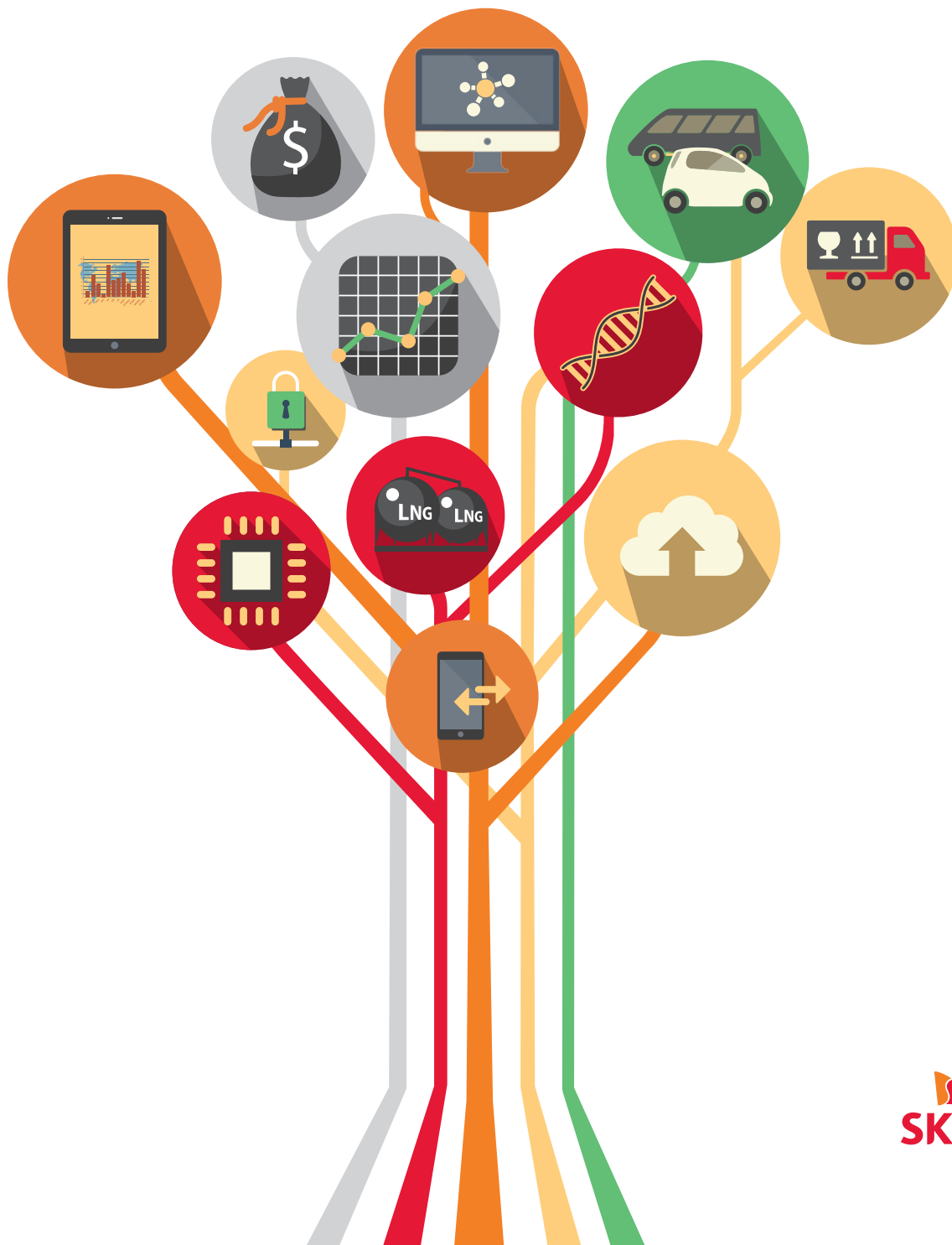


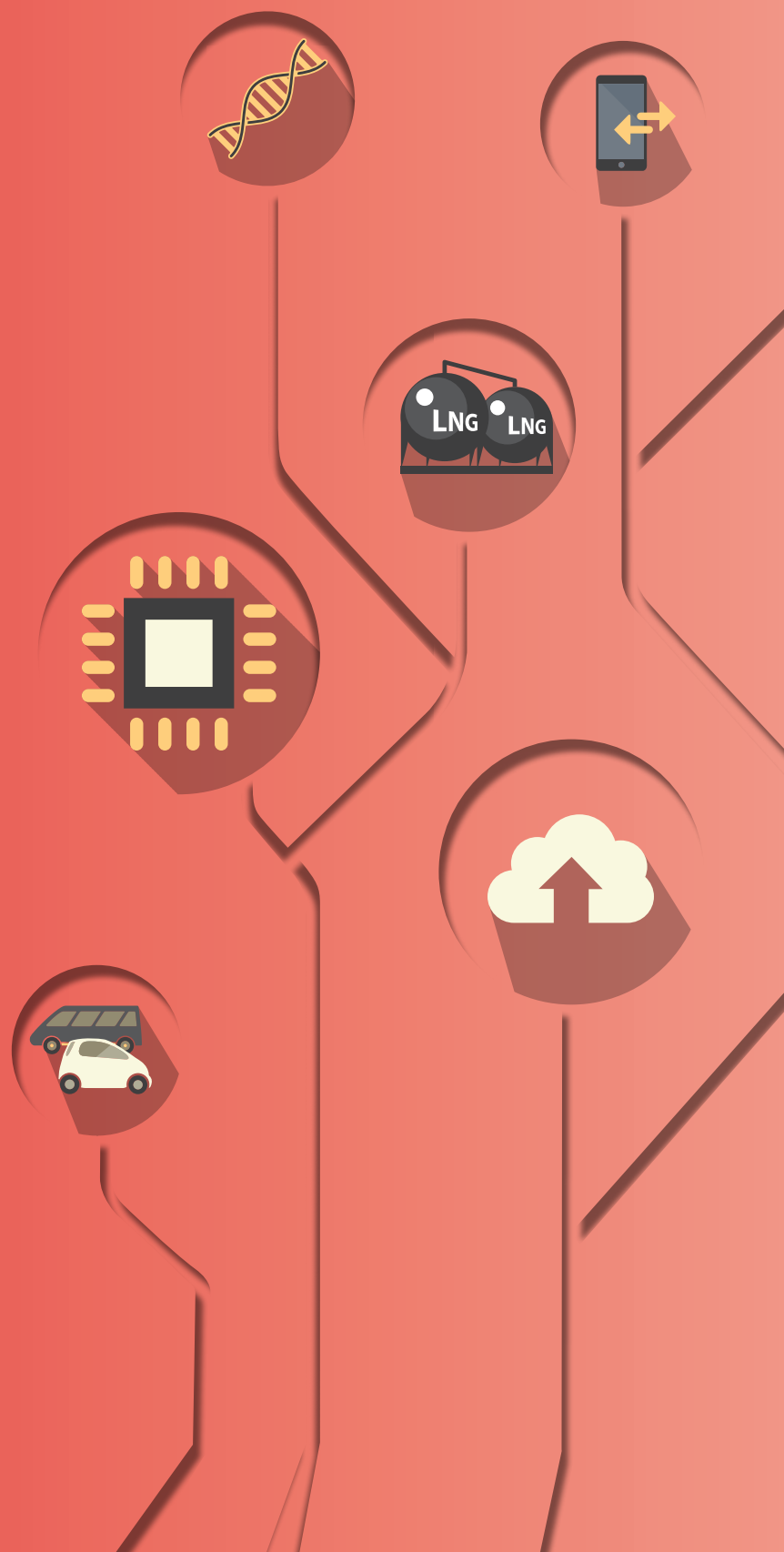
# HAPPINESS WITH SK

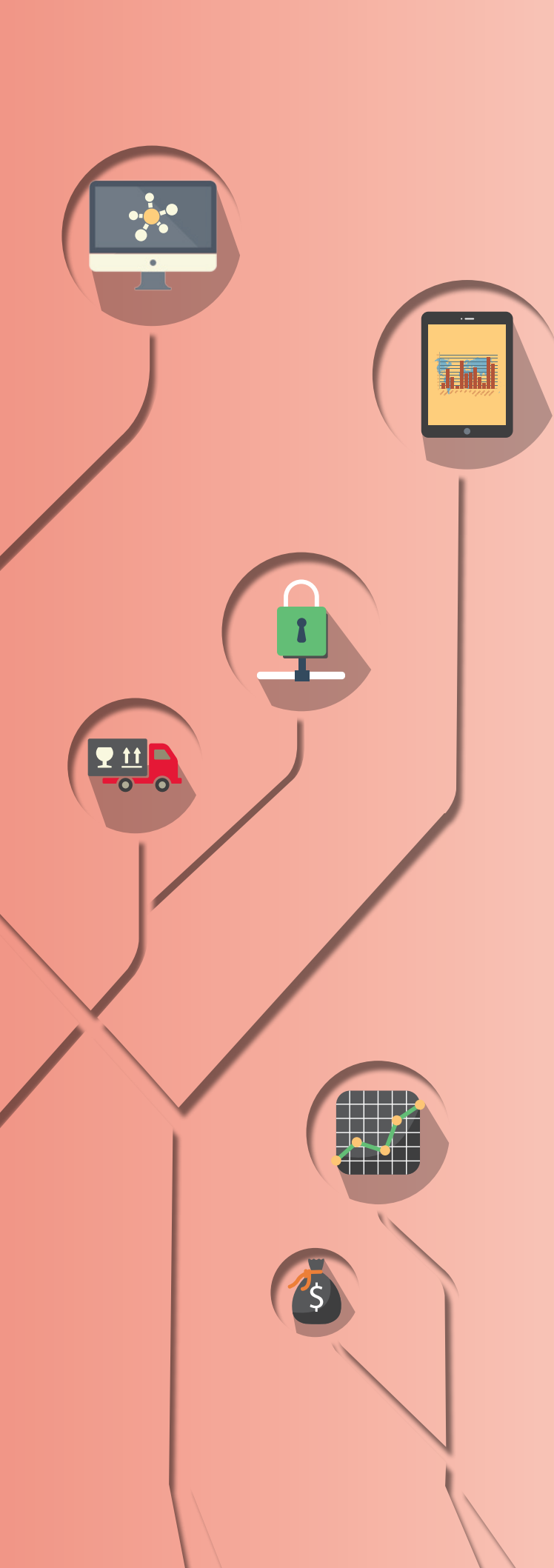
2016 SK holdings Sustainability Report



# HAPPINESS WITH SK

2016 SK holdings Sustainability Report





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► **INTRO**

STRATEGIC FOCUS AREA  
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# CHAIRMAN'S LETTER



WELCOME

Sustainability of business management is an important subject matter for contemporary businesses. Businesses nowadays tend to have a much shorter lifespan than the past. The global credit ratings company, S&P, reports that the average lifespan of top 500 businesses in the world. As a result, it has decreased from 45 years in the 1950s to just 15 years in 2015. Business lifespans have become shortened due to fiercer competition to rapidly changing business environments and emergence of innovative technologies.

SK Group celebrates the 63rd anniversary in this year. A small company that started out with several looms in a war-torn country developed into a massive group that was ranked 64th among 'Fortune Global 500' in 2015. I'm believed that SK has managed to arrive at this stage due to its sustainable business management based on its willpower and aspiration amid support by its stakeholders, rather than regression in the difficult business environment.

SKMS(SK Management System) is the backbone of the business philosophy and corporate culture of SK. SKMS, first established in 1979, is a management system agreed on and shared by all SK members. SK has been able to repeat sustainable growth and development to date with the result that we have steadily practiced system management based on SKMS. The core value pursued under SKMS is satisfaction of all stakeholders. Furthermore, SKMS clearly states that 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 will strive to continue its sustainable business management based on the SKMS philosophy. It will also concentrate on the enhancement of social values as a corporate citizen. SK will not engage in business activities for the benefit of SK only. It will develop and implement strategies that are substantially beneficial to society and the national economy. SK will also strive to let the positive effect generated by investment and other business activities by group companies spread throughout to the entire community. In addition, SK will also continue to support the development of a sustainable ecosystem for social businesses to resolve various social problems.

SK has been benefitted greatly by society. Now, we believe it is our duty as a corporate citizen to give back to society and the nation. We will do our utmost to contribute as best we can to the overall happiness of society. We deeply appreciate the continued unwavering support of all of our stakeholders. Thank you.



CEO-Chairman, SK holdings Co., Ltd.

**Chey Tae-won**

## CEO MESSAGE



CEO-President, SK holdings **Cho Dae-sik**

CEO, Current SK holdings(Holdings)

Head of SK Business Support Division

Head of SK Autonomous-Responsible Management Support Team

### Dear SK holdings stakeholders,

I'd like to welcome all of you to 2016 SK holdings Sustainability Report. SK holdings was launched an operational holding company structure through the successful merger in August last year. All employees are committed to securing shareholder value and new growth engine by strengthening existing business competitiveness and exploring new opportunities. It is intended to accomplish the objectives of 'Leaping forward to become a global top-tier holding company focusing on future growth businesses'.

The business environments in Korea and around the world is expected to grow even more uncertain than last year and this year because of the slowdown of the Chinese economy, and the low oil prices the instability of the international financial market due to rising interest rates in the USA. By making these circumstances a turning point for streamlining its internal management structure, SK holdings has made meaningful achievements for further leaps forward in new business lines. At the same time, we has enhanced the competitiveness of its portfolio of subsidiaries. SK holdings started its new semiconductor materials business based on the successful acquisition of SK Materials. Also, SK Biofarmaceuticals has entered the third phase clinical trials for a new epilepsy medicine it has developed. We also changed the governance of SK Biotech and increased equity capital in order to expand its pharmaceutical business in earnest.

In the ICT domain, the competitiveness of the group's portfolio of subsidiaries at home and abroad has been enhanced through tremendous growth based on the expanded product portfolio of semiconductor chips newly started in 2014. And the foundation for growth has been laid for promoting smart factory, logistics and cloud computing service businesses and diversification of the Encar business by actively utilizing global partners.

As a result, SK holdings posted 39.6 trillion won sales and 1.4 trillion won operating income in its 2015 consolidated financial statement of the merged companies. In addition to such business efforts, it has strived to further diversify its personnel and culture, including development of female leadership, while adhering to the 10 principles of the UN Global Compact, such as human rights, labor, environment, and anti-corruption, which includes improvement of working conditions, ethical management, and enhancement of win-win growth structures with its business partners. In doing so, SK holdings was cited by the Korean government in 2015 as a 'Beloved Korean Enterprise' for the second

consecutive year, and has been included in Dow Jones Sustainability Index DJSI World for four consecutive years, and has been awarded an A grade in Environment, Social and Governance (ESG) appraisal of the Korea Corporate Governance Service for four consecutive years. It is believed that SK holdings has been given such awards because it has been recognized as being equipped with an excellent sustainable management structure in both the domestic and global markets.

SK holdings will concentrate its resources on generating revenue and growing in its new business lines while enhancing the competitiveness of existing business lines through steady growth and overcoming difficult business conditions in 2016. To that end, it will further reinforce its enterprise-wide integrated system for risk management while creating a corporate culture based on devotion, creativity and innovation along with the steady development of specialized talents in future growth business lines and increased investment in and providing support for the development of the capabilities of its employees.

In addition, SK holdings will practice independent, effective management centered on the Board of Directors through a governance committee organized inside the board for advancing its governance structure while protecting the rights and benefits of its shareholders. Furthermore, we will strengthen its ability for executing of executing its ethical management, Corporate Social Responsibility (CSR) programs and pursue the happiness of the stakeholders by actively responding to climate changes.

SK holdings will strengthen its CSR activities related to its business lines in order to help resolve social issues as well as to achieve the far-reaching business objective of being reborn into a global top-tier holding company. It will also augment its sustainable management system in which all stakeholders grow together by exploring growth opportunities while pursuing creative approaches and innovation in all social and environmental aspects. In order to further reform the group, SK holdings looks forward to the continued interest and support of all of its stakeholders.

June 2016

CEO-President, SK holdings

**Cho Dae-sik and, Park Jung-ho**



*Jung - park*

CEO-President, SK holdings **Park Jung-ho**

CEO, Current SK holdings(C&C)

Head of SK C&C Corporate Development

Head of SK Telecom Business Development Office



# 2015 HIGHLIGHTS



## HISTORIC FIRST STEP OF THE NEWLY LAUNCHED HOLDING COMPANY

SK holdings was reorganized into an operational holding company by merging with the former SK C&C on August 1, 2015. SK holdings maintains its system (being one company, but has the two independent specialized units of SK holdings(holding unit) and SK C&C(business unit)). Hearby, it shares infrastructure and vision to increase synergy. The merger is significant as it combined the ICT-based business opportunities of SK C&C and the abundant resources and portfolio management capabilities of SK holdings. SK holdings exercised powerful leadership as an operational holding company through the merger and developed a powerful foundation for growing into a global top-class an operational holding company with increasing investment resources for combining the IT and ICT capacity of the group.



## GLOBAL SCALE IMPLEMENTATION OF SUSTAINABLE MANAGEMENT

SK holdings was included in DJSI World for the fourth consecutive year in 2015. For DJSI, an index of world-class authority, S&P and Dow Jones (USA), and Robeco Sam (Switzerland) evaluate the sustainability of 2,495 listed companies in terms of 21 aspects, including economic, environmental and social aspects based on their ethical management, win-win growth, environmental policies and corporate social responsibility. In June 2016, SK was ranked 8th at the First Asia CSR Ranking Conference in recognition of its outstanding achievements in win-win growth management. In addition, SK launched its world-class Safety, Health and Environment (SHE)-oriented management system based on its management philosophy of 'Pursuit of Happiness for All Stakeholders' in November 2015. The SHE management system includes an item of IT operation for providing a stable ICT service that is the group's growth axis. A corporate culture is induced for adhering to the SHE-oriented management through internal broadcasting, education programs and newsletters in order to help employees understand and practice the ideals.



## WIN-WIN GROWTH, HAPPY COLLABORATION RESULTING IN REAL ACHIEVEMENTS

SK holdings was awarded the highest grade in the '2014 Win-win Growth Index Assessment' in June 2015 as it had maintained cooperative relations with its business partners. It was because SK holdings' pro-active business activities for win-win growth were highly recognized, including routine use of standard subcontract forms and joint technological development and deposit of technological data with business partners. Only 19 companies including SK holdings were rated the best among a total of 112 candidate companies. SK holdings has made diverse efforts for win-win growth. It organizes the 'Biz Idea Festival with BPs' to share and award new ideas developed by the business partners, and celebrates 'Win-Win Growth Day' for sharing the SK management philosophy and ensuring win-win growth by inviting the CEOs of business partners. In particular, more visible successes have been achieved as ideas awarded at the 'Biz Idea Festival' have been recognized in the global market, including a healthcare service platform called 'Health-up V4.0' and 'i-Sensor' which is an environmental sensor using BLE (Bluetooth Low Energy) module.



## HAPPINESS SHARED BY PROMOTING A CORPORATE CULTURE OF VOLUNTARY PARTICIPATION

SK holdings steadily conducts CSR activities for communicating with local communities. In 2015, particular efforts were made to increase opportunities for volunteer service activities so that the participating employees may experience happiness and pride in CSR activities, including activities by small service groups and expert volunteer groups. In 2016, SK holdings plans to further advance its CSR services so that its employees may feel they are the masters for resolving social problems voluntarily rather than passively participating in volunteer service programs organized by the company.



## SEMICONDUCTOR MATERIALS BUSINESS STARTED BY ACQUIRING OCI MATERIALS

SK holdings has actively promoted five new growth projects as it was reshuffled into a holding company. Among them, SK holdings took over OCI Materials from OCI based on a board decision in November 2015 to start the semiconductor materials business. SK Materials (The former OCI Materials) is a company specialized in the production and sales of special gases used for processes for manufacturing semiconductor chips, displays, and solar energy panels. It has world-class competitiveness in NF3 gas, which is essential to semiconductor materials. SK holdings has laid the foundation for actively advancing in the semiconductor materials business through the acquisition. The semiconductor materials line is expected to have a significant synergetic effect with local semiconductor chip makers as technological collaboration with the manufacturers is crucial.



## DEVELOPMENT OF NEW GROWTH ENGINES BASED ON ICT CONVERGENCE AND GLOBAL PARTNERSHIPS

SK holdings has started to explore next-generation growth businesses by founding growth-oriented business organizations in 2015, including convergence logistics, convergence security, cloud computing and smart factory. It succeeded in developing a new growth engine based on partnerships for the first time among domestic IT service companies. In particular, SK holdings held ICT Partners Day to commit to cooperative relations with global partners while sharing future growth strategies. It was an opportunity to strengthen global partnerships by signing business contracts and MOUs with such global ICT businesses as Ericsson, IBM and Siemens. The smart factory business was also promoted based on global partnerships. In this way, SK holdings continues its preparations for the next-generation ICT services by developing and launching diverse platforms and solutions.



## DEVELOPMENT OF CORPORATE CULTURE FOR SELF-INITIATED CREATION AND INNOVATION

In 2015, SK holdings made efforts to promote a corporate culture for self-initiated creation and innovation in its C&C division. It held 'Creative Cell Day', awarding Creative Cell on two occasions in May and October 2015. During the event, the attendees freely proposed new business ideas, voluntarily propagating a culture of creativity. The Creative Cell program that was started by the officer in charge of ICT growth later spread to the entire division. The program achieved successful development of new ideas awarded by the program which are now under commercialization or have already been launched, including 'Face Recognition Based Convergence Biz' and 'Prepaid Dual USIM for Foreign Visitors'. Meanwhile, GSP that started in June 2015 has provided the employees with opportunities for self development. The GSP participants were stimulated with an extensive refreshing world, becoming good examples for the entire organization. In addition, Tech Labs, small voluntary groups of four to five members, demonstrated meaningful achievements of exploring new business models, while planting the DNA of success in their members, including the recent opening of the 'Remote Mobile Test Center'.



# COMPANY OVERVIEW

On 1 August 2015, SK holdings was reorganized into an operational holding company through a merger with SK C&C in order to increase value for shareholders through improving the governance structure and securing new growth engines for the future. The newly founded holding company became more competitive by combining the ICT-based growth potential of the previous SK C&C with the resources and management capability of previous SK holdings.

In 2015, it achieved excellent financial performance by posting KRW 39,569.8 billion in sales and KRW 1,403.3 billion in operating income based on the consolidated financial statement of SK holdings. Furthermore, it is highly regarded in terms of sustainable management as it has been included in the world grade of Dow Jones Sustainability Indices for four consecutive years. Also, It has been awarded an A grade in ESG (Environment, Social, Governance) appraisal by the Korea Corporate Governance Service.

SK holdings will move forward step by step to accomplish its long-term goal of KRW 200 trillion in sales in 2020 by steadily fostering five growth domains – IT service, ICT convergence, LNG, bio, pharmaceuticals, and semiconductor material modules. SK holdings will contribute to the development of its customers, shareholders, and employees, as well as society and the national economy by enhancing its growth-driving power and creation of jobs based on the newly started but stable holding company structure.

## BUSINESS PORTFOLIO AND GROWTH STRATEGY

SK holdings operates a portfolio of diverse business lines and consists of its holdings unit which manages investment in new growth business lines, the SK brand and the business unit which integrate systems and outsource ICT services, and deal in sales and exportation of used cars.



### Holdings unit, SK holdings

Holdings unit(holdings) has competitive subsidiaries in diverse business lines, including energy, chemical, IT, semiconductor, marketing and services. Furthermore, it strives to practice and upgrade SKMS, SK Group with SK holdings culture as well as its unique value while widely sharing the value of the SK brand, the core intangible asset and source of the group's competitiveness. It will further solidify the growth foundation through efficient management based on financial stability in addition to efforts for steadily improving its governance structure. In addition, it will concentrate its resources in order to enhance value for shareholders by investing in new growth businesses that are expected to generate greater value in the future.



### Business Unit, SK holdings C&C

Business unit(C&C) has enhanced its core competitiveness through strategic partnerships with superior customers, powerful brand perception, outstanding personnel and technologies, and strong corporate culture by conducting business in all of the IT service areas. It has solidified its position as a leading IT service provider creating customer value based on such competitive advantages. It will leap forward to become a global top-tier ICT company with expertise in IT and ICT services and intuition in diverse industries. The Encar division has the highest level of brand perception in connection with used car sales in Korea. It has led the culture of a transparent used car trading service based on healthy trading practices. It was made possible by introducing diagnosis and guaranteed repair service for used cars for the first time in Korea.

\* The sales amount account for the business division (SK C&C) between January and December of 2015 and the holding division (SK holdings) between August and December of 2015.

## MAJOR SUBSIDIARIES OF SK HOLDINGS



### Name of Subsidiaries

### Business Lines

**SK  
INNOVATION**

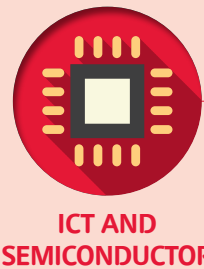
SK Innovation is Korea's representative energy and chemicals company. It maintains world-class technology leadership in battery for electric cars and new energy solutions based on its diverse successful business models, ranging from direct exploration and operation of oil and LNG fields to their production,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



### Name of Subsidiaries

### Business Lines

**SK  
TELECOM**

SK Telecom is Korea's leading mobile phone service operator that occupies roughly 50% of the domestic market in 2015. And it leads Korea's ICT ecosystem with world-class and trend-setting technologies and services.

**SK  
HYNIX**

SK hynix is Global Top 2 memory chip sector enterprises, based on revenues in 2015. 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 continues revenue-centered management and quality-based growth based on its market-leading technological know-how.

**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.



### Name of Subsidiaries

### Business Lines

**SK  
NETWORKS**

Since it started out as a fabric weaver, SK Networks distributes energy with a focus on petroleum products, provides ICT services centered on mobile devices, and conducts trading utilizing its competitiveness based on its network bases at home and abroad, its loyal customers.. It also operates various other growth business lines, including rental cars, car repairs and other car-life service, fashion goods based on licensed and in-house brands, and hotel management.

**SK BIO-  
PHARMACEU-  
TICALS**

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.

## SK HOLDINGS STRATEGIES FOR SUSTAINABLE MANAGEMENT

Established in 1979, SK Group’s unique management system called the SKMS not only embodies the group’s business philosophy, but it is also essential to the very existence and growth of SK Group. As the basis of SK’s corporate culture, SKMS has been the decision-making standard for the company’s business activities and its employees’ job performance. SK holdings implements sustainability management, according to its corporate philosophy stated in the SKMS: "The corporate enterprise should achieve its ultimate goal of sustained progress by maintaining stability and growth. Furthermore, it should create value for its customers, employees, and shareholders, thereby contributing to social and economic development and human well-being."

VISION

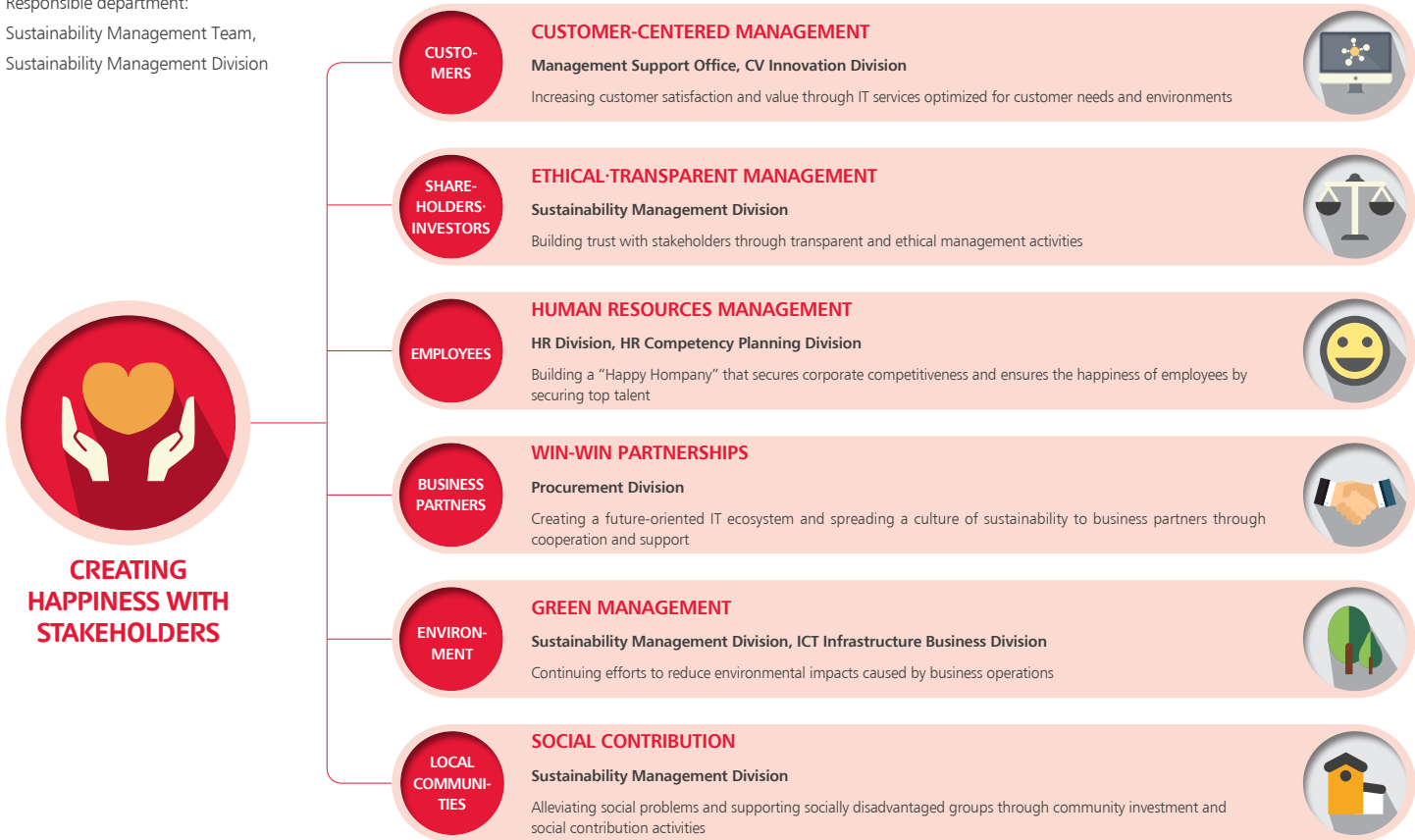
”
 STEADY CREATION OF HAPPINESS FOR ALL STAKEHOLDERS
 ”

## STRATEGIC DIRECTIONS FOR SUSTAINABLE MANAGEMENT

SK holdings has defined six sustainable strategic directions to fulfil 'sustainable development' the happiness of stakeholders. By deducing the organizations and tasks about each strategic direction and implementing these, we has exerted to become a sustainable business.

### Sustainable Management Organization

Responsible department:  
 Sustainability Management Team,  
 Sustainability Management Division



# STAKEHOLDER ENGAGEMENT

## DEFINITION OF STAKEHOLDERS

SK holdings defined six strategic directions for sustainability management. These are shareholders, investors, customers, employees, business partners, local communities, environment-related agencies. The major interests of the stakeholders are surveyed and reflected in the company's long-term directions by actively responding to them.

## COMMUNICATION CHANNELS BY STAKEHOLDER GROUP AND RESPONSE TO KEY ISSUES

SK holdings operates a two-way participation channel. Though active communication, SK holdings plans to pursue win-win development and growth of the company and its stakeholders by reflecting their opinions concerning its sustainability on its management after collecting opinions from them.

Classification	Major Interests	Actions Taken by SK holdings	Channels for Participation
<b>Customers</b> IT services · Security services · Content and other distribution	<ul style="list-style-type: none"> <li>Enhancing customer communication and satisfaction</li> </ul>	<ul style="list-style-type: none"> <li>Establish a dedicated department for integrated management of Voice of the Customer (VoC)</li> <li>Conduct a satisfaction survey among IT customers to improve quality of service</li> </ul>	Operation of Customer Experience Management Committee
<b>Shareholders and Investors</b> General investors · Institutional investors · Largest shareholders	<ul style="list-style-type: none"> <li>Creation of economic value and fair distribution</li> <li>Business diversification and advancement into global markets</li> <li>Emphasis on sustainable management and disclosure of achievements by highest governance organization</li> </ul>	<ul style="list-style-type: none"> <li>Operation of earnings-centered business models</li> <li>Increased advancement into global markets and enhanced strategies for starting combined business groups</li> <li>Enhanced connectivity between excellent governance assessment system and sustainable management strategy</li> <li>Deployment of compensation systems based on achievements in sustainable management</li> </ul>	General shareholders meeting, Information disclosed  Operation of Governance Committee
<b>Employees</b> Marketing & Sales · Technicians · Consultants · Supporting staff	<ul style="list-style-type: none"> <li>Investment in and support for development of employee capabilities</li> <li>Improvement of work conditions and organization culture</li> <li>Prevention of discrimination or infringement of work-related human rights</li> <li>Diversity in hiring</li> <li>Acquisition of experts for future growth businesses</li> <li>Establishment of culture for autonomous practice of ethical business</li> </ul>	<ul style="list-style-type: none"> <li>Deployment of personalized career development roadmaps for employees</li> <li>Operation of diverse welfare systems, including flexible work schedules</li> <li>Operation of programs to promote communication</li> <li>C.I. (Creative Innovator) program etc.</li> <li>Deployment of processes for hiring socially alienated people for diversifying human resources</li> <li>Extension of programs for proactive development of human resources</li> <li>Four principles of Fair Trading and operation of autonomous compliance with Fair Trading rules</li> <li>Operation of counseling and reporting on ethical issues</li> </ul>	Survey of Sustainability Management Culture Survey  Operation of anonymous internal bulletin board, U-Symphony  Implementation of voluntary internships  Ethical code shared by employees, Operation of website for reporting illegitimate transactions
<b>Business Partners</b> Product procurement · Contract procurement	<ul style="list-style-type: none"> <li>Strengthening support for win-win growth with partners</li> <li>Prevention of unfair trading</li> </ul>	<ul style="list-style-type: none"> <li>Operate Win-Win partnership programs in eight core areas (Finance, technology, business, etc.)</li> <li>Deployment of penalties for preventing bribery and other unfair trading practices</li> </ul>	Win-win growth committee  Enforcement of corporate policies or sanctions for punishing unfair transactions
<b>Environment</b> Environmental NGOs · Stakeholders in sharing environmental resources in the broader sense, such as government and regulatory agencies	<ul style="list-style-type: none"> <li>Fulfillment of corporate environmental responsibilities</li> <li>Responding to climate change</li> <li>Enhancement of efficiency and reuse of raw materials</li> <li>Efficiency and conservation of energy and water</li> </ul>	<ul style="list-style-type: none"> <li>Development and enforcement of SHE-related policies and manuals</li> <li>Deployment of enterprise-wide SHE management organizations and systems</li> <li>Analysis of risks and opportunities related to climate change</li> <li>Response to GHG and Energy Target Management System</li> <li>Making Green office and enhancing eco-friendly IT services</li> </ul>	Operation of SHE-related consultative body  Deployment of measuring system for greenhouse gas (GHG) emission
<b>Local Communities</b> Residents of local communities · Local governments and regions · Social contribution centers · NGOs	<ul style="list-style-type: none"> <li>Investment in and service provision to social infrastructure facilities</li> <li>Performance of corporate social responsibility for local</li> </ul>	<ul style="list-style-type: none"> <li>Planning and implementation of programs for contributing to local communities</li> <li>Increasing CSR activities linked to IT service</li> <li>Founding and supporting social enterprises</li> </ul>	Operation of volunteer service groups

## MEETING WITH EXTERNAL STAKEHOLDERS

SK holdings held a meeting to gather the opinions of external stakeholders on sustainable management. Experts on governance structure and local community issues were invited to the meeting to derive development ideas and matters for improvement while collecting proposals on overall sustainable management. SK holdings will continue to reflect the opinions of external stakeholders on all aspects of management through active communication.



### Participants

Five experts on different sustainability areas and managers of SK holdings

- Yoon Jin-soo, Senior researcher, Korea Corporate Governance Service
- Kim Joon-sop, Senior analyst, Yujin Investment & Securities
- Cho Eun-ju, Director, Seoungnam-si Volunteer Service Center
- Cho Young-hoon, Manager, Korea Software Industry Association
- Lee Jong-O, General manager, Korea Sustainability Investing Forum



### Details of Key Discussions

- 1 Review of 2015 SK holdings Sustainability Report and suggestions for improvement
- 2 Opinions on materiality assessment and authenticity of sustainable management
- 3 Opinions on overall sustainability and suggestions for improvement



## Opinions on Overall Sustainability and Suggestions for Improvement



### Yoon Jin-soo, Senior researcher, Korea Corporate Governance Service

Being an integrated SK Group holding company merged on August 1st 2015, SK holdings should earnestly disclose the details of its overall sustainable management, including its transparent decision-making system and dividends policies. So, the sustainability report is believed to be the most appropriate communication channel that can contain diverse details while also being easily accessible to all stakeholders.

Accordingly, I wish for more detailed information be added with regards to sustainability as the current report is limited to contents that can be checked via the company's website or business reports.



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**Kim Joon-sup, Senior analyst, Yujin Investment & Securities**

Former SK C&C is now equipped with an operational holding company structure through the merger with the former SK holdings. Therefore, SK holdings should have a clear vision and direction as an integrated holding company. SK holdings is also required to examine CSR programs that can be implemented by lining its business vision and direction. In other words, it would be desirable for the SK holdings website or sustainability reports to include its plans to expand its business areas and to increase value for shareholders through its CSR programs so that anyone can check them easily. Lastly, SK holdings should provide its stakeholders with information including more specific backup data concerning its current status and future plans as they may trace past, present and future target values through the sustainability report.


**Cho Eun-ju, Director, Seongnam Volunteer Center**

To implement a truly meaningful CSR program, a business should first make efforts to explore specific social issues which only the business can resolve while uncovering social issues that local communities truly need resolved. To this end, I believe SK holdings has smoothly converged with local communities as it has employed social workers for its CSR programs, who have long served in the relevant communities. Furthermore, SK holdings may consider plans to select specific candidates to promote the CSR programs through collaboration with diverse partner agencies. I think SK holdings should disclose quantitative values or story-based data concerning desirable changes occurring in the local communities by concentrating on programs. It can reflect the authenticity of SK holdings while discontinuing plain stereotype CSR programs, such as development of commune-like villages and families for disadvantaged groups and support for education and cultural life for children and adolescents based on strong fervor for education.

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**Cho Young-hoon, Manager, Korea Software Industry Association**

It is necessary to provide educational and financial support to technologically competitive businesses rather than providing unconditional support to startups. Furthermore, I believe SK holdings should introduce a program to foster internal venture companies. The most desirable approach to exploration of new businesses and expansion of markets for win-win growth and management would be to spin off certain businesses with outstanding patents when they acquire resources sufficient to stand along after acquiring them if they are unable to be self sufficient. In addition, as the greatest merit of SK holdings is believed to be its maintenance of long-term strategies and directions for employment of its employees and CSR programs, it should prepare business strategies based on the direction of such long-term strategies. Lastly, the target of the sustainability reports should be clearly defined and more intuitive or easy-to-understand language should be used as opposed to jargon when preparing the reports should be used for their benefit.


**Lee Jong-O, Director, Korea Sustainability Investing Forum**

Development of new business models based on IT solutions related to climate change may provide the IT industry with new business opportunities as the world has a greater interest in climate change. In that regard, SK holdings should introduce more eco-friendly equipment to its Green Data Center and implement programs for providing solutions to investment in green technologies and promotion of green projects.

In addition, the environment should be considered in establishing long-term objectives or business strategies as environmental issues tend to have a greater influence on business activities. It would be a desirable approach to demonstrating the authenticity for the company to continue efforts for transparent communication with its stakeholders in areas where SK holdings has made mistakes. Also, SK holdings would establish a clear objective through close examination of international trends and statutes.

# MATERIALITY ASSESSMENT

SK holdings assessed materiality to derive issues which its internal and external stakeholders regard to be important and those that appear to have a greater influence on its business. The major issues derived are transparently shared and communicated with the stakeholders by reporting the details of achievements and objectives of such efforts in this report.

## MATERIALITY ASSESSMENT PROCESS

A pool of key issues was selected by examining and surveying key issues reported through mass media concerning SK holdings sustainability in 2015, international standards for sustainability, IT services, and sustainability related issues reported inside conglomerates. The core issues top-ranking in the materiality assessment which were selected based on the degree of their impact on business and society among key issues included in the pool are contained in the report by linking them with the key aspects of the core issues.

### STEP.01 Verification of Sustainability Issue Pool

- Sustainability international standard indicators : GRI G4, DJSI etc.
- Analysis of environment in- and outside : Advanced sustainable businesses among IT service and conglomerates's sustainability issues, Issues disclosed by the media in 2015, and Core material issues of already-published reports
- In-and outside Risk elements of SK holdings

### STEP.02 Collection of Opinions from Stakeholders

- Survey of core issues the internal and external stakeholders believe to be substantial using online questionnaire survey tools
- Internal stakeholders(Management, Employee representatives) |** participated in by 223 persons
- External stakeholders (customers, shareholders or investors, local communities, partners etc.) |** participated in by 70 persons

#### Outcome of Questionnaire Survey



Ranking	Issues
01.	Investment in R&D for innovation of ICT technologies
02.	System for management of business portfolio focusing on future growth
03.	Business diversification and advancement into global markets
04.	Investment in and support to development of employee capabilities
05.	Employment of experts for future growth businesses
06.	Improvement of work conditions and organizational culture
07.	Acquisition of Global ICT partnership
08.	Creation of economic values and fair distribution
09.	Equal provision of growth opportunities to employees (by age, gender and region)
10.	Settlement of culture for autonomous practice of ethical business

Ranking	Issues
01.	Creation of economic values and fair distribution
02.	Business diversification and advancement into global markets
03.	Employment diversity (by age, gender and region)
04.	Employment of experts for future growth businesses
05.	Investment in R&D for innovation of ICT technologies
06.	Efficient use and conservation of energy (electric power, oil etc.)
07.	Investment in and support for the development of employee capabilities
08.	System for management of business portfolio focusing on future growth
09.	Equal provision of growth opportunities to employees (by age, gender and region)
10.	Maintenance of cooperative labor-management relations

## STEP.03 Materiality Assessment

- Conduct materiality assessment according to social impact, business impact and select core material issues

**Degree of Attention by Internal Stakeholders** | Benchmarking of advanced businesses, Industry issues, Collection of opinions

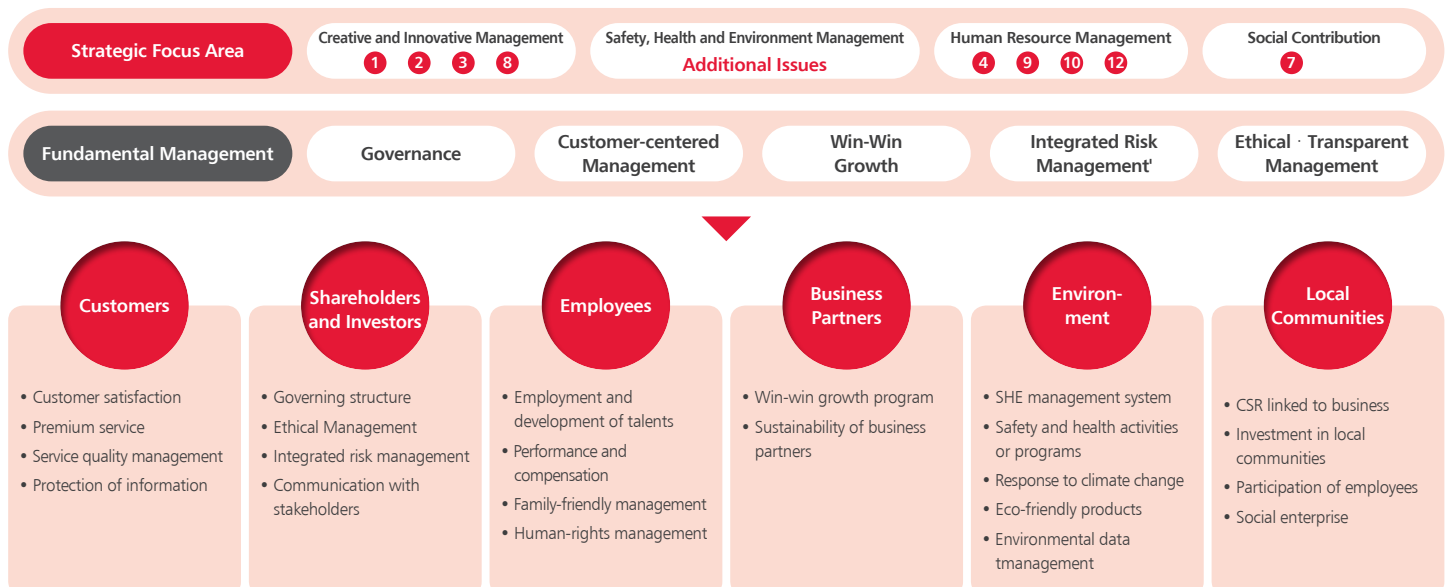
**Degree of Attention by External Stakeholders** | Collection of opinions from stakeholders, Media analysis

Classification	Core Material Issues
1	Creation of economic values and fair distribution
2	Business diversification and advancement into global markets
3	System for management of business portfolio focusing on future growth
4	Employment diversity (by age, gender and region)
7	Performance of social responsibility for local communities (CSR programs etc.)
8	Investment in R&D for innovation of ICT technologies
9	Investment in and support to development of employee capabilities
10	Employment of experts for future growth businesses
12	Improvement of work conditions and organizational culture
14	Deployment of integrated risk management systems
15	Equal provision of growth opportunities to employees (by age, gender and region)
Additional Issues	Efficient use and conservation of energy (electric power, oil etc.)
	Reduced emissions of greenhouse gases and ozone-harming materials
	Protection of workers' safety



## STEP.04 Composition of Aspects Reported for Each Material Issue

- Composition of material issues derived from results of materiality assessment by linking with aspects of report defined under GRI G4
- Classified as strategic focus areas and fundamental managements, organized the six stakeholder's activities and achievements



# RISKS AND OPPORTUNITIES FOR EACH CORE ISSUE

SK holdings will steadily examine and manage the crisis and opportunity elements of 11 core issues derived from the results of the materiality assessment. SK holdings will derive the business connectivity of opportunity elements to utilize them for developing sustainable business strategies while properly responding to potential risk elements.

Core Issues		Risk Elements
<div></div> <div>Promotion of Future Growth</div>	<div>Business Projects</div> <div><div>System for Managing Business Portfolio Centered on Future Growth</div><div>Business Diversification and Advancement into Global Markets</div><div>Investment in R&amp;D for Innovation of ICT Technologies</div></div>	<div><div>• Rapid change in business environment due to disruptive innovation technology</div><div>• Stagnation of IT service business, the major portfolio area</div></div> <div><div>• Lowering of the growth of existing BM due to stagnation of the IT service business</div><div>• Continuation of low growth and intensification of competition in the domestic market</div></div> <div><div>• Widespread commoditization and automation of existing IT service technology</div><div>• Acceleration of convergence between new technologies and its rise to prominence as a competitive edge</div></div>
	<div>People</div> <div><div>Acquisition of Expert Personnel for Future Growth Businesses</div><div>Investment in and Support for Development of Employee Capabilities</div><div>Employment Diversity (by Age, Gender and Region)</div><div>Equal Provision of Growth Opportunities to Employees (by Age, Gender and Region)</div></div>	<div><div>• Expansion of influence of professional manpower with core technology · knowledge</div><div>• Intensification of global competition for securing talents</div></div> <div><div>• Demand for a new structure of capabilities that is different from the traditional IT areas as new technology continues to spread out</div><div>• Expanding customer demand for quality service</div></div> <div><div>• Reinforcement of law · system regarding prohibition on discrimination during hiring</div><div>• Increased demand for recognition of diversity (hiring locals, etc.) toward global stakeholders</div></div> <div><div>• Reinforcement of law · system regarding prohibition on discrimination when providing employees opportunities for growth</div><div>• Strengthening of requirement for prohibition of discrimination toward domestic · overseas stakeholders</div></div>
	<div>Culture</div> <div><div>Improvement of Work Conditions and Organizational Culture</div></div>	<div><div>• Expansion of social/systematic requirement regarding safe and pleasant work environment</div><div>• Increased demand for change in group culture regarding creativeness and innovation</div></div>
	<div>Mgmt. Infra</div> <div><div>Deployment of Integrated Risk Management System</div></div>	<div><div>• Possibility of new risks occurring with changes in business conditions</div><div>• Increase in issue/demand of stakeholders in social · environmental areas</div></div>
	<div></div> <div>Creation of Value for External Stakeholders</div>	<div><div>Creation of economic value and distribution among stakeholders</div><div>Performance of CSR for Local Communities</div></div> <div><div>• Strengthening of mandatory regulation and government supervision on company activities such as fair trade and subcontracting acts</div><div>• Increased demand for company’s social responsibility in solving issues in the local community</div><div>• Increased market influence of companies that utilize the CSR strategy</div></div>

### Opportunity Elements

- Expansion of new business opportunities in various industries based on ICT core capabilities
  - Increase the possibility of expanding business to related areas such as convergence between industries
- 
- Expanding cooperation based on global partnership between ICT companies (BM, regional expansion, etc.)
  - Continued growth of new market
- 
- Continuing the trend of technological innovation based on ICT technology such as AI, Cloud and Big Data
  - Improving the public image as a leading ICT technology trend company
- 
- Expansion of the professional talent pool based on the ICT centric HR network
  - Expansion of the accessibility of global recruiting through verified sustainable company image
- 
- Securing competitive advantage of businesses that have instilled technological prowess and improving brand value accordingly
  - Enhancement of business efficiency and productivity
- 
- Expansion of opportunities to pursue creativeness and innovation as well as secure competitive advantage based on diverse HR
  - Improving global credit rating through expanded diversity
- 
- Establishment of a trust base on providing opportunity for growth and fostering of a self-directed talent training environment
  - Enhancement of job satisfaction of the employees and their sense of belonging to company
- 
- Active exploration of knowledge-sharing and ideas by deploying creative and innovative corporate culture
  - Improving cooperation and trust environment through activation of communication both at home and abroad
- 
- Secure timely response ability according to environmental changes and improve company's management stability and competitive edge
- 
- Upgrade company value and improve brand image through increased trust of stakeholders
  - Securing of a solid partnership through strengthening shared growth
- 
- Enhancement of corporate image and business competitiveness in local regions by forming friendly relations with local communities
  - Expansion of stakeholder Win-Win opportunity in connection to social value creation

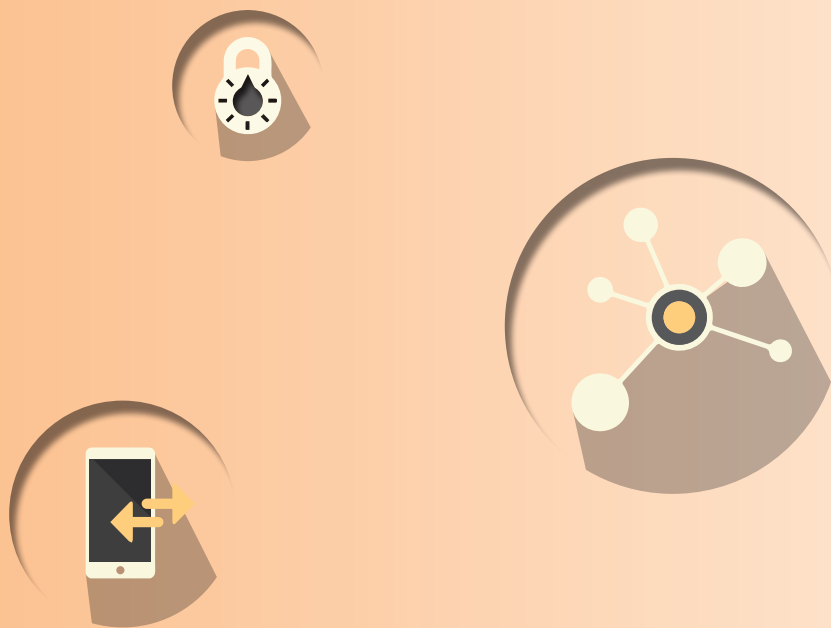
### Responsive Strategies

- Strengthening portfolio management, one of the five future growth area major businesses (IT service, ICT convergence, LNG value chain, bio-pharmaceuticals, semiconductor materials and modules.)
  - Strengthening the transformation of existing businesses based on ICT core technology
- 
- Strengthening partnership with global top player while considering growth BM and target market
  - Expansion of business promotion to businesses based on a global base
- 
- Installation of a dedicated R&D organization for the development of an ICT core technology focusing on future growth
  - Implementation of 'open innovation' with external expert groups, including academic societies and other businesses
- 
- Securing of future growth area professional talent pool through the utilization of various channels (Industry-Academy connection, SNS dedicated to global audience, etc.) growth business areas
  - Pursuit of cultivating professional talents through a leading IT · ICT Learning Platform
- 
- Strengthening of systematic fostering/training programs that fit the new technological trend
  - Expansion of a differentiated value offering system for customers through the fostering of professional capability
- 
- Strengthening of hiring global talents with ICT professional capabilities
  - Strengthening of adaptability to organization through the establishment of a customized work capability road map
- 
- Continued strengthening of HR system that fits the global standard
  - Seeking to advance the current processes for counseling on complaints and reports
- 
- Expansion of process, system and Smart Work Place establishment to create a creative and innovative work environment
  - Establish future-centric employee shared values and code of conduct
- 
- Establish risk management principles including non-financial risks such as social · environment factors
  - Strengthening and instillation of organization's self risk inspection role
  - Expansion of employee training including in new business areas
- 
- Listen to stakeholders' voice through regular communication channel
  - Continued transparent communication through business report, sustainability report, etc.
- 
- Periodic inspection of the problems and issues of the local community and establishment of mid-long term CSR strategy reflecting the results
  - Support the autonomous growth of ICT-related social companies

# STRATEGIC FOCUS AREA







SK holdings, through the launching of a business-type holdings company system, aims to foster its new growth business while maintaining the stable portfolio system of the existing company.

To that end, we are implementing a creative and innovative management to build a foundation for the new growth business, and striving to strengthen the company's competitive edge through SHE management and talent management. Also, through genuine social contributions, we are playing our part as a responsible corporate citizen.

### Key Stakeholders by Material Issue

**Creativity and Innovation Management:** Shareholders and investors, customers, employees

**Safety, Health and Environment Management:** Employees, business partners, environment

**Human Resource Management:** Employees, business partners

**Social Contribution:** Local communities

### Performance and activities related to main issues regarding sustainability



R&D investment

**KRW 29.6 billion**



Hiring of socially alienated people

**115 people**



Occurrence of disasters

**0 cases**



Ratio of subscription to volunteer service groups

**85 %**

# DMA

DISCLOSURE ON  
MANAGEMENT  
APPROACH

## 01. CREATIVITY AND INNOVATION MANAGEMENT



### Background of Selection as Core Aspect

SK holdings was a holding company with the purpose of controlling other companies by owning their shares and generated its main income from dividends. While industrial restructuring occurs rapidly in the global Market, Global Leading Company are emphasize business transformation by convergence and combination. The operational holding company may deploy a stable sustainable business environment for new growth domains as a holding company may directly lead areas that require long-term investment for the future. Through the launch of the integrated holding company, new promising businesses can be easily explored and integrated with SK investment equities. Thus, SK holdings is able to secure a portfolio with high growth potential and stability. SK holdings has adopted a vision of ‘Leap forward into a global holding company securing a growth business-centered portfolio’. To that end, it strives to enhance the competitiveness of the portfolios held by its subsidiaries, explore and foster new growth business lines, and create social values based on its economic achievements.

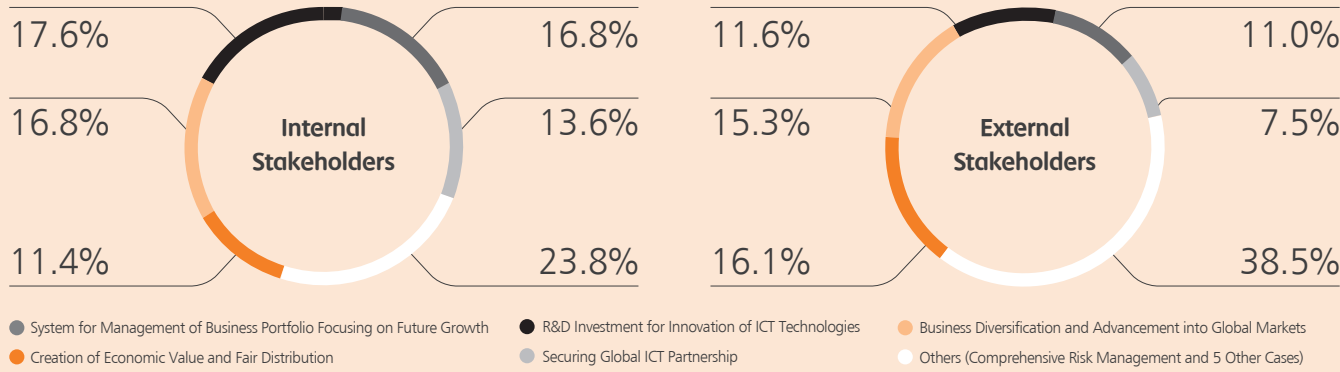


### Degree of Attention of Stakeholders

Key material issues have been analyzed by classifying the stakeholders of SK holdings into internal (employees) and external (customers, partners, local communities etc.). As a result, the material issues that were selected as top-ranking in the economic areas include ‘Creation of economic values and fair distribution’, ‘enhanced business diversification and advancement into global markets’, ‘systems for managing business portfolio focusing on future growth’, and ‘R&D investment ICT technology for innovation of ICT technologies’. ‘R&D investment ICT technology for innovation of ICT technologies’ was selected as a material issue by 16.3% of the internal stakeholders while ‘economic value creation and fair distribution’ was selected as a material issue by 14.8% of the external stakeholders.



### Attention of Stakeholders Results



### Key Achievements and Objectives

Classification (Material Items)	2015 Objectives	2015 Achievements	2016 Objectives
R&D	<ul style="list-style-type: none"> <li>Enhanced application of NEXCORE Mobile Platform</li> <li>Increased registration of patents</li> </ul>	<ul style="list-style-type: none"> <li>Won a project to build a sales support system applying the NEXCORE Mobile Platform</li> <li>Increased number of patents compared with 2014</li> </ul>	<ul style="list-style-type: none"> <li>Securing global competitiveness of Vertical solution (Watz Eye, Smart Factory, etc.)</li> <li>Securing Cloud · Watson-based Sellable solution</li> <li>Continued support to filing new patents</li> </ul>
Creation of Social Value	<ul style="list-style-type: none"> <li>Promotion of businesses linked to creation of social value</li> </ul>	<ul style="list-style-type: none"> <li>Deployment of integrated operations system for 2015 Gwangju Summer Universiad</li> </ul>	<ul style="list-style-type: none"> <li>Continued exploration of business items related to creation of social issues</li> </ul>



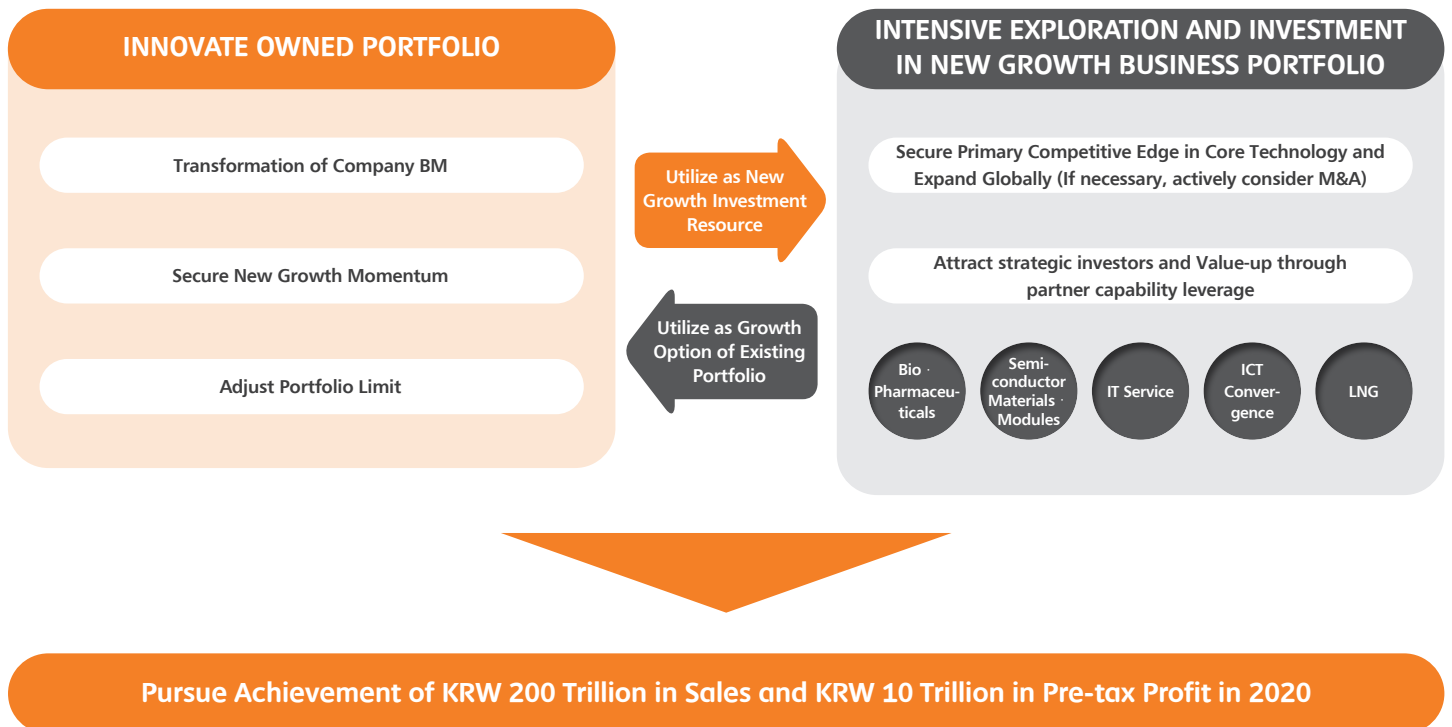
# CREATIVITY AND INNOVATION MANAGEMENT

## GROWTH-FOCUSED FUTURE STRATEGIES FOR ENHANCING BUSINESS COMPETITIVENESS

SK holdings' financial structure has been improved based on the resources held by the holding unit(holdings) and ICT-service based business opportunities held by its business unit(C&C). Its competitiveness has been further enhanced as it can explore new growth engines more easily, including diverse new promising businesses.

SK holdings does its utmost by concentrating all of its resources in order to satisfy the expectations of its stakeholders by attaining KRW 200 trillion sales and KRW 10 trillion profit before tax by 2020. In particular, it plans to develop into a global operational holding company by intensively fostering five growth areas, including IT service, ICT convergence, LNG value chain, bio-pharmaceuticals, semiconductor materials and modules.

### Business Strategies



## R&D THAT LEADS TECHNOLOGICAL INNOVATION

The recent advancement of ICT technology in the fields of cloud computing, big data and artificial intelligence is creating big changes not only in the individual's life style but also in the way companies operate and their business models. Business are actively utilizing these technologies to create new formats of innovation, going beyond merely supporting and improving the businesses of existing organizations.

SK holdings defines this phenomenon as the 'Digital Transformation', and strives to develop systematic technologies and solutions so that customers can create new value through redefining our business model and value chain model.

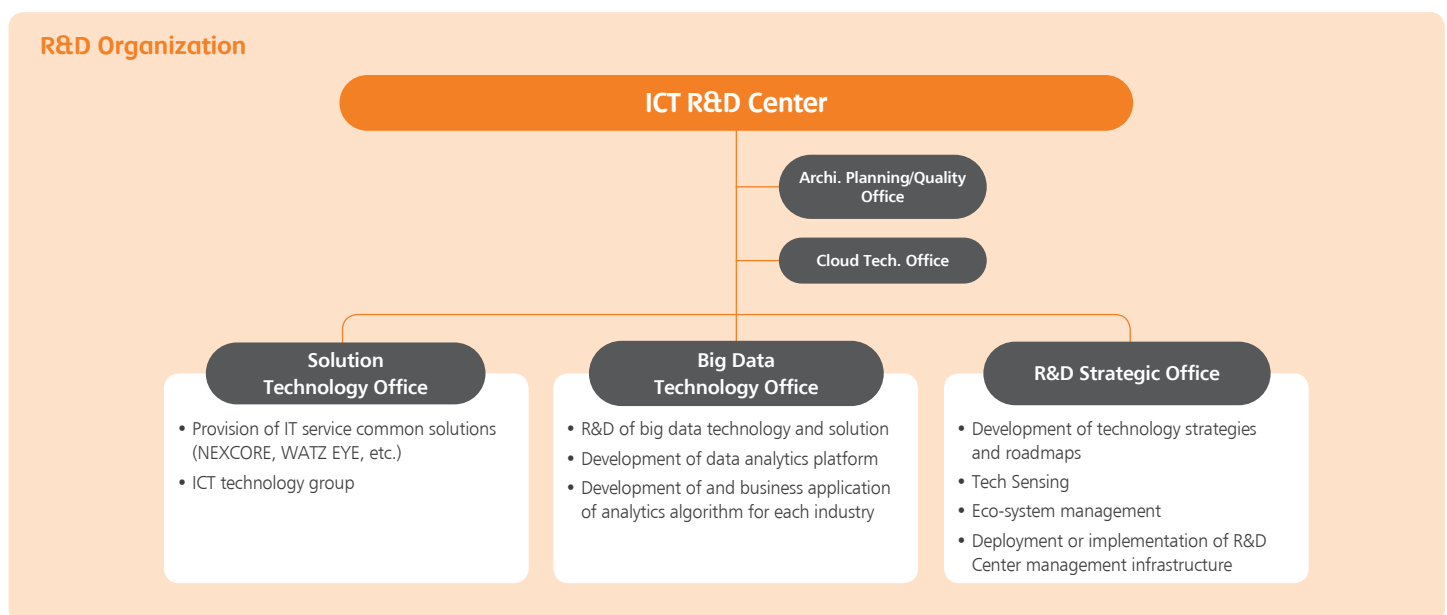
### R&D Process

SK holdings utilizes an R&D process according to a lifecycle comprising the following stages: Basic and core research, ideation and applied research, product · process development, product launch, sales · marketing and product · technical service support.

During the basic · core research stage, SK holdings performs technical level analysis based on market and technology trends. Then, through ideation and applied research, SK holdings analyzes a competitive target market, establishes a long-term solution roadmap and responds efficiently to the market. During the development stage, SK holdings devotes its capabilities to development and improvement using technology developed through research. Then, it organizes R&D activities for the innovation and optimization of products · processes. Through these activities, R&D outcomes are made into products, provide technical and solution support services, and then reflect market feedback on products for future improvements.

### Organization and Human Resources

SK holdings R&D organization consists of teams subordinate to ICT R&D Center which are responsible for solution technologies, big data technologies, architecture planning and quality, cloud technologies, and R&D strategies. The solution technology team develops application development and solution product groups for IT services while the big data technologies team concentrates on development of a New ICT technologies such as Big Data, IoT etc. The architecture planning and quality team performs establishment and diagnosis of key business architectures while the cloud technologies team resolves the technical issues of IaaS services and secures Multi-Cloud operating technologies. The R&D strategy team develops technological strategies and roadmaps, and performs functions for creating the R&D environment.



## MAJOR R&D ACTIVITIES AND ACHIEVEMENTS

SK holdings develops application frameworks for enterprises, mobile applications, big data and IoT solutions for businesses, and smart card products. The company selects major R&D tasks and conducts R&D to expand its business and customer base. By continuously finding new customers and increasing distinct technologies, the company will bolster its core capabilities and expand its revenue streams.

### NEXCORE Solutions for Business

NEXCORE is the brand for a group of solutions for business SK holdings has developed to enhance its development productivity and quality of business applications from 2001. This is a product group that integrates know-how in both system integration and solutions development accumulated by SK holdings over a long period of time. The group has been adopted in over 600 projects and received favorable reviews. It has been highly recognized in diverse sectors, including finance, public, service and manufacturing from small to large next-generation systems at home and abroad as it provides outstanding performance, stability and convenient functions.

#### NEXCORE Product Groups

##### Framework Product Groups

Application framework supporting the most platforms in Korea, determining quality, performance and perfection of entire systems

##### Mobile and Smart Web Platform

Korea's first platform for development and operation of integrated mobile services that supports diverse mobile environments

##### UI Framework Product Group

HTML5-based UI product group supporting diverse OSs, devices and browsers without using RIA or ActiveX.

##### Quality Automation Tools Product Group

Group of tools for automation of the design and testing processes and control for real-time quality inspection and process management

**NEXCORE Framework** Application framework refers to a product in which the foundation of the system was pre-configured to ensure ease and convenience during the development process. To increase convenience and efficiency, the inspected and qualified design, common module, and support tools provided by an application framework allow the reuse and automation of a variety of features during the construction and operation of IT systems. The NEXCORE Framework is an integrated framework product that encompasses all elements, including the online/batch framework, operations support tool, development standard and more.

#### Features of NEXCORE Framework

##### High Output Ensuring Optimum Performance

- Optimized execution architecture ensuring high performance and availability
- Upgraded standardization of code quality for centralized management of technology elements

##### Efficiency of Development and Operation

- Unified development architecture enabling development focusing on business
- Enhanced reusability with Loosely-Coupled structure

##### Stability across Operations

- Execution architecture maximizing stability
- Early discovery of and response to risks through code inspection and impact analysis

##### Business Visibility of Systems

- Centralized governance of meta information
- Abundant operation management tools
- Visual Coding

##### Flexibility of System Requirements

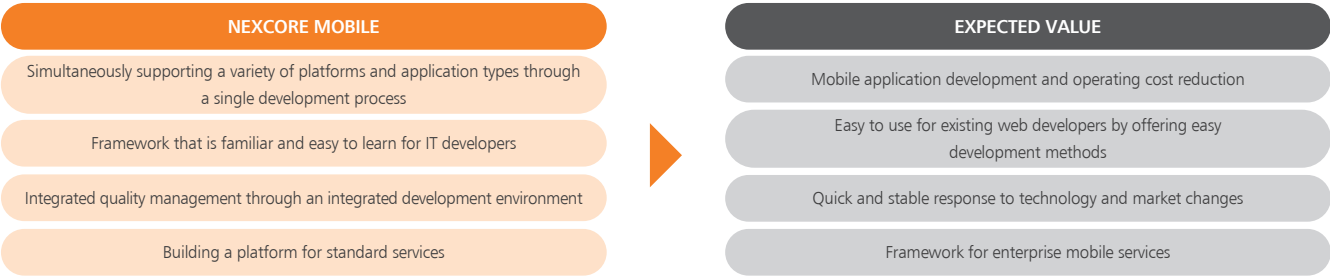
- Accommodation of diverse development languages
- Any OS, Any DB, Any Middleware
- Framework core engine that can easily replace the framework structures of other companies

##### Real-time Response to Changes in Environments

- Hot-Deployment enabling real-time response to changes in business environments
- Advanced development architecture enabling speedy development of new services and ensuring the period of existing services during repair and maintenance
- Ongoing standby of high-level support personnel

**NEXCORE Mobile Platform**► NEXCORE Mobile Platform provides an environment for developing and operating all mobile service systems that enable the users to use diverse information and services offered by a business directly on their mobile devices. NEXCORE Mobile Platform is an enterprise mobile application development platform that enables speedy and easy development of mobile websites and applications on diverse mobile devices, provides smooth connections with diverse legacy modules, and enables efficient management of the entire mobile system. NEXCORE Mobile Platform enables prevention of additional burden of development and reduction of the customer’s operational costs despite the rapidly changing technology trends and diversity of mobile operating systems. Met Life Insurance APAC mobile sales system is Asia’s first comprehensive smart insurance sales support system developed based on NEXCORE Mobile Platform. It can be used on diverse mobile devices. It has been highly evaluated as it propagated the mobile sales environment to all insurance service functions, as it was previously limited to certain functions only, such as product design and customer management. In 2016, KB Kookmin Bank Tablet Branch(ODS) System is scheduled to start a visiting channel service. It provides financial services using a tablet PC that enables bank employees to access the bank’s computing system online to sell financial products to new customers, open a new account, accept applications for card issuance or loans at the premises of customers.

Expected Value of NEXCORE Mobilet



**Alopex UI Platform**► As more customers require mobile support and cross browsing services, examples of applying HTML5 to application UIs have increased drastically. Alopex UI, HTML5-based UI Framework, has a diversity of powerful UI components, including grid UIs, and enables speedy screen prototyping fetching of existing web pages or using built-in templates as it is based on HTML5. It enables speedy development by generating or sharing templates.

Functions and Effects of Alopex Uis

Functions	Effects
	Full-scrolling based expression of over 1,000,000 pixel data without screen white blinking or paging.
Korea’s best grid components	Maximizes user convenience by providing sorting, filtering, export, copy and paste, and cell-based statistical functions, comparable to Microsoft Excel.



## Watz Eye Convergence Control Platform

Watz Eye is a program that controls physical equipment inclusively for video capturing, security and disaster prevention. It provides effective physical security by rapidly processing data concerning events detected by various sensors and devices, based on pre-defined Standard Operating Procedure (SOP) following their integrated analytics and management.

Watz Eye may be applied to diverse domains, including safety and disaster prevention, smart factory, abnormal process management, urban control, major facility security, and traffic control. It has many examples of successful system deployment.

### Features of Watz Eye Services



#### Support of Integrated Control

Provision of easy integrated control to diverse subordinate systems and devices



#### Real-time Actions against Abnormal Conditions

Abnormal conditions are accurately detected using inclusive monitoring of device conditions and accurately treated based on response scenarios set up in advance.



#### Real-time and Past Image Analysis

Events are rapidly analyzed and actions are taken against abnormal symptoms through automatic detection and rapid searching of past images.



#### Data Visualization

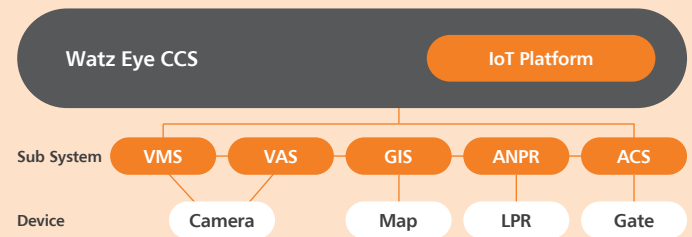
Speedy decision-making is supported by providing intuitive statistical data by visualizing the outcomes of analysis.



#### Interoperation with IoT Platform-based Devices

Compatibility ensured among heterogeneous types of equipment and integrated stable management of multiple devices

### Watz Eye Configuration Chart



- CCS: Convergence Control System
- VMS: Video Management System
- VAS: Video Analysis System
- GIS: Geographic Information System
- ANPR: Automatic Number Plate Recognition
- ACS: Access Control System
- LPR: License Plate Recognition

## Watz Eye Deployment Examples



Incheon International Airport Security System



ITS System (Azerbaijan and Vietnam)



Ashkhabad Safe City (Turkmenistan)

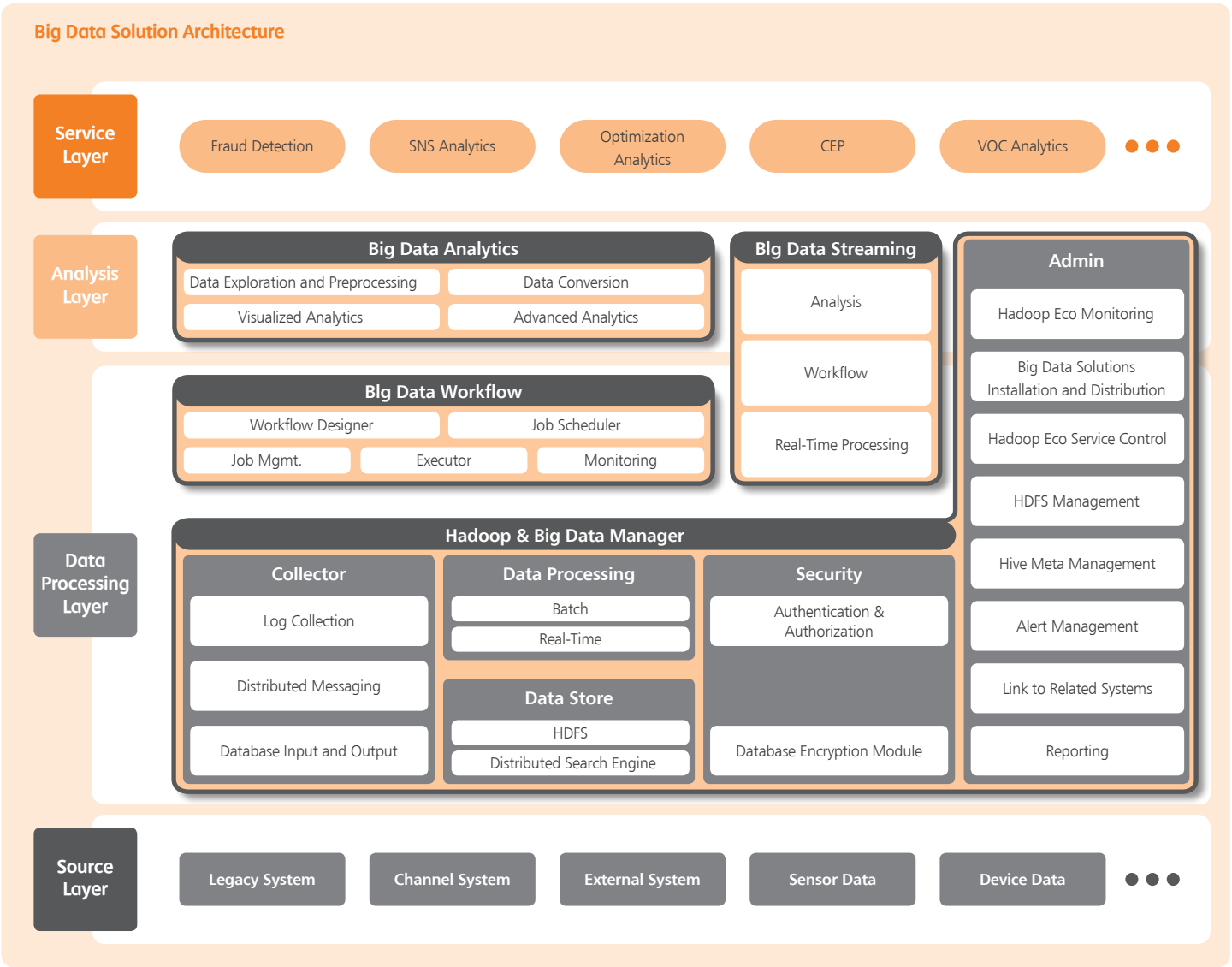


U-Gangnam Safe City Control Center

Big Data Solutions

SK holdings is developing big data processing functions with enhanced monitoring and operating functions based on open source and a total big data solution package that consists of statistical analysis, real-time data processing, and batch job management functions. To support creation of new businesses and enhancement of competitiveness, it applies big data core technologies, including Hadoop, Spark, and R, which can reduce costs compared to commercial solutions as they can respond to rapid technological changes because they are based on open source.

The big data solution consists of four solutions - 'Hadoop & Big Data Manager', 'Big Data Analytics', 'Big Data Streaming', and 'Big Data Workflow'. Hadoop & Big Data Manager is a solution that has added integrated support monitoring, remote control, and installation and distribution functions to an open source standard package that provides functions for collection, storage and processing of large volumes of data based on Hadoop. Big Data Analytics is a solution for data analytics and visualization providing analytics algorithms for statistics, mining and machine learning. Big Data Streaming is a solution for real-time processing and analytics that enables timely perception of new insights by rapidly processing and intuitively visualizing large volumes of data collected in real-time. Big Data Workflow is a solution for large-volume batch job development and operation that provides functions for job scheduling and monitoring while designing component-based Drag & Drop mode workflow for Hadoop large-volume batch jobs.



**Features of Big Data Solutions** The key functions, expected effects and utilized areas of the four domains of big data core technologies are as follows.

Core Technology Domains	Key Functions	Expected Effects	Utilized Areas
Hadoop & Big Data Manager	<ul style="list-style-type: none"> <li>Collection, storage and processing of large-volume data</li> <li>Integrated operation and management of Hadoop systems</li> </ul>	<ul style="list-style-type: none"> <li>Operational efficiency enhanced and rapid response to failures by inclusively monitoring multiple Hadoop clusters</li> </ul>	<ul style="list-style-type: none"> <li>Easy initial configuration of Hadoop infrastructure for performing projects</li> <li>Provision of environment for integrated monitoring when Hadoop systems are operated</li> </ul>
Big Data Analytics	<ul style="list-style-type: none"> <li>Exploratory analytics functions through visualization functions</li> <li>Provision of functions for statistical analytics and diverse R libraries</li> </ul>	<ul style="list-style-type: none"> <li>Reduction of costs as programs are developed based on open source R</li> <li>Work efficiency is enhanced as programs can be easily used by beginner analysts and marketers as GUI environment is provided similar to that of commercial solutions</li> </ul>	<ul style="list-style-type: none"> <li>Essential analytic tools required for marketers and data analysts of businesses</li> </ul>
Big Data Streaming	<ul style="list-style-type: none"> <li>Intuitive real-time Rule design and data flow control</li> <li>Real-time visualization of analysis and monitoring results</li> </ul>	<ul style="list-style-type: none"> <li>Direct search of real-time collected data in memory format, detect events and perform distributed processing</li> </ul>	<ul style="list-style-type: none"> <li>Utilize on works that need event detection in real-time based on Rule and monitoring</li> </ul>
Big Data Workflow	<ul style="list-style-type: none"> <li>Design flow for massive data analysis processing</li> <li>Comprehensive scheduling and control for overall batch job</li> </ul>	<ul style="list-style-type: none"> <li>Increases development productivity because of easy workflow design through web-based drag &amp; drop</li> <li>System administrator can easily check all jobs distributed by server in one view</li> </ul>	<ul style="list-style-type: none"> <li>Tool for IT development administrators who are not familiar with Hadoop-based development environment</li> </ul>

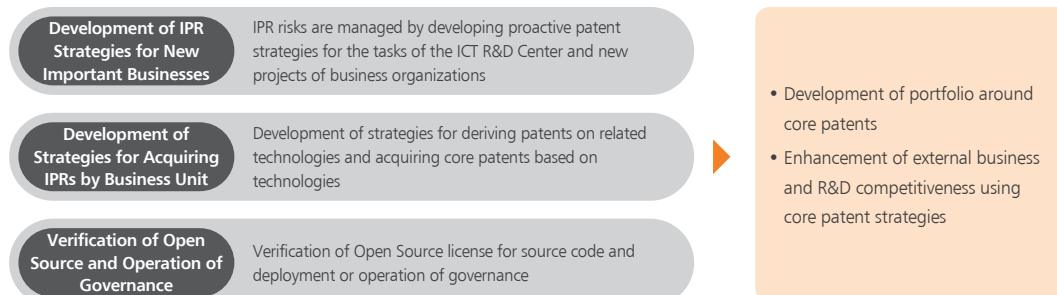
## MANAGEMENT OF INTELLECTUAL PROPERTY RIGHTS RELATED TO R&D

SK holdings have a total 201 patents as of 2015. This is the result of its consistent efforts for increasing and managing patents through R&D. It has developed systems for management and support of intellectual property rights (IPRs) for each stage of R&D and business activities. It also lays the foundation for sustainable growth by licensing such intellectual property rights. For management of intellectual property rights, the company supports R&D projects at each stage, supports business exploration as well as commercialization of acquired intellectual property rights.

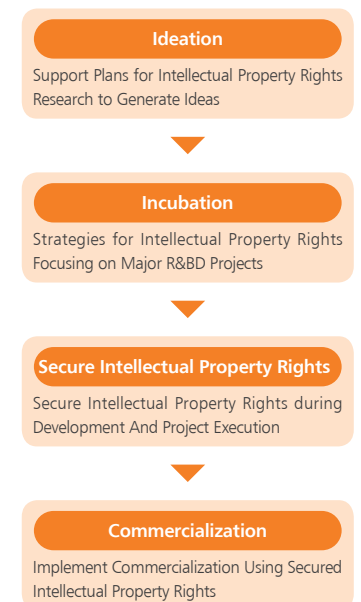
### Patent Status

Business Lines	Number of Cases	Domestic		Overseas	
		Filed	Registered	Filed	Registered
ICT R&D	149	23	106	14	6
IT Services (SI, OS)	49	21	28		
Others	3	1	2		
<b>Total</b>	<b>201</b>	<b>45</b>	<b>136</b>	<b>14</b>	<b>6</b>

### Management Activity and Direction of Support for R&D -related Intellectual Property Rights Support Plan



### Intellectual Property Rights Support Plan for Each Stage of R&D



## INCREASED CREATION OF SOCIAL VALUE

Traditionally, businesses have given back to society through the economic value they create for society. But, as of late, the landscape has changed to the extent that business activities have expanded now to include creating social value in addition to economic value. SK holdings will utilize its IT business to expand effort towards social contributions, ensuring the protection of life and safety and increasing human happiness, all the while giving back to society through practicing good corporate social responsibility.

### Deployment of a Backbone Network for Efficient Government Administration in Bangladesh

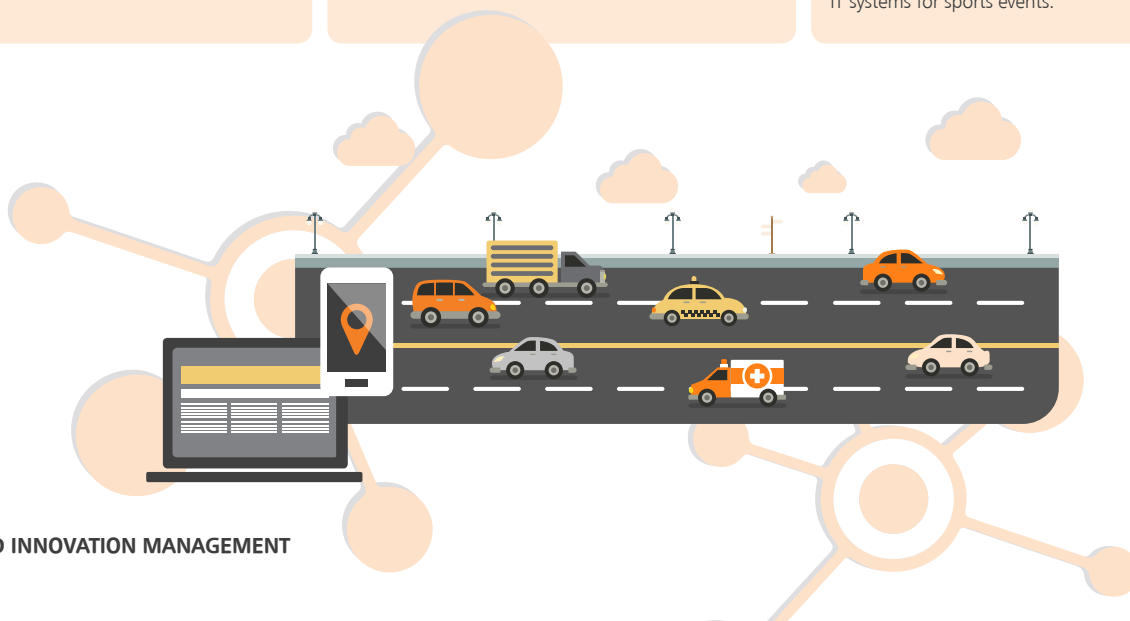
SK holdings deployed a national backbone data network including networks for dedicated optical cable, transmission and Internet by connecting all of the 368 different sites of the central and subordinate administration agencies of Bangladesh by one backbone network in July 2015. This was an infrastructure project for binding independent networks deployed in different Bangladesh regions into one nationwide network, enabling central government level management of public information which was previous managed separately in different regions. For the project, a comprehensive IT resource management system was developed by deploying a Total Operation Support System (TOSS) enabling real-time performance and failure monitoring across the entire system, including operating software, as well as IT infrastructure such as servers and storage devices of the e-government network.

### Deployment of Intelligent Transportation System (ITS) Enhancing Transportation Efficiency

ITS(Intelligent Transportation System) is a transportation system enabling efficient operation of safe transport environment by combining ICT to the existing transportation infrastructure. ITS is a system that enhances transportation efficiency by combining IT technologies to existing road infrastructure. It enhances the quality of life for citizens as it contributes to enhancing the efficiency of transportation infrastructure in terms of traffic flow, transportation, socio-economic policies, energy and the environment by using the most advanced IT technologies. SK holdings has successfully implemented over 40 projects at home and abroad, including overseas projects in Azerbaijan and Mongol.

### Deployment of Integrated Operation System for 2015 Gwangju Universiad Applying the Most Advanced IT Technologies

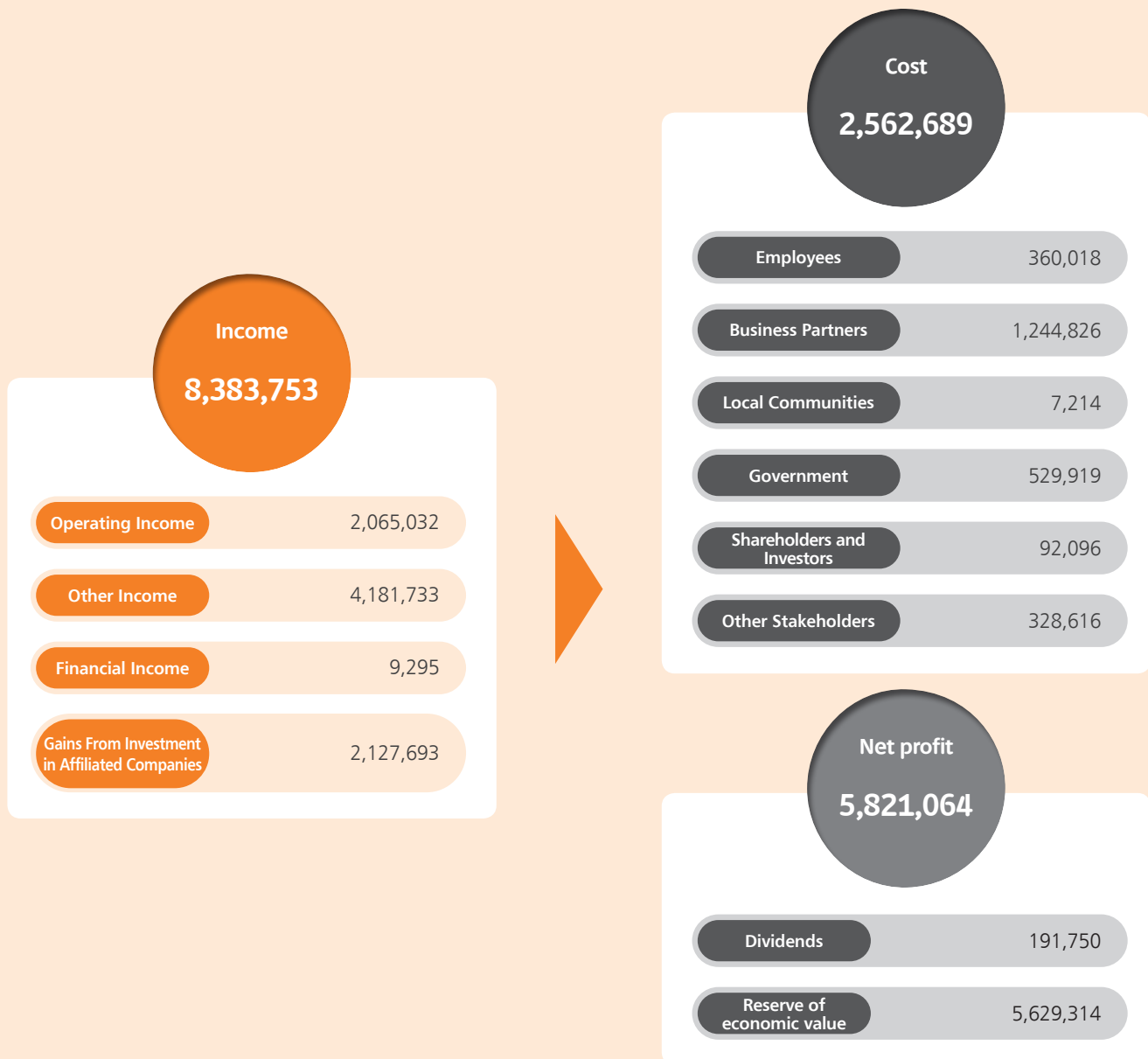
SK holdings contributed to the realization of the most advanced IT-enabled Universiad (ITversiad) based on IT technologies by deploying a Total Integration Management System (TIMS) for the 2015 Gwangju Summer Universiad. The TIMS consists of five key systems – Universiad management system that effectively controls and support the functions of its organizing committee, recording and measuring system that measures and scores records by game, results processing system for real-time accurate handling of game results, and Universiad information distribution system that rapidly provides the players, umpires, and viewers with the game results. The system played the core backbone roles of the ITversiad, a comprehensive sports event, during its period as it was systematically interlinked. Furthermore, the TIMS that has been applied to the current event will be utilized for next Universiad events as it is provided to the International University Sports Federation (FISU). The deployment of the system has contributed to the creation of new business opportunities in the area of deploying future IT systems for sports events.



## CREATION OF ECONOMIC VALUE AND FAIR DISTRIBUTION

The efforts of a business for enhancing happiness should be made in the direction of attaining balanced relations and roles between the business and its stakeholders, which are sustainable for a long period. To that end, SK holdings has contributed to society and economic development through fair distribution and steady creation of economic value for its future growth while increasing value for stakeholders.

Unit: KRW 1 million, based on 2015



# DMA

DISCLOSURE ON  
MANAGEMENT  
APPROACH

## 02. SAFETY, HEALTH AND ENVIRONMENT MANAGEMENT



### Background of Selection as Core Aspect

The temperature has risen and natural disasters occur more frequently across the world due to the environmental contamination attributable to industrial development. In the case of the Korean peninsula, the annual average temperature has steadily risen over the past 10 years and water shortage caused by drought occurs more frequently. IT services operated by SK holdings have limited impact on the environment unlike general manufacturing businesses. Yet, more power and water are used to cool off the rising temperature of its data centers essential to IT services.

Furthermore, as power consumption increases as more data centers are required along with the development of such new technologies as cloud computing and IoT, the energy consumed by SK holdings has become the main cause for greenhouse gas discharged by its facilities.



### Degree of Attention of Stakeholders

Stakeholders in and outside SK holdings have selected 'Protection of workers' safety,' 'Reduced discharge of greenhouse gases and ozone-harming materials', and 'Efficient use or conservation of energy (power etc)', 'Compliance with environmental laws', 'Eco-friendly products and service from customer's point of view' as the highest-ranking issues in the areas of safety and environment. In particular, 16.4% of internal stakeholders and 13.2% of external stakeholders believe 'Efficient use or conservation of energy (power etc.)' to be a material issue, demonstrates their high concern regarding the issue.



### Attention of Stakeholders Results



### Key Achievements and Objectives

Classification (Material Items)	2015 Objectives	2015 Achievements	2016 Objectives
Upgrading of Safety, Health and Environment	<ul style="list-style-type: none"> <li>Development of SHE-centered management system</li> <li>Non-occurrence of major SHE accidents.</li> <li>Deployment of systems for addressing emergencies related to office building safety</li> </ul>	<ul style="list-style-type: none"> <li>Completion of development of SHE policies and regulations</li> <li>Number of major SHE accidents: 0 case</li> <li>Deployment of systems for addressing emergency related to office building safety</li> </ul>	<ul style="list-style-type: none"> <li>Practice of and compliance with SHE-centered management activities</li> <li>0 major SHE accidents maintained</li> <li>Continuous performance of drills addressing emergencies related to office building safety</li> </ul>
Programs for Safety and Health of the Employees	<ul style="list-style-type: none"> <li>Enhanced intensive management of those with symptoms and diversification of management items to improve health management</li> </ul>	<ul style="list-style-type: none"> <li>Health counseling for those with symptoms</li> <li>Amendment to guidelines for enforcement of physical examination system</li> </ul>	<ul style="list-style-type: none"> <li>Improvement of counseling process based on health examination results</li> <li>Continuous enhanced intensive management of those with symptoms and diversification of management items</li> </ul>
SK holdings Prepared against Climate Change	<ul style="list-style-type: none"> <li>Daedeok Data Center's Response to greenhouse gas(GHG) and Energy Target Management System</li> </ul>	<ul style="list-style-type: none"> <li>Deployment of system for real-time measurement of power usage effectiveness (PUE) and greenhouse gas (GHG) emissions</li> </ul>	<ul style="list-style-type: none"> <li>Maintain greenhouse gas emissions</li> </ul>





# SAFETY, HEALTH AND ENVIRONMENT MANAGEMENT

## UPGRADING OF SAFETY, HEALTH AND ENVIRONMENT

Sustainability Management Team, Sustainability Management Division of SK holdings promotes SHE (Safety, Health, Environment)-centered management in order to ensure stable IT services while protecting the company and its employees from large accidents or failures. The employees are encouraged to actively participate in the activities based on its SHE management policies. The company will strive to enhance its SHE management level by having the SHE management system instilled in the employees.

**SHE-centered Management System** > SHE management system operates four target areas set up for intensive management to prevent injury, damage or contamination risks to the employees, the environment, asset services and images, including bodily injury, property loss, environmental pollution, and IT-related incidents.

### Value Pursued in SHE

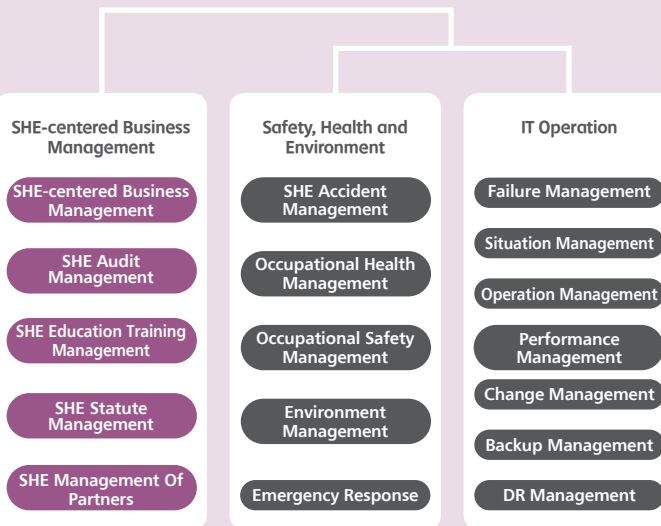
The company pursues happiness of its stakeholders by upgrading the company's SHE-centered management system to a level that ensures sustainability and the trust and support of society.

### 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

### SHE Management Elements



### SHE Capabilities

Technologies

People and Organization

### SHE Culture

Leadership

Rules and Discipline

Follow-up Management

## 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 below-listed:

### 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.

### Strengthening of 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 that are actively participated in by 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 minimizing emissions of pollutants deeply, realizing its corporate responsibility.

**Operation of SHE-related Consultative Body>** To discuss the SHE business management system and related issues periodically, SK holdings organized a SHE-related consultative group and records, manages, and reflects all of its decisions on its SHE business management system. Occupational safety and health committees have been organized to cover the areas of health and safety while the agenda belonging to the other areas is reported to the SHE management agent for being separately handled when it is received by department heads responsible for SHE-related activities. The consultative group is attended by the SHE management agent, team leader proposing the agenda, department head in the relevant area, and head of the department responsible for SHE activities. Internal and external experts may be invited as required. The head of the department responsible for SHE activities gives notice of the agenda to discuss, place, and date at least one week prior to a meeting and the results are publicly announced to all of the employees so that SHE management may actually be instilled in them.

**Structure for Sharing Information Concerning SHE-related Accidents>** The structure for sharing information concerning SHE-related accidents and contact numbers are publicly announced to the employees so that they may report any SHE-related accidents to the team responsible for the relevant accident or the superior personnel (unit directors or division head) upon their discovery. The organizations those who are responsible for or to be notified or informed of accidents have been appointed by classifying them into serious and general accidents. A structure is set up to enable rapid response by assigning different roles and responsibilities to different departments or subsidiaries for recognizing and handling accidents. When a SHE accident takes place, an investigation team is also organized to explore the cause and measures for preventing recurrence are developed to complete the necessary actions within a given time. The SHE accident-related records are archived permanently. Implications are analyzed and consistently improved upon.

**Enactment of SHE Policies>** To let the SHE business management system function substantively, SK holdings enacted and published corporate policies segmented into three operational elements of SHE business management, safety, health and environment, and IT operation. Such policies not only provide specific guidelines for preventing SHE accidents but also enable preemptive prevention of failures by establishing standards and procedures with even potential risks taken into consideration. Furthermore, policies concerning citation and punishment and education contribute to enhancing the perception level of SHE management by the employees.

**SHE Change Management>** SK holdings has implemented campaigns, training and other programs fully realizing that change in the employees’ perception is critical to the proper establishment of SHE management. It has produced and distributed screen savers containing hints for responding to emergencies and methods of escape. It has also affixed information plates covering escape routes in the meeting room on the 3rd floor of the main office building so that visitors may recognize them in the occurrence of an emergency. The escape route information is also shown on monitors inside the elevators of the Pangyo Campus. Automated external defibrillators (AED) and ambu bags are installed on the 1st floor of the respective office building as their installation in public places has become mandatory under the Act on Emergency Medical Service. The employees are trained in CPR and first aid procedures and in emergency escape through internal broadcasting. The personnel in charge of security, cleaning and maintenance are also trained each year so that all of the employees may work in safe conditions while reducing the risk of accidents.

State of Safety Training				
Classification	Unit	Year		
		2013	2014	2015
Personnel Trained	persons	80	125	139
Total Personnel	persons	81	125	139
Training Completion Rate	%	99	100	100

**Partner SHE Management>** SK holdings also encourages its business partners to understand and comply with its SHE business management system to manage SHE management activities more thoroughly. In particular, to prevent or address SHE related accidents, the SHE management capabilities of the business partners are enhanced by assessing their SHE management level to reflect on its policies related to procurement.

## PROGRAMS FOR SAFETY AND THE HEALTH OF THE EMPLOYEES

**Support to Enhancement of Health of Employees** SK holdings has also supported health examinations, collective injury insurance, eco-friendly agriculture produces, fitness suites, and health management offices in order to improve the health of the employees.

In 2015, the company newly installed a health management office and fitness suite at its Pangyo campus, which provide a health counseling service, blood pressure gauging, blood tests (cholesterol, blood sugar), medicines and first-aid treatment. It conducted 1:1 mental and physical training programs for checking or treating employees with poor posture. It has also contributed to the enhanced health of their family members by providing mental and physical training programs to their children during vacations. Furthermore, it has also provided free flu vaccinations to its employees. From 2015, all employees may have the flu vaccination even if they are allergic to chicken eggs as new vaccines are produced using a cell cultivation method rather than the old method of using fertile chicken eggs.

'Sympathy Plus', a psychiatric counseling office, contributes to the mental stability of the employees by conducting psychiatric state tests concerning baby nursing stress and the ENRICH couple relations examination as well as conventional personality, job, and learning-related counseling.

### Quit-smoking Clinic Service

SK holdings provided a quit-smoking clinic service to 105 persons who wanted to quit smoking. It was going along for six months from September 2015 while public attention was focused on smoking cessation. A total 12 quit-smoking sessions consisting of individual counseling and management programs were provided once every other week in cooperation with local public health offices. Supplementary kits (patches, vitamins, etc.) were also provided. To raise the success rate, in particular, the company operated a matching fund program under which it pays subsidy in accordance with the amount borne by individuals. If one fails to quit smoking, the amount paid by him/her is donated. This contributed to motivating the smoker to quit smoking.

### Deployment of Systems to Respond to Communicable Diseases

Serious economic and social damages are caused by communicable diseases running rampant worldwide, including MERS, Ebola, and swine flu. In view of the characteristics of business types that are exposed to visits by many customers, programs for preventing communicable diseases are essential to maintaining the health of the local communities as well as the employees. When MERS broke out in 2015, SK holdings immediately provided its employees with action guides and masks wearable by them at anytime, and emphasized augmented personal hygiene through enterprise-wide notices. Some of the entrances of the home office building were closed. 24-hour monitoring was conducted by nurses and security guards by installing heat-detecting cameras. Cafeterias, cafes, health centers and other places frequented by people were disinfected and quarantine actions were taken as required. By establishing absenteeism rules for MERS suspected or diagnosed employees, they were ordered to stay at home while those who had been on a business trip to any of the countries where MERS broke out were required to take a mandatory health examination upon returning home.



Quit-smoking Clinic



Real-time Monitoring of Communicable Diseases

**Health and Safety Support to Employees who Travel Overseas for Business Purposes** SK holdings has introduced and implements overseas a health and safety support service to protect its employees who work on projects in areas vulnerable in terms of health and safety. Counseling is available 24 hours a day, 365 days a year on diverse medical and security problems they may encounter during their overseas trip or stay. They are repatriated to other countries or home as required. Furthermore, they are provided with vaccines, long-term traveler insurance coverage, domestic medicine and packages of necessities before departure.

# Climate Change Activities by SK holdings

## Caring about the Earth



### Analysis of Risk And Opportunity Elements

Climate change has become a risk element as the government strengthened environmental regulations, and electricity charges have been raised as the government is required to further reduce greenhouse gas emissions under 2015 Paris UN agreement on climate change. To this end, the Korean government implements an emission trading scheme and GHG and energy target management system in order to increase eco-friendly activities by businesses. In particular, if designated as a business establishment subject to energy target management, the business needs to submit a statement of particulars and reduce energy consumption by setting up a reduction target. Fines are imposed and non-performance is published if the business fails to attain the target. The business's burden for power bills has increased as the unit price of power has been raised. The government regulation and power rate increase work as risk elements for climate change. However, the business opportunities for green IT service are increasing as new and renewable energies become more important due to climate change, including solar power generation. Thus, SK holdings strives to develop eco-friendly workplaces by deploying green office systems or green data centers, realizing that climate change is an opportunity for business growth. To this end, SK holdings has carried out eco-friendly projects, including deployment of a green city experience center in Gangneung and sales of eco-phone sets.



### Response to Eco-friendly Regulations

The GHG and energy target management system is designed to help efficiently attain the targets that the business and government agree on or set for reduced GHG emission and energy consumption. SK holding Daedeok Data Center that was designated in 2015 as a business site subject to GHG and energy target management has developed specific plans to respond pursuant to the statutory requirements. To efficiently respond to energy related regulations, the data center has deployed a GHG inventory system that can automatically measure power consumption and real-time tally of GHG emission volume. In 2016, the company plans to secure capabilities to respond to the regulations by training expert personnel in-house. In addition, it obtained Green Data Center certification from Korea IT Service Association, and actively responds to tightened external eco-friendly requirements in accordance with the Carbon Disclosure Project (CDP), international certification concerning the environment.





## Activities and Achievements Relating to Response to Climate Change

### Development of Green IT Technologies

SK holdings possesses diverse green IT technologies, including EMS (Energy Management System), ESS (Energy Storage System), and AMR (Automatic Meter Reading) for deploying smart grid infrastructure. It has developed technologies and products related to smart grid. Based on such green IT technologies, it has performed projects for deploying a green city experience center in Gangneung and solar power generation systems.

Gangneung green city experience center consists of an integrated convention center and two experience and training centers in Gangneung-si, Gangwon-do. The green city experience center, using only natural energy only, such as solar power and geothermal heat, is an energy-independent building that consumes the energy that it produces without any external energy support. It is a new-concept building equipped with systems for zero fossil fuel use. SK holdings will continue its efforts for creating an eco-friendly world by actively responding to climate change through minimum energy loss, reduction of costs and GHG emissions using green IT technologies.

### Eco-friendly Office

To develop an eco-friendly work environment by reducing GHG emission, SK holdings continues its activities for enhancing the energy efficiency of its Bundang office building and building in its Pangyo campus. The Bundang home office building contributes to reduction of energy consumed and GHG emission by replacing existing illumination with LED lamps. It reduced its power bill by KRW 28 million and 106.23 tons of CO<sub>2</sub> emissions a year by replacing the illumination in its underground parking lot, emergency staircase, elevator halls and vestibulars with LED lamps.

Pangyo Campus uses 248 TOE of new and renewable energy, approximately 1% of their total energy by aggressively introducing eco-friendly equipment and appliances. By installing a heat pump, it uses geothermal heat raised from 150m underground for office cooling or and heating. It also installed an optical duct drawing solar ray into its underground parking space and installed a photovoltaic power generator for illumination of the parking lot.

### Eco-friendly Procurement

SK holdings has established procurement principles to ensure purchase of 'eco-friendly goods' that can reduce environmental pollution while contributing to conservation of resources compared to other products or services for identical usage, unless otherwise justified by some extraordinary causes.

Furthermore, it strives to block environmental risk elements proactively from the stage of procurement of raw materials, machinery and materials by reflecting the principles in its policies.

### Green Data Center Deployment

SK holdings has operated data center and deployed them in diverse facilities to reduce energy consumed by its data center which consumes large volumes of power. It attempted to reduce power consumption by replacing the existing illumination of the data center with highly efficient LED lamps and the old UPS constant temperature and humidity chamber with high efficiency-low energy consumption equipment.

Furthermore, it also developed a portable simplified containment to improve the cooling efficiency of the data center and installed it inside the computer room. The containment currently under use by Daedeok Data Center has been sold to computing rooms of other companies as it offers outstanding cooling efficiency, where it is installed and operated. The portable simplified containment contributes to creation of business opportunities using eco-friendly solutions as well as enhancing energy efficiency.

In 2015, it also deployed a DCIM (Data Center Infrastructure Management) System for efficient energy management through integrated operation of the data center infrastructure equipment. The DCIM system consists of modules for monitoring of the infrastructure equipment, temperature and humidity, and GHG emission volume.

The infrastructure equipment monitoring system contributes to early detection of failures, preemptive capture of signs, and reduction of time to action as it is designed to monitor, detect and control abnormal signs of the electric, mechanical and security equipment on a real-time basis. The temperature and humidity monitoring system in the computer room can monitor and analyze temperature trends on a real-time basis by installing temperature sensors on its IT system racks. It contributes to prevention of IT equipment failure and reduction of power consumed by remotely controlling the constant temperature and humidity chamber based on simulation and temperature and humidity of the computer room environment at the times when equipment is brought in or taken out of the computer room.

The PUE (Power Usage Effectiveness) & GHG Counting System measures in real-time the PUE and GHG emission volume, indicators of power efficiency of the data center, to effectively manage its power consumption. The systems also successfully respond to certification and regulation at home and abroad by developing mid- and long-term plans for reducing GHG emission.



Temperature and Humidity Monitoring System for The Computer Room



PUE & GHG Emission Calculation System

### 03. HUMAN RESOURCE MANAGEMENT

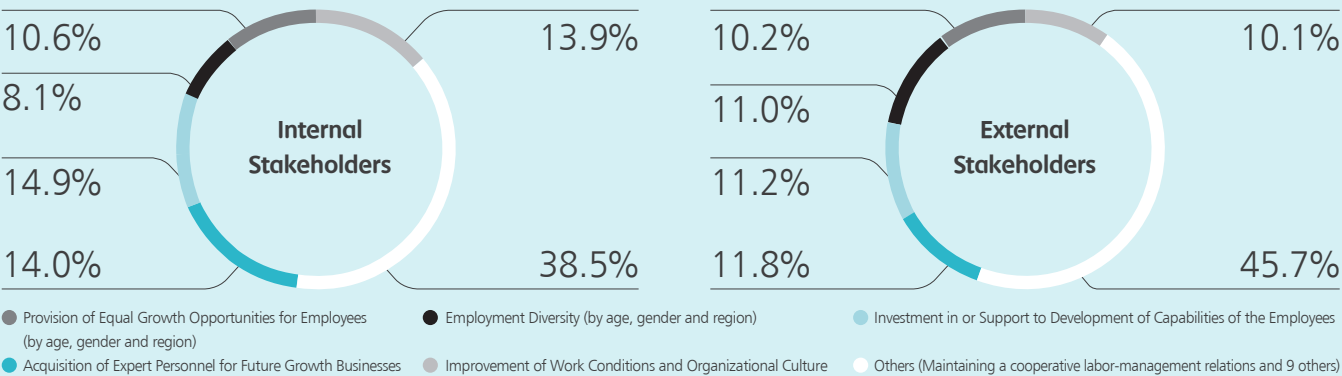
#### Background of Selection as Core Aspect

With the prolongation of the global economic recession slow growth rates are here for the foreseeable future and competition among businesses is becoming increasingly intensified. However, the IT service industry, SK holdings' business line, has been given more business opportunities based on new ICT technologies, including cloud computing and big data services. The company's key competitiveness includes its possession of project managers, consultants, architects and other experts with extensive experience in and outstanding technological competence for performing diverse IT projects. Accordingly, SK holdings concentrates its resources to develop family-friendly work conditions by performing family-friendly management in addition to its efforts for exploration and development of creative or innovative talents who can lead changes without being bound by conventional thinking, based on reasonable performance and compensation management.

#### Degree of Attention of Stakeholders

A survey of SK holdings internal and external stakeholders' degree of attention regarding HR-related issues revealed that they show high interest in such issues as those related to 'provision of equal growth opportunities to the employees', 'investment in or support to development of capabilities of the employees', 'acquisition of experts for future-growth business areas', 'diversity in hiring', and 'improvement of work conditions and organizational culture'. Among them, 'investment in or support to development of capabilities of the employees' was selected as a material issue by 14.9% of the internal stakeholders while 'acquisition of experts for future-growth business areas' was selected as material issue by 11.8% of the external stakeholders.

#### Attention of Stakeholders Results



#### Key Achievements and Objectives

Classification (Material Items)	2015 Objectives	2015 Achievements	2016 Objectives
Acquisition and Development of Personnel Pursuing Creativity • Innovation	<ul style="list-style-type: none"> <li>Enhancement of global HR capabilities</li> <li>Enhanced development of technology experts</li> </ul>	<ul style="list-style-type: none"> <li>Acquisition of global talents through global forums</li> <li>Expansion of training opportunities to GSP, MOOC, Techie Chat, etc.</li> </ul>	<ul style="list-style-type: none"> <li>Recruiting domestic and foreign ICT talent (Guru class)</li> <li>Strengthening of NEW ICT technology capability training</li> </ul>
Objective and Reasonable Performance Appraisal • Compensation	<ul style="list-style-type: none"> <li>Improvement of systems for performance appraisal and compensation</li> </ul>	<ul style="list-style-type: none"> <li>Improvement of appraisal system, Introduction of peer assessment among intermediate leaders</li> </ul>	<ul style="list-style-type: none"> <li>Extraction and improvement of problems of systems for performance appraisal • compensation</li> </ul>
Family-friendly Management	<ul style="list-style-type: none"> <li>Development of family-friendly corporate culture</li> </ul>	<ul style="list-style-type: none"> <li>Improvement of employee loans and scholarship schemes, Enhanced aid to congratulatory or condolence events for employees</li> </ul>	<ul style="list-style-type: none"> <li>Maintenance of certification of family-friendly management</li> </ul>





# HUMAN RESOURCE MANAGEMENT

## ACQUISITION AND DEVELOPMENT OF PERSONNEL PURSUING CREATIVITY • INNOVATION

SK holdings pursues a talented person who can win the trust of the customers with their enhanced capabilities by sharing accumulated knowledge while demonstrating expertise based on passionate thinking and posture. It also enforces the policies of hiring more handicapped persons for acquisition of diverse human resources without discrimination. It also implements education programs systematically for an increased development scope and using diversified education methods by developing roadmaps for competence development to respond timely to changes in business conditions.

**Acquisition of Diverse Human Resources without Discrimination** SK holdings strives to develop a corporate culture free from discrimination. It has made sure to remove any and all forms of discrimination based on ethnic group, gender, disability or religion in all of its HR management processes for hiring, compensation, appraisal, promotion and education. In order to prevent discrimination in hiring based on schooling, eligibility or qualifications that are irrelevant to duties, SK holdings has removed its employment application form columns for indicating history of awards, English proficiency scores, and overseas language training. It also exerts to ensure fair hiring through blind screening without requiring any personal identity related information in the hiring process. In particular, it aggressively increased employment of physically handicapped people twice over 2011 by implementing the 'Hope Internship' program designed to employ physically handicapped persons. As a result of its efforts for preventing discrimination based on gender, a female employee was promoted to an officer post for the first time in 2016, and the number of female managers or directors has steadily increased to fifteen.

### Employment of More Handicapped People through 'Hope Internship' Program

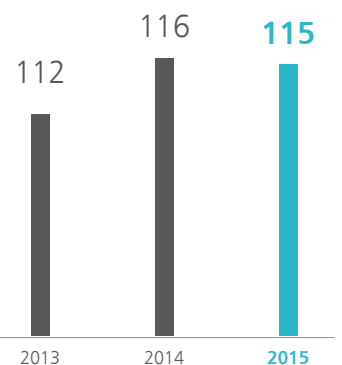
In the past, physically handicapped persons were hired through open recruitment that did not apply any separate categorization in order to provide equal opportunities without discrimination. From 2013, SK holdings has implemented its 'Hope Internship' program for hiring handicapped persons considering that competition with people without any form of handicap may in itself be a form of discrimination.

The 'Hope Internship' Program provides the interns with an opportunity to experience job duties at field departments in summer vacation of July to August after participating in a three-month program related to job duties from April. Then, some of them are hired for regular employment. In particular, SK holdings provides customized education in cooperation with the Korea Employment Agency for the Disabled considering the characteristics of the individuals. It also assigns the interns to related areas considering their home town.

The interns are helped to determine if they are qualified for or suitable for the job by providing them with opportunities to experience the duties they will be responsible for in advance through the 'Hope Internship' Program. The program provides quality jobs to disabled persons by improving their job skills and helping them to successfully start their career. SK holdings will continue the 'Hope Internship' Program to acquire outstanding human resources among disabled persons while fulfilling its corporate social responsibility.

Number of Employees from Disadvantaged Groups

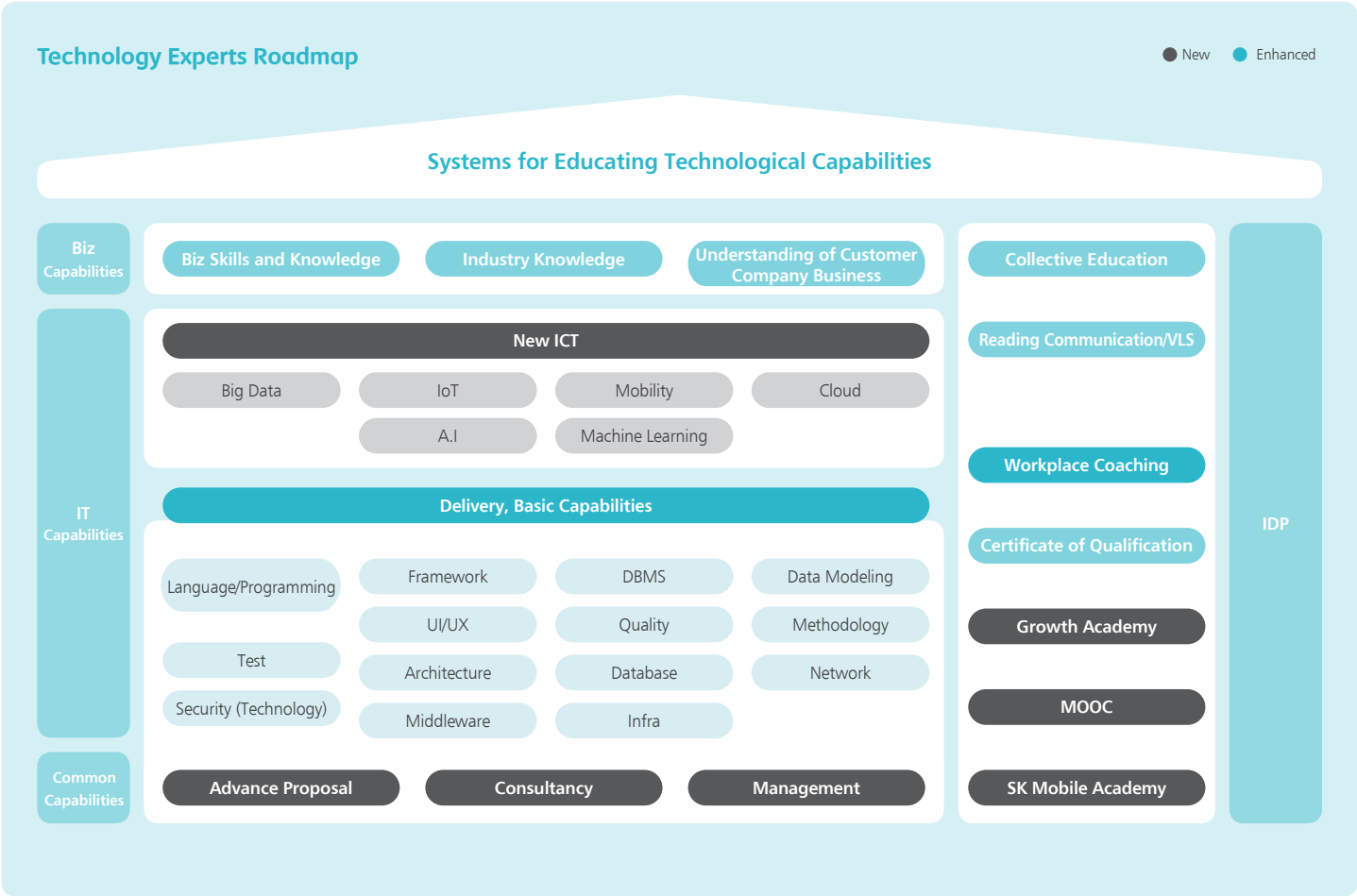
Unit: cases



**Active Rotation among Departments** SK holdings continuously strives to promote rotation among departments as a system to help its employees develop their careers while securing an optimum structure of organizational capabilities. A Job Market is implemented to reassign staff members to other departments based on agreement with the new department manager without requiring consent to be given by the employee's current department manager. This program enables soft innovation of people and culture maximizing the productivity of the individuals and organization by way of the employees devoting themselves to their desired department while the company rapidly secures personnel with the required capabilities.



**Securing of Foundation for Developing Technological Experts** To enhance the development of technology experts in a manner enabling win-win growth between the company and the employees, SK holdings presented growth targets and career paths based on a plan for developing the employees of its IT service departments in 2015. It defined the skills of the software developers into levels 1 to 3 through inspection of individuals’ levels based on self-diagnosis of their ability in software development. This has optimized the capabilities and levels through the collection of opinions from the employees. Such diagnosis is utilized by businesses departments as criteria for self-development or coaching through inspection of development capabilities or a checklist of development duties in the field. Furthermore, with regards to corporate aspects, it is being utilized to develop standards for exploring or selecting expert software developers or to develop individually customized education programs. SK holdings also provides enhanced training programs on field jobs and diversifies curricula in order to foster technology experts. In order to strengthen individually customized job skills, it strengthens on-the job training programs and explores expert role models so that capabilities, experience and know-how may be delivered irrespective of job grades. Furthermore, it provides diverse education curricula by extending on- and off-line and mobile education programs, including Growth Academy and MOOC (Massive Open Online Course) etc.



## MINI CASE



### GSP(Global expertise Sharing Program)

SK Holdings introduced Global Expertise Sharing Program (GSP) to motivate personnel equipped with expertise to undertake new challenges based on their creativity and passion while providing them with opportunities to develop new insight. GSP enables the employees to perform local tours for benchmarking of outstanding global businesses while participating in global forums and seminars based on a learning plan or schedule developed by themselves. In 2015, the company selected a total of 23 employees in the first half (1st class) and the second half (2nd class) amid attention and participation by many employees. They visited world famous IT businesses through the program, including Google, Amazon, and Microsoft. In 2016, groups of more employees as well as individuals will be selected to participate in the program.



### Forum for Sharing Knowledge - Open Lab

Open Lab is a leading SK holdings platform for sharing knowledge and experience among its individual employees. Open Lab, started in 2013, is held in topic-based seminars for one hour once a year on diverse subjects. Open Lab has been recognized as a leading brand for knowledge sharing among employees and has contributed to boosting their insight and creative ideas. Open Lab was held a total of 10 times in 2016 (five times on new technology trends, another five times on challenge and passion). Each session was participated in by an average of 170 persons. In 2016, the company plans to allow more employees to listen to the lectures through real-time broadcasting and outstanding external experts will be invited based on the demand by the employees.



### Techie Chat 15

Techie refers to people who are experts and who are enthusiastic about computing and other technologies. Techie Chat 15 is a forum for communication where each individual may have a 15-minute TED style presentation and then hold a technology discussion with peers rather than seminars held for a long time mainly to deliver existing IT service trends. This program can be participated in by all IT engineers inside the company. They share the essence or details of technologies (development language, new technologies, data analysis etc.) they have learned or applied. A total of three sessions were held in 2015. The sessions were broadcast in real time over the Internet for the employees who work at remote locations. Techie Chat contributes to the technological growth of SK holdings through the sharing of technologies and knowledge among its engineers.



## OBJECTIVE AND REASONABLE PERFORMANCE APPRAISAL • COMPENSATION

SK holdings makes diverse efforts to create new growth engines, including development of new technology models, transformation of existing business attributes, and exploration of the global market. To that end, it was determined that innovation of people and culture should be further accelerated so that all of the employees may further devote themselves affirmatively to the changes voluntarily with a determination that they will achieve goals without failure, fully recognizing the need for the changes. In this respect, the company improved its performance appraisal and compensation systems to encourage the employees to challenge and practice changes boldly.

**Fair Performance Management**► SK holdings has ample consultation and agreement on the levels of business targets by setting up clear and specific targets. It also induces active communication between leaders and employees concerning performance management through routine feedback. It pursues objective and reasonable appraisal based on assessment of specific performance against business targets. The appraisal that is conducted once a year consists of performance appraisal, capability assessment, and assessment of the organization based on key performance indicators (KPI) designed to evaluate the performance and capabilities of individual employees. Performance appraisal assesses how well the individual employees have achieved their business targets against their individual performance for achieving the business targets of the company. Capability appraisal assesses the level of capabilities possessed by the individual employees based on their job group or grade. KPI-based appraisal assesses the performance of the organizations based on their achievement of KPIs set up according to their business plan. The appraisal results are reflected on the promotion, annual pay, bonus, education, and job assignment or transfer. In 2015, the company enhanced its horizontal development through supporting the growth of intermediate leaders into experts or managers by introducing a system using positive feedback by peers around them concerning their job performance capabilities, leadership, etc. Furthermore, it also enhanced fairness in conducting absolute appraisal of certain organizations that require new attempts or collaborations for creating new business models.

**Promotion System Linked to Performance Appraisal**► SK holdings job grading system consists of five promotion steps based on the individuals' capabilities for performing job duties and their leadership level. The system is operated as an axis for developing experts in connection with the overall HR system, including training, assignment of duties, and differentiation of appraisal or compensation based on job grades. A higher job grade is granted once a year through a given verification procedure to those who are determined to be qualified for a higher position as they perform given duties in their current job grade for a given period. In particular, the promotion system is operated based on performance as the company promotes individuals who have not completed the standard period required for promotion by job grade but have demonstrated outstanding performance or leadership, through separate review.

**Reasonable Competitive Compensation**► SK holdings implements an annual pay system that differentiates annual compensation of individuals based on their performance and capabilities. To motivate the employees to the maximum, it also implements a performance-based compensation system compensating the employees based on their contribution to the performance of the organization and their individual performance. The performance-based compensation system consists of two sub-systems: the first is a profit sharing system that pays a part of the company's profit to organizations or individuals based on their contribution to the performance when the company achieves business performance over a given level, and the second is a performance-based compensation system by job group that compensates for performance based on performance in winning project orders, cost saving, or successful launching of new business projects. The company also provides payroll-like welfare and benefits in addition to performance-based compensation, including commuting and self-development allowances. In addition to such monetary compensation, the company attempts to secure and maintain outstanding human resources and to motivate its employees by implementing a reasonable competitive compensation management system by providing welfare and benefits concerning healthcare, living, leisure or hobby activities, SKMS performance-based compensation and support to education and training, and development of innovative work conditions.

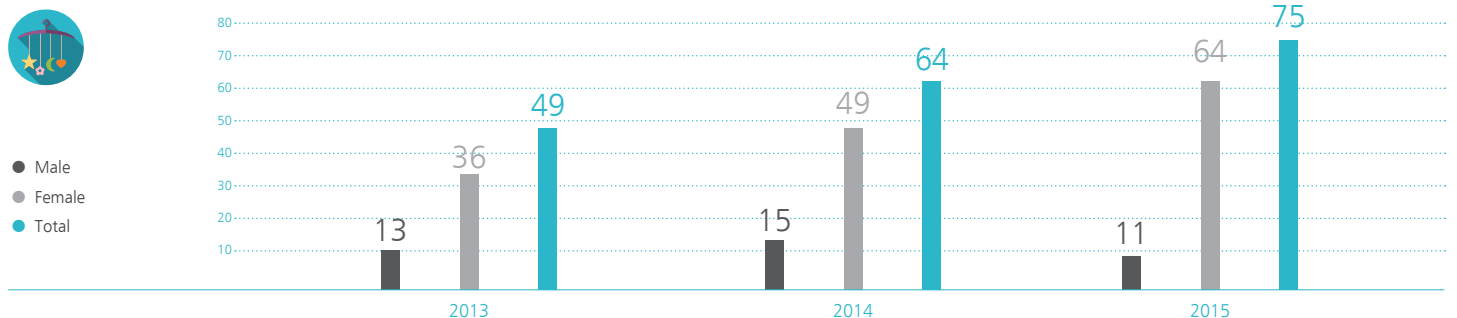
## FAMILY-FRIENDLY MANAGEMENT MAKING BOTH THE COMPANY AND ITS EMPLOYEES HAPPY

SK holdings implements family-friendly systems to help all its employees to work with a stronger will as they can lead a stable and satisfying work and family life. In addition, the company consistently strives to develop innovative work conditions by improving their work and welfare related systems so that they can harmonize family life with work. For this performance, it was awarded 'Family Friendliness Certificaton' and the 'Prime Minister's Prize' in 2013. It will continue its pursuit of a 'Happy Homepany(Home+Company)' caring about its employees to enable them to maintain a balance between work and life.

**Support to Child Birth and Raising>** For the creation of a Happy Hompany and to resolve the social issue of low birthrate, SK holdings believes it is most important to develop an environment where work and home lives can be balanced. To that end, it provides a family-friendly environment in which all employees may work without gender-based discrimination while a company where the employees and their family members are happy is made by supporting pregnancy, child birth and raising. Hours required for periodic health examination during pregnancy are treated as worked hours. Married women are entitled to a maximum of one year leave when they require extended hospital treatment for subfertility. Overtime work is limited for pregnant women. They are also entitled to reduced work hours with 12 weeks or after 36 weeks of their pregnancy. They are also entitled to leave when they have a miscarriage or stillbirth. SK holdings supports a part of childbirth expenses through group insurance. It also pays childbirth congratulations money. Male employees are also provided leave when their spouse delivers a child and are also entitled to child raising leave identical to that of the female employees. The system has substantively taken root as the child raising leave taken by male employees has increased five times compared with 2011. The company operates 'Happy Mom's Room' for breastfeeding and an internal nursing home. In 2013, it raised the age of children entitling their parent to child raising leave from six to eight. It also presents gifts to children who enter elementary school. In 2015, the company also removed the previous limitation to the number of children entitled to scholarships. The support for school expenses, which was previously limited to a maximum of two children per person, has been eliminated to alleviate the burden of the employees for pregnancy, child birth and child raising.

Number of Employees Who Have Used Child Raising Leave

Unit: persons



**Support to Development of Family-friendly Culture>** SK holdings actively recommends its employees to take long-time leave to improve their life quality and productivity with sufficient rest by developing quarterly leave plans in advance. The company has also distributed an enterprise-wide written guide for utilizing leave, which contributes to the enhancement of its employee satisfaction based on a balance between work and life by taking leave by presenting diverse examples of leave utilization. Furthermore, it lets its employees take leave for caring for their family by newly introducing 'Long-time Family Care Leave of Absence' in addition to the statutory family-care leave of absence. SK holdings has also increased its support to stable living by reducing their financial burden with an increase in loan amounts and lowered interest rates of its internal loan scheme for its employees for acquisition of a house, lease deposit, or stable livelihood. It also supports the operation of a rest and recreation center for employees, coverage of group injury insurance, souvenir items on anniversaries, and mobile phone bills. It also supports 50% of prices of organic eco-friendly farm produces for providing the families of employees with a healthy diet. In addition, starting in 2015, it has expanded funeral expenses granted to employees to cover funeral costs for siblings, grandparents and parents of their spouse by increasing the beneficiaries in addition to the previous scope of the employee, their spouse, parents, grandparents (in the case of their father being deceased), and children.

**Flexible Work-hour System and Reduction of Overtime Work**> SK holdings strives to reduce overtime work while introducing flexible work hours in order to enhance employee efficiency and devotion to work during work hours in addition to improvement of their life quality. For some of its business lines, it implements a system of flexible work hours while allowing its employees to determine their work hours and posts autonomously in order to reduce their overtime work that is sometimes inevitable inherently due to the nature of work. The flexible work hour system is divided into three sub-systems: a selective work hour system under which the employees adjust their time to report to work autonomously while maintaining total work hours of 8 hours a day (40 hours a week), a flexible work hour system under which the work hours are increased when workload increases but reduced when workload decreases, and a discretionary work hour system under which work performance is delegated to the employees and they are regarded to have worked the given hours as agreed. The employees can pursue a balance between work and life by efficiently distributing work hours by electing a work hour system suitable to the nature of their job. In 2015, 18% used the flexible work hour system. The company plans to continue to promote this. In particular, the flexible work hour system is utilized in a way to minimize overtime work that was previously inevitable due to their job nature. It operates MOVE (Motivation, Ownership, Value, Environment) radio broadcasting to induce on-time leave from work, a program designed to minimize overtime work. The broadcast urges the employees to leave from work at six pm sharp everyday. Stories of diverse topics and songs are broadcast with disc jockeys played by employees.

**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 2015, the total retirement pay was estimated to be KRW 191.9 billion. 82.1% or KRW 157.5 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.

**Development of a Pleasant Work Environment**> SK holdings enables its employees to work in a pleasant or comfortable environment by improving the conditions of its Bundang home office and Pangyo campus offices in 2015. The offices have been transformed into a space for happy communication while stabilizing body and mind applying warm colors and illuminations in the entire space.

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#### Improved Pangyo Campus



Pangyo Campus Lobby



Pangyo Campus Library



Pangyo Campus Conference Room



# DMA

DISCLOSURE ON  
MANAGEMENT  
APPROACH

## 04. SOCIAL CONTRIBUTION



### Background of Selection as Core Aspect

Society nowadays assesses the value of a company based on its social responsibility which is even more expected of a company than creation of economic profits. In other words, the activities of a company relating to corporate social responsibility are regarded as the most important virtue it needs in the eyes of modern society, and it is treated as the criteria for assessing and measuring their social value. For that reason, corporate social responsibility activities have changed from the past when social contribution was done "for show" or only for the short-term. They have developed into diverse CSR activities planned and implemented by companies for the long-term. Furthermore, sincere corporate social responsibility activities have developed into a part of material management strategies and the value of a business is evaluated based on such activities.

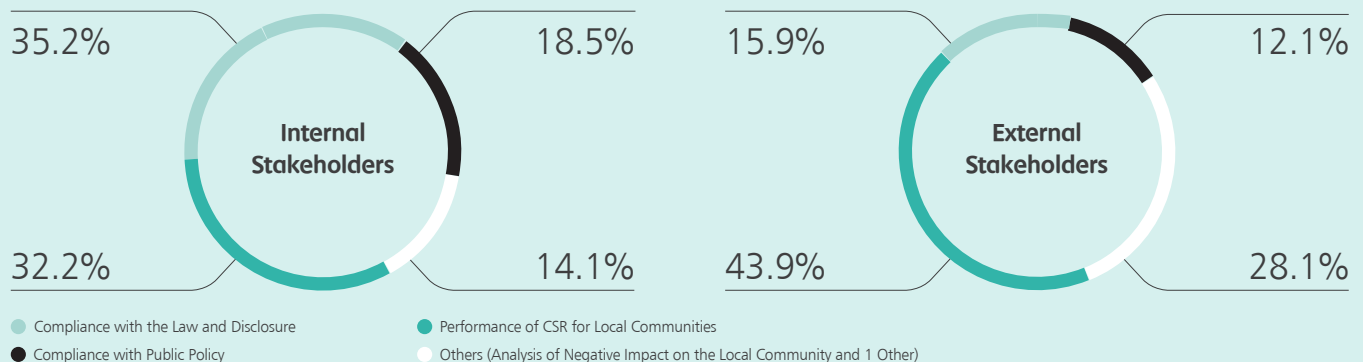


### Degree of Attention of Stakeholders

Both internal and external stakeholders have shown high levels of interest in 'social responsibility to local communities'. 32.2% of internal and of 43.9% of external stakeholders selected this issue as being the most important.



### Attention of Stakeholders Results



### Key Achievements and Objectives

#### Classification (Main Items)

#### 2015 Objectives

#### 2015 Achievements

#### 2016 Objectives

##### Enhancement of Social Values in Connection with IT Services

- Improving IT training program for adolescents contribute to bridging the information gap
- Continue used PC donation projects for improving accessibility of information.

- Total 16 times, for 671 persons
- 135 PCs donated to schools and welfare centers at seven locations in Seoul

- Continue IT training support projects for persons with disabilities
- Used PC donation projects

##### Volunteering Service by Employees

- Active encouragement for employee participation in volunteering service programs

- Annual average of 7 hours per person

- Proactive and voluntary participation of employees in social contribution activities

##### CSR Activities for Resolving Social Issues

- Encouraging other enterprises to become more socially responsible through active social contribution.
- Happy Web & Media Turn Around

- Supporting management operation of Happy Web & Media, Establishing local community-oriented business sites, launching regular marketplace, 15 purchases of social corporate goods in connection to volunteering
- Return to profit (-0.44 billion → 0.12 billion)

- Turning ICT social corporation (Happy Web & Media) into a reference model



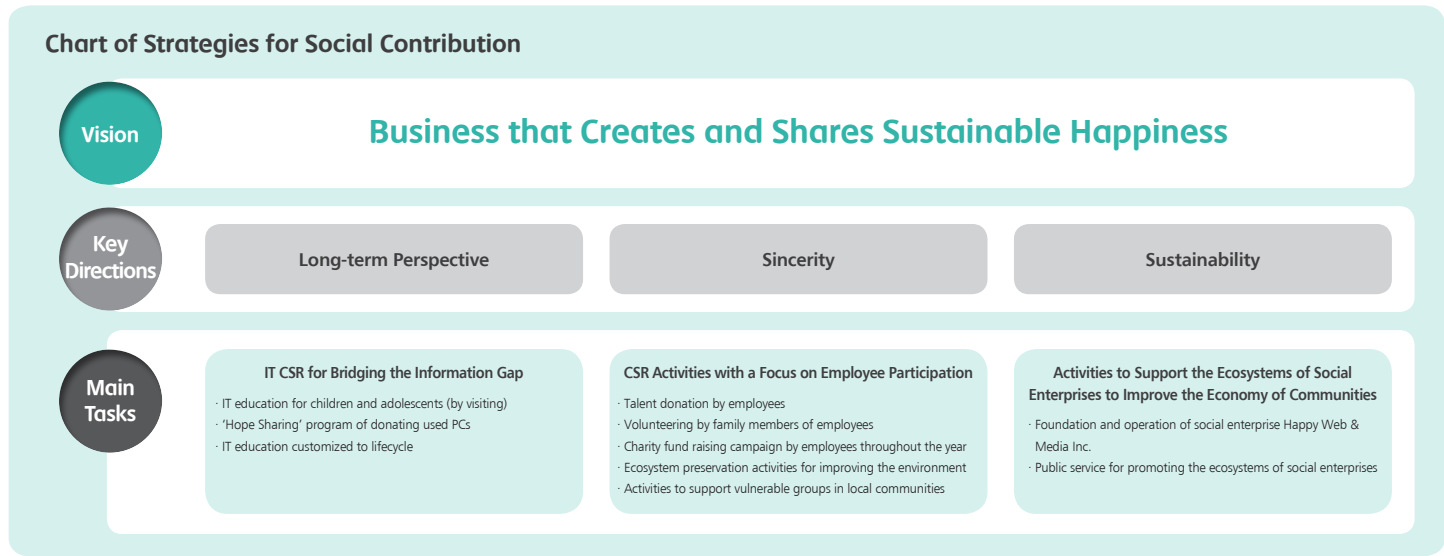
# SOCIAL CONTRIBUTION

A company’s social responsibility towards local communities is not an option but a necessary requirement for its business operations. Social corporate philanthropy does not merely bring happiness to individuals and local communities, it also changes the business environment in the long run and will have a significant impact on the company’s growth. For the company and local communities to grow together, it is important for the company, as a corporate citizen, to become actively involved in resolving social problems. SK holdings devotes unconditional support to strengthening social corporate philanthropy activities and creating a sustainable ecosystem of a social corporation in order to solve social problems.

**Vision of Corporate Social Responsibility**> SK holdings practices 'Happiness-sharing management' to make a world in which all stakeholders may become happy. In particular, it aims at CSR programs that create a sustainable social ecosystem where vulnerable social groups may become self-sufficient through resolution of the fundamental social problems under the company’s CSR vision for a ‘business that creates and shares sustainable happiness’ based on the group’s philosophy of ‘pursuing happiness’.

**Direction for Social Contribution**> SK holdings intends to maximize the sustainable happiness of all members of society by focusing on resolving fundamental social problems by utilizing its expertise based on its three CSR implementation principles of Long-term Perspective, Sincerity, and Sustainability rather than the unilateral charitable or benevolent activities conducted by other businesses.

**CSR Committee**> SK Group has founded SK Volunteer Service Corps under the CSR Committee Chair of its SUPEX Pursuit Committee. Approximately 90% of SK Group employees provide volunteering services in over 400 volunteer groups performing diverse services. The employees mainly perform CSR activities at the level of unit organizations of each group company they belong to. The CEO participates in the activities, leading by example. SK holdings-organized CSR activities are performed under the overall management and support of its department responsible for social contribution. Each organization and individual employee is helped by the relevant service group coordinator to perform their voluntary CSR activities.



System for Operating SK holdings’  
 Volunteer Service Group





## Social Value with Long-term Perspective in Connection with IT Services

SK holdings provides service to the public to develop social talents through supporting IT infrastructure and information-related education, which can resolve fundamental problems from mid and long-term perspectives to eliminate the information gap. SK holdings will continue to concentrate its efforts on CSR activities consistently rather than seeking short-term effects.

**IT Education for Children and Adolescents (by visiting)>** SK holdings has provided special lectures on basic IT understanding and future industries for elementary and middle school students in Seongnam area. It has also provided special IT lectures on IT-related career education for high school students in areas where its facilities are located.

### 2015 IT Education Support for Teenagers

Target Audience	Region	Education Programs	Number of Participants
Elementary School Students	Seongnam-si, Gyeonggi-do	7 times	210 persons
Middle School Students	Seongnam-si, Gyeonggi-do	2 times	21 persons
High School Students	Daejeon, Ulsan, Gyeongnam	7 times	440 persons

**‘Hope Sharing’ Program of Donating Used PCs>** Since 2004, SK holdings has carried out IT service-related CSR activities to help isolated neighborhoods to communicate with society more effectively and to improve their access to information by creating websites for vulnerable welfare centers and donating PCs. It has donated 452 PCs to 23 non-profit organizations in the past three years.

## Sincere CSR Activities Mainly Carried Out by Employees

All of SK holdings’ employees strive to resolve social issues in local communities and environmental issues by participating in volunteer service groups to donate their talents in diverse manners. These volunteer service programs have been performed with utmost sincerity by the employees over the past 10 years.

### Social Responsibility Toward Local Communities

**Specialized Volunteer Group for Talent Donation>** SK holdings provides its employees with opportunities to donate their capabilities and talent to society by enhancing their capabilities and talent in their personal areas of interest and expertise. It offers courses for them to receive specialized training or acquire qualifications early each year so that the talent donation activities may be performed systematically. In so doing, it ensures that talent donation activities are performed in a more specialized manner.

The key activities carried out by the employees are volunteering to provide a pro-bono business advice service to social enterprises (IT skills, marketing, PR, management strategies, finance etc.), volunteer service for photo-taking and birthday parties for isolated or solitary senior citizens, volunteer service for dementia prevention through ‘healing with painting’, volunteer service for reading and debate with children and young adults who defected from North Korea in order to provide them with the opportunity to enhance their social skills in South Korea, volunteer service for mountain climbing, volunteer service for typing Braille books for visually impaired persons, audio book recording and production, and knitting woolen headwear for infants in underdeveloped countries.



Special IT Lecture for Adolescents

**Rate of Employees who Joined the Volunteer Group** Unit: %



85

**Volunteered Hours per Person** Unit: hours



7

**Volunteer Service by Family Members of Employees>** SK holdings has provided its employees with opportunities to contribute to society while experiencing the joy of sharing and family love through ‘One-Family Day’ and ‘Family Service Day’. ‘One-Family Day’ is a family service program held three times a year for families to experience a variety of activities by matching one child with a disability to one family whereas ‘Family Service Day’ is a family service program for supporting the daily lives of physically handicapped persons in institutions in the third week of each month.

**Donation of Charcoal Briquette and Kimchi for Disadvantaged Groups>** In October each year, SK holdings donates charcoal briquette and kimchi for the cold winter season as part of its activities for sharing happiness and caring. The winter sharing activities which have performed to help vulnerable groups to enjoy a warm winter from 2006 are highly significant as they are participated in by all of the employees from top management team members to general employees.

#### Amount of Charcoal Briquette and Kimchi Donated

Year	Amount of Charcoal Briquette Donated	Amount of Kimchi Donated
2013	24,200 pieces (78 households)	3,000 heads (581 households)
2014	30,000 pieces (100 households)	2,000 heads (300 households)
2015	33,000 pieces (138 households)	3,500 heads (500 households)



Sharing Kimchi for Sharing Happiness

## Social Responsibility for Sustainable Environment

**Programs for Preserving Ecosystems by Improving Issues Related to the Natural Environment>** SK holdings has continued its programs for preserving ecosystems, including planting seedlings for developing woods on mountains so that the health of communities and the environment may be maintained in the future.

#### Planting Trees for Happiness

Year	Region	Number of Seedlings
2013	Gwangnaru District Ecological Park, Seoul	5,000
2014	Saetgang Ecological Park, Seoul	5,000
2015	Jungwon-gu, Seongnam-si (Seedling road developed)	15,000



Planting Seedlings to Develop Woods on Mountains

**Activities for Improving the Environments of Local Communities>** SK holdings performs activities for improving or preserving the environment in daily life. To improve the environment in areas superannuated in Seongnam city where its Seongnam facility is located, the company painted the exterior walls of low-income densely populated areas, and periodically cleans the streets near the SK office building and Tancheon Stream. Employees have participated in such activities from 2009. In 2015, it beautified the districts of Taepyeong-dong and Sujin-dong, Seongnam city for the development of the local community as part of a business-government governance project.

## Providing Support to Maintain Sustainable Ecosystems by Social Enterprises for Improving the Economical Soundness of Communities

SK holdings supports social enterprises so that they become businesses that consistently provide value rather than playing the simple role of creating jobs. SK holdings’ support to social enterprises focuses on their permanent survival and growth without depending on outside help. In addition, SK holdings strives to enhance ecosystems so that more social enterprises may emerge.

**Happy Web & Media, Inc. a Social Enterprise Creating Social Values Based on IT Service>** Happy Web & Media, Inc. is a social enterprise that was jointly founded by SK Happiness Sharing Foundation and SK holdings in December 2011 to provide social services while creating jobs for socially disadvantaged groups. Happy Web & Media, Inc. performs services for benefiting the public and generating revenue at the same time. It enhances the life quality of those without access to information through its IT service and it also enhances social values.

## Public Service for Promoting Ecosystems Containing Social Enterprises>

### Happy Value Store



SK holdings created 'Happy Value Store' to assist social enterprises in Seongnam City to secure stable sales routes. 'Happy Value Store' is a business-government cooperation project in which SK holdings remodeled the common store while Seongnam municipal government provided space. Initially, 30 social enterprises sold their products through the store.

### Happy Wednesday Mart



To increase the understanding and experience of its employees regarding social enterprises, SK holdings holds 'Happy Wednesday Mart' in its Bundang office building each week to promote the sales of diverse goods by social enterprises.

### Happy Value Mart



SK holdings held special temporary stores touring its affiliated companies located in Seongnam city by assisting 'Happy Value Mart' together with the SK Social Enterprise Center and KAIST Social Entrepreneurs (MBA).

## CSR Activities for Resolving Social Issues and Donating to Charity

SK holdings has continually created innovative resolutions for social issues in a strategic manner to provide solutions for diverse social issues spread throughout society. Not only the company but also its employees have voluntarily made donations.

**Donations Through Year-End 'Hope-Sharing' Campaign>** SK Group jointly participates in charity fund-raising campaigns by Community Chest of Korea staged nationwide each year to help underprivileged neighborhoods. In 2015, it donated KRW 644 million through CSR activities.

**Supporting Traditional Marts>** To support traditional marts that are experiencing difficulties due to slow business and reduced consumption, SK holdings purchased 'Onnuri (Global) Coupons' which are used as a CSR service to low-income families. In 2015, it purchased 440 million won worth coupons, participating in efforts for promoting the economic situation of low-income families.

**Fund Raising Campaign for 'Happy Scholarship'>** SK holdings has donated cash to charities through various programs – 'Happy Scholarship' with funds donated each month, year-end small amount donations for helping disadvantaged children, and 'Happiness Sharing Bazaar' as part of its participative CSR service from 2004.

### Charity Donations Made by Employees

Classification		2012	2013	2014	2015
Happiness Scholarship	Amount Raised	KRW 77 million	KRW 87 million	KRW 87 million	KRW 92 million
	Recipient Students	54 persons	72 persons	75 persons	49 persons
Fund Raising for Providing Meals to Disadvantaged Children		KRW 12 million	KRW 8 million	KRW 11 million	KRW 4 million



Happiness scholarship fundraising campaign

# FUNDAMENTAL MANAGEMENT





SK holdings is deploying an advanced management system for enhancing its transparency and reliability. It continues to make efforts to attaining material achievements through value creation of customers and business partners. SK holdings will enhance its fundamental management elements for the stable and continuous development.

### Important Issues According to Each Major Stakeholder

**Governance:** Shareholders and investors

**Customer Experience Management:** Customers

**Win-Win Growth:** Business partners

**Integrated Risk Management:** Shareholders, investors, employees

**Ethical • Transparent Management:** Business partners, employees

### Achievements and activities of sustainable management system



Board meetings held

**13 meetings**



Degree of customer satisfaction

**78.4 points**



Scale of financial support to business partners

**KRW 11.4 billion**



Participatin in ethical management survey

**70.1%**



# GOVERNANCE

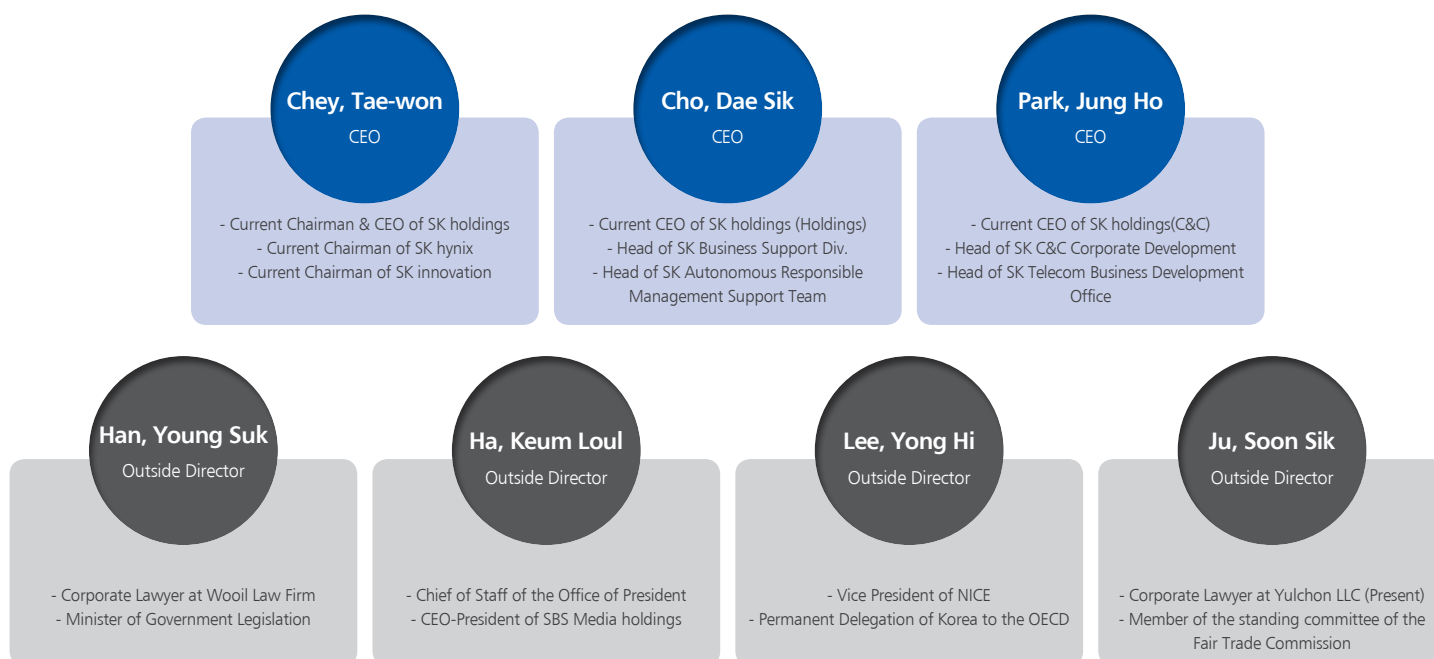
## ADVANCEMENT OF GOVERNANCE STRUCTURE THROUGH TRANSPARENT MANAGEMENT

**Composition of Board of Directors** > SK holdings pursues substantive protection of shareholder rights and benefits and advanced governance structure through its Board of Directors composed and operated based on the principle of transparent management. The Board of Directors is authorized to make key decisions of the company (governance structure, investment and planning, accounting, finance, etc.) and monitors and advises on important strategic decisions and management activities. The board consists of a total of seven directors, including three inside directors and four outside directors. To enhance transparency and independence, the board mostly comprises outside directors (57%). In order to prevent conflict of interest, the directors are not allowed to enter into transactions associated with the categories of the company's business to their own or a third-party account without advanced approval by the board under the Commercial Act and the Board Regulations. They are also disallowed from becoming a general partner or director of another company in the same industry.

**Fair and Objective Election of Directors** > The directors are elected at the general shareholders meeting. The candidates are referred to the shareholders meeting after being selected by the Board (inside directors) and Outside Director Nomination Committee (outside directors). When election of a director is proposed by a shareholder based on the relevant statute, the board submits a bill to the shareholders meeting as allowed under the statute. To secure fairness and independence, the outside directors are elected by the shareholders meeting after strict examination by the Outside Director Nomination Committee. It is based on their neutrality, approach to business, and reputation as well as expertise concerning law, macro economy, fair trading and business management. The Outside Director Nomination Committee aims to meet the requirements of the Commercial Act that the outside directors need to surpass as judged by the majority of the Board Directors.

**Performance and Compensation of Board** > The remunerations of the inside directors are determined based on their business achievements reflecting their social and environmental achievements depending on their duties. The outside directors are not paid any bonuses or other remunerations except for a basic pay in order to guarantee their independence. The compensation levels of the directors are determined finally by way of a shareholders meeting after their remunerations limit is reviewed by the board of directors based on the statutory provisions. Detailed information on compensation can be found in the business report.

### SK holdings Board of Directors



**Efficient Operation of Board** Board meetings are held once a month but may also be held more often in certain circumstances. All of the directors may contribute to resolutions by the board without personally attending, such as through electronic means. In such cases, the directors are regarded to have attended the board or its committee meetings personally. This is to enhance their access to board meetings without being restricted by time or location, in line with the advancement of telecommunications technologies. To enhance the expertise or specialty of the external directors, support organizations are operated to assist their service in the board or its subordinate commissions. They also attend training courses provided by the Korea Directors Association. The opinions of stakeholders are reflected on the board as the board listens to the opinions of the company's officers, employees, and outside people, allowing them the chance to present themselves at board meetings. Furthermore, the board has enhanced its efficiency by inspecting its operational status.

**Transparent Management and Shareholder-Friendly Policies** SK holdings has reduced the powers of majority shareholders and senior management team members in order to strengthen transparent and shareholder-friendly management, and has innovatively improved the governance structure by organizing a governance committee. The responsible management by major shareholders has been strengthened by registering them as inside directors under the notion that the management team should be responsible for board decisions adopted by all the family members of the major shareholders personally attending meetings of the board which is a decision-making organization of the company. In addition, the powers of the high-senior management were reduced while reinforcing responsible management by major shareholders. The retirement pay rate for the senior management has been decreased by up to one third through a reshuffle of the retirement allowance payment scheme for the officers. SK holdings organized a governance committee to strengthen the role of the board in protecting the rights and interests of the shareholders. This committee comprising only of outside directors examines key management issues which have material impact on shareholder value, including investments, mergers or division of the company, and matters related to finance. In particular, the board of directors is now required to periodically discuss 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 exerted itself to develop a management structure that is truly transparent and friendly to shareholders, including steady increase of profit dividends.

## Composition of Committees

Committee Name	Purpose and Authority	Composition
<b>Audit Committee</b>	<b>01. Purpose</b> <ul style="list-style-type: none"> <li>The audit committee audits accounting and operations of the company, and handles matters entrusted by the board, pursuant to statutes, articles of incorporation, and board regulations.</li> </ul> <b>02. Authority (The second clause of Article 6 of the Audit Committee Regulations)</b> <ul style="list-style-type: none"> <li>Matters concerning general shareholders meetings</li> <li>Matters concerning directors and the Board of Directors</li> <li>Matters concerning audit</li> <li>Other duties provided under statutes, articles of incorporation and board regulations</li> </ul>	<b>Outside Directors (3 Persons)</b> <ul style="list-style-type: none"> <li>Ha, Keum Loul, Outside Director</li> <li>Lee, Yong Hi, Outside Director</li> <li>Ju, Soon Sik, Outside Director</li> </ul>
<b>Outside Director Nomination Committee</b>	<b>01. Purpose</b> <ul style="list-style-type: none"> <li>Recommendation of outside directors to be elected by way of general shareholders meeting and handling of matters entrusted by the board of directors</li> </ul> <b>02. Authority (The second clause of Article 6 of the Outside Director Nomination Regulations)</b> <ul style="list-style-type: none"> <li>Recommendation of outside director candidates</li> <li>Evaluation of directors' activities and review of utilization plans</li> <li>Matters required for recommending outside director candidates, Matters entrusted by the board of directors</li> </ul>	<b>Outside Directors (2 Persons)</b> <ul style="list-style-type: none"> <li>Han, Young Suk, Outside Director</li> <li>Ha, Keum Loul, Outside Director</li> </ul> <b>Inside Directors (1 Person)</b> <ul style="list-style-type: none"> <li>Cho, Dae Sik, CEO</li> </ul>
<b>Governance Committee</b>	<b>01. Purpose</b> <ul style="list-style-type: none"> <li>To pursue the principles of more substantive board-centered management while protecting shareholder value and interests, and to enhance transparency of the governance structure</li> </ul> <b>02. Authority</b> <ul style="list-style-type: none"> <li>Transactions between specially related parties which require advance board approval as provided under the Act on Regulation of Monopoly and the Fair Trade and the Commercial Act</li> <li>Plans to promote CSR activities and ethical management</li> <li>Inspection of performance of the fair trade compliance program</li> <li>Matters that affect shareholder value concerning investment and financial management among those the board adopts resolutions pursuant to the board regulations</li> <li>Other matters referred to by the Chairman among management-related matters, which have enormous influence on shareholder value</li> </ul>	<b>Outside Directors (4 Persons)</b> <ul style="list-style-type: none"> <li>Han, Young Suk, Outside Director</li> <li>Ha, Keum Loul, Outside Director</li> <li>Lee, Yong Hi, Outside Director</li> <li>Ju, Soon Sik, Outside Director</li> </ul>





# CUSTOMER EXPERIENCE MANAGEMENT

## IMPROVED CUSTOMER SATISFACTION THROUGH ENHANCING CUSTOMER VALUE

SK holdings, through incessant innovation and a challenge-taking mindset, offers diverse convergence technologies in all IT · ICT domains, which also allows them to provide quality service specialized or customized to satisfy the needs of different customers and enhance customer business value by exploring premier services. In addition, it enhances customer satisfaction with enhanced service quality while closely communicating with the customers using multiple channels and tools, including surveying of IT-related satisfaction and VoC for diagnosis of customer value. It will also strive to attain a sustainable society by creating leading technologies and thoroughly customer-centered value based on continued 'Insight into industries and ICT technologies'.

### Diagnosis of Customer Satisfaction Degree

SK holdings enhances customer satisfaction by substantively realizing their needs while providing IT convergence services and products customized for each industry as well as simply improving its products as the IT service industry has entered its maturity after passing the introductory period.

**Survey of IT Customers Satisfaction** > Since 1999, SK holdings has measured the satisfaction of the end-users of its corporate customers with regards to all of the IS services it provides to them each year. The degree of customer satisfaction of the customers is surveyed using socio-science survey methodologies and the qualitative degree of satisfaction is qualitatively measured and analyzed. It has maintained a good index (70 points or higher) of customer satisfaction since 2003. It enhances its service quality while deriving tasks for improvement by measuring the degree of satisfaction more accurately as overseas branches and local business establishments of the customers have been included in the scope of its online questionnaire survey since 2013. As a result, the degree of customer satisfaction in 2015 rose by 2.3 points over the preceding year and the company achieved best-level customer satisfaction - 10% higher than that of competitors in the same industry.

### Premium Service

Since 2014, SK holdings has consistently explored and provided premium services to offer differentiated solutions for protecting or creating customer value based on its understanding of the customer's business. Thus, it has continued efforts for exploring the hidden needs of the customers and for resolving their concerns first. It provides premium services to all its customers in all industrial sectors of finance, telecommunications, electronics, energy, chemical and logistics service by discovering elements that can provide value to the customers.

#### Development of Programs or Systems for Counting Optimal Transport Distance and Cost Using Open Source

- Calculation tool of optimal distance for reducing delivery costs for distribution of goods are offered by developing programs using open source
- Deployment of trusted customer relations through reduction of customer costs by introducing the solution

#### Exploration and Application of Network Backup Service Using Wireless Networks

- Provision of ideas and solutions applying a wireless network to duplex wired circuits
- Acquisition of sales network while reducing cost for duplex circuits in areas where a wire network is not available

#### Provision of Marketing Platform Utilizing Roaming Service Data

- Development and provision of platforms enabling target marketing while resolving difficulties faced by customers for marketing based on data roaming
- Contributed to the enhanced subscription rate for roaming services by successfully applying the program while showing a high rate of response to marketing

We have carried out the recognition process in order to discover premium service in a continuous manner for each quarter. 75 premium services were selected in 2015 and we plan on honing in our service capability through continuing with such activities.

## SERVICE QUALITY MANAGEMENT

SK holdings practices its quality policies and eight quality management principles while having promulgated quality management in order to maintain the trust of its customers in its products and the degree of satisfaction regarding its service quality to the highest level. To put this plan into practice, it has established the eight quality management principles and introduced a comprehensive quality surveillance system to construct an pre-error monitoring system, making sure that quality is guaranteed.

\* Eight quality management principles: Customer-centricity, leadership, total participation, access to processes, access to systems, steady improvement, decision-making based on facts, and win-win relations with suppliers

### Signing of SLA and Service Management

SK holdings, in order to provide quality service for its products, has signed an SLA with customers and is operating a service evaluation meeting each month with customers. It has also developed a Service Level Management System that reflects the detailed standards of the ITIL (IT Infrastructure Library) that it provides to customers. The service level management is carried out in the four stages of SLA enactment (structure design, negotiations, and agreement), establishment of the SL (Service Level) management system, SL reporting and service improvement plans.

\* ITIL: An international framework that supports, builds and manages IT services, it is a model for effective IT service management. The Service Management (SLA) process is repeated in accordance with the steps of preparation: SLA development, operation, and improvement, and these processes were realized through SLMS.

In the SLA enactment stage, customer requirements were collected, SLA structure was designed, details were confirmed through negotiations and 'SML methodology' was developed and operated. Then, the SL (Service Level) Management System was designed and was utilized to measure items subject to management and to reach agreements on goal levels.

After the services had been offered, major issues were deduced through SL reporting and reviewed with the customers through a service evaluation meeting. According to the results of the service evaluation meeting, tasks for improvement will be selected to improve the services. Compensation shall be provided based on the conditions stated so that employees can carry out customer service with a responsible attitude.

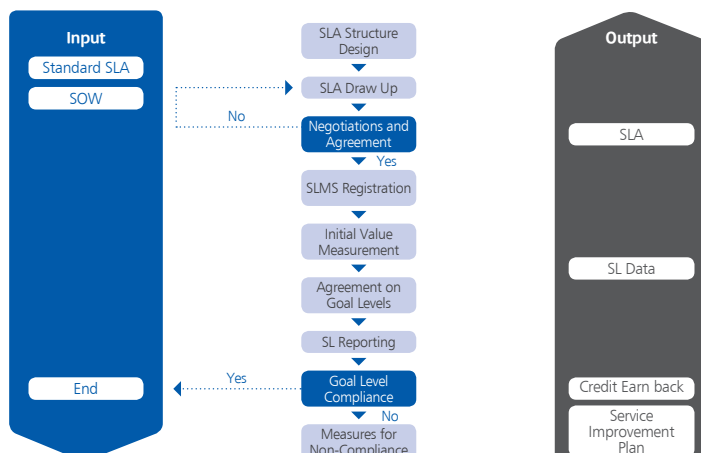
### Operation of a Comprehensive Quality Surveillance System

SK holdings has constructed and is operating a comprehensive quality surveillance system in order to improve the continuity of SKT IT services and manage the quality. The comprehensive quality surveillance system is a quality management tool that, rather than conducting individual monitoring of infrastructure, carries out comprehensive monitoring focusing on a service to detect risks of error in real-time and identify services that are impacted through IT Relation DB. It also is equipped with statistics analysis technology with dynamic threshold that reflects the characteristics of each service.

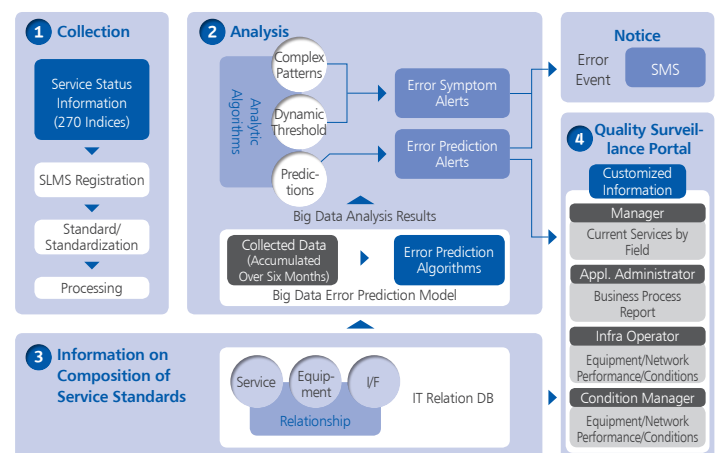
\* Threshold: Standard value for alert

We plan on applying big data algorithms in order to enhance error prediction and level of analysis function and gradually expand our premium quality surveillance service to all of our clients.

#### Service Level Management Process



#### Structure Map of Comprehensive Quality Surveillance System



## CLIENT INFORMATION PROTECTION

SK holdings faithfully adheres to the Information Communications Network Act, the Privacy Protection Act, and other domestic and overseas laws, systems, standards, current trends, and other security conditions. In order to protect and manage all valuable information assets of our clients from external threats. We do our absolute utmost to prevent unauthorized leakage.

**Enactment of the Six Principles of Privacy Protection**> SK holdings has enacted the six principles of privacy protection as the foundation for practice when employees collect, utilize and manage personal information for work purposes, so that it can serve as the standard when conducting activities to prevent leakage of personal information and other security incidents as well as when establishing privacy policy and making decisions.

**Security System of Global Standard**> SK holdings is the first company in Korea to acquire the Information Security International Standard (ISO27001) for its head office and data center in 2006. The company has implemented client information protection activities on systems such as information security policy, organization, asset management, HR security, physical security, access control, development and operation security, accident response and disaster recovery, all based on the international standard.

**Training on Privacy Protection and Improvement of Awareness**> SK holdings required all employees to sign a security pledge once a year and provides privacy protection training. It designates a personal information handling officer each year and provides an additional group training session to prevent even accidental leakage of personal information. The company also implements change management activities including consistent in-house broadcasting and information security letters to improve employee awareness of security.

**Inspection and Monitoring for Privacy Protection**> SK holdings has a 24/7 security threat and breach incident monitoring service to prevent leakage of client information. Through regular security diagnosis of the IT system and mock hacking sessions, possibilities of breach by the most recent security threats are identified and handled in advance. Thorough management is provided so that personal information is securely protected; inspections are conducted twice a year to check that all employees who handle personal information as part of their work are adhering to the privacy protection procedures.

### Six Principles of Privacy Protection

- 1 Principle of Minimum Collection**

Information shall be collected in the minimum scope in accordance with the purpose of the collection with the explicit · specific consent of the information object.
- 2 Principle of Safe Storage**

Personal information shall be safely protected and managed internally and externally so that it does not become lost, stolen, leaked or damaged.
- 3 Principle of Purpose and Utilization**

Personal information shall be used and provided only within the scope of the agreement consented to by the information object.
- 4 Principle of Enhanced External Management**

Personal information provided to outside parties shall be managed by enhancing the management of external companies related to personal information consignment or partnership.
- 5 Principle of Timely Destruction**

Personal information whose possession has become unnecessary due to accomplishment of the purpose of collection shall be immediately destroyed so that it cannot be restored.
- 6 Principle of Process Management**

A privacy protection management system for organization construction, training, inspection, accident response processes, etc. shall be established.



# WIN-WIN GROWTH

## SHARED IDEAS AND GOALS

SK holdings promotes substantive win-win growth by developing fair transparent relations based on trust by its business partners. Furthermore, it operates a specialized support program while promoting communication with its business partners in order to develop a sustainable future.



FOR LONG-TERM ENHANCEMENT OF CAPABILITIES, SHIFT FROM MUTUALLY BENEFICIAL POLICY · PROGRAMS TO A CULTURE OF WIN-WIN PARTNERSHIP

## Direction of Win-Win Growth Promotion

SK holdings has developed and operated win-win growth programs for enhancing the competitiveness of its business partners in addition to creating and strengthening trustful relations with them. From 2015, SK holdings has made joint business achievements with business partners by exploring domestic and overseas markets based on a corporate culture where the constituents participate in such efforts voluntarily and proactively.



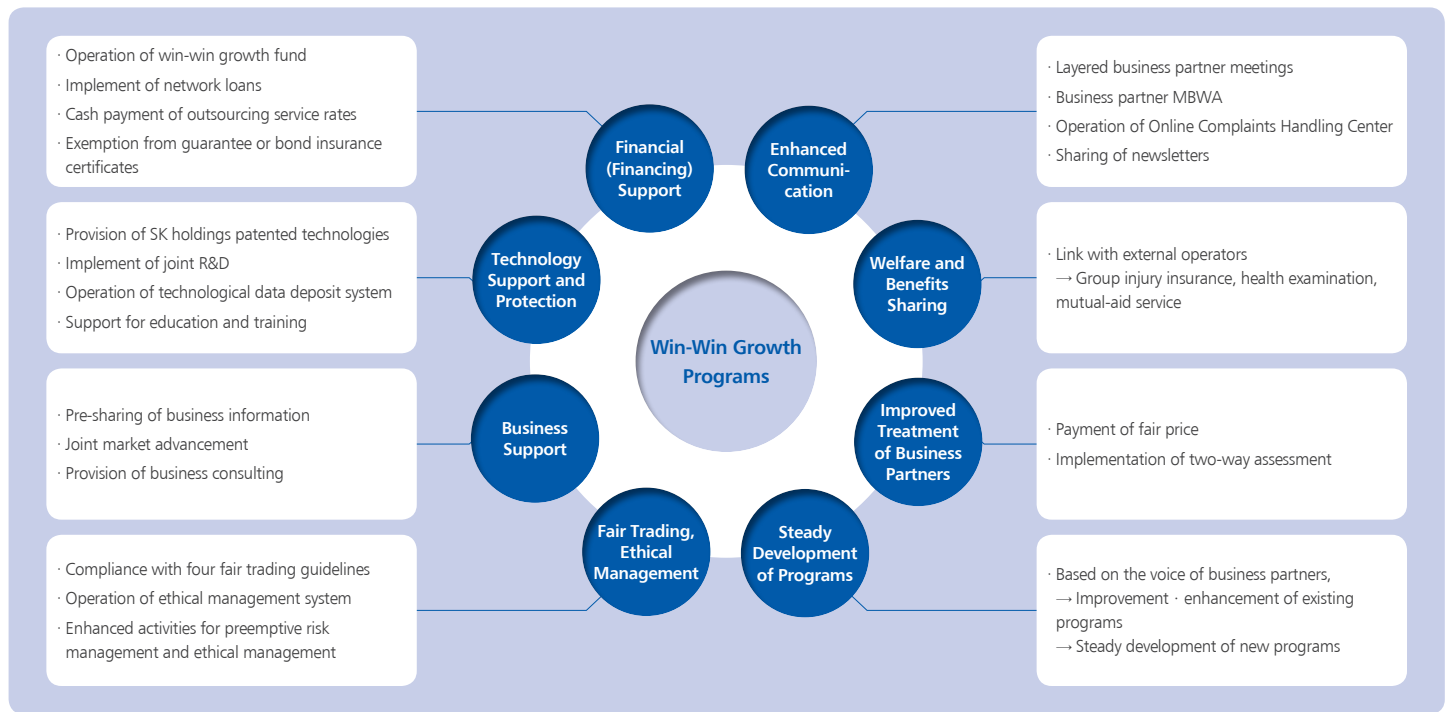
## Organization for Promoting Win-Win Growth

SK holdings internally inspects the compliance of provisions under the win-win growth agreement signed with business partners and holds meetings of win-win growth consultation to enhance fairness and legality of subcontracting transactions. The win-win growth council consists of a procurement unit that inclusively manages business partners, an ethical management team that has expertise in fair trading and ethical management, etc.



## Win-Win Partnership 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 win-win partnership programs aligned with the company’s tasks in 8 core support areas, such as finance, technology, and business, and 21 subdivided areas.



## Enhanced Communication with Business Partners

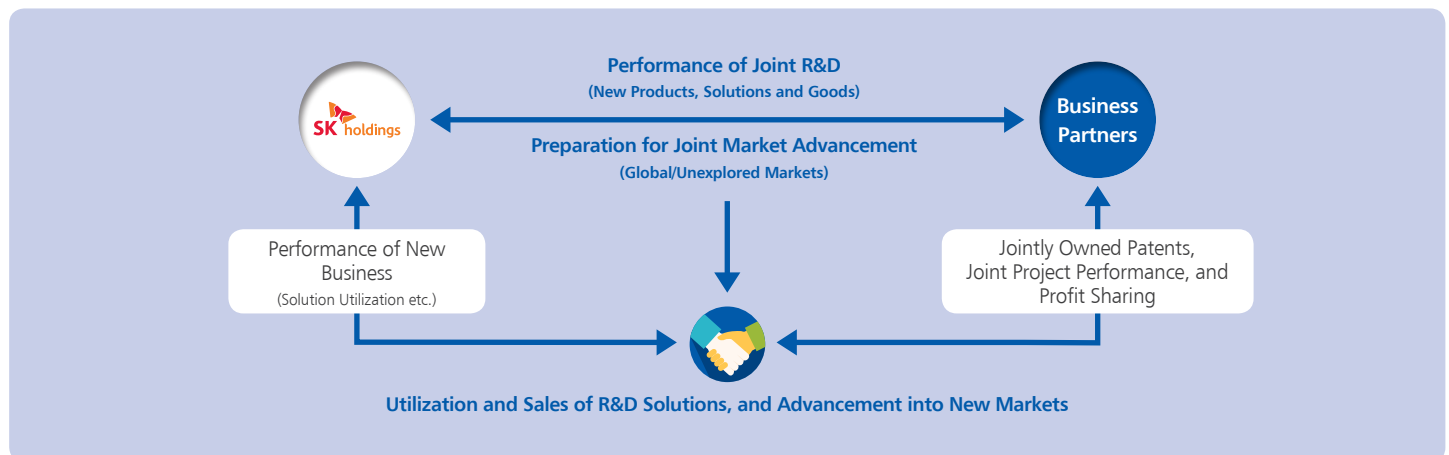
CEO meetings are held periodically to share and communicate determination for win-win growth with business partners. SK holdings routinely accepts diverse complaints and suggestions from business partners and cooperates by deploying procurement information systems. It also encourages collaboration and eliminates working-level difficulties through visiting and communicating with the CEO, employees of business partners.

## Free Support of Advanced Technologies and Protection of Technologies Belonging to Business Partner

**Provision of SK holdings Patented Technologies>** SK holdings can 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 on SK holdings patented technologies to business partners.



**Operation of Technology Protection or Deposit System>** SK holdings and business partners jointly deposit technological data with a third-party agency to protect their core technological data. In doing so, SK holdings could prevent illegitimate take-over of business partner technologies, prove facts concerning development, prevent loss or leakage of technologies, etc. In addition, SK holdings could secure licenses and stable R&D based on the technology deposit system.



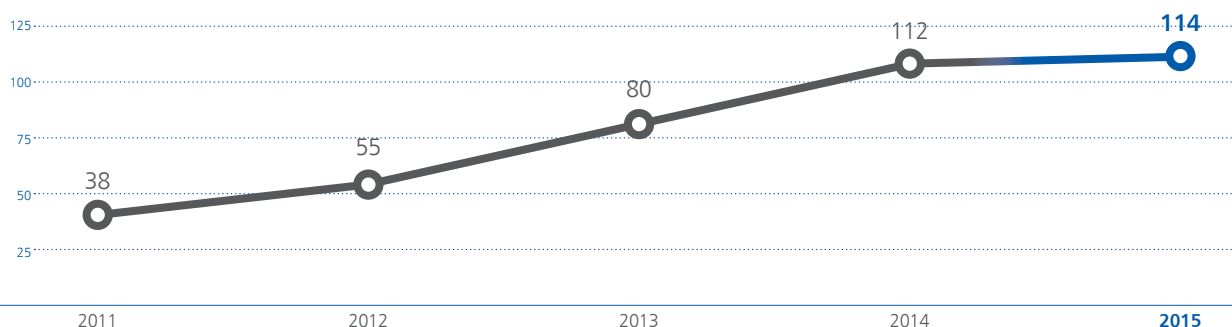
**Joint R&D and Advancement into New Markets with Technological Support>** SK holdings helped business partners to enhance their capabilities by sharing its technologies and business know-how through joint R&D projects. In doing so, SK holdings saved resources through collaboration with specialized business partners and reduced lead time to market whereas business partners resolved their issues caused by limited resources and inferior environment issues while they performed R&D based on a stable market.

## Support to Business Partners Finance · Education · Training

**Financial Support**► To support the financial soundness of business partners by helping secure liquidity based on planned financial activities, SK holdings developed a win-win growth fund, utilized network loans, paid for outsourced services and products in cash once a week, and earlier on, major Korean holiday seasons like New Year or Thanksgiving. Furthermore, based on trustful relations with business partners, it has helped its business partners reduce expenses by exempting them from various guarantee bond and insurance policies.

### Scale of Financial Support to Business Partners

Unit: KRW 100 million



**Technology and Education Support**► SK holdings supports technological education 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 education courses' to help enhance their technological workforce. In addition, it has helped young people to enhance their qualifications for employment by offering occupational training and internships. From 2016, it also plans to start the 'SK employment stepping stone system' to help business partners develop outstanding workforces.

Classification	Program Name	Detailed Programs	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
	Win-Win Growth MBA	8-week mini MBA course (including global workshops) * conducted twice	8
	Win-Win Growth e-Learning	75 online courses offered on IT, OA, management, etc.	2,038
	VLS	31 online courses offered on IT, management strategy, etc.	211
SK holdings	Business Partner CEO Seminars	Special lectures on IT trends for CEOs of business partners once per quarter	366
	Support Attendance to Outside Training Institutes	Support attendance to multi campus, Korea Productivity Center education courses	12

## Sustainable Management 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 the depth of partnership with SK holdings, as well as sustainability elements such as ethical management and fair trade. 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 our business partners based on their assessment results. Business partner grades are largely divided into Strategic BP, Excellent BP, and Ordinary BP. Strategic BPs refer to business partners who are in strategic partnerships with SK holdings and are classified as top-priority recipients of collaborative opportunities and win-win growth partnership programs. The Excellent BPs are partners with excellent BP assessment results and can have a good partnership with SK holdings. These partners are also classified as priority recipients of win-win growth partnership programs and are eligible to be promoted to Strategic BPs. The Ordinary BPs are partners with certain levels of market competitiveness and financial soundness, who can carry out transactions with SK holdings as basic business partners necessary for SK holdings to perform its business operations. SK holdings inclusively determines the level of its business partners' social responsibility by adding their SHE (Safety, Healthy, and Environment) management items to its existing business partner evaluation items of human rights, labor, fair trading, and eco-friendliness from 2015.

\* Criteria for merit/demerit points in an annual assessment of business partners: Bonus points (new business/win-win partnership and CSR practices, etc.) / Demerit points (failure to comply with policies such as ethical management and security)



### Business Partner Sustainable Management Evaluation Checklist

Classification	Evaluation Checklist	Details	Checklist by Item
Human Rights, Labor, Safety	Human Rights	Equal Employment and Diversity	Do employees face discrimination at work based on ethnicity, religion, physical disability, gender, or region of origin?
	Labor	Labor-Management Relations	Does the company operate systems and programs for maintaining collaborative labor-management relations?
		Working Conditions	Is the company committed to improving employee working conditions and the work environment?
	Safety	Health-Safety	Is the company committed to improving employee health and safety?
Social Responsibility	Fair Trade	Compliance with Fair Trade	Have there been incidents of late payments or legal actions related to Fair Trade?
	Social Contribution	Social Contribution Activities	Do the company and its employees conduct donation and volunteer activities?
Environment	Greenhouse Gas	Reduction of Greenhouse Gas Emissions	Does the company conduct activities to reduce greenhouse gas emissions?
	Green Purchasing	Green Procurement Practices	Does the company have any program for purchasing green products? Or has the company ever purchased green products?

### Business Partners by Type and Grade

Type of Business Partners	Number of Business Partners	Remarks (Grade)		
		Regular	Excellent	Strategic
Purchase of Goods		195	27	-
Outsourcing		132	28	5
Total		327	55	5
Business Partners Available to Sign Win-Win Growth Agreement		34	21	5

## MINI CASE



SK holdings hosted the 'BP Company CEO Seminar' with over 100 CEOs in attendance, including the CEO of its business partner (BP). The event was hosted in order to share the details of its cloud business, which SK holdings is fostering as a strategic business, and to construct a 'Shared growth type cloud business ecosystem' with capable BP companies through the introduction of the 'SK Cloud Channel Program.' Business partners that participate in the cloud channel program shall be classified into independent service vendor (ISV), system integration (SI) and exclusive distributor (reseller) depending on each of their cloud business-related experience and solution ownership status, and support will be provided in the areas of customized marketing, sales, training and technology so that companies can enhance their cloud business capabilities quickly.

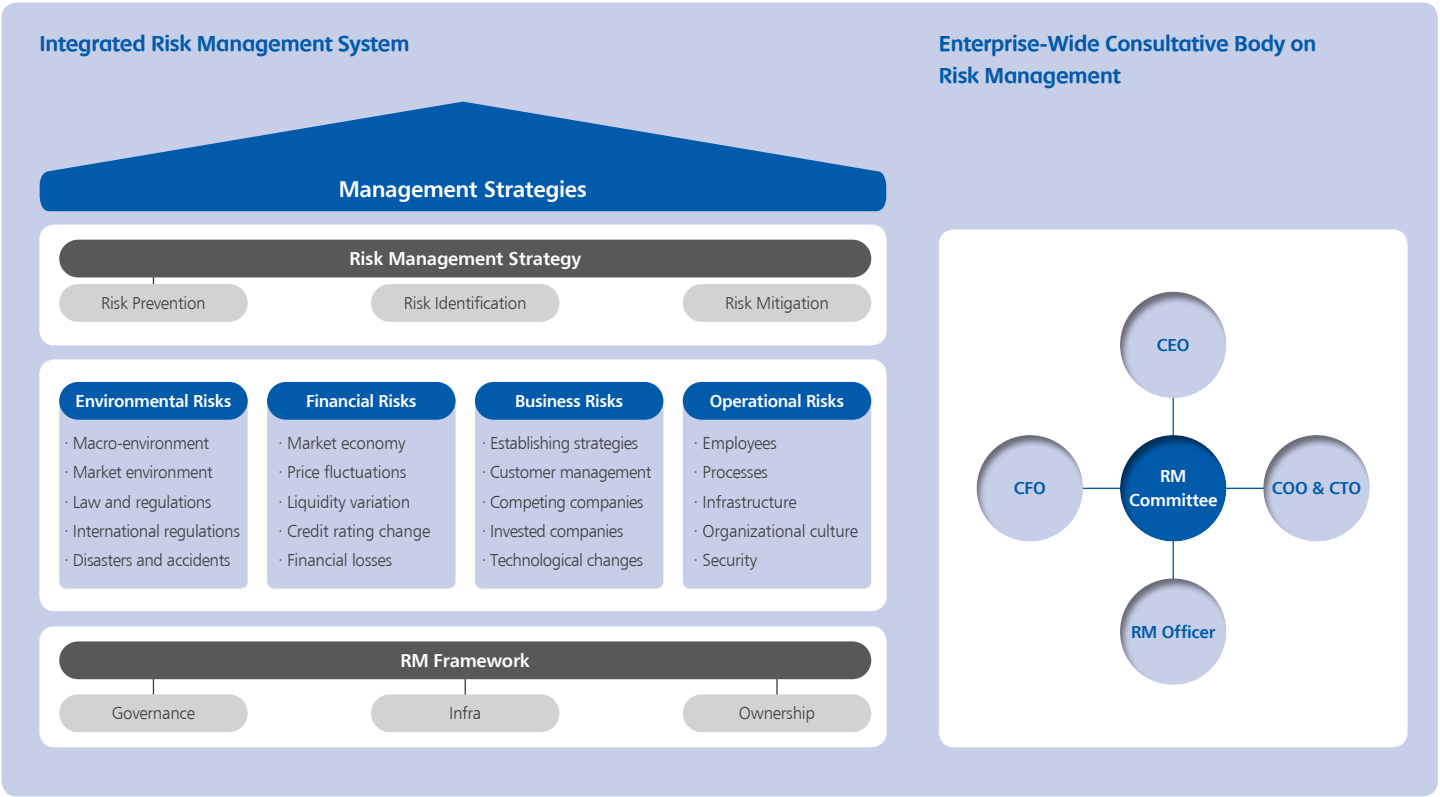


# INTEGRATED RISK MANAGEMENT

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.

## INTEGRATED RISK MANAGEMENT SYSTEM

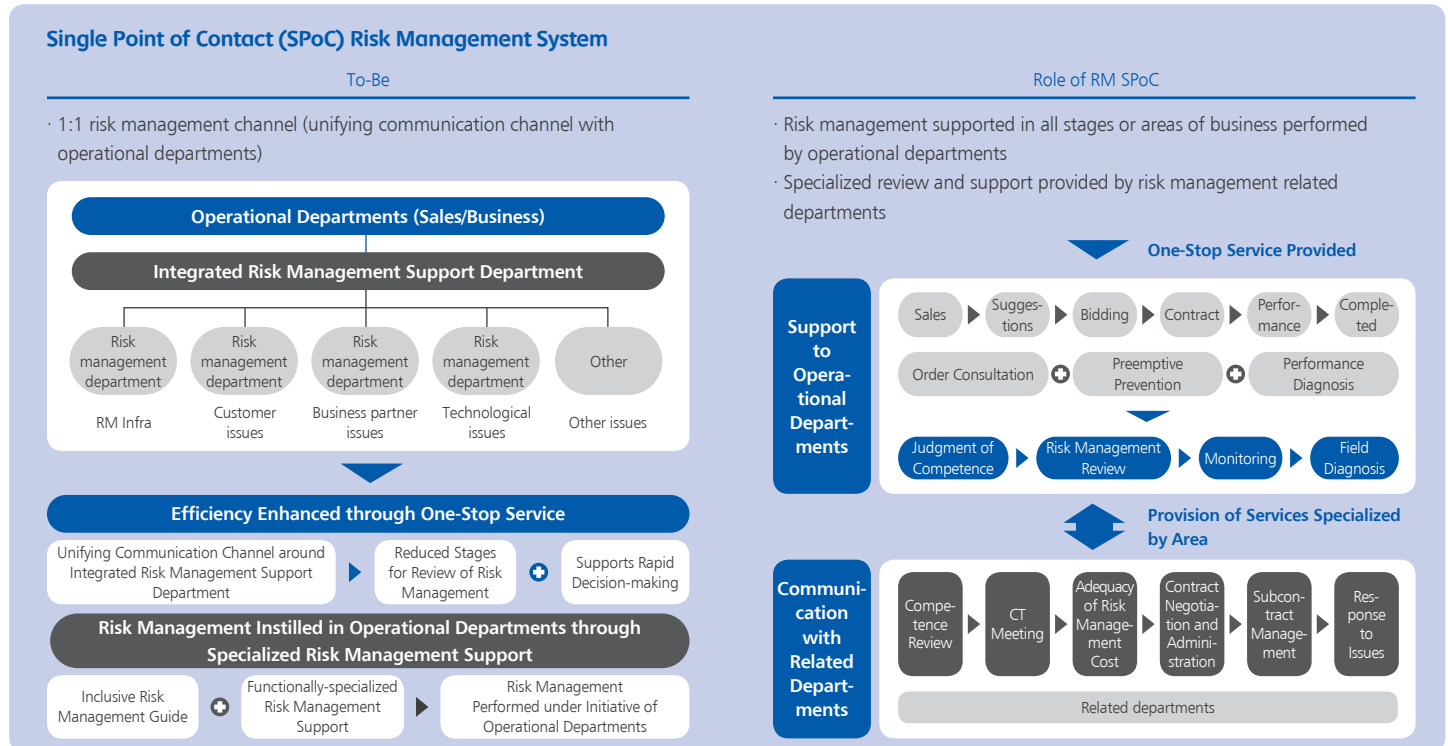
SK holdings preemptively identifies and controls environment risks from a macro perspective defined for addressing its operational risks and mid- and long-term business risks, including sales, capital, credit, interest rates, liquidity, exchange rates, investment and other financial risks, strategies, customers, investors, technological changes, and other business risks, and constituents, processes, infrastructure, organizational culture, security and other operational risks.



Furthermore, SK holdings has deployed various measures and systems to perform preventive risk-reduction strategies as well as responding to risks by defining a risk management framework. In order to prevent them in advance, it has developed plans to address possible risks by surveying all circumstances and measuring their degree of impact which can adversely affect business. It responds to existing risks by analyzing them immediately and takes appropriate actions to prevent recurrence of similar risks through feedback.

It also makes business decisions based on risk prediction and review by operating a consultative body on enterprise-wide risk management. It assists all operational and risk management departments to share opinions naturally in such processes.

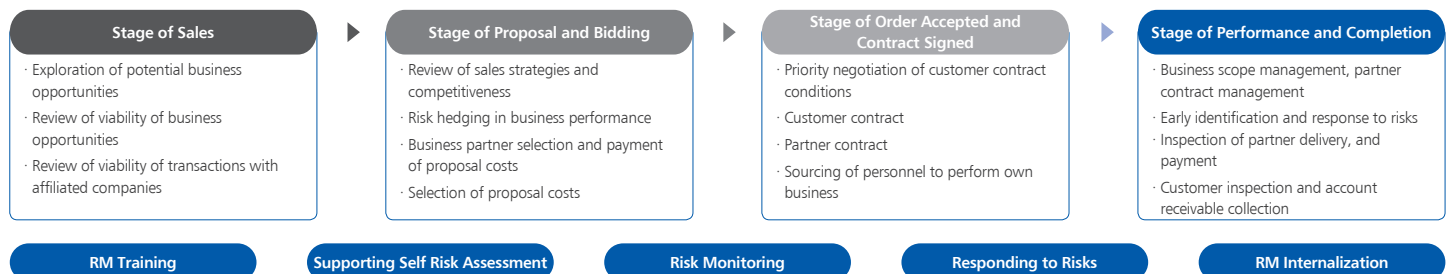
**Single Point of Contact (SPoC) Risk Management System Introduced** SK holdings provides comprehensive support to risk management by introducing a Single Point of Contact (SPoC) risk management system in 2015 exclusively responsible for each business unit in order to generate efficient business environments through a one-stop service integrating risk management and layered communication channels.



## Business Risk Management

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, proposition, contract, and execution. The project manager identifies risks by preparing a self-assessment checklist and conducts an internal audit, presents the risks at a risk review meeting, and organizes 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, overall project risks are deliberated to determine the costs and price at a project evaluation meeting. Through risk management, the project manager effectively executes a project, and the related teams regularly conduct risk monitoring of the project and manage risks.

### Risk Checklist by Project Stage and RM Support Areas



## Propagation of Risk Management Culture

SK holdings operates diverse compliance programs for creating a culture of autonomous compliance with Fair Trade law and regulations, including officers’ seminars, sworn statements, risk management training for personnel, compliance campaigns, revision of autonomous compliance manual, and operation of risk management portals. Risk management education is segmented into contents differentiated by job group or grade and degree of difference by defining systems of capabilities required or suitable to changes in environment for the relevant business. In particular, it collects information on business needs and identifies core risks through training enabling pre-occurrence identification of and response to risks of new business areas. In addition, it routinely publishes laws, institutions, internal policies and policy trends through its risk management portal. It also manages risk-related data available to utilize for business, and information concerning its enterprise-wide risk management systems and individuals responsible for risk management.

### Education on Risk Management



Education by job group or grade, VLS (online education)

### Revision of Autonomous Compliance Manual

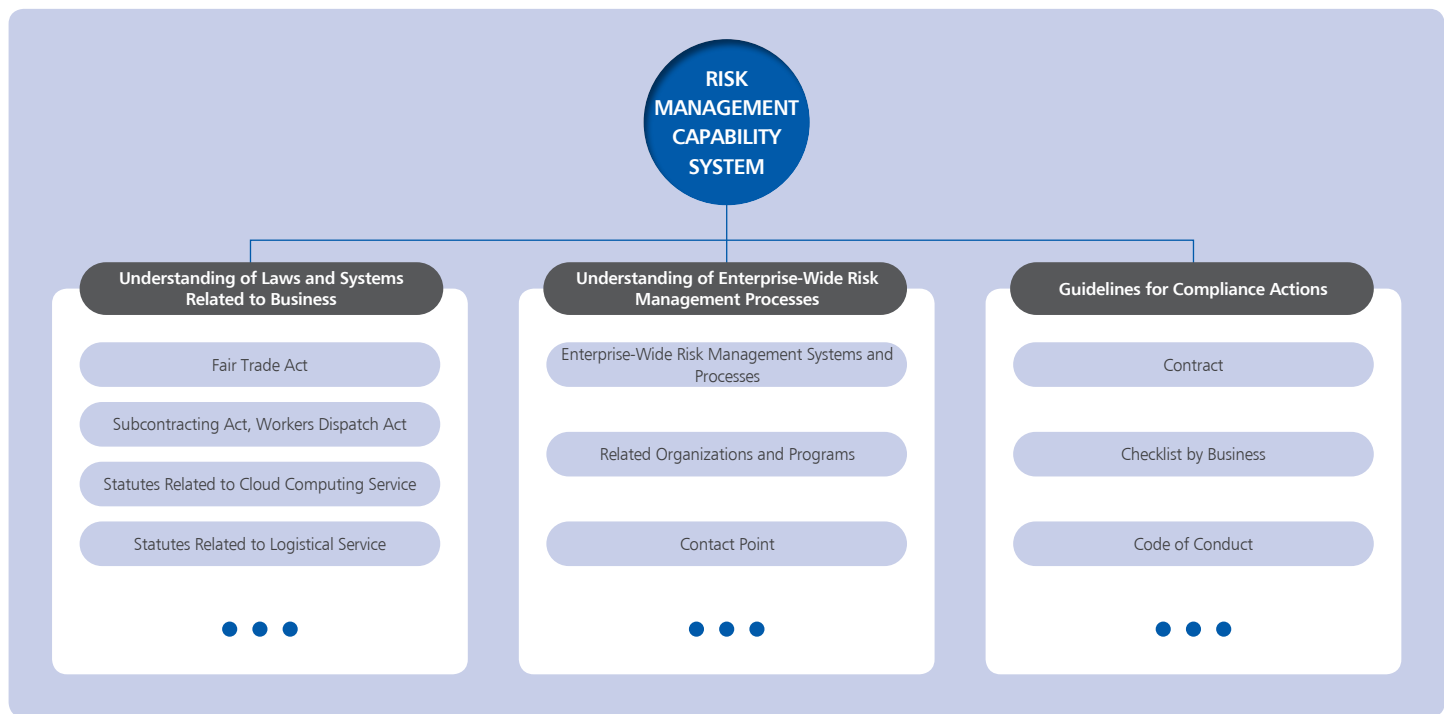


Production and internal distribution of manuals

### Operation of Risk Management Portal



Data concerning risk-management systems, processes, and systems



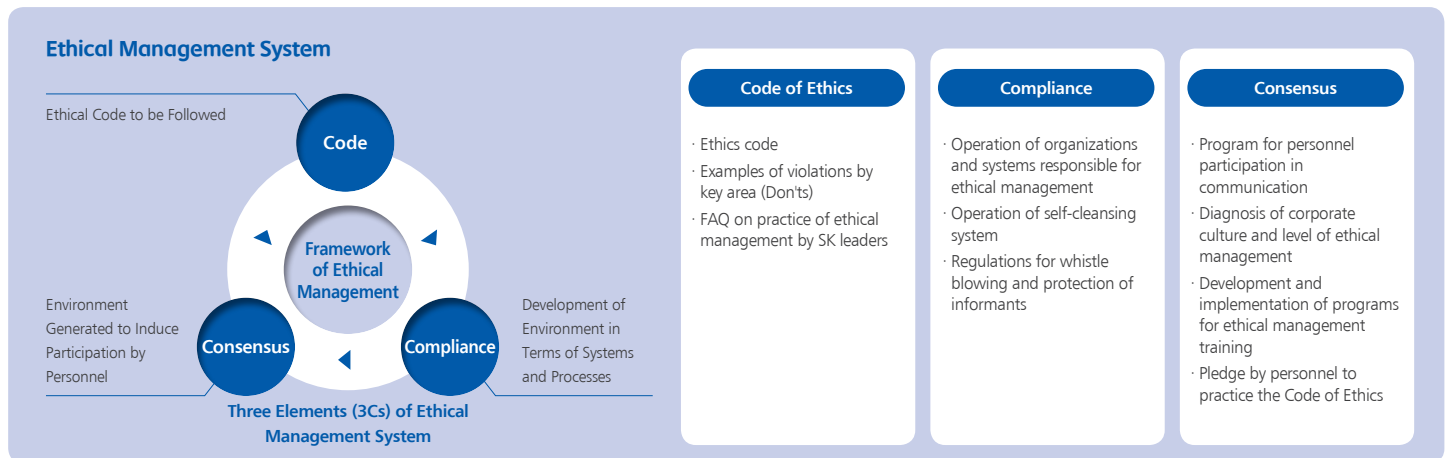


# ETHICAL · TRANSPARENT MANAGEMENT

## ETHICAL MANAGEMENT PRACTICED TO DEVELOP HEALTHY CORPORATE CULTURE

SK holdings encourages all of its employees to develop a proper attitude to ethics, pursues the happiness of all stakeholders, including customers, shareholders, partners, employees, and society, through ethical management and fair trade across all business operations, and strives to uphold corporate social responsibility and an ethically healthy corporate culture.

Complying with domestic and international corporate ethics and laws is essential to the existence of a company as a responsible corporate citizen. Furthermore, as greater emphasis is placed on corporate social responsibility and as corporate transparency and morality become more important, SK holdings announced the adoption of ethical management on November 1, 2002. Since then, the company has devoted itself to incorporating ethical management into its corporate culture through a systemic 3Cs (Code, Compliance, and Consensus)- approach.



### Code of Ethics

The Code of Ethics has been consistently updated since it was enacted in 2003. It is utilized as the guidelines for ethical judgment and actions by the employees. All constituents are responsible for complying with the code. The organization leaders are required to support or control their personnel or business-related stakeholders to properly understand and comply with the company's code of ethics. The constituents are required to judge and act based on the provisions of the code when they face ethically sensitive circumstances while performing their duties. However, the constituents are supposed to judge and act autonomously based on the principles for decision making, including legitimacy, transparency and rationality, when the code does not provide clear-cut guidelines. They are also supposed to follow advice of their leader or the department responsible for ethical management when they are not confident in their own judgment.

**Practice of Ethical Management** The ethical management guidelines provides clear provisions concerning the ethics of the personnel, ethics toward customers, society, company, and shareholders, and protection of informants (whistle blowing).

Classification	Contents
Employees	Mutual respect and prohibition of exchange of money or valuables between constituents, roles of leaders, etc.
Customers	Efforts for securing customers' trust, protection of their information, 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.
Company · Shareholders	Priority on company benefits when in conflict of interest, protection of company assets and information, reporting and business management, etc.
Protection of Informants	Operation of whistle blowing system, protection of whistle blowers, prohibition of disadvantageous actions, etc.

**Examples of Violations by Key Area (Don'ts)**> In 2010, 'ethical guidelines(Don'ts)' were produced and provided to personnel for their use as ethical guidelines in their daily business activities by collecting and organizing diverse examples of violations of ethical management regulations. The items are required to follow while performing their duties are classified into 111 items in five areas by reflecting the related internal policies, existing controversies, and laws applicable to types of events. In 2016, the ethical guidelines (Don'ts) were renamed to 'Examples of violations by key area (Don'ts)'.

Area	Items	Key Details
Unethical	23	Basic etiquette, sexual harassment, money or valuables, treatment, or entertainment, conflicts of interest, protection of company assets and information, etc.
Security	14	PC security, information and document management, project security, etc.
Subcontract	18	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	Issues concerning trade, unfair or illegitimate internal transactions, unfair common actions (rigging), unfair trading, etc.
Reporting · Management	33	Risky business promotion, false, delayed or partial reporting, negligent business management, etc.

In addition, the company developed leaders’ guidelines for ethical management to strengthen their exemplary practice in 2013. The guidelines are shared and periodically reviewed. The leaders’ guidelines for ethical management includes specific provisions concerning procedures for settling conflicts of interest, prohibition of solicitation for purchase or HR actions, guidelines and examples concerning private use of company assets, prohibition of transfer of company-provided overseas travel benefits to third parties, protocol-related warnings, prohibition or allowed cases of payment to or receipt from money or valuables from business partners, and procedures for handling gift items received inevitably.

## Compliance

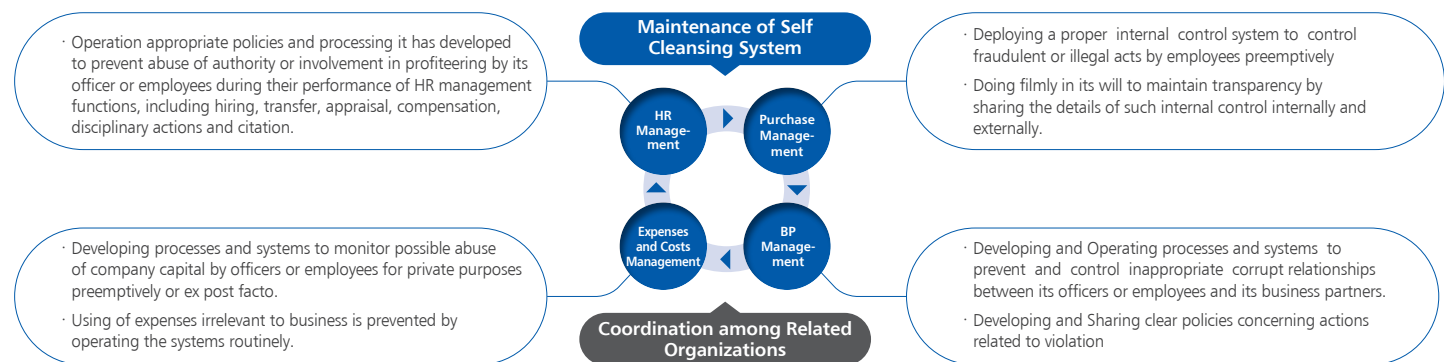
**Ethical Management Organizations**> SK holdings strives to make its personnel understand and accept ethical management as part of its corporate culture through its ethical management team of the Sustainable Management Division, Corporate Culture Unit. To that end, the ethical management team designs and implements diverse systems and programs such as management diagnosis, investigation of reports, and operation of a self-cleansing system as well as enhancing the ethical mind of the personnel through training and campaigns. It also operates diagnosis and support systems to help develop ethical management activities autonomously by its subsidiaries at home and abroad.

**Whistle Blowing and Autonomous Reports**> SK holdings operates diverse channels for all stakeholders to report unethical acts. Counseling and contents of reports are accepted and treated in a confidential manner. The identity of and details reported by informants are thoroughly protected. The facts are checked and feedback is provided promptly. The company’s ethical management website (<https://ethics.sk.co.kr>) provides information concerning counseling or reporting related to ethical management. The company also operates diverse channels for reporting acts of abnormal management, including counseling on ethical management (<https://ethics.sk.co.kr/advice/ethics.aspx>), online reporting (<https://ethics.sk.co.kr/advice/reportimportance.aspx>), phone (02-6400-6262) and fax (02-6400-0613).



Counseling · Reporting on Ethical Management

**Operation of Self-Cleansing System (Risk Assessment and Ethical Management-Related Inspection Practices)**> SK holdings inspects and assesses risks periodically (once a year) using checklists compatible to the nature of duties in HR, purchasing, business partners and costs in order to enhance autonomous practice of ethical management rules by the operational units. In addition, the ethical management team also conducts periodic audits of business units and audits as required for reports received through the reporting channels.



**Examples of Verified Violations of Policies and Discipline and Actions Taken** In 2015, a total of three cases of disciplinary violations were discovered – equity investment in a partner company, hiring, incomplete reporting and neglecting supervision. Disciplinary actions were taken – one dismissal and two formal warnings issued. Recurrence of similar violations is prevented by announcing the cause and details of such disciplinary actions.

## Consensus Development

**Ethics Education and Diffusion of Practicing Culture** SK holdings implements diverse practical activities periodically each year to form a consensus among its personnel as well as pledge to practice ethical management in order to induce voluntary practice and enhance their understanding of ethical management. Mandatory education is conducted on ethical management for newly hired or appointed employees. Ethical management is included in tests for promotion to help instill ethical management among them as material value of the company. The performance of ethical management by the employees is diagnosed through periodic surveys and the results are reflected on business management to induce continued progress in their performance of ethical management.

**Number of Workplaces Found to be at Risk of Violation** Unit: numbers



4

**Ratio of Workplaces Found to be at Risk of Violation** Unit: %



100

### Communication and Participation Program for Personnel



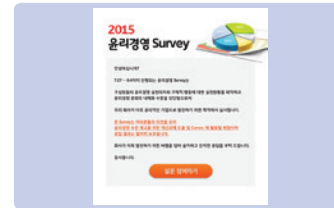
Monthly ethical management newsletter, guidelines for leaders and employees, ethical management campaigns

### Development and Implementation of Ethical Management Training



Development of courses for newly hired personnel, project managers, team leaders and VLS (online training)

### Diagnosis of Ethical Management Level



Survey of Ethical Management

### Pledge on Practice of Ethics



Pledge by Personnel on Practice of Ethics

**Implementation of Compliance Program** SK holdings has adopted and faithfully adheres to the Compliance Program through collaboration with the ethics management team and the business support team to establish a culture of fair trade with business partners and improve the level of compliance.



Autonomous Compliance with Fair Trade Law  
· Declaration by CEO

## Four Guidelines of Compliance

### Entering into Contracts

- Build contract infrastructure
- Determine an appropriate delivery date after sufficient negotiations
- Prohibit unfair price reductions

### Selection of Business Partners

- Enhance objectivity and fairness in business partner selection/ cancellation criteria
- Disclose the criteria for selecting/ canceling selection of business partners and the selection results

### Setup · Operation of Internal Deliberation Committee

- Set up/operate a monitoring group for unfair transactions
- Enter into a contract at or higher than a certain price / Deliberate in advance before determining the price
- Deliberate on appropriateness of business partner selection / cancellation criteria and procedure

### Issuing · Safekeeping of Documents

- Issuing written subcontract agreements (Retention period of 3 years)



# SUSTAINABLE PERFORMANCE







# ECONOMIC PERFORMANCE

## Economic Performance

(Unit: KRW million)

Classification	2013	2014	2015
<b>Current Assets</b>	988,337	927,128	29,765,131
Cash and cash equivalents	259,061	246,017	6,995,224
Stock inventory	83,675	141,780	5,643,327
Other current assets	645,601	539,331	17,126,580
<b>Non-Current Assets</b>	4,304,593	4,379,911	66,868,678
Affiliated companies and joint ventures	3,391,718	3,314,585	11,157,775
Tangible assets	467,969	574,183	39,445,286
Intangible assets and business rights	112,594	101,737	9,749,429
Other non-current assets	332,312	389,406	6,516,188
<b>Total Assets</b>	5,292,930	5,307,039	96,633,809
<b>Current Liabilities</b>	873,214	640,529	25,919,322
<b>Non-Current Liabilities</b>	1,918,912	2,064,142	30,637,237
<b>Total Liabilities</b>	2,792,126	2,704,671	56,556,559
<b>Controlling Interest</b>	2,500,364	2,585,433	12,566,518
Equity	10,000	10,000	10,000
Other paid-in capital	535,911	555,097	4,773,965
Retained earnings	3,126,460	3,178,899	7,801,713
Other components of capital	100,185	48,369	24,545
<b>Non-Controlling Interests</b>	440	16,935	27,510,732
<b>Total Equity</b>	2,500,804	2,602,368	40,077,250
<b>Liabilities and Capital Total</b>	5,292,930	5,307,039	96,633,809
<b>Number of Companies Included in the Consolidated Statement</b>	13	14	277
<b>I. Revenue</b>	2,301,755	2,425,966	39,569,775
<b>II. Operating Income</b>	225,193	271,542	1,403,264
<b>III. Net Profit from Continuing Operations after Corporate Tax and Expenses</b>	269,259	187,267	6,238,848
<b>IV. Consolidated Net Profit from Continuing Operations</b>	202,347	129,899	5,658,723
<b>V. Net Operating Income</b>	202,347	129,899	5,549,259
Net income attributable to controlling interest	202,256	127,294	5,345,978
Net income attributable to noncontrolling interest	91	2,605	203,281
<b>VI. Profit per Equity Share Held by Controlling Company Owners (Unit:KRW)</b>			
Earnings per share	4,449	2,891	107,921
Earnings per share from continuing operations	4,449	2,891	108,654

\* Business unit is the sum from January to December 2015. And holding unit is the sum from August to December 2015.(consolidated IFRS)



# ENVIRONMENTAL PERFORMANCE

## Energy Consumption

Classification		Unit	2013	2014	2015
<b>Total Energy Consumption (Absolute Amount, Excluding Scope 3)</b>		TJ	534	609	<b>708</b>
<b>Gas (LNG)</b>		TJ	7	9	<b>9</b>
<b>Electricity</b>		TJ	520	580	<b>683</b>
<b>District Heating</b>		TJ	7	20	<b>17</b>
<b>Total Energy Consumption (Absolute Amount, Excluding Scope 3)</b>	Per KRW billion in revenue	TJ	0.232	0.251	<b>0.343</b>
	Per employee	TJ	0.123	0.148	<b>0.172</b>
<b>Gas (LNG)</b>	Per KRW billion in revenue	TJ	0.003	0.004	<b>0.005</b>
	Per employee	TJ	0.001	0.002	<b>0.002</b>
<b>Electricity</b>	Per KRW billion in revenue	TJ	0.226	0.239	<b>0.331</b>
	Per employee	TJ	0.12	0.141	<b>0.166</b>
<b>District Heating</b>	Per KRW billion in revenue	TJ	0.003	0.008	<b>0.008</b>
	Per employee	TJ	0.001	0.005	<b>0.004</b>

## Greenhouse Gas Emissions

Classification		Unit	2013	2014	2015
<b>Scope 1</b>		tCO <sub>2</sub> e	368	452	<b>472</b>
<b>Scope 1 Emission Intensity per Unit</b>	Per KRW billion in revenue	tCO <sub>2</sub> e	0.16	0.186	<b>0.229</b>
	Per employee	tCO <sub>2</sub> e	0.085	0.11	<b>0.115</b>
<b>Scope 2</b>		tCO <sub>2</sub> e	25,423	28,691	<b>33,536</b>
<b>Fuel &amp; energy not included in Scopes 1 &amp; 2</b>	Per KRW billion in revenue	tCO <sub>2</sub> e	11.049	11.827	<b>16.240</b>
	Per employee	tCO <sub>2</sub> e	5.852	6.979	<b>8.140</b>
<b>Scope 3</b>		tCO <sub>2</sub> e	2,792	2,935	<b>4,439</b>
<b>Upstream</b>	Fuel & energy not included in Scopes 1 & 2	tCO <sub>2</sub> e	942	1,050	<b>1,233</b>
	Transportation & distribution	tCO <sub>2</sub> e	10	10	<b>9</b>
	Waste generated from operations	tCO <sub>2</sub> e	11	16	<b>11</b>
	Business trips	tCO <sub>2</sub> e	560	566	<b>1,063</b>
	Employee commuting	tCO <sub>2</sub> e	8	8	<b>8</b>
	Leased assets	tCO <sub>2</sub> e	1,261	1,290	<b>2,114</b>
<b>Downstream</b>	Transportation & Distribution, Manufacturing, Use, Disposal, Leased assets, Franchise	tCO <sub>2</sub> e	-	-	-

## Water/Waste

Water		Unit	2013	2014	2015
<b>Water</b>	Total amount used	ton	131,788	121,479	<b>110,266</b>
	Total amount of recycled or reused water	ton	5,915	3,052	<b>12,258</b>
	Total rate of recycled or reused water compared to total amount of water intake	%	4	2.5	<b>11</b>
<b>Waste</b>	Recycling	ton	145	155	<b>166</b>
	General waste	ton	94	134	<b>95</b>
	Specified waste	ton	-	2.6	-
	Cost of emissions treatment	KRW	31,416,000	36,259,000	<b>53,902,200</b>



# SOCIAL PERFORMANCE

## Current State of Employees

Classification	Unit	2013	2014	2015
<b>Total Number of Employees</b>	persons	4,344	4,111	<b>4,174</b>
Male	persons	3,532	3,353	<b>3,397</b>
Female	persons	812	758	<b>777</b>
<b>Total Number of Full-Time Jobs</b>	persons	4,195	4,036	<b>4,096</b>
Male	persons	3,438	3,309	<b>3,344</b>
Female	persons	757	727	<b>752</b>
<b>Total Number of Contracted Jobs</b>	persons	149	75	<b>78</b>
Male	persons	94	44	<b>53</b>
Female	persons	55	31	<b>25</b>
<b>Ratio of Non-Employees to Total Workforce</b>	%	0.6	1.2	<b>1.8</b>
Male non-employees	persons	14	17	<b>17</b>
Female non-employees	persons	10	34	<b>58</b>
<b>Employees with Disabilities</b>	persons	31	39	<b>40</b>
<b>Patriots and Veterans</b>	persons	81	77	<b>75</b>
<b>Ratio of New Recruits</b>	%	7	5	<b>8</b>
<b>Turnover (Full-Time Employees)</b>	persons	285	221	<b>342</b>
Male	persons	222	182	<b>241</b>
Female	persons	63	39	<b>101</b>
<b>Turnover (Full-Time Employees)</b>	%	10	4	<b>6</b>
Male	%	10	5	<b>5</b>
Female	%	8	2	<b>7</b>

\* It(2013 , 2014) is the sum of the existing SK C&C. 2015's total is the sum of the surviving corporation in the business sector (C & C) and holding sector (holdings)

## Health/Safety

Classification	Unit	2013	2014	2015
<b>Injury (Male)</b>	cases	4	0	<b>0</b>
<b>Injury (Female)</b>	cases	0	0	<b>0</b>
<b>Injury Rate (Male)</b>	%	0.14	0.00	<b>0.00</b>
<b>Injury Rate (Female)</b>	%	0.00	0.00	<b>0.00</b>
<b>Work Days Lost (Male)</b>	days	141	0	<b>0</b>
<b>Work Days Lost (Female)</b>	days	0	0	<b>0</b>

## Parental Leave

Classification	Unit	2013	2014	2015
Employees Who Were Entitled to Parental Leave(Male)	persons	154	157	151
Employees Who Were Entitled to Parental Leave (Female)	persons	36	53	47
Employees Who Took Parental Leave(Male)	persons	13	15	11
Employees Who Took Parental Leave (Female)	persons	36	49	64
Usage Rate of Parental Leave(Male)	%	8	10	7
Usage Rate of Parental Leave (Female)	%	100	92	145
Rate of Those Who Returned to Work After Parental Leave Ended(Male)	%	100	100	83
Rate of Those Who Returned to Work After Parental Leave Ended (Female)	%	100	100	92
Rate of Retention over 12 Months After Return from Parental Leave(Male)	%	100	100	82
Rate of Retention over 12 Months After Return from Parental Leave (Female)	%	73	100	87

## Education and Training

Classification	Unit	2013	2014	2015
Average Hours of Education/Training per Person	hours	72	55	76
Male	hours	71	56	79
Female	hours	77	53	66
Associates	hours	110	67	63
Assistant managers	hours	86	69	90
Managers	hours	65	48	72
Senior managers	hours	56	51	78
General managers	hours	43	47	70

## Human Rights and Anti-Corruption

Classification	Unit	2013	2014	2015
Employees Who Received Anti-Corruption Education	persons	951	905	1,450
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	37	57	63
Rate of Security Officers Who Received Training on the Human Rights Policy and Procedure	%	100	100	100

## Social Investments

Classification	Unit	2013	2014	2015
Hours of Volunteer Work per Employee	hours	10	8	7
Employee Contributions	KRW thousand	95,023	98,328	96,242
Community Investment	KRW thousand	2,464,235	2,806,202	2,928,173

## 2015 Ratios of Social Investments



## Local Purchases in Significant Locations of Operation

Classification	Unit	2013	2014	2015
Total Amount of Purchases	KRW 100 million	8,402	7,052	3,433
Amount of Domestic Purchases	KRW 100 million	8,114	6,885	3,266
Domestic (Seoul)	KRW 100 million	7,088	5,996	2,481
Domestic (Local)	KRW 100 million	1,026	889	785
Amount of Overseas Purchases	KRW 100 million	288	167	167

## R&D Investments

Classification	Unit	2013	2014	2015
R&D Costs	KRW million	19,744	25,830	29,578
Selling, general and administrative expenses (SG&A)	KRW million	9,555	15,614	12,335
Development costs	KRW million	10,189	10,216	17,243
Ratio of R&D Costs to Revenue	%	1.09	1.31	1.52

## Government Support

Classification	Unit	2013	2014	2015
Total Amount of Support	KRW million	1,560	727	521
Subsidies	KRW million	86	0	0
Tax Deductions	KRW million	1,474	727	521



# APPENDIX



# GRI G4 CONTENT INDEX

## G4 General Standard Disclosure

G4 Indicator		Coverage	Page / Direct Answer
<b>Strategy and Analysis</b>			
G4-1	Provide a statement from the most senior decision-maker of the organization (such as CEO, chair, or equivalent senior position) about the relevance of sustainability to the organization and the organization's strategy for addressing sustainability.	●	4~7
G4-2	Provide a description of key impacts, risks, and opportunities.	①	4~7, 62~64
<b>Organizational Profile</b>			
G4-3	Report the name of the organization.	●	10~11
G4-4	Report the primary brands, products, and services.	●	86~109
G4-5	Report the location of the organization's headquarters.	●	111
G4-6	Report the number of countries where the organization 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.	①	110
G4-7	Report the nature of ownership and legal form.	●	52~53
G4-8	Report the markets served (including geographic breakdown, sectors served, and types of customers and beneficiaries).	●	10~11, 86~109
G4-9	Report the scale of the organization.	●	70, 72
G4-10	Report the structure of employees in the organisation.	●	72
G4-11	Report the percentage of total employees covered by collective bargaining agreements.	①	34
G4-12	Describe the organization's supply chain.	●	57~61
G4-13	Report any significant changes during the reporting period regarding the organization's size, structure, ownership, or its supply chain.	●	112
G4-14	Report whether and how the precautionary approach or principle is addressed by the organization.	●	62~64
G4-15	List externally developed economic, environmental and social charters, principles, or other initiatives to which the organization subscribes or which it endorses.	●	82~84
G4-16	List memberships of associations (such as industry associations) and national or international advocacy organizations in which the organization.	Omission	Check limit
<b>Identified Material Aspects and Boundaries</b>			
G4-17	List all entities included in the organization's consolidated financial statements or equivalent documents. Report whether any entity included in the organization's consolidated financial statements or equivalent documents is not covered by the report.	●	10~11
G4-18	Explain the process for defining the report content and the Aspect Boundaries, and how the organization has implemented the Reporting Principles for Defining Report Content.	●	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 the Aspect Boundary within the organization.	●	16~17
G4-21	For each material Aspect, report the Aspect Boundary outside the organization.	●	16~17
G4-22	Report the effect of any restatements of information provided in previous reports, and the reasons for such restatements.	●	110
G4-23	Report significant changes from previous reporting periods in the Scope and Aspect Boundaries.	●	110
<b>Stakeholder Engagement</b>			
G4-24	Provide a list of stakeholder groups engaged by the organization.	●	13
G4-25	Report the basis for identification and selection of stakeholders with whom to engage.	●	13
G4-26	Report the organization's approach to stakeholder engagement, including frequency of engagement by type and by stakeholder group, and an indication of whether any of the engagement was undertaken specifically as part of the report preparation process.	●	13
G4-27	Report 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. Report the stakeholder groups that raised each of the key topics and concerns.	●	13
<b>Report Profile</b>			
G4-28	Reporting period (such as fiscal or calendar year) for information provided.	●	110
G4-29	Date of most recent previous report (if any).	●	110
G4-30	Reporting cycle (such as annual, biennial).	●	111
G4-31	Provide the contact point for questions regarding the report or its contents.	●	110
G4-32	Report the 'in accordance' option the organization has chosen, the GRI Content Index for the chosen option, and the reference to the External Assurance Report, if the report has been externally assured.	●	110
G4-33	Report the organization's policy and current practice with regard to seeking external assurance for the report, the scope and basis of any external assurance provided (if not included in the assurance report accompanying the sustainability report), the relationship between the organization and the assurance providers, and whether the highest governance body or senior executives are involved in seeking assurance for the organization's sustainability report	●	53

G4 Indicator		Coverage	Page / Direct Answer
<b>Governance</b>			
G4-34	Report the governance structure of the organization, including committees of the highest governance body. Identify any committees responsible for decision-making on economic, environmental and social impacts.	●	53
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.	●	52~53
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.	●	53
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.	●	53
G4-38	Report the composition of the highest governance body and its committees.	●	52~53
G4-39	Report whether the Chair of the highest governance body is also an executive officer.	●	52
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.	●	52
G4-41	Report processes for the highest governance body to ensure conflicts of interest are avoided and managed. Report whether conflicts of interest are disclosed to stakeholders, including	●	53
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	●	53
G4-43	Report the measures taken to develop and enhance the highest governance body's collective knowledge of economic, environmental and social topics.	●	53
G4-44	Report the processes for evaluation of the highest governance body's performance with respect to governance of economic, environmental and social topics. Report actions taken in response to evaluation of the highest governance body's performance with respect to governance of economic, environmental and social topics, including, as a minimum, changes in membership and organizational practice.	●	53
G4-45	Report the highest governance body's role in the identification and management of economic, environmental and social impacts, risks, and opportunities. Include the highest governance body's role in the implementation of due diligence processes. Report whether stakeholder consultation is used to support the highest governance body's identification and management of economic, environmental and social impacts, risks, and opportunities.	●	62
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.	●	62
G4-47	Report the frequency of the highest governance body's review of economic, environmental and social impacts, risks, and opportunities.	●	62~63
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.	●	53
G4-49	Report the process for communicating critical concerns to the highest governance body.	●	53
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.	●	53
G4-51	Report the remuneration policies for the highest governance body and senior executives for the below types of remuneration. Report how performance criteria in the remuneration policy relate to the highest governance body's and senior executives' economic, environmental and social objectives.	●	52
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.	●	52
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
<b>Ethics and Integrity</b>			
G4-56	Describe the organization's values, principles, standards and norms of behavior such as codes of conduct and codes of ethics.	●	65
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.	●	66~67
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.	●	66

## G4 Specific Standard Disclosures

Aspect	Materiality	G4 Indicator	Coverage	Page / Direct Answer
<b>Economic</b>				
Economic Performance	Material Aspect (DMA: p. 22)	EC1	Direct value generated and distributed	● 31
		EC2	Financial implications and other risks and opportunities for the organization's activities due to climate change	● 36~37
		EC3	Coverage of the organization's defined benefit plan obligations	● 44
		EC4	Financial assistance received from government	● 74
Market Presence	Non-material Aspect	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, but detailed amounts cannot be disclosed.
Indirect Economic Impacts	Material Aspect (DMA: p. 45)	EC7	Development and impact of infrastructure investments and services supported	● 46~49
		EC8	Significant indirect economic impacts, including the extent of impacts	● 47~49
Procurement Practices	Non-material Aspect	EC9	Proportion of spending on local suppliers at significant locations of operation	● 74
<b>Environmental</b>				
Energy	Material Aspect (DMA: p. 32)	EN3	Energy consumption within the organization	● 71
		EN4	Energy consumption outside of the organization	● 71
		EN5	Energy intensity	● 71
		EN6	Reduction of energy consumption	● 36~37, 71
		EN7	Reductions in energy requirements of products and services	● 36~37
Water	Non-material Aspect	EN8	Total water withdrawal by source	● 71
		EN10	Percentage and total volume of water recycled and reused	● 71
Emissions	Material Aspect (DMA: p. 32)	EN15	Direct greenhouse gas (GHG) emissions (scope 1)	● 71
		EN16	Energy indirect greenhouse gas (GHG) emissions (scope 2)	● 71
		EN17	Other indirect greenhouse gas (GHG) emissions (scope 3)	● 71
		EN18	Greenhouse gas (GHG) emissions intensity	● 71
		EN19	Reduction of greenhouse gas (GHG) emissions	● 36~37, 71
		EN20	Emission 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.
Effluents and Waste	Non-material Aspect	EN23	Total weight of waste by type and disposal method	● 71
Products and Services	Material Aspect (DMA: p. 32)	EN27	Extent of impact mitigation of environmental impacts of products and services	● 36~37
		EN28	Percentage of products sold and their packaging materials that are reclaimed by category	N/A Do not apply , which is typical of business.
Compliance	Non-material Aspect	EN29	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with environmental laws and regulations	● No violation of environmental laws and regulations etc.
Overall	Non-material Aspect	EN31	Total environmental protection expenditures and investments by type	● 36~37
Supplier Environmental Assessment	Non-material Aspect	EN33	Significant actual and potential negative environmental impacts in the supply chain and actions taken	● 60~61
Environmental Grievance Mechanisms	Non-material Aspect	EN34	Number of grievances about environmental impacts filed, addressed, and resolved through formal grievance mechanisms	● 13
<b>Social: Labor practices and decent work</b>				
Employment	Material Aspect (DMA: p. 38)	LA1	Total number and rates of new employee hires and employee turnover by age group, gender, and region	● 39, 72
		LA2	Benefits provided to full time employees that are not provided to temporary or part time employees, by significant locations of operation	● 43~44
		LA3	Return to work and retention rates after parental leave, by gender	● 43, 73
Labor/Management Relations	Non-material Aspect	LA4	Minimum notice periods regarding operational changes, including whether these are specified in collective agreements	① 34
Occupational Health and Safety	Material Aspect (DMA: p. 32)	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	● 34
		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	● 72
		LA7	Workers with high incidence or high risk of diseases related to their occupation	① 35
		LA8	Health and safety topics covered in formal agreements with trade unions	● 34~35

Aspect	Materiality	G4 Indicator	Coverage	Page / Direct Answer
<b>Social: Labor practices and decent work</b>				
Training and Education	Material Aspect (DMA: p. 38)	LA9	Average hours of training per year per employee by gender, and by employee category	● 73
		LA10	Programs for skills management and lifelong learning that support the continued employability of employees and assist them in managing career endings	● 40~41, 44
		LA11	Percentage of employees receiving regular performance and career development reviews, by gender and by employee category	● 42
Diversity and Equal Opportunity	Material Aspect (DMA: p. 38)	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	● 72
Equal Remuneration for Women and Men	Non-material Aspect	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	Non-material Aspect	LA15	Significant actual and potential negative impacts for labor practices in the supply chain and actions taken	● 60~61
Labor Practices Grievance Mechanisms	Non-material Aspect	LA16	Number of grievances about labor practices filed, addressed, and resolved through formal grievance mechanisms	● 34
<b>Social : Human Rights</b>				
Non-discrimination	Non-material Aspect	HR3	Total number of incidents of discrimination and corrective actions taken	● 39
Freedom of Association and Collective Bargaining	Non-material Aspect	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	● 84
Child Labor	Non-material Aspect	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	● 84
Forced or Compulsory Labor	Non-material Aspect	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	● 84
Security Practices	Non-material Aspect	HR7	Percentage of security personnel trained in the organization's human rights policies or procedures that are relevant to operations	● 73
<b>Social : Society</b>				
Local Communities	Material Aspect (DMA: p. 45)	SO1	Percentage of operations with implemented local community engagement, impact assessments, and development programs	● 46
		SO2	Operations with significant actual or potential negative impacts on local communities	● 33~34
Anti-Corruption	Non-material Aspect	SO3	Total number and percentage of operations assessed for risks related to corruption and the significant risks identified	● 67
		SO4	Communication and training on anti corruption policies and procedures	● 65~67, 73
		SO5	Confirmed incidents of corruption and actions taken	● 67
Public Policy	Non-material Aspect	SO6	Total value of political contributions by country and recipient/beneficiary	● Under Korean laws, political contributions from companies are prohibited, and there were no political contributions from SK holdings in 2015.
Anticompetitive Behavior	Non-material Aspect	SO7	Total number of legal actions for anti competitive behavior, anti trust, and monopoly practices and their outcomes	● See the sanctions covered in the annual report.
Compliance	Non-material Aspect	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 annual report.
<b>Social : Product responsibility</b>				
Product and Service Labeling	Non-material Aspect	PR5	Results of surveys measuring customer satisfaction	● 54
Marketing Communications	Non-material Aspect	PR6	Sale of banned or disputed 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	Non-material Aspect	PR8	Total number of substantiated complaints regarding breaches of customer privacy and losses of customer data	● 56
		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 2016 SK holdings Sustainability Report (the “Report”). 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’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 2015. This included:

- Evaluation of the principles for defining the sustainability report content in the Global Reporting Initiative (GRI) Sustainability Reporting Guidelines 4.0
- 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.

## Basis of our opinion

We performed our work using DNV GL’s assurance methodology VeriSustain™, which is based on our professional experience, international assurance best practice including International Standard on Assurance Engagements 3000 (ISAE 3000). We applied the limited level of assurance. The audit was carried out in April and May 2016. The site visits were made to SK holdings Bundang building. We undertook the following activities as part of the assurance process:

- 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 associated reporting system and associated reporting systems as they relate to selected content and performance data;
- Reviewed the outcomes of stakeholder consultation report and the materiality assessment report.

## Limitations

The engagement excludes the sustainability management, performance and reporting practices of SK holdings’s associated companies, subsidiaries, suppliers, contractors and any third-parties mentioned in the Report. DNV GL did not interview external stakeholders as part of this Assurance Engagement. Economic performance based on the financial data is cross-checked with internal documents, the audited consolidated financial statements and the announcement disclosed at the website of Korea Financial Supervisory Service (<http://dart.fss.or.kr>) as well as SK holdings’s website (<http://cc.sk.co.kr/>). These documents, financial statements and the announcements are not included in this Assurance Engagement. Limited depth of evidence gathering including inquiry and analytical procedures and limited sampling at lower levels in the organization were applied. The baseline data for Environmental and Social performance are not verified, while the aggregated data at the corporate level are used for the verification. DNV GL expressly disclaims any liability or co-responsibility 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 Principles for defining report content in GRI G4 nor is prepared 'in accordance' with GRI G4 Comprehensive option. The verification team has observed that there is general awareness of sustainability context across all different levels of the organization. Further opinions with regards to the adherence to the following Principles are made below;

**Stakeholder Inclusiveness**> SK holdings has identified internal and external stakeholder groups such as Shareholders & Investors, Customers, Employees, Suppliers, Local Communities and Environmental related organizations. SK holdings engages with the stakeholders at the company and business unit levels through various channels. SK holdings conducted the meeting with external stakeholders to listen to interests and expectations for the sustainability issues. The report presents the communication channels of stakeholders and corresponding actions taken to the key issues.

**Sustainability Context**> The report covers the sustainability circumstances of economic, environmental and social impacts by addressing the background of key issues selection and analysis of shareholders' interests. The report also introduces strategies for the identified crisis and opportunities of each key issues and provides a clear view of goals and performances.

**Materiality**> SK holdings has conducted materiality assessment to prepare the Report and well described the decision making process of relative priority of issues. The relevant issue pool was formed by analysing the key issues from the global sustainability standards, and internal & external business environment. The issues in the pool are rated via stakeholders survey, industry peer group benchmarking, and mass media analysis in terms of the interest for the prioritization. SK holdings has grouped the material issues into 4 aspects of sustainability strategy and 4 aspects of fundamental management and presented its management approaches and performances in the Report. The audit team has reviewed and confirmed that the main issues selected through the materiality assessment process have been included in the report.

**Completeness**> SK holdings reported the organizational performance on key issues of sustainability taking into account the economic, environmental and social impacts. The report presented the change in the scope of the organizational merger in 2015 and this scope change has been reflected to aggregate performance of SK holdings properly.

**Accuracy and Reliability**> Any errors and misstatements identified during the engagement were corrected prior to the Report being published. Data and information contained in the report has been described as an accurate and reliable way on the basis of sample checked, other reported information and other available evidence.

## 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.

30 May 2016  
Seoul, Korea

  
In Kyo Ahn

Country Representative  
DNV GL Business Assurance Korea Ltd.



# GREENHOUSE GAS VERIFICATION REPORT

## Level of Assurance

The Korea Productivity Center (KPC) assures the risk discovered during the verification process is within the acceptable level of emissions.

## Object of Assurance

SK holdings' data regarding greenhouse gas (GHG) emissions and energy usage has been verified to a limited degree by KPC for the year 2015.

## Verification Protocols Used to Conduct the Verification

- Guidelines for the Greenhouse Gas Target Management System
- IPCC Guideline, WRI GHG Protocol
- ISO14064
- EPA optional emission from commuting, business travel and product transport
- GHG Protocol Technical Guidance for calculating scope 3 emission

## Limitation of Verification

Through the verification process involving on-site sampling of emissions sources, KPC found that there may be potential errors and omissions which SK holdings was unable to detect. Although there were no significant exceptions, the verified emissions rate has a limitation, which can occur during the process of applying unspecified standards and methods.

## Conclusions (Appropriate, Partially Appropriate, Inappropriate)

SK holdings has performed the appropriate corrective actions in response to its main aspects of improvement, which was discovered during the verification process. This assurance engagement was carried out to the extent that the data were measurable based on SK Holding's fulfillment of its social responsibilities. Regarding the emissions data in 2015, including Scope 1, Scope 2, and Scope 3, and the data of energy usage, we found that the Report was appropriately prepared in accordance with the assurance standards and concluded that the Report was "Appropriate."

May 13, 2016

Assurance Agency : Korea Productivity Center



CEO **Hong, Soon Jick**

# HUMAN RIGHTS STATEMENT

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.

## 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 Labour 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

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.

# UN GLOBAL COMPACT AND UN SDGs

## 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.
	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,	p.84
	Principle 04. The elimination of all forms of forced and compulsory labor,	p.84 (SK holdings does not allow any form of compulsory labor.)
	Principle 05. The effective abolition of child labor,	p.84 (SK holdings prohibits child labor.)
	Principle 06. The elimination of discrimination in respect to employment and occupation.	p.39
Environment	Principle 07. Businesses should support a precautionary approach to environmental challenges,	p.32~37
	Principle 08. Undertake initiatives to promote greater environmental responsibility and	p.32~37
	Principle 09. Encourage the development and diffusion of environmentally friendly technologies.	p.32~37
Anti-corruption	Principle 10. Businesses should work against corruption in all its forms, including extortion and bribery.	p.64~67

## 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.34
Goals4	SK holdings ensures inclusive and equitable quality education and promotes lifelong learning opportunities for all.	p.38~40
Goals5	SK holdings achieves gender equality and empowers all women and girls.	p.42~43
Goals8	SK holdings promotes sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.	p.42, 48~49
Goals9	SK holdings builds resilient infrastructure, promotes inclusive and sustainable industrialization and fosters innovation.	p.37
Goals11	SK holdings makes cities and human settlements inclusive, safe, resilient and sustainable.	p.30
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.36
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.	p.36
Goals17	SK holdings strengthen the means of implementation and revitalizes the global partnership for sustainable development.	p.84

# BUSINESS INFORMATION





# INTRODUCTION TO HOLDINGS UNIT

## Key New Business Portfolio



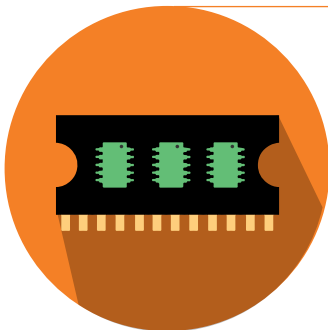
### LNG

SK holdings continues to be Korea's most competitive company in the upstream sectors of development of gas fields overseas through its subsidiary SK E&S to the downstream sectors of transportation, storage, power generation and city gas service. It strives to strengthen business competitiveness and generate stable high earnings through integration of its LNG value chains. In addition, it plans to grow into a world-class LNG service operator through global market diversification, including China. In doing so, it will grow its LNG business to an annual five million-ton scale by 2020 through plans to increase or unite its value chains into China and other potential markets based on captive demand it possesses in Korea, together with competitive LNG sourcing.



### Bio-pharmaceuticals

SK holdings is in the process of developing bio-pharmaceuticals as the Group's key portfolio for creating new values. It has invested in development of diverse new drugs through its subsidiary SK Bio-pharm. It accelerates growth by deploying an independent survival system through development of new drugs for the central nervous system, including those for dyssomnia and epilepsy. In addition, it plans to grow into a global pharmaceutical company integrating all value chains from development of new drugs to production and marketing in 2018 by deploying a consistent value chain concentrating on production of medicines through SK Biotech.



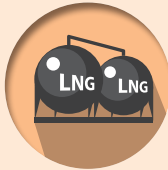
### Semiconductor Materials

The semiconductor materials line has emerged as a new core growth business of SK holdings as a substantial synergy is expected in its value chain as SK hynix, world-leading memory chip producer, is included in its portfolio. In order to foster a new growth portfolio for advancing into the specialty gas sector for semiconductor, it acquired SK Materials (formerly OCI Materials) in November 2015. It plans to secure a high-growth high-earnings portfolio by implementing growth strategies utilizing the group's global network based on the synergy with SK hynix. To that end, SK Materials will grow into a global business by enhancing its cooperative structure with existing semiconductor materials companies and by actively performing value-up activities, including expansion into Taiwan and Chinese markets utilizing the group's global network while advancing into semiconductor materials markets in a stable manner by acquiring businesses with global top-level technologies.

## Strengthening of Portfolio Management

SK holdings will further strengthen its value-centered portfolio management for stable group management based on steadily enhanced governance structure and financial stability. In particular, SK holdings will steadily increase its value by securing resources for new investment through preemptive management improvement and portfolio restructuring while shifting its portfolio to next-generation promising or high-growth areas by increasing investment focusing on growth values.

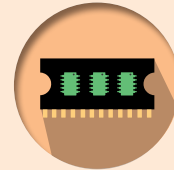
### Acquisition of New Growth Engine



LNG



Bio-pharmaceuticals



Semiconductor Materials

### Strengthening of Existing Portfolio Management



Energy

**SK** innovation

**SK** lubricants

**SK** E&S

**SK** energy

**SK** chemicals

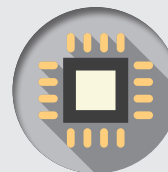


Telecommunications

**SK** telecom

**SK** broadband

**SK** planet



Semiconductors

**SK** hynix



Logistics/Service

**SK** networks

**SK** shipping

**SK** E&C



# INTRODUCTION TO BUSINESS UNITS



## PROPELLING OUR ICT INTEGRATED SOLUTION BUSINESS



### INDUSTRY

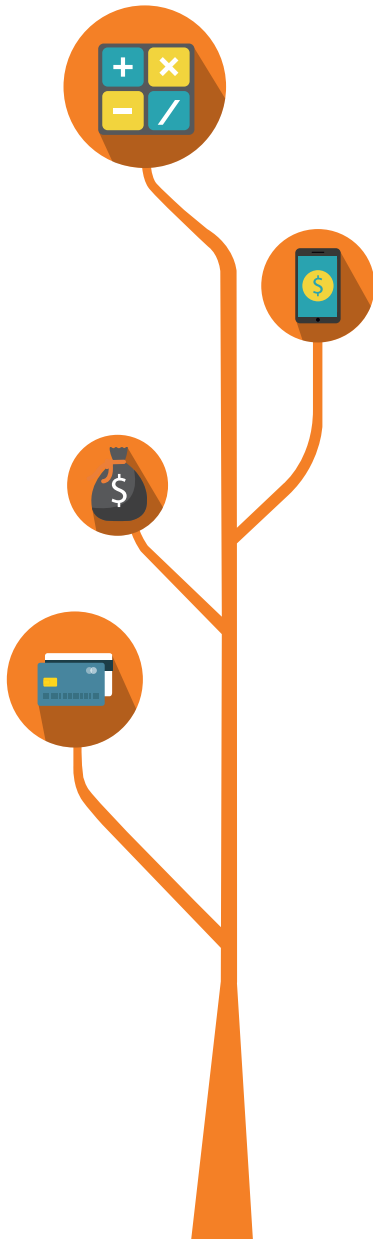
## Finance

The Financial IT Service unit provides total IT solutions and services for deploying unit systems in all domains of financial service institutions that desire to secure IT competitiveness to enhance their business value, ranging from consulting on development of strategies for ISP, BPR and PI, to deployment of next-generation systems and channel systems (Internet/Mobile Banking), compliance systems for IFRS and Basel standards, CMBS, risk management and CRM systems. The current financial service sector has faced an era of significant changes that requires innovative business models due to socio-economic changes, such as slow growth, aging population, globalization, and development of digital technologies for mobile, big data, cloud, and social network services. The convergence and combination of business between different financial services and different industries have undeniably become a trend.

Amid such changes, the financial IT service is required to play a key role for sustainable management while helping explore new business value. SK holdings provides comprehensive IT services and verified solutions so that all types of financial service institutions, including banks, insurance, securities, and credit card companies, may reform themselves into digital financial services by helping them explore convergent or combined business models based on its outstanding knowledge and human resources accumulated through its IT service projects in diverse sectors, including those for deployment of next-generation financial service systems, compliance, risk, and channel management systems. In particular, it accumulates core capabilities for leading business models related to IT or ICT-based convergence or a combination of financial services, such as Internet-based banks, by organizing specialized teams for Fintech, Cloud, Big Data Analytics, and Mobile Banking Services that developed rapidly in recent years. Furthermore, it provides a reliable and stable service in the security and compliance sectors, and it has shown a competitive advantage in the financial service sector through steady monitoring of and response to the latest policies and market trends.

SK holdings has steadily strengthened its position as a market leader through enhancement of internal competencies, accumulation of knowledge assets, systematic quality management, and development of solutions amid the rapid changes in technological environments since it emerged as a new leader in the financial IT service market by successfully deploying next-generation systems and compliance systems for IFRS and Basel standards. In addition, SK holdings operates enterprise-wide business support organizations for project management, quality assurance and technical assistance with abundant human resources, including personnel specialized in financial IT services, financial business consultants, and architects with experience in deployment and management of next-generation systems across all financial service industries and unit systems for diverse specialty areas.

SK holdings is further evolving into a service provider leading the digital financial service era featuring convergence and combined IT-based services and solutions. It will support steady creation of business value for its customers by providing premier competitive services and solutions.







## Main Services

### Next-generation Systems (Account and Information Systems)

- Time To Market
- Product Factory
- Development of Customer-centered Systems
- User-Friendly Systems
- Application of New Technologies and Processes
- Flexible yet Stable Cost-efficient IT Systems

### Personal Internet Banking

- Individual Internet Banking
- Corporate Internet Banking
- Telebanking
- Smart Banking
- Mobile Banking

### CMBS (Capital Market Business System)

- Data Management Service
- Trading Support Service
- Trading Service
- Processing Service
- Management & Control Service
- Flow Business Service
- Integrated Management and Monitoring Service

### IFRS (International Financial Reporting Standards)

- Financial Product Evaluation Service
- Service for Bad Debt Allowance
- Service for Closing, Consolidated Closing, and Disclosure of Footnotes
- IFRS Data Mart Service

### BASEL

- Market Risk
- Credit Risk
- Operational Risk
- IR Risk
- Liquidity Risk
- Risk Integration
- RDM (Risk Data Mart)

### Paperless (ODS, BPR)

- Development of Tablet PC-based Mobile Service Processes
- Enhancement of Reliability, Safety and Security of E-Banking Services Using Digital Document Forms, Prevention of Forgery and Tampering, Public Certification, and Depository of Certified Digital Documents

### Process Innovation

- Definition of Requirements for Next-Generation Services
- Development of Strategies for Deployment of Next-generation Systems

### Internet-specialized Banks

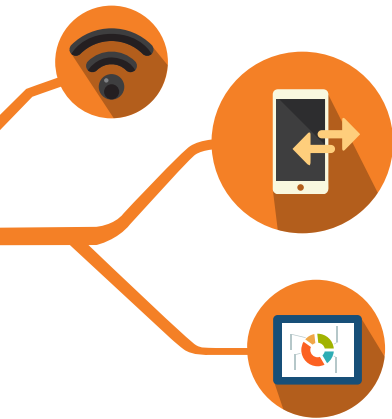
- Payment Services
- Cloud Funding
- Asset Management P2P Loans
- Asset Management Services for Specified Customers



## INDUSTRY

# Telecommunications

The telecommunications service is a core ICT business that will lead the convergence era through diverse convergence services in all industrial sectors, including automobiles, education, and financial services, mainly based on mobile phone service and diverse wire and wireless integrated services. The telecommunications service has experienced changes of an unprecedented level in recent years. Both existing and new business operators have unparalleled expectations for IT technologies to enhance their fundamental competitiveness because of the rapid evolution of technology attributable to integration and convergence of wire and wireless telecommunications services, innovation in IoT and big data services, and dramatic changes in consumer requirements attributable to ubiquitous smart services, MVNO, and MTM. SK holdings has deployed business-leading processes and systems by timely provision of services that satisfy diverse customer requirements in the rapidly changing telecommunications market. Its core competencies have demonstrated a solid competitive advantage in the market. It has also contributed to service innovation by providing differentiated information security and smart business environment while assisting its customers to maintain the No. 1 ranking spot consistently over many years in the National Customer Satisfaction Index (NCSI) and Korean Customer Service Index (KCSI) categories by providing Korea's best telecommunications service. In addition, it has continued to go the extra mile to help its customers enhance their competitiveness by taking initiative while leading new-growth industries, combining new ICT technologies and telecommunications, including big data, IoT and cloud computing services. It assisted SK Telecom to maintain its market leader position by successfully deploying world-first wire and wireless integrated management systems in a short period of time. It also assisted SK Telecom to start commercial NFC-USIM service early on by supplying its solutions for addressing changes in the market attributable to the rapid growth of smart phone service. Furthermore, it has played a leading role in the deployment of a next-generation platform required for the sustainable growth of customers, including deployment of next-generation systems for business systems supporting network-based automotive value-added services, cable and broadband Internet services.



## Main Services

### Customer Care & Billing System (CCBS)

SK holdings provides optimized standard processes to ensure absolute customer satisfaction throughout the entire cycle of their service. It also supports time-to-market services, including customized goods and flexible billing systems to actively respond to rapidly changing consumer expectations and market conditions. The company is also a leader in terms of upgrading level of provided service by consistently developing and applying specialized technologies, including large-capacity billing for Korea's largest subscriber base of telecommunications services and real-time hot-billing.

### Network Management

Its mobile communication network requires transition into a highly efficient but low cost network structure to be prepared for the exponential growth of data traffic caused by the development of IoT and ICT services. To that end, 4G network evolves into a software-based virtualized dynamic communications network by applying such IT technologies as cloud computing and big data service. SK holdings support a rapid transition into the next-generation network by developing an optimized operational environment for smart networks.

### Mobile Virtual Network Operation (MVNO) Solution

It also provides end-to-end support from business to operations for diverse MVNO service models for retail and rental businesses based on its experience in operating Korea's No. 1 MNO service.

### Mobile Application & Solution (Enterprise Mobile Platform)

SK holdings helps businesses to deploy an enterprise mobility environment quickly and easily by providing a developer center based on an agile architecture and diverse business logics and solutions required by different industries. In particular, it enables businesses to perform all their operations in the mobile environment by perfectly supporting such latest technologies as diverse application services and HTML5, including native, hybrid, and web applications, as well as speedy interoperoperation with ERP and groupware systems currently in operation. SK holdings mobile applications and solutions will completely resolve the problems of all businesses that are transitioning from the mobile-first era into the mobile-only era.

## TOMARS

Total Operating Mediation and Rating Solution (TOMARS) is a telecommunications service billing solution that performs integrated mediation and real-time billing functions, including those related to monitoring of servers and processes and batch schedule management. TOMARS is a solution that has been developed through the combined know-how of internal experts with vast operational experience. It enables composition of goods with diverse characteristics and real-time stable processing of large volumes of data for convergence services, and provides operational convenience for modularization and rule engines.

## ER-C

ER-C is a web-based data model viewer that enables multiple users to query data models prepared on Nexcore Modeler or ERWin through the web browser. Being a sheer web application developed using Java Script, it enables query of data models with a web browser only without a separate client, just like a real modeling tool. It supports all existing browsers and can be used on mobile devices as well.

## SQL-C

SQL-C can steadily collect and control SQLs performed on database and integrates diverse types of information required for design of indexes. It offers such functions as those for verification of SQL compatibility in connection with table modification, analysis of SQL performance and access indexes for index design, and search of impairment or failure patterns.

## Data based Marketing (DBM)

It discovers causes or solutions for business issues by deriving differentiated insight through analysis of big data collected omni-directionally within the lawful extent. It contributes to creation and protection of customer values based on optimized solutions for marketing and sales activities. In doing so, it pursues innovation based on creative and reasonable marketing paradigms.

## Oran-C

Oran-C is an Oracle DB tool specialized for the operational environment of large-scale systems. It has all functions generally performed by DB tools, including access to DB, SQL execution, query of results and query of DB schema. It can perform such additional functions as those for control of DB access by user, control of heavy SQLs, and monitoring of use of personal information when it is used together with a rule server.

Oran-C client is an independent tool developed to run on a Windows PC with Net 3.0 or higher installed. Rule Server is a web application server for centralized control, which runs on WAS supporting Java 1.5 or higher.

## DSET

DSET is a web-based solution for data management that integrates a meta data management system with a data quality management system. Meta data can be requested or approved over the web and data quality may be managed based on registered meta data.





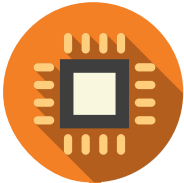
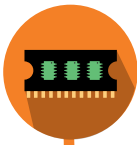
## INDUSTRY

# Semiconductor

The application range of semiconductor chips which are core components of IT products has increased drastically as Internet-based industrial appliances, automobiles, and medical equipment are being developed while digital appliances have become mobile and smarter. The semiconductor chips are divided into memory chips that store and save information and system chips that can process information.

The core competitive factors of the semiconductor industry have so far depended on an increased production capacity and cost saving through massive investment. From now on, however, the core competitive factors will be advanced production technologies and development of diverse technologies for enhanced added value of products as their ultra-fine processes will become ever more complex. Furthermore, the support and role of IT technologies will become more important as the ability to respond to the market emerges as a core competitive factor, including the ability to launch products in a timely manner, while strengthening marketing and customer support services as the customer requirements for better performance and quality levels have further diversified.

SK holdings has enhanced value for its customers by merging such changes in business conditions and the latest ICT trends with their business. SK holdings sourced expert personnel by strengthening its collaboration with world-class manufacturers of semiconductor chips such as SK hynix, and has secured business knowledge and resources for its semiconductor business by producing semiconductor chip modules from 2014 mainly through its subsidiary called Essencore.



## Main Services

### ERP

Global ERP

### Information Systems and R&D

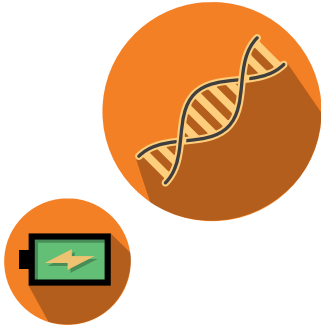
Services and R&D for an integrated business environment and quality management

### Semiconductor Automation Systems

Automation of production / Automation of equipment / Automation of quality

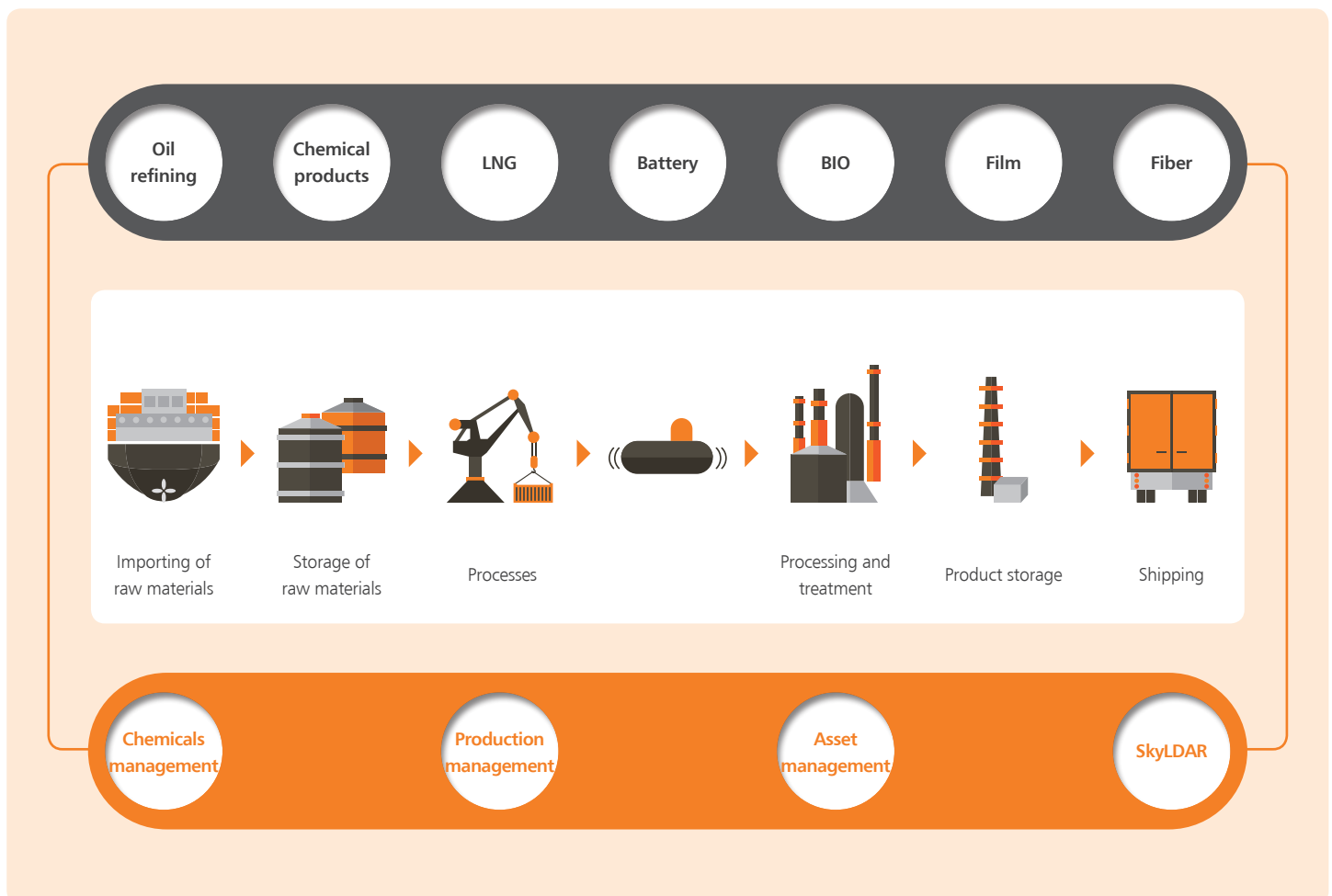
## INDUSTRY

# Energy · Chemicals



Energy and chemicals IT service is a total IT service that supports optimization of entire business activities, such as BPR and OPI, as well as efficient operation of specialized fields, including demand projection, purchase management and integrated production management, based on an understanding of the entire business processes, ranging from import of raw materials to production and sales.

Optimal excellence in procurement, production and supply has become more important for energy and chemical businesses along with the recent drastic fluctuation of oil prices, diversification of market needs, and intensified competition in the global market. ICT services have become essential elements for businesses to secure differentiated competitive advantages as they enable timely production of products and customer support, and cost saving, especially in the rapidly changing marketplace. The newly developed ICT technologies support optimum decision making based on inclusive in-depth analysis, including projection of demand and supply using big data service, real-time coverage of operational information based on IoT technologies, and reduction of trial and error through AR and VR. The leading market players are seeking a new quantum leap through ICT convergence.





## Main Services

### PMS (Process Monitoring System)

Large-volume raw data from DCS, PLC and other control instruments are monitored to identify abnormal processes in real time.

### SkyPRO

SkyPRO is an integrated system supporting all processes, ranging from product planning to implementation and quality management to help secure world class competitiveness in film production.

### SkyLAB

SkyLAB, a laboratory information management system (LIMS) developed internally by SK holdings, enhances the productivity of labs and enhances analysis reliability through automation of standardized lab processes.

### CHEMS (Chemicals Management Systems)

The types and usage volumes of chemical substances have increased along with the advancement of industries. The government has tightened regulations to prevent harm and hazards to health and the environment. It has become essential to provide information concerning the all processes in the handling of chemicals in order to ensure safety at business establishments while complying with the relevant regulations.

### TOMS (Right-Quality and Right-Amount Transportation System, T/T Oil Theft Solution)

TOMS, which is designed to enhance the reliability of oil products transported by tank lorries, deploys a stable and accurate logistics system, enhances efficiency of physical distribution operations, and reduces costs by preventing illegal leakage of oil products.

### RTDB (Real-Time Database)

The costs of addressing problems occurring in ongoing processes at petrochemical plants can be minimized when process operations are monitored in real time. Therefore, process management starts with real-time process monitoring.

### SKY A-One Chemical (ERP)

SKY A-One Chemical is an ERP solution that has been developed for the chemical industry by combining SAP's mySAP All-in-One with chemical project management consulting and the know-how of SK holdings.

### VOIS

This system enables managers to identify production problems and points for improvement as it provides the user with current production status in graphics which are gathered from diverse perspectives or based on different roles.

### Battery MES (Manufacturing Execution System)

Battery MES (Manufacturing Execution System) provides all information required for battery plant processes for producing electric car batteries, ranging from collection of data concerning production performance, quality and equipment to production execution and decision making. It can also help enhance production competitiveness and secure external quality reliability with history tracking functions interconnected with finished car assemblers and vendors in the supply chain, which are essential to the auto parts industry.

### SkyLDAR

This system facilitates speedy yet accurate decision making by providing data concerning the controlling of the sources of large-volume dispersing leakages by effectively collecting, processing and analyzing them. It helps businesses to reduce the costs of controlling sources discharging dust by enhancing work efficiency while effectively responding to increasingly stringent environment regulations.

### ATMS (Advanced Transportation Management Systems)

ATMS, developed to interface diverse TLG data with integration, management, and superior ERP and DCS systems, reduces workload of the operators, increases usefulness of data, and optimizes operational productivity.

### LDS

This system is designed to prevent damage to property and human life as well as environmental contamination caused by oil leaks and theft.

### CMMS

A minor problem with equipment may cause the shutdown of an entire facility. The efficiency of a new facility can be obtained if the efficiency of an existing facility is prevented from degrading due to problems with equipment. Therefore, CMMS (Computerized Maintenance & Management System) is a core system of facilities as it ensures that equipment is kept in operational condition.

## INDUSTRY

# Logistics Service

The logistics service provides customers with business success by enabling them to utilize data generated in service areas using IT services while maintaining diverse industrial supply chains in optimum conditions. The logistics service helps enhance the customer's business competitiveness by securing optimum logistical structure through management and redesign of their overall processes, including marketing, ordering, procurement, production, physical distribution, sales and purchases. The education and medical service unit enhances service competitiveness by providing liberal learning conditions and speedy medical information without any limitations relating to time or space.

Supply-chain management using the company's IT service has become more important due to rapid growth in global trading volumes. In particular, diverse business opportunities are created due to drastic changes in the market, including long-tail, O2O, and platform businesses, which transcend conventional physical distribution and marketing approaches as the requirements of B2C customers have diversified. The smart learning service has cemented its position as a two-way or alternative education service. The mobile healthcare market has also grown rapidly thanks to the development of smart appliances, in vitro diagnosis, and biometric data. Accordingly, the role of its logistics service based on the customer's knowledge of the market has become more important in addition to the ICT competencies. Optimum structure of logistic services has become a new growth engine as it is a core business that needs to be secured through the benchmarking of diverse sectors.







## Main Services

### ICT Converged Logistics Service

SK holdings promotes smart logistics based on the platform of its ICT converged logistic service by leveraging its capabilities accumulated while performing professional ICT services.

### WinPOS

Data concerning outdoor gas dispensers and chargers are collected in real time for instant billing or payment outdoors after filling as they are interoperating with SK compound terminals (or ODT in the case of self-service gas stations). Furthermore, it supports diverse customer management services as it is interoperating with an 'OK Cash-back' (LMS) service. It can be easily integrated with existing systems as flexible interoperation is available with home office systems (MIS or ERP).

### TAS (Terminal Automation System)

This system automates product loading operations while controlling product carrying vehicles entering a storage base or terminal.

### SKY A-One CPG (ERP)

SKY A-One CPG is an ERP solution that has been developed for CPG businesses by combining SAP's mySAP All-in-One with SK holdings know-how for consulting, consumer goods, and food and beverage projects.

### Mobile Healthcare

The paradigm of healthcare has shifted from treatment-centered to prevention-centered services. This service enables individuals to check their health using a smart device at home as well as at hospital for enjoying individually tailored counseling and health management services.

### Smart Class

This system provides an interactive learning environment using smart devices.

### ExPOS

ExPOS is a next-generation point of sales (POS) solution that can be extended to interface with gas station dispensers or pumps and VAN services as well as standard types of sales as international standard processes and data specifications are applied.

### Sky WMS

Sky WMS, a core SCM element, enables optimum inventory management by precisely tracking and controlling the inventory flow of a warehouse by interlinking it with OMS (Order Management System) or TMS (Transportation Management System). Warehouse management involves planning and management services to enhance efficiency of a warehouse service, including loading and unloading for shipping or acceptance of cargo, storage method, preservation of cargo quality, enhancement of storage efficiency, warehouse cost management, data processing, and transportation. Sky WMS is a solution that helps enhance the efficiency of warehouse management functions.

### FIMS (Fashion Business Information Management System)

FIMS manages the overall processes of SK Networks' fashion business, including marketing, procurement, production, logistics, business administration, and sales, and purchases. It also provides functions for management of sales spaces, customers and sales being interconnected with POS systems of fashion goods stores. It can also perform accounts receivable, cost, and income management in interoperation with an ERP system.

### Smart Hospital

This system enables existing hospital information systems to be used in mobile environments. It enables the core service of next-generation hospitals providing patient-centered customized services using smart devices.

### e-Learning System

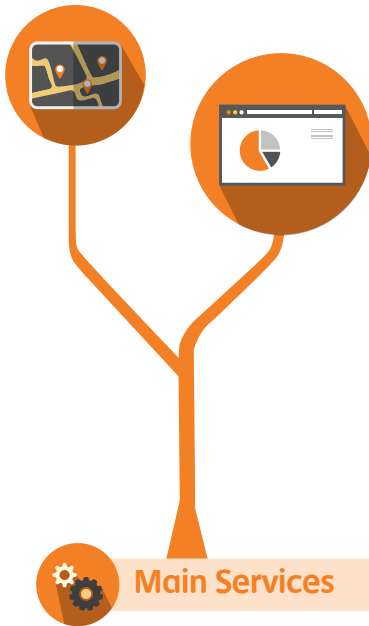
This system enhances the efficiency and distinction of the advanced e-learning environment by providing both e-learning platforms and interfaces enabling customization by the school.

### Smart Campus

This system provides diverse services linked with smart devices to enhance student convenience and effectiveness of learning.

## INDUSTRY

# Public and SOC Services



Public and SOC services enhance efficiency and value of the customers' operations by applying the latest ICT technologies to government administration, transportation, security, sports, social overhead capital, events and other public services.

Services essential to government administration require the deployment and operation of high-quality government IT systems, including disaster management, local government finance management, management of street-based address systems, and vehicle information management. The government IT system provides a foundation for deploying intelligent traffic systems or advanced security control centers in municipalities. Industrial sectors, including logistics, physical distribution, education, medical services and manufacturing can be operated effectively when the public or SOC services are well established, including government administration, traffic, and security services.

Many attempts have been made to innovatively enhance the convenience and efficiency of existing systems for public or SOC services by applying the latest IoT, Cloud, Big data and Mobile (ICBM) service technologies. In phase with the trends of 'connected' and 'converged', SK holdings provides its Connected Smart City Platform and Service, applying IoT data to public and SOC services.

## Main Services

### Sports IT (GIS)

GIS (Games Integration System) is optimized to large-scale international events, including sports events. It follows the essential management standards satisfying the event or game environment. It also provides a flexible system operating environment to meet the requirements of the customers (organizing committees or international organizations).

### FESS (Fire & Emergency Service System)

This system deploys an advanced emergency response structure by providing quality civic service while enhancing the efficiency of disaster response services applying advanced technologies and automated solutions from the reception of notices to mobilization, site, and follow-up activities.

### Street-based Address System

This system automatically assigns and controls street names and building numbers by interlinking them with location information based on space-related information. It facilitates early adaptation and service stability of the new address system by interlinking with previous parcel-based addresses. It supports easy and rapid searching of locations by additionally applying basic zones and spot numbers.

### Vehicle Management Information Service

This solution provides a web-based vehicle management service over the entire life cycle from production to retirement. It enhances the accuracy and convenience of the administrative functions related to vehicles with an integrated database and standardized processes. It also provides more efficient vehicle management functions at the national level by interlinking information belonging to related government agencies, including taxation and law enforcement.

### DMS

Damages or risks of natural disasters tend to increase across the world with gradually increasing frequency and magnitude of typhoons and storms. DMS (Disaster Management System) enables advanced disaster management services that can reduce damage to life and property by supporting efficient disaster management functions by having disaster-related information distributed promptly to the people and related agencies.

### ECS

ECS (Emergency Call Center System) is designed to enhance the efficiency of emergency services while reducing time spent on handling accidents or other emergency events through optimal monitoring and command from the reception of notices to completion by unifying windows for receiving notices or information concerning accidents or events that require police or fire-fighting services.

### Municipal Government Finance

This project was started in 2003 to develop a standardized automated management system for the financial services of municipal governments to make them healthier, transparent and efficient by fundamentally reforming the framework of their budget and accounting systems that have been operated for the past 60 years. The system developed by SK holdings started a full-fledged operation by applying both institutions and systems to all municipal governments in 2008 after deploying the system in all municipal governments in 2006 and development services for upgrading them in 2007.

### ITS

ITS (Intelligent Transportation System) is a transportation system enabling efficient operation of safe transport environments by combining ICT with the existing transportation infrastructure.

ITS facilitates urban development and benefits the citizens by substantially improving socio-economic and policy services, energy and environment as well as transportation services. SK holdings has successfully implemented over 40 projects both home and abroad, including overseas projects in Baku, Azerbaijan and Ulaanbaatar, Mongol.



## Traffic Flow Control

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This service reduces transit time and enhances road service efficiency as the traffic flow is controlled by a control center based on the traffic conditions.

## Parking Management Service

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This service enables unmanned billing and payment of parking service rates at time of entry and exit to a parking lot using a camera recognizing plate numbers. It also provides information concerning available parking spaces and the locations of cars in a parking lot by utilizing diverse sensors.

## Taxi Management Service

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This service efficiently controls the operation of taxis while providing the passengers and taxi drivers with automatically collected information concerning taxi operation.

## Automated Fare Collection of Public Transportation

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This service provides user convenience by enabling payment of fare using an integrated card for diverse means of public transportation, including bus, subway and taxi.

## Integrated Urban Surveillance

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This service enables integrated management and shared operation of CCTV, number-plate cameras, and other equipment by an operational center inside ITS and surveillance systems.

## VMS

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VMS (Video Management System) provides diverse differentiated functions by interoperating two-way voice communication, e-map, 24-hour alarm, monitoring and event data (sensors, motion, and image analysis) as well as the functions of remote image monitoring, search and camera PTZ control by interoperating security network cameras and video servers. It is an open-type program that provides optimized control functions of integrated images with user accounts, groups, camera data, server management and integrated performance of software.

## ACAM

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ACAM (Access Control & Alarm Monitoring), a solution for integrated control of diverse security systems, controls access to secure zones, monitors intrusion alarms transmitted by sensors in case of unauthorized entry attempts, and provides functions for taking adequate measures when an emergency arises.

## GHG (greenhouse gas) Inventory Management

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Management of greenhouse gas (GHG) refers to the surveying of emissions of greenhouse gases and deployment of a management system that controls their emission by identifying their direct and indirect emission sources within an organizational perimeter defined by a business, and computing and listing their respective volumes of emission. Furthermore, the GHG inventory systems include deployment of a management system structure in addition to surveying their emissions.

## Law Enforcement against Violation

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This system automatically detects and controls vehicles violating traffic control statutes using cameras and sensors identifying their number plates.

## Bus Management Service

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This service efficiently controls the operation of buses while providing the passengers and bus drivers with information related to bus operation collected in real time using GPS.

## Automated Toll Collection

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This service automatically collects toll charges on paid roads based on communication between road-installed antenna and RFID Tag or OBU (On-board Unit) installed on vehicles.

## Cargo Truck Management Service

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This service enables fast and safe delivery of cargo by providing the location, status and routes of car trucks, and other information in real time.

## Information Service for Multiple Means of Transportation

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This service provides information concerning the use of diverse transportation means in different regions over the Internet, kiosk, and mobile devices by interlinking or integrating such information.

## Smart-i (IBS)

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SK-IBS (Intelligent Building System) solution Smart-i enables the creation of human-centered space, enhancement of work efficiency, and efficient facility management by systematically integrating information concerning diverse building infrastructure, including those related to ICT, BA and OA systems based on various solutions (integrated operation management, integrated control, audio and video, and energy management). SK holdings Smart- I, a total IBS service provider, will provide complete satisfaction to building owners, managers and tenants alike as it is a premium integrated IBS solution.

## Construction EPMS (Enterprise Project Management System)

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A system supporting management of civil engineering and housing construction projects on site, the Construction EPMS is designed to enable accumulated data for similar projects while sharing relevant information or data between the home office and project sites, including those concerning billing of materials, process management, execution, project management, and communication, from commencement to completion of projects on site.

## INDUSTRY

# Industry-common Solutions

SK holdings has contributed to enhanced competitiveness of its customers by consistently applying industry-specific solutions based on its knowledge of each of the industries. In addition, it has led the advancement of local IT service levels by developing industry-common solutions that enhance the inherent competitiveness of local IT service industry.



## Main Services

### HIPER Workplace

Hyper Workplace is an integrated solution that supports unified communication inside collaboration and enterprise portal domains. It is Web 2.0 based communication infrastructure that supports real-time decision making interlinked with ECM, IP Telephony, and Mobile Office systems.

Hyper Workplace supports the development of portals based on diverse roles, e-mail, e-payment, EDMS, integrated search, and web-based global IT trends. It ensures instant convergence based on new IT trends and changes in the business environment as it is optimized to agile business environments.

### Performance Designer Master (Tool Automating Diagnosis of Database Performance)

Diagnosis and tuning of database performance is a service that diagnoses the performance and weak points of a database system. More effective results are derived in proportion to the capability and experience of the engineer who performs the diagnosis. This tool packages know-how accumulated for many years and automates processes while diagnosing the Oracle database of customers both at home and abroad. PowerPoint reports are automatically generated after diagnosis is performed at the click of a mouse if the user has basic knowledge on the database. The database can be diagnosed rapidly and quality diagnosis is guaranteed by the PD Master.

### C-SHIFT

C-SHIFT is a solution for managing SAP modifications applicable to customers who have introduced SAP ERP. In the management of SAP modification objects, it can manage approval procedures from development of modification or revision objects to final transfer of operating systems, as well as the history of changes in processes.

It is a solution that enables integrated management of change-related details in the transfer procedure based on interactive proposal and approval processes together with the BASIS organization, originating organization, and customer PI (IT planning and operation), as well as system operation or developing organs.

### GSC Service Package

This is a global ERP solution package developed by utilizing the know-how SK holdings has acquired while performing ERP consulting services.

### Standard Integrated Purchase Management System for the Group

This system enhances efficiency of purchase functions and generates synergy of purchases based on 'One IT Platform for Group Procurement by collecting and analyzing purchase data, and performing integrated purchase services as it consists of a buyer and vendor portal, standard e-procurement system, and statistical analysis modules.

### Deployment of Separate Networks

Separate networks protect IT assets and information resources from outside intrusions and fundamentally blocks leakage of personal and business information from insiders. To that end, corporate networks are divided into internal operational networks and networks connected to the outside Internet. The networks are divided either by physical or logical separation. Generally, the physical separation features enhanced security as it fundamentally blocks the intrusion routes while the logical separation incurs relatively low deployment costs.



## SERVICE

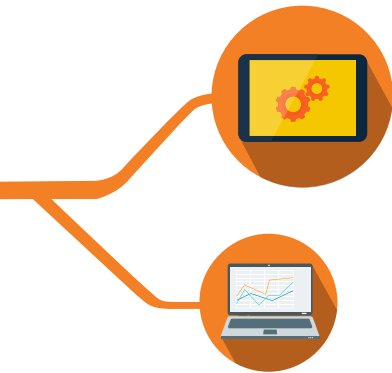
# IT Outsourcing

IT Outsourcing refers to the entrustment of overall IT-related management activities to an outside specialized entity, including the management of equipment, personnel and hardware related to information systems.

With the advancement of information technologies, IT services evolve under convergence or combination with new industrial sectors, and new IT technologies have emerged. Therefore, it is necessary to adapt new technologies and business environments seamlessly and rapidly to the changing needs in the market. Many businesses pursue means to enhance their competitiveness while swiftly innovating business processes according to changes in the outside environment using IT services. SK holdings, the IT frontrunner in Korea, helps its customers to enhance their business value and competitiveness by concentrating their core resources while increasing productivity and earnings by enhancing operational efficiency while reducing costs.

SK holdings has consistently expanded on its experiences and capabilities while performing integrated management of IT assets since 1998. It is an IT outsourcing expert providing SLA (Service Level Agreement) based services by introducing an advanced IT outsourcing system for the first time in Korea. The SLA service is designed to provide services above a given quality level by operating a monthly service appraisal meeting with the customers under a service level agreement concluded with the customers. It is a service quality assurance technique that was implemented in the IT sector of Korea for the first time in 1999. It is currently used as the standards for measuring and appraising the level of service provided by many local IT businesses.

SK holdings offers a total service covering all of the services that the customers require in the IT sector, ranging from consulting and operation of applications and infrastructure to data centers, disaster recovery service, and network circuit services based on industry knowledge accumulated while performing professional IT services in the diverse industrial sectors of telecommunications, semiconductor, energy and chemicals. It provides premium services that support the success of its customers with world-class IT infrastructure and advanced processes.



## Outsourcing Service Consulting

Consulting on  
Diagnosis of System  
Environment

Consulting on  
Enhancement of  
Outsourcing

Consulting on  
Diagnosis of Outsourcing  
Competence

ISP

Application  
Operations Service

SAP ERP  
Operations  
Service

Groupware  
Service

Infrastructure  
Operations  
Management Service

Network Line  
Service

Data Center  
Service

Disaster Recovery  
Service

Korea's first SLA-based IT service management system implemented (SKPE-ITO methodology)

ISO 20000 Certification  
for ITSM

ISO 27001 for Information  
Management System

eSCM L4 Certification  
Outsourcing (First Worldwide)

CMMI L5 Software  
Quality Assurance



## Main Services

### Consulting on Outsourcing

SK holdings is equipped with world-class optimized consulting methodologies. It leads customer value innovation based on the experiences and know-how of its consultants accumulated in diverse industrial sectors, the latest management theories, and outcomes of research on new technologies. It supports "Biz Innovation for Future Growth" and "Knowledge Leader for Enhancing Biz Value" that contribute to enhancement of customers' competitiveness in business strategy, IT and new business model consulting based on such resources.

### Infrastructure Operations Management

Service The Infrastructure Operations Management Service provides integrated operation of customers' IT services through comprehensive and systemic management of various IT platforms in a consistent and efficient manner. Through the modularization of operations management targets and operations services, customers can choose their desired service targets and levels to make effective investments.

### Data Center Service

By utilizing the top-notch capabilities and experience concentrated at SK holdings' large-scale data centers (Daedeok, Pangyo, and Ilsan), the company provides protection for customers' IT assets and secure operating environments, and offers suggestions for improvement to make IT operating environments more efficient.

### SAP ERP service

ERP system, a backbone system of businesses, should definitely control the long-term system lifecycle while evolving to rapidly respond to the user requirements as business processes dramatically change, and steadily evolve in the global arena.

SK holdings makes it possible to immediately respond to rapid changes in the environment by utilizing examples of application and experiences in diverse industries.

### Application Operations Service

SK holdings provides an advanced application operations service based on its experience in deploying applications to various industries and its expertise in new information system deployment and O/S operations on the basis of standard development methodologies.

### Network Circuit Service

SK holdings provides stable network services of high quality utilizing 18 local bases and four overseas bases for smooth communication of data or information derived from high-quality networks. This service provides access to the business network or Internet anywhere by operating 21 nodes and 9,000 circuits at home and abroad.

### Disaster Recovery Service

The disaster recovery (DR) system is deployed and operated around core business systems to enable rapid recovery of normal operations while minimizing damage in a disaster by electing the deployment range and preparing the fast disaster response system considering the impact on the customers' business.

SK holdings is a provider of a total BCP and DR service that offers differentiated competitive BCP and DR consulting, deployment of DR systems, and operation or outsourcing of data center services for all sectors of disaster recovery service.

### Groupware Service

The Groupware operating service provides solutions for providing advanced business environments that support optimum operational performance by the customers, supporting of communication, collaboration and decision making tools for enhancing work productivity, consulting on customer requirements, and efficient introduction, deployment and/or operation of such tools.



## SERVICE

# Application Development

As information systems have grown in size and complexity, businesses are often unaware of which appliances and software should be introduced. Application Development refers to the services for designing systems, selection of optimum hardware, and development of software suitable to the users.

Development and optimization of processes that can rapidly accommodate abrupt changes in the business environment are essential to steady business innovation. In fact, many businesses respond to such changes by modifying their systems partly or completely while new products and services are introduced every day for all industrial sectors of finance, manufacturing and service.

SK holdings embeds insights for various different industries based on its experience in implementing diverse projects in the finance, SOC, and health sectors, as well as developing diverse systems for SK Group's affiliated companies. In addition, it provides the foundation for securing competitive advantages based on opportunities captured for resolving problems faced by businesses or for their innovation by providing new technologies surpassing the limits of existing IT systems by grafting them using the latest ICT technologies, including those for mobile, cloud, big data and IoT services. In particular, Nexcore, which has developed applications for enhancing productivity and quality from 2001, has been greatly recognized at home and abroad in such diverse industrial sectors as finance, manufacturing, and service by providing outstanding performance, stability and convenience in small to extra large next-generation projects with products it developed using its know-how for SI and solution development.

SK holdings will help enhance the business value and competitiveness of its customers with optimized systems by inclusively designing and analyzing the entire system of customers based on its workforce and technology specialized for each industrial sector.



## Main Services

### IT Architecture Design

SK holdings designs optimum systems so that business processes may be systematically connected and managed by ensuring rapid, effective and stable operation of the systems in a wholesome perspective as IT systems become greater in scale and more complex while their requirements become progressively more diversified and complex.

### Infrastructure Deployment

SK holdings provides infrastructure environments by selecting the service targets and levels that the customer desires so that the customer's IT system may be deployed in a stable and efficient manner. It maintains the customers' IT assets securely with its infrastructure and first-rate technologies, including its large-scale data centers and networks deployed at home and abroad.

### Application Development

SK holdings is equipped with processes and organizations that can provide development services customized to the customer's industry sector based on its experiences in performing large projects for finance, SOC and public services as well as diverse systems deployed for diverse SK Group member companies.



## SERVICE

# On- and Off-line Sales / Distribution

SK holdings provides diverse services related to used cars, including on- and off-line purchasing of used cars for businesses or individuals, contracting and sales, diagnosis and repair, exporting, and direct importing of used cars.

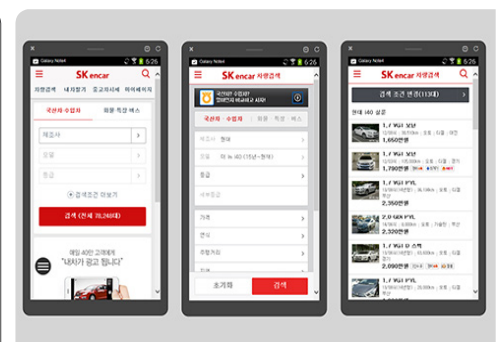
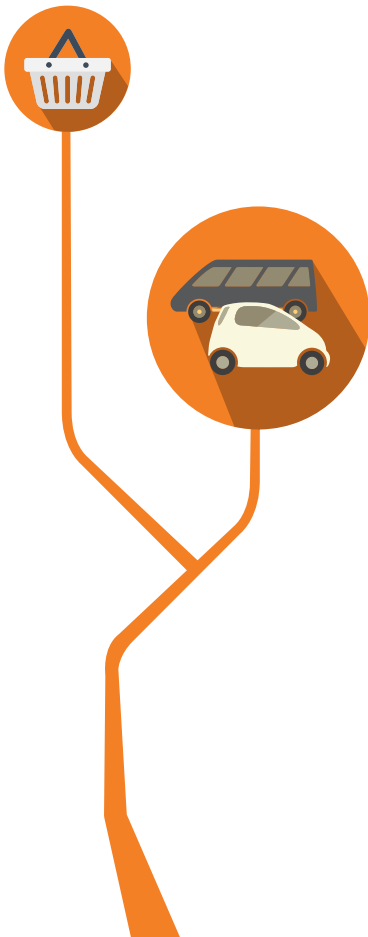
## SK Encar (Automobile)

With the competitiveness of SK Encar, Korea's No. 1 used car service provider, SK holdings will provide on- and offline used car services of a new level that can compete in the world market by combining CRM, DBM and cloud computing technologies possessed by SK holdings.

## SK Encar Online Service

IT convergence takes place in the car distribution services in Korea as well as e-commerce and security services. SK Encar, SK holdings subsidiary and Korea's No. 1 used car service provider, provides an online advertisement platform service (Encar.com) that links buyers and sellers of used cars. It leads an advanced used car trading culture by placing top priority on transparency in fixing market prices and searching cars for sale.

The users of Encar Mobile, a smart phone based application, have increased drastically thanks to the popularity of smart phones. The application can be downloaded from AppStore or Android Market. It offers all of the diverse functions which were previously only available on the PC platform (including those for market price, search, registration, and management). In particular, the smart phone-based vehicle registration service provides a new experience and great value to many customers who often engage in outdoor activities.



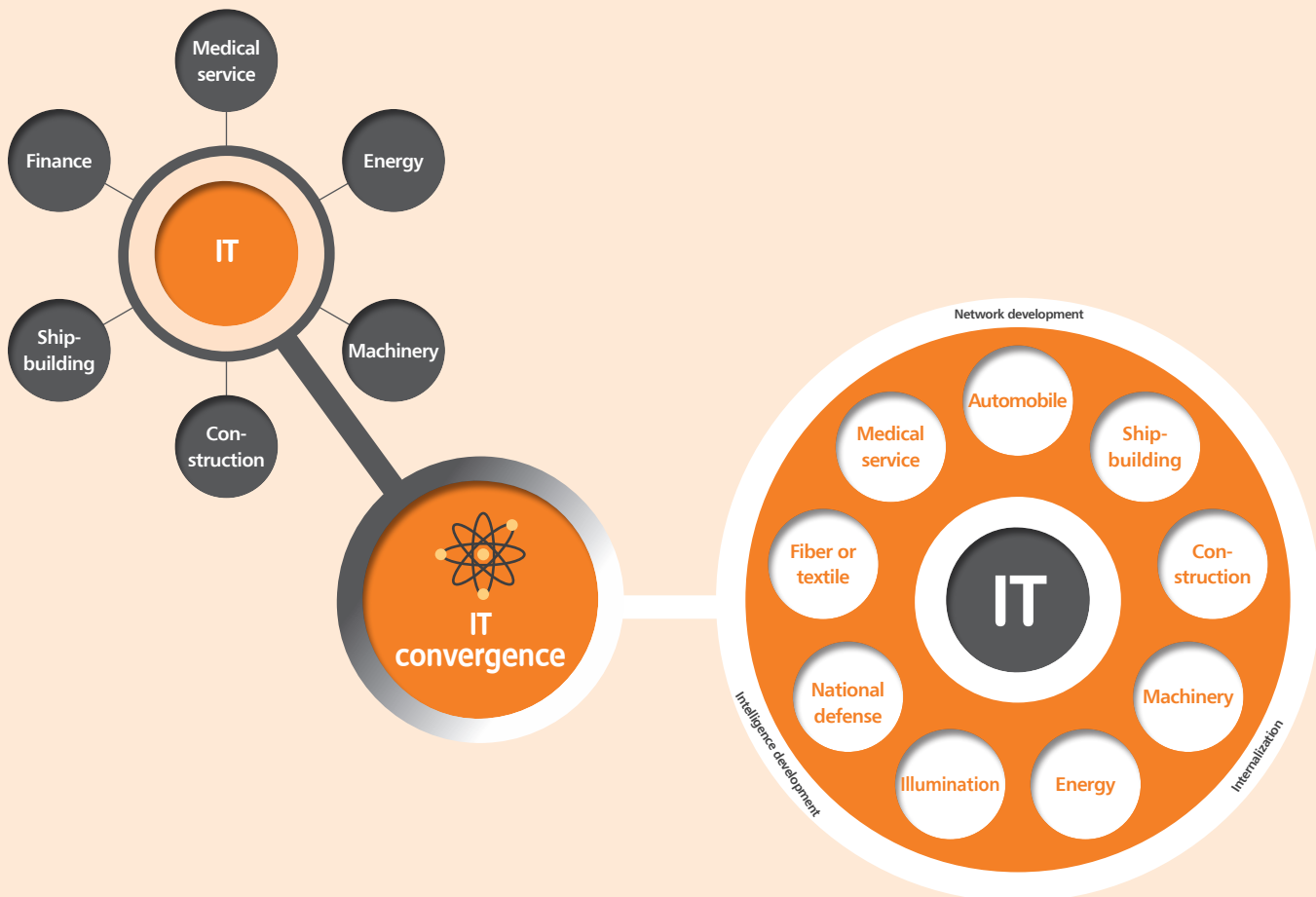


## SERVICE

# Convergence Service

With the rapid development of ICT technologies, more business areas are operated based on ICT service. Consequently, ICT technologies themselves have become the inherent competitiveness of businesses. As ICT technology development has drastically affected diverse industries, such as manufacturing, physical distribution, security and finance, new markets are being created through convergence as industrial boundaries are gradually fading away. Typical convergence services include business models based on optimization and automation of ICT technologies for the manufacturing and distribution industries, business models integrating information security service with physical security, and Internet-based banks based on Fintech technologies introduced into financial services.

SK holdings will increase its new IT services by diversifying convergence services with new ICT technologies while understanding customers' needs in new markets that may emerge along with changes in business conditions based on its resources and know-how accumulated through performing IT service projects in diverse industries.





## Main Services

### Convergence Security

Convergence security refers to a comprehensive security service that is provided from the perspectives of integrated security combining physical security, information security, and compound security, and applying security to non-IT industries or ICT convergence domains. Convergence security service is recognized to be a technique that can affect innovation in the inherent service domains of B2C and B2B as security is converted into safety while security also expands from IT systems and people to the 'compound objects surrounding them'. SK holdings convergence security service contributes to the enhancement of customer value by providing B2C and B2B convergence security service from the perspective of Safety-Health-Environment-SHEE) in smart home and factory domains.

### Safety, Health and Environment (SHE)

This is a solution for integrating information concerning safety, environment and health in a business while integrating work flows and management elements into a system to comply with regulations at home and abroad, including ISO14001, PSM, OHSAS, the Act on Registration and Evaluation of Chemical Substances and the Chemicals Control Act. This solution offers a platform that can lead sustainable development of a business by pursuing zero-disaster and eco-friendly business by detecting environmental pollutants and risks using IoT technologies.

### Process Optimization

Improvement of yield through process optimization is an ongoing issue of the process and manufacturing industries as it significantly impacts their competitiveness. Process optimization service provided by SK holdings deploys a system enabling collection and analysis of all information concerning the operation of equipment and processes using big data and IoT technologies. In doing so, it provides services for consistently enhancing the efficiency of processes while discovering inclusive optimization logics for optimization of equipment operation and minimization of input energy considering management of normal operation of individual pieces of equipment and interrelationships of processes.

### Internet Only or Internet-specialized Banks

Internet only banks provide their customers with self-banking services enabling customers to invest funds or pay for e-commerce transactions, including savings and loans, and Fintech services (including cloud funding and P2P loans).

### ICT Convergence Logistics Service

SK holdings promotes smart logistics based on a platform of ICT convergence logistics service by leveraging its capabilities accumulated while performing professional ICT services. 'ICT convergence logistics service platform' is a platform for operating distribution systems that are under deployment by applying the latest technologies for LBS, IoT, big data and AR (augmented reality) based on capabilities SK holdings has secured for distribution IT services by performing IT service projects for the diverse industrial sectors of semiconductors, energy, chemicals, trading and construction.

### Smart Card

Smart Card offers an advanced technology for providing users with diverse services for mobile communication, finance and user authentication by securely storing and processing key security data on its chip circuit. SK holdings leads the market by supplying USIM hardware and software to mobile network operators (MNOs) at home and abroad.

### Smart Factory

Smart Factory is a core part of Industry 4.0 that provides a factory environment where production activities are automated, and become intelligent and autonomous through digitalization via connection and integration of all comprising entities, including people, things (equipment, sensors etc.), and IT systems. This service enhances customer value by attaining higher productivity and efficiency, and faster time-to-market delivery, the core values of the manufacturing industry.





## KEY TOPIC

# Cloud



SK holdings provides a customized cloud funding service based on its experience and know-how it has accumulated while performing IT service projects for many years. SK holdings combines its cloud service with cloud services provided by global service vendors in order to provide its customers with optimum cloud services.

SK Total Cloud Service provider, SK holdings rapidly responds to customer demand for cloud computing. SK holdings's cloud service provides customers with customized consulting, deployment and operation services while providing service to all types of IaaS, PaaS, and SaaS Cloud. SK Cloud provides either Private, Public, or Hybrid Cloud service or deploys an independent cloud for customers depending on their requirements.

## 'as-a-Service' Provided to All Domains of Infrastructure, Platforms and Solutions

SaaS

Niche Industry Solution

Multi-purpose Solution

PaaS

PaaS (Platform as a Service): Application Development Environment

IaaS

Cloud Service Infra

Server

Storage

NW

Cloud Consulting &amp; Integration Service

Private Cloud

Migration

Security



## Services Provided

### IaaS Service

IaaS service provides either SK holdings cloud service or cloud computing (CPU, Memory, Disk, Network) of a global cloud service provider in accordance with the requests of customers.

### SaaS Service

SaaS service provides diverse solutions based on customers' requirements for ERP, Groupware, and CRM systems widely used by average businesses through either the SK holdings cloud platform or a cloud computing platform of a global cloud service provider depending on the customer's requirements. Furthermore, it will steadily convert solutions customized to the customer's business into cloud services.

### PaaS Service

PaaS service provides NEXCORE, an open-type development platform that can directly develop and manage customers' applications inside the cloud platform. Utilizing NEXCORE, the developers may deploy development environments for web pages or mobile systems at home and abroad by freely combining diverse development tools that they desire irrespective of the project scale or type. NEXCORE has the advantages of reduced development costs, enhanced productivity and heightened security.

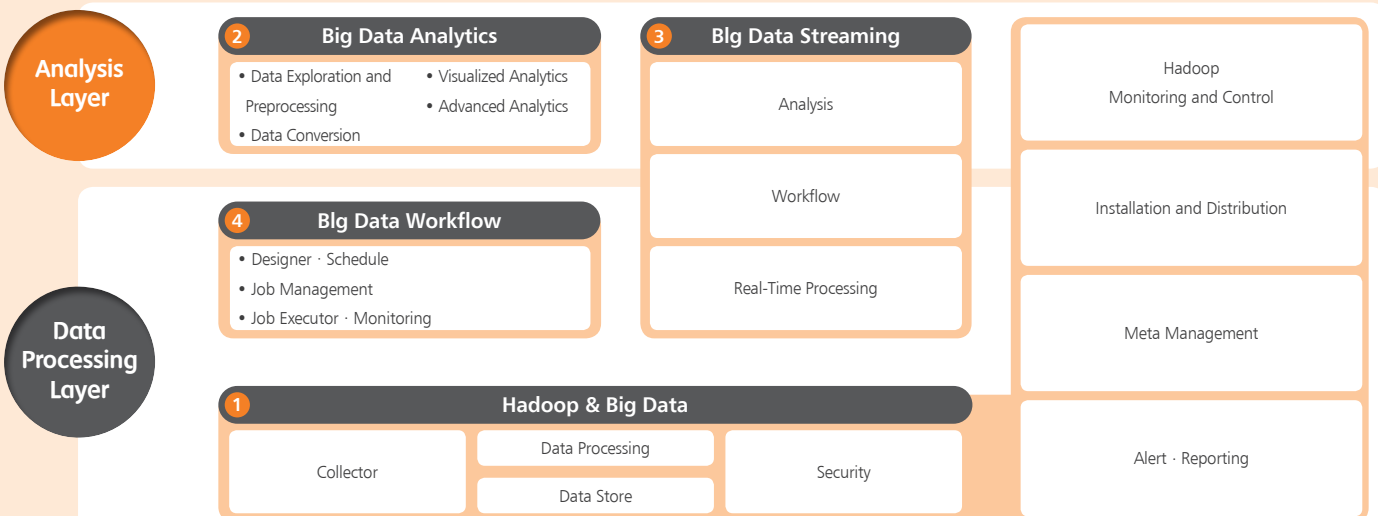


## KEY TOPIC

# Big Data

NEXCORE Big Data is a solution that has been developed by concentrating technologies accumulated through actual projects while applying latest big data core technologies, including Hadoop 2.0, Spark, and R, for the purpose of supporting the generation of new business models and enhancement of competitiveness. Consisting of the four solutions of 'Hadoop & Big Data Manager', 'Big Data Analytics', 'Big Data Streaming', and 'Big Data Workflow', it provides core big data-related functions, including those for collection, storage, processing, analysis and operation of large volumes of data.

## NEXCORE Big Data Solution Architecture



## Functions and Merits

### Hadoop & Big Data Manager

This is a Hadoop-based solution that collects, stores, and processes large volumes of data. It provides an integrated monitoring environment to IT administrators who are not familiar with the Hadoop development environment by adding such powerful Hadoop system operating management functions as resource monitoring, remote control, installation and distribution based on Hortonworks technologies, the global top player of big data solution technologies.

### Big Data Streaming

This is a solution that can rapidly collect, process and analyze large volumes of data in real time, applying open source Spark - the core technology for real-time distributed processing of data. It provides the functions for rule-based real-time detection of events, real-time control of data flow, real-time data query and visualization.

### Big Data Analytics

This is a statistical & analytic solution for data scientists and an analytic tool that can apply even machine learning and other advanced analytic algorithms based on open-source R.

It enables the users to easily perform statistical analytics by providing a menu-click based analytic environment that has significantly enhanced user convenience over script-based analytics - the limit of conventional open sources.

### Big Data Workflow

This is a solution that enables designing and scheduling of intuitive workflows for Hadoop distribution processing of big data. Oozie, a standard Hadoop scheduling technology, is applied to this solution, enabling effective control and monitoring of entire job performance on a dashboard.



## KEY TOPIC

# IoT Platform

IoT (Internet of Things) refers to the technologies and applied services that can enhance the productivity and convenience of the economy, industries and individuals by connecting objects and devices to the Internet using network communication between people and things or just between things. Diverse effects are expected from enhanced data communication using IoT, including improved quality of life, further automation of industries, and creation of new business opportunities.

The IoT platform is a core component that constitutes IoT along with devices, networks and services. The customers use services provided on the platform whereas the IoT service providers generate profit by participating in the platform.

SK holdings IoT platform integrates core functions for providing services aiming at the super-connected era. It has expanded its collaboration structure with manufacturers of devices and communication terminals. It is equipped with systems for real-time monitoring and analytics of large volumes of data collected from things. Furthermore, to steadily extend applied services as per the customer's desire, it is expanding services utilizing technologies developed in-house industry knowledge developed by specialized vendors.

SK holdings IoT platform enhances the value of existing business by connecting with data of things. It also helps businesses to enhance their convenience and productivity in an innovative manner.



## Functions and Effects

### Rapid deployment and expansion of IoT service

SK holdings IoT platform service enables the application of desired services with minimal investment of time compared with that required for new installation. The platform service is being consistently expanded upon and improved along with changes in business environments. New services are provided through speedy modification as required to address new trends.

### Reduction of Deployment And Operation Costs

The platform significantly reduces the heavy initial investment required for introducing new services. It also minimizes the cost for repair and maintenance that is incurred for steady operation and improvement after system deployment.



## Main Services

### Watz Eye

As a program that collectively controls physical equipment for video capturing, security and disaster prevention, Watz Eye provides effective physical security by rapidly processing data concerning events detected by various sensors and devices, based on pre-defined Standard Operating Procedure (SOP) following their integrated analytics and management.

#### Examples of Deployment

- Turkmenistan: Deployment of a safe city system
- Mongol and Azerbaijan: Intelligent traffic control system
- SK Innovation: Process management, operation system, LDAR
- SK Planet: Deployment of meteorological data platform

## KEY TOPIC

# Development Solution

NEXCORE is the brand of a solution owned by SK holdings, consisting of product groups developed to systematically perform software projects for enhancing productivity and quality in the phases of development and operation. NEXCORE has 14 products, the most diversified among platform brands developed in Korea so far, including .NET Framework developed in 2001. They continue to evolve for improving the IT environments of customers. NEXCORE product groups are highly evaluated as they have been applied to over 600 projects, ranging from small projects to large-scale next-generation projects at home and abroad, with their outstanding performance, safety and easy-to-use functions.

## Framework product group

Application framework supporting the most platforms in Korea, determining quality, performance and perfection of entire systems

NEXCORE  
J2EE  
Framework

NEXCORE  
C  
Framework

NEXCORE  
NET  
Framework

NEXCORE  
Batch  
Scheduler

## Mobile and Smart Web Platform

Korea's first platform for development and operation of integrated mobile services that supports diverse mobile environments

NEXCORE  
Mobile  
Platform

NEXCORE  
Smart Web  
Platform

## Tools for automation of quality product group

Group of tools for automation of the processes of design, test and control for real-time quality inspection, and process management

NEXCORE  
Code  
Inspector

NEXCORE  
Test  
Manager

NEXCORE  
Project  
Managemnt.

NEXCORE  
Data  
Modeler

## UI Framework product group

HTML5-based UI framework product group supporting diverse OSs, devices and browsers without using RIA or ActiveX.

Alopex  
UI

Alopex  
Grid

Alopex  
IDE

Alopex  
Runtime



## Functions and Effects

### NEXCORE Framework

NEXCORE is a SK holdings unique framework solution based on J2EE, TPM, and .NET that adheres to the technical standards.

### NEXCORE Mobile Platform

This platform provides an environment for developing and operating all mobile service systems that enable the users to use diverse information and services offered by a business directly on their mobile appliances.

### NEXCORE Code Inspector

NEXCORE code inspection tool enables elimination of defects upon occurrence by performing real-time code inspection in the background during coding by developers. When this tool is used for a project, the inaccurate manual code inspection is automated to enhance code quality while reducing cost and time.

### NEXCORE Data Modeler

NEXCORE Data Modeling Tool prepares ER models for designing data structure of information systems in the analytics and design stages. It ensures enhanced quality of data design models while reducing the relevant costs by automatically generating data-related outputs. Standard model rules can be defined using domain and glossary functions without applying any separate meta system.

### NEXCORE Test Manager

NEXCORE Test Manager is a tool for real-time integrated management of tests and defects.

To perform tests effectively for the entire range, project stakeholders (test managers, developers and testers) design, perform and manage tests. Defects found during tests are tracked and controlled applying defect management processes. In addition, it provides a progress management status board in diverse formats, including administrative-purpose reports by job, tester, and developer.

### NEXCORE PMS

PMS (Project Management System) enables scheduling and progress management of software development projects, management of costs, resource allocation, communication, and inclusive performance indicators (shown on a dashboard).

### Alopex UI

As more customers require support of mobile and cross browsing services, examples of applying HTML5 to application UI increase drastically. Alopex UI is HTML5-based UI Framework equipped with diverse powerful UI components, including grids and Alopex IDE.



# HAPPINESS WITH SK

## 2016 SK holdings Sustainability Report

### ABOUT THIS REPORT

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#### Report Overview

SK holdings has been publishing a sustainability report each year since May 2012. This is SK holdings' forth sustainability report prepared in accordance with the G4 Guidelines. The report discloses information focusing on material GRI issues, which has significant effect on the company's sustainable business operations and its stakeholders.

#### Reporting Standards

The 2016 SK holdings Sustainability Report was prepared in accordance with the Comprehensive Requirements of GRI G4 Guidelines announced by the Global Reporting Initiative (GRI) in May 2013, and its fulfillment was confirmed through an external assurance. Furthermore, the company also observes the UNGC Communication on Progress (COP) principles. The Guidelines Content Index is provided in pages 76 to 79.

#### Reporting Period

This report presents SK holdings' financial and non-financial performance results from January 1 to December 31, 2015. The report includes quantitative results over a three-year period, from January 1, 2013 to December 31, 2015, which allow for an annual analysis.

#### Report boundary

SK holdings has a total of nine place of business at home and abroad. The key boundaries of the quantitative and qualitative performance report are limited to SK holdings., subject to separate IFRS standards, considering its actual control and the impact of the individual operations on the occurrence of material issues. However, financial performance such as revenue is based on the consolidated financial statement in order to increase stakeholders' understanding. Furthermore, since Encar Network Co., Ltd. merged with SK holdings in May 2013, information about its employees has been integrated. However other information has been excluded since the two companies have separate management systems. Information on criteria other than those used herein is specified within the report.

#### Assurance Report

To increase the credibility of the report, this report has been externally assured. The assurance results are provided in the External Assurance Report on pages 80 to 81.

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**2016 SK holdings**  
**SUSTAINABILITY REPORT**

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**Date of Publication** June 2016

**Publisher** SK holdings

**Design** Autumn Communication



**PRINTED WITH  
SOY INK**



This book was created on environment-friendly paper that has been certified by the FSC (Forest Stewardship Council) using lumber produced in forests developed and managed by eco-friendly means. Alcohol-free printing was implemented using eco-friendly NON-VOC ink out of respect for people and the environment.

