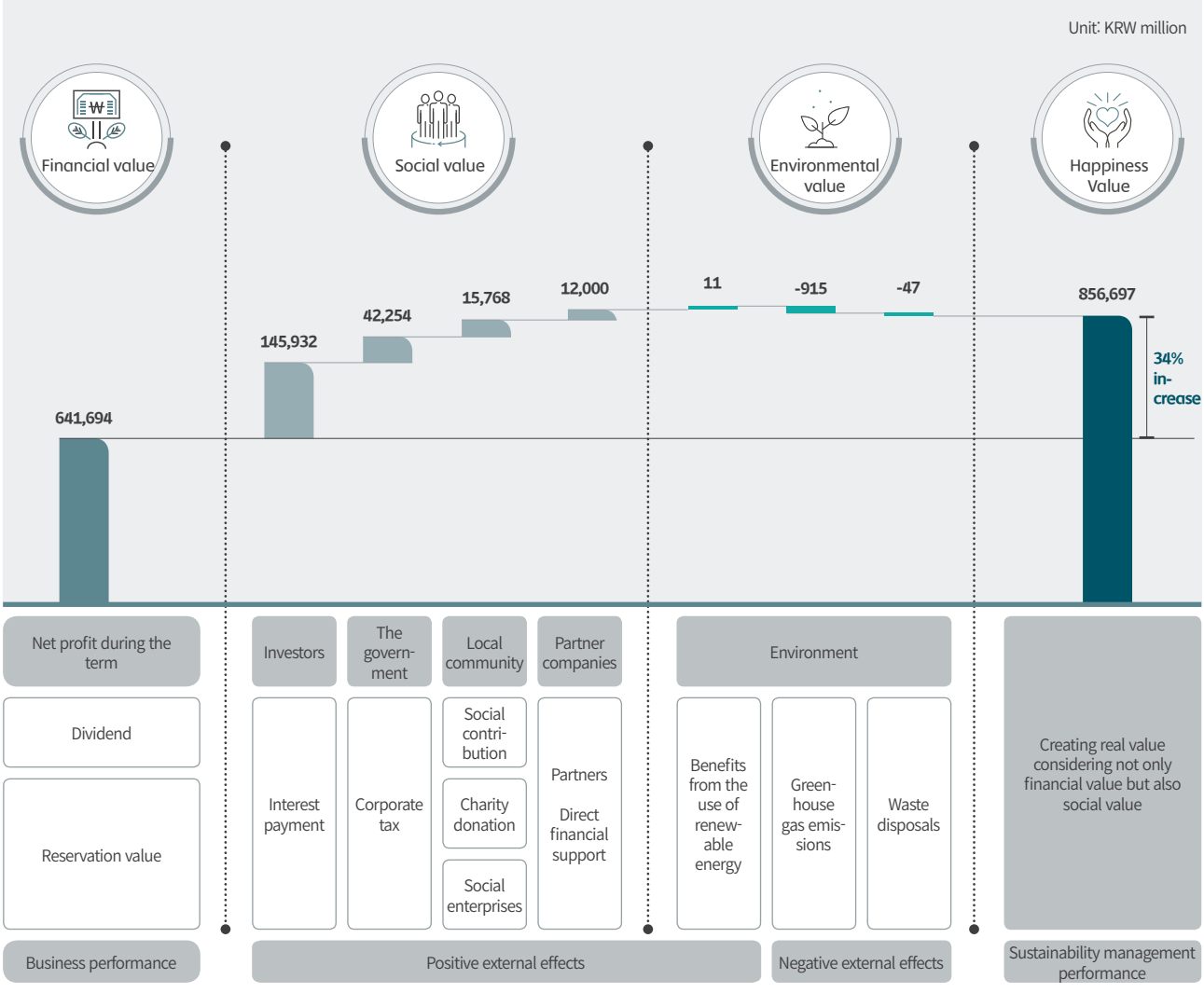
HAPPINESS VALUE

Happiness Value

Recently, the importance of corporate sustainability management has become increasingly important, and interest in the achievements of sustainability management activities has increased as well. Moreover, there is an increasing need to accurately recognize and manage the social and environmental values created by companies through sustainability management performance measurement. In particular, SK holdings added to its articles of incorporation that "it will grow with society by creating social value" at its shareholders' meeting held in March 2017. It stated in the articles of incorporation that companies not only achieve economic development goals by making profits but also generate social value through "growth with society". SK holdings' amendment to the articles of incorporation declares to internal and external stakeholders that SK holdings seeks to not only creating financial value but also creating social value under the corporate value and its goal.

Accordingly, SK holdings converted the performance of social and environmental activities generated by the company into the market value (monetary value) of the benefits gained by each beneficiary group, and then reflected them with the financial performance of business activities together to calculate Happiness Value. The Happiness Value is a social and environmental performance measurement method that converts the "pursuit of happiness of stakeholders", to which SK holdings aims, into actual financial value.

The financial value created by SK holdings on the basis of the IFRS in 2016 is KRW 641.6 billion, and the Happiness Value measured by reflecting sustainability performance is KRW 856 billion, which is 34% higher than its financial value. In the future, SK holdings will strive to systematically manage the performance of the company's social and environmental activities by further upgrading the methodologies of measuring Happiness Value and continuously calculating Happiness Value.



Appendix

GRI G4 Content Index 76

Independent Assurance Statement 82

Greenhouse Gas Verification Report 84

UN Global Compact, UN SDGs 85

Membership·Awards and Recognition 86

GRI G4 CONTENT INDEX

G4 General Standard Disclosure

G4 Indicators		Coverage	Page/Direct Answer
Strategy and Analysis			
G4-1	Statement from the most senior decision-maker	●	4~7
G4-2	Provides a description of Key impacts, risks, and opportunities	●	4~7, 20, 25, 30, 34, 37, 48~49
Organizational Profile			
G4-3	Report the name of the organization	●	8~12
G4-4	The primary brands, products, and services	●	11~12, 21~24, 51~52
G4-5	The location of the organization's headquarters	●	89
G4-6	The number of countries where the organizaion operates, and names of countries where either the organization has significant operations or that are specifically relevant to the sustainability topics covered in the report	●	2
G4-7	The nature of ownership and legal form	●	44~45
G4-8	The markets served (including geographic breakdown, sectors served, and types of customers and beneficiaries)	●	8~12
G4-9	Scale of the organization	●	8~12, 64, 67
G4-10	Total workforce	●	67
G4-11	The percentage of total employees covered by collective bargaining agreements	●	68
G4-12	The organization's supply chain	●	54~58
G4-13	Any significant changes during the reporting period regarding the organization's size, sutructure, ownerhsip, or its supply chain	●	2
G4-14	Whether and how the precautionary approach or principle is addressed by the organization	●	48~49
G4-15	List Externally developed economic, environmental, and social charters, principles, or other initiatives to which the organization subscribes or endorses	●	72~73, 85
G4-16	Memberships in associations (such as industry associations) and/or national/international advocacy organizations in which the organization	●	86
Identified Material Aspects And Boundaries			
G4-17	List all entities included in the organization’s consolidated financial statements or equivalent documents	●	10~12
G4-18	The porcess for defining the report content and the Aspect Boundaries	●	16~17
G4-19	List all the material Aspects identified in the process for defining report content	●	16~17
G4-20	For each material Aspect, report Aspect Boundary within the organization	●	16~17
G4-21	For each material Aspect, report the Aspect Boundary outside the organization	●	16~17
G4-22	The effect of any restatements of information provided in previous reports, and the reasons for such restatements	●	If there was a special modification, it was annotated in the text separately
G4-23	Significant changes from previous reporting periods in the Scope and Aspect Boundaries	●	2, 11
Stakeholder Engagement			
G4-24	List of stakeholder groups engaged by the organization	●	14~17, Disclosed on the Website[1]
G4-25	Basis for identification and selection of stakeholders with whom to engage	●	14~17, Disclosed on the Website[1]
G4-26	Organization’s approach to stakeholder engagement, including frequency of engagement by type and by stakeholder group	●	14~17, Disclosed on the Website[1]
G4-27	Key topics and concerns that have been raised through stakeholder engagement, and how the organization has responded to those key topics and concerns, including through its reporting	●	14~17, Disclosed on the Website[1]
Report Profile			
G4-28	Reporting period such as fiscal or calendar year) for information provided	●	2
G4-29	Date of most recent previous report (if any)	●	2
G4-30	Reporting cycle such as annual, biannial)	●	2
G4-31	Provide the contact point for questions regarding the report or its contents	●	89
G4-32	Report the ‘in accordance’ option the organization has chosen	●	2
G4-33	Report the organization’s policy and current practice with regard to seeking external assurance for the report	●	2

1) Website(http://sk.co.kr/gateway/kr/about/gwkow151.aspx)

G4 Indicators		Coverage	Page/Direct Answer
Governance			
G4-34	Report the governance structure of the organization, including committees of the highest governance body	●	44~45
G4-35	Report the process for delegating authority for economic, environmental and social topics from the highest governance body to senior executives and other employees	◐	44~45
G4-36	Report whether the organization has appointed an executive-level position or positions with responsibility for economic, environmental and social topics, and whether post holders report directly to the highest governance body	●	44~45
G4-37	Report processes for consultation between stakeholders and the highest governance body on economic, environmental and social topics If consultation is delegated, describe to whom and any feedback processes to the highest governance body	●	44~45
G4-38	Report the composition of the highest governance body and its committees	●	44~45
G4-39	Report whether the Chair of the highest governance body is also an executive officer (and, if so, his or her function within the organization's management and the reasons for this arrangement)	●	44~45
G4-40	Report the nomination and selection processes for the highest governance body and its committees, and the criteria used for nominating and selecting highest governance body members	●	44~45
G4-41	Report processes for the highest governance body to ensure conflicts of interest are avoided and managed	◐	44~45
G4-42	Report the highest governance body's and senior executives' roles in the development, approval, and updating of the organization's purpose, value or mission statements, strategies, policies, and goals related to economic, environmental and social impacts	●	44~45
G4-43	Report the measures taken to develop and enhance the highest governance body's collective knowledge of economic, environmental and social topics	●	44~45
G4-44	Report the processes for evaluation of the highest governance body's performance with respect to governance of economic, environmental and social topics	●	44~45
G4-45	Report the highest governance body's role in the identification and management of economic, environmental and social impacts, risks, and opportunities	●	48~49
G4-46	Report the highest governance body's role in reviewing the effectiveness of the organization's risk management processes for economic, environmental and social topics	●	48~49
G4-47	Report the frequency of the highest governance body's review of economic, environmental and social impacts, risks, and opportunities	●	48~49
G4-48	Report the highest committee or position that formally reviews and approves the organization's sustainability report and ensures that all material Aspects are covered	●	48~49
G4-49	Report the process for communicating critical concerns to the highest governance body	●	48~49
G4-50	Report the nature and total number of critical concerns that were communicated to the highest governance body and the mechanism(s) used to address and resolve them	●	48~49
G4-51	Report the remuneration policies for the highest governance body and senior executives	◐	44
G4-52	Report the process for determining remuneration Report whether remuneration consultants are involved in determining remuneration and whether they are independent of management Report any other relationships which the remuneration consultants have with the organization	●	The process for determining remuneration are disclosed in the annual report
G4-53	Report how stakeholders' views are sought and taken into account regarding remuneration, including the results of votes on remuneration policies and proposals, if applicable	●	44
G4-54	Report the ratio of the annual total compensation for the organization's highest-paid individual in each country of significant operations to the median annual total compensation for all employees (excluding the highest-paid individual) in the same country	●	The amount of compensation for the highest-paid individual and the average amount of compensation for employees are disclosed in the annual report.
G4-55	Report the ratio of percentage increase in annual total compensation for the organization's highest-paid individual in each country of significant operations to the median percentage increase in annual total compensation for all employees (excluding the highest-paid individual) in the same country	Omission	Cannot be disclosed under the internal information disclosure policy
Ethics and Integrity			
G4-56	Describe the organization's values, principles, standards and norms of behavior such as codes of conduct and codes of ethics	●	46~47
G4-57	Report the internal and external mechanisms for seeking advice on ethical and lawful behavior, and matters related to organizational integrity, such as helplines or advice lines	●	46~47
G4-58	Report the internal and external mechanisms for reporting concerns about unethical or unlawful behavior, and matters related to organizational integrity, such as escalation through line management, whistleblowing mechanisms or hotlines	●	47

Economic

G4 Indicators		Coverage	Page/Direct Answer
Economic Performance			
EC1	Direct econmic value generated and distributed	●	13, 74
EC2	Financial implications and other risks and opportunities for the organization's activities due to climate change	●	40~41
EC3	Coverage of the organization's defined benefit plan obligations	●	33
EC4	Financial assistance received from government	●	70
Market Presence			
EC5	Ratios of standard entry level wage by gender compared to local minimum wage at significant locations of operation	●	The SK holdings guarantees payments of compensation higher than minimum wage in areas where its locations of operation are
Indirect Economic Impacts			
EC7	Development and impact of infrastructure investments and services supported	●	59~62
EC8	Significant indirect economic impacts, including the extent of impacts	●	59~62
Procurement Practices			
EC9	Proportion of spending on local suppliers at significant locations of operation	●	54

Environmental

G4 Indicators		Coverage	Page/Direct Answer
Energy			
EN3	Energy consumption within the organization	●	65
EN4	Energy consumption outside of the organization	●	65
EN5	Energy intensity	●	65
EN6	Reduction of energy consumption	●	39~41
EN7	Reductions in energy requirements of products and services	●	39~41
Water			
EN8	Total water withdrawal by source	●	65
EN10	Percentage and total volume of water recycled and reused	●	65
Emissions			
EN15	Direct greenhouse gas(GHG) emissions (scope)	●	65
EN16	Energy indirect greenhouse gas(GHG) emissions (scope)	●	65
EN17	Other indirect greenhouse gas(GHG) emissions (scope)	●	65
EN18	Greenhouse gas (GHG) emissions intensity	●	65
EN19	Reduction of greenhouse gas(GHG) emissions	●	40~41
EN20	Emissions of ozone-depleting substances (ODS)	N/A	Do not dispose of the business nature of ozone-depleting substances, which is typical of business.
EN21	Nox, Sox, and other significant air emissions	N/A	Do not dispose of the NOx, SOx and other significant air emissions, which is typical of business

G4 Indicators		Coverage	Page/Direct Answer
Effluents and Waste			
EN23	Total weight of waste by type and disposal method	●	65
Products and Services			
EN27	Extent of impact mitication of environmental impacts of products and services	●	39~41
EN28	Percentage of porducts sold and their packaging materials that are reclaimed by category	N/A	Do not apply, which is typical of business.
Compliance			
EN29	Monetary value of significatn fines and total number of non-monetary sanctions for non-compliance with environmental laws and regluations	●	66
Transport			
EN30	Significant environmental impacts of transporting products and other goods and materials ofr the organization's operations,, and transporting members of the workforce	●	65
Overall			
EN31	Total environmental protection expenditures and investments by tyep	●	66
Supplier Environmental Assessment			
EN32	Percentage of new suppliers that were screened using enviromental criteria	●	55~58
EN33	significant actual and potential engative environmental impacts in the supply chain and actions taken	●	55~58
Environmental Grievance Mechanisms			
EN34	Number of grievances about environmental impacts filed, addressed, and resolved through formal grievnce mechanisms	●	39, 66

Society

Labor Practices and Decent Work

G4 Indicators		Coverage	Page/Direct Answer
Employment			
LA1	Total number and rates of new empoyee hires and empoyee turnover by age group, gender, and region	●	67
LA2	Benefits provided to full-time employees that are not provided to temporary or part-time employees, by significant locations of operation	●	31~33
LA3	Return to work and retention rates after parental leave, by gender	●	68
Labor/Management Relations			
LA4	Minimum notice periods regarding operational changes, including whether these are specified in collective agreements	◐	33
Occupational Health and Safety			
LA5	Percentage of total workforce represented in formal joint management-worker health and safety committees that help monitor and advise on occupational health and safety programs	●	38
LA6	Type of injury and rates of injury, occupational diseases, lost days, and absenteeism, and total number of work-related fatalities, by region and by gender	●	68
LA7	Workers with high incidence or high risk of diseases related to their occupation	●	39, 68
LA8	Health and safety topics covered in formal agreements with trade unions	●	38~39
Training and Education			
LA9	Average hours of training per year per employee, by gender, and by employee category	●	68
LA10	Programs for skills management and lifelong learning that support the continued employability of employees and assist them in managing career endings	●	33
LA11	Percentage of employees receiving regular performance and career development reviews, by gender and by employee category	●	68
Diversity and Equal Opportunity			
LA12	Composition of governance bodies and breakdown of employees per employee category according to gender, age group, minority group membership, and other indicators of diversity	●	67

Society

Labor Practices and Decent Work

G4 Indicators		Coverage	Page/Direct Answer
Equal remuneration for women and men			
LA13	Ratio of basic salary and remuneration of women to men by employee category, by significant locations of operation	●	SK holdings enforces a policy that guarantees equal basic salary for women and men.
Supplier Assessment for Labor Practices			
LA14	Percentage of new suppliers that were screened using labor practice criteria	●	54~58
LA15	Significant actual and potential negative impacts for labor practices in the supply chain and actions taken	●	54~58
Labor Pracitces Grievance Mechanisms			
LA16	Number of grievances about labor practices filed, addressed, and resolved through formal grievance mechanisms	●	32~33

Human Rights

G4 Indicators		Coverage	Page/Direct Answer
Investment			
HR1	Total number and percentage of significant investment agreements and contracts that include human rights clauses or that underwent human rights screening	◐	54~58, 73
HR2	Total hours of employee training on human rights policies or procedures concerning aspects of human rights that are relevant to operations, including the percentage of employees trained	●	54~58
Non-discrimination			
HR3	Total number of incidents of discrimination and corrective actions taken	●	73
Freedom of Association and Collective Bargaining			
HR4	Operations and suppliers identified in which the right to exercise freedom of association and collective bargaining may be violated or at significant risk, and measures taken to support these rights	●	72~73
Child Labor			
HR5	Operations and suppliers identified as having significant risk for incidents of child labor, and measures taken to contribute to the effective abolition of child labor	●	72~73
Forced of Compulsory Labor			
HR6	Operations and suppliers identified as having significant risk for incidents of forced or compulsory labor, and measures to contribute to the elimination of all forms of forced or compulsory labor	●	72~73
Security Practices			
HR7	Percentage of security personnel trained in the organization's human rights policies or procedures that are relevant to operations	●	68
Assessment			
HR9	Total number and percentage of operations that have been subject to human rights reviews or impact assessments	●	73
Supplier Human Rights Assessment			
HR10	Percentage of new suppliers that were screened using labor practice criteria	●	73
HR11	Significant actual and potential negative impacts for labor practices in the supply chain and actions taken	●	72~73
Human Rights Grievance Mechanisms			
HR12	Number of grievances about human rights impacts filed, addressed, and resolved through formal grievance mechanisms	●	72~73

Society

G4 Indicators		Coverage	Page/Direct Answer
Local Communities			
SO1	Percentage of operations with implemented local community engagement, impact assessments, and development programs	●	59~62
SO2	Operations with significant actual and potential negative impacts on local communities	●	59~62
Anti-corruption			
SO3	Total number and percentage of operations assessed for risks related to corruption and the significant risks identified	●	47
SO4	Communication and training on anti-corruption policies and procedures	●	68
SO5	Confirmed incidents of corruption and actions taken	●	47
Public Policy			
SO6	Total value of political contributions by country and recipient/beneficiary	●	69
Anti-competitive Behavior			
SO7	Total number of legal actions for anti-competitive behavior, anti-trust, and monopoly practices and their outcomes	●	See the sanctions covered in the business report
Compliance			
SO8	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with laws and regulations	●	See the sanctions covered in the business report
Supplier Assessment for Impacts on Society			
SO9	Percentage of new suppliers that were screened using criteria for impacts on society	●	54~58
SO10	Significant actual and potential negative impacts on society in the supply chain and actions taken	●	54~58

Product Responsibility

G4 Indicators		Coverage	Page/Direct Answer
Product and Service Labeling			
PR5	Results of surveys measuring customer satisfaction	●	35~36
Marketing Communications			
PR6	Sale of banned or disputes products	●	The service provides no cases that arguably
PR7	Total number of incidents of non-compliance with regulations and voluntary codes concerning marketing communications, including advertising, promotion, and sponsorship, by type of outcomes	●	The service provides no cases that arguably
Customer Privacy			
PR8	Total number of substantiated complaints regarding breaches of customer privacy and losses of customer data	●	The service provides no cases that arguably
Compliance			
PR9	Monetary value of significant fines for non-compliance with laws and regulations concerning the provision and use of products and services	●	See the sanctions covered in the business report

INDEPENDENT ASSURANCE STATEMENT

Introduction

SK holdings Co., Ltd. (hereinafter referred to as "SK holdings") commissioned DNV GL Business Assurance Korea Ltd. (hereinafter referred to as "DNV GL"), part of DNV GL Group, to undertake independent assurance of the 2017 SK holdings Sustainability Management Report (the "Report"). DNV GL's assurance engagements are based on the assumption that the data and information provided by the client to us as part of our review have been provided in good faith.

Scope of assurance

The scope of assurance included a review of sustainability activities and performance data over the reporting period 1st January to 31st December 2016. This included:

- Evaluation of the Report on the adherence to the AccountAbility principles provided in AA1000 AccountAbility Principles Standard (APS) 2008.
- Verification of disclosures to check the Report is prepared 'In accordance' with the GRI Guidelines G4(Comprehensive option) (Aggregated level of data from the period between January and December in 2016)
- Evaluation of the process for determining material aspects for reporting and the management approach to material issues and the process for generating, gathering and managing the quantitative and qualitative data in the Report.

Verification Method

We performed our work using AA1000AS(2008) and DNV GL's assurance methodology VeriSustain™[1], which is based on our professional experience, international assurance best practice. We provide Type 1 and the moderate level of assurance. The audit was carried out in May and June 2017. The site visit was made to SK holdings Headquarters in Seoul, Korea. The assurance engagement was conducted in the following method based on sampling.:

- challenged the sustainability-related statements and claims made in the Report and assessed the robustness of the underlying data management system, information flow and controls
- interviewed representatives from the various departments
- conducted document reviews, data sampling and interrogation of supporting databases and computerized system
- reviewed the outcomes of the materiality assessment report

Limitations

The engagement excludes the sustainability management, performance and reporting practices of SK holdings' subsidiaries, associated companies, suppliers, contractors and any third-parties mentioned in the Report. DNV GL did not interview external stakeholders as part of this Assurance Engagement. Financial statements of SK holdings, data announced on DART system of the Financial Supervisory Service(http://dart.fss.or.kr), and data on the website(http://www.sk.co.kr.) of SK holdings are not included in the scope of assurance. Data verification was conducted by checking the basis in a limited scope, including inquiry, analysis, and limited sampling method, on the data collected by SK holdings. The aggregation and calculation process for building economic performances is reviewed and tested by the audit team. Also, the environmental and social data were verified with the aggregated data. The directors of SK holdings have sole responsibility for the preparation of the Report. The responsibility of DNV GL in performing the assurance work is to the management of SK holdings in accordance with the terms of reference. DNV GL expressly disclaims any liability or coresponsibility for any decision a person or an entity may make based on this Assurance Statement.

Opinion and Observation

On the basis of the work undertaken, nothing comes to our attention to suggest that the Report does not properly describe the adherence to the AccountAbility Principles in AA1000APS(2008) nor is prepared 'in accordance' with GRI G4 Comprehensive option. Further opinions with regards to the adherence to the following Principles are made below;

1. The VeriSustain protocol is available upon request at DNV GL Website (www.dnvgl.com)

The Foundation Principle of Inclusivity

SK holdings has recognized the importance of stakeholders in corporate management. Early year of 2017, SK holdings stated that in the SKMS(SK Management System) and the Articles of Incorporation that the core value pursued under SKMS is satisfaction of all stakeholders and this satisfaction should be sustainable in the long term and should be practiced in a way that balances the relations and roles of businesses and stakeholders. SK holdings has identified internal and external stakeholder groups such as Customers, Shareholders & Investors, Employees, Suppliers, Environment, and Local communities (disclosed on its website). SK holdings surveyed stakeholders and had meetings with them to check the status and direction of its sustainability management. SK holdings could develop various channels from which stakeholders' expectation and concerns are gathered and a robust process in which prioritized stakeholders' expectations and concerns are integrated into its sustainability management.

The Principle of Materiality

SK holdings conducted the materiality assessment to prepare the Report. Sustainability issues in economic, environmental and social aspects are reviewed in various ways during the assessment. The relevant issue pool was formed from various information sources such as international standards, internal information, industry peers' reports and journalist reports by analyzing material issues affected by management activities of SK holdings. Issues were rated by the relevance of business and sustainability aspects and the impact on stakeholders. Subsequently material aspects and topics were prioritized and determined for this year reporting. The determination of material reporting topics and the outcomes of each evaluation step (media research, peerreviewed industry topics, and surveys) were disclosed in the report.

The Principle of Responsiveness

SK holdings discloses management approaches to the reported issues derived from materiality assessment. It describes the background and impact of issues from the sustainable development perspective. It also discloses SK holdings' goals, performances and future plans in terms of managing issues. "Happiness value," quantified value of sustainability management performance, is presented in the report. This new attempt is considered a meaningful progress to achieve the sustainability management performance in terms of social and environmental values created as well as economic performance. SK holdings could continuously improve the quantification methodology on "happiness value" and contribute to the happiness of stakeholders.

Accuracy and Reliability

The audit team evaluated the accuracy and reliability the Report by testing the data and information on a sampling basis and did not note any intentional errors or misleading descriptions. The data provided in the Report was gathered from respective teams of SK holdings and processed by the dedicated team in Headquarters. The audit team conducted interviews with the personnel, reviewed the process of gathering and processing data and information, and verified the supporting documents and records. The level of depth on data testing is limited to the data input by each facility.

Competence and Independence

DNV GL Business Assurance is part of DNV GL Group and a global provider of certification, verification, assessment and training services, helping customers to build sustainable business performance. Our environmental and social assurance specialists are present in over 100 countries. The assurance work was performed by independent team which meets DNV GL's competence requirements. DNV GL was not involved in the preparation of any statements or data included in the Report except for this Assurance Statement. The audit team has complied with DNV GL Code of Ethics during the assurance engagement.

11 June 2017
Seoul, Korea

In Kyoon Ahn

Country Representative
DNV GL Business Assurance Korea Ltd.

AA1000
Licensed Assurance Provider
000-10

DNV·GL

GREENHOUSE GAS VERIFICATION REPORT

Introduction

Korea Productivity Center was required to verify '2016 Greenhouse Gas (GHG) emissions Statements (hereinafter 'Statement')', of which reporting years was defined as January 1, 2016 to December 31, 2016, by SK holdings.

Levels of Assurance

A reasonable level of assurance was agreed.

Verification Scope

The verification team verified GHG emissions(Scope3) at workplaces of SK holdings in 2016

Verification Criteria

- GHG Energy Target Management Guideline
- Community-Scale GHG Emission Calculation Guideline
- IPCC Guideline : 2006, WRI/WBCSD GHG Protocol : 2004
- ISO14064-3 : 2006 standard

Limitation

Having investigated by sampling method, the Statement might have errors and uncertainties. Final GHG estimates may contain uncertainty for the reasons such as unspecified standard and method, although no exceptional factors has been reported.

Conclusion

- The verification team confirmed that the 'Statements (2016)' was being reported in accordance with self-inspection guideline based on GHG Energy Target Management Guideline and IPCC Guideline.
- Appropriate corrective action was taken by SK in accordance with investigation results from the verification team.
- The verification team confirms that the 'Statements (2016)' was being reporting 'appropriately' in accordance with relevant standards.

SK	GHG Emissions
Direct Emissions (Scope1)	612 ton CO_2e
Indirect Emissions (Scope2)	44,265 ton CO_2e
Other Indirect Emissions(Scope3)*첨부1	4,323 ton CO_2e

Appendix I. Based on the verification, the details of GHG emissions(Scope1, 2, 3) in SK is as below;

Category	GHG Emissions
1. Fuel-and energy-related activities (not included in scope1 or scope2)	1,614 ton CO_2e
2. Upstream transportation and distribution	10 ton CO_2e
3. Waste generated in operations	11 ton CO_2e
4. Business travel	566 ton CO_2e
5. Employee commuting	8 ton CO_2e
6. Upstream leased assets	2,114 ton CO_2e
Total Emissions	4,323 ton CO_2e

※ In order to report the GHG emissions as an integer, the rounded number on the statement might be different from the number on the system with ± 1 ton CO_2e.

June 2017

kpc 한국생산성본부 KOREA PRODUCTIVITY CENTER

CEO Hong Soon Jick

UN GLOBAL COMPACT

UN Global Compact

On May 1, 2012, SK holdings announced that it had joined a voluntary initiative called the UN Global Compact(UNGC) as a commitment to its corporate social responsibility.
Under the UNGC principles, the company has in place precautionary principles and devotes itself to compliance with the UNGC's 10 Principles in the areas of human rights, labor, environment, and anti-corruption, such as respecting human rights and labor, spreading a culture of ethical management and anti-corruption, operating environmentally friendly businesses and providing environmentally friendly services. The company will continue its commitment to the UNGC's 10 Principles, publicly disclose information about its performances, and diligently fulfill its responsibilities as a responsible global citizen.

Classification	Principle	Page / Notes
Human Rights	Principle 01. Businesses should support and respect the protection of internationally declared human rights	SK holdings respects all human rights set forth in 'The Universal Declaration of Human Rights' adopted by the UN.(p.72~73)
	Principle 02. Businesses should make sure they are not complicit in abuse of human rights	
Labor	Principle 03. Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining,	SK holdings supports the freedom of association and the right for collective bargaining.
	Principle 04. The elimination of all forms of forced and compulsory labor,	SK holdings does not allow any form of compulsory labor .(p.72~73)
	Principle 05. The effective abolition of child labor,	SK holdings prohibits child labor.(p.72~73)
	Principle 06. The elimination of discrimination in respect to employment and occupation.	p.73
Environment	Principle 07. Businesses should support a precautionary approach to environmental challenges,	p.37~41
	Principle 08. Undertake initiatives to promote greater environmental responsibility and	
	Principle 09. Encourage the development and diffusion of environmentally friendly technologies.	
Anti-corruption	Principle 10. Businesses should work against corruption in all its forms, including extortion and bribery.	p.46~47

UN SDGs(Sustainable Development Goals)

In September 2015, the United States officially adopted '2030 Agenda for Sustainable Development' that includes sustainable development goals (SDGs) to be attained by the international community in 15 years from 2016 to 2030. The SDGs, effective from 2016, consists of 17 goals and 169 specific goals. They urge businesses across the world to enhance sustainable development through investment, solution development and activities. In doing so, the businesses are urged to reduce adverse impacts and increase positive contribution to the agenda on SDGs. SK holdings has developed and implemented strategies to link the goals related to its business among the 17 goals presented under the agenda to its sustainable management, and has disclosed the achievements.

Classification	Goals	Page / Notes
Goals3	SK holdings ensures healthy lives and promote well-being for all at all ages.	p.59, 62
Goals4	SK holdings ensures inclusive and equitable quality education and promotes lifelong learning opportunities for all.	p.60
Goals5	SK holdings achieves gender equality and empowers all women and girls.	p.31
Goals8	SK holdings promotes sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.	p.60~61
Goals9	SK holdings strive to ease intra-national and cross-national inequality	p.61
Goals10	SK holdings makes cities and human settlements inclusive, safe, resilient and sustainable.	p.62
Goals13	SK holdings protects, restores and promotes sustainable use of terrestrial ecosystems, sustainably manage forests, combats desertification, and halts and reversed land degradation and halts biodiversity loss.	p.37~41
Goals15	SK holdings takes actions to protect, recover and make on-land ecosystems sustainable, maintain sustainability of forests, prevent or recover desertification or land degradation, and prevent loss of biodiversity.	
Goals17	SK holdings strengthen the means of implementation and revitalizes the global partnership for sustainable development.	p.82~83

MEMBERSHIP·AWARDS AND RECOGNITION

Membership

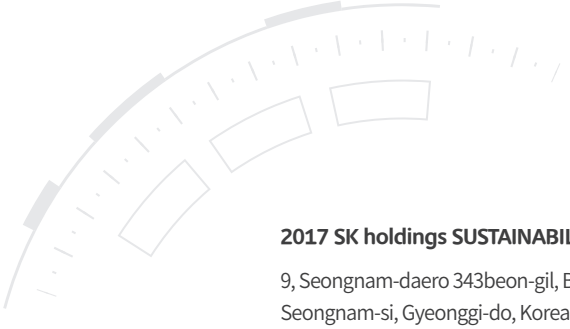
The Seoul Bar Association
The Korean Bar Association
The Korea Patent Attorney Association
The Korea Engineering and Consulting Association
The Korea International Trade Association
The Korea Information & Communication Contractors Association
The Information & Communication Financial Cooperative
The Korea Electrical Contractors Association
The International Contractors Association of Korea
The Engineering Guarantee Insurance
The Korea Specialty Contractor Financial Cooperative
The Korea Equipment Construction Association
The Fire Guarantee
The Korea Fire Safety Association
The Korean Nurses Association

The Seongnam Chamber of Commerce & Industry
The Korea Software Industry Association (KOSA)
The Federation of Korean Information Industries (FKII)
The Korea Association for ICT Promotion Korea Association for ICT Promotion (KAIT)
The Korean Information Technology Service Industry Association (ITSA)
The Korea Association of Cloud Industry
The Seoul Economist Club
The Korea Fair Competition Association
The Korea Listed Companies Association
The Korea IR Service
The Korea Employers Federation
The Gyeonggi Employers Federation
The Korea Petroleum Quality & Distribution Authority
The Intelligent Transport Society of Korea
The Korea Big Data Society

The Korea Industrial Technology Association
The Korea SW Technology Association
The Consortium of Cloud Computing Research
The Korea Open Source Software Association
The Korea Institute of Information Security & Cryptology
THE KOHSIA
The Korea SW Quality Association
The Korea SW Architect Association
The Korea Cardlinx Association
The Korea Fintech Industry Association
The Korea Defense SW Industry Academy
The Korea Defense Industry association
The Korea IoT Association

Awards and Recognition

No	Title of Awards	Award winner	Awarding Organization	Time of Award
1	Quality Innovation Award of the 42nd National Quality Management Convention (Sustainability Management sector)	SK holdings	The President	November 2016
2	The 11th WEEK Award for Responding to Climate Change and GHG Reduction	SK holdings	Minister of Commerce, Industry and Energy	November 2016
3	Grand prize of the E-daily entrepreneur angel index of the 2016	SK holdings	Minister of Commerce, Industry and Energy	November 2016
4	The 4th Awards of Korean Beloved Enterprises by the Government (Individual)	SK holdings Kim, Hyeong-jung	The Korea Society for Sustainability Management	November 2016
5	Included in the DJSI (Dow Jones Sustainability Index) World, Asia-Pacific, Korea for 5 consecutive years	SK holdings	S&P Dow Jones Indices	October 2016
6	Grand Prize for the Best Company in the Accompanied Growth Index Assessment	SK holdings	The Korea Commission for Corporate Partnership	December 2015
7	The 3rd Awards of Korean Beloved Enterprises by the Government	SK holdings	Chairman of the Korean Standards Association	November 2015
8	Included in the DJSI (Dow Jones Sustainability Index) World, Asia-Pacific, Korea for 4 consecutive years	SK holdings	S&P Dow Jones Indices	November 2015



2017 SK holdings SUSTAINABILITY REPORT

9, Seongnam-daero 343beon-gil, Bundang-gu,
Seongnam-si, Gyeonggi-do, Korea
(Postal code 13558)

SK holdings IR Team

Tel_ 02-6400-5082

E-mail_ sustainability@sk.com
www.sk.co.kr

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