

DIGITAL TECHNOLOGY FOR A SUSTAINABLE FUTURE

Samsung SDS Sustainability Report 2021



INTERACTIVE User Guide



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Samsung SDS Sustainability Report

Samsung SDS is a company that leads the value of sustainable management through digitalization.



For Further Details on This Report

Samsung SDS annually publishes both financial and non-financial data for investors and stakeholders with full transparency on the Samsung SDS official website and Financial Supervisory Service website.



2020 Annual Report



2020 Samsung SDS
Audit Report



Articles of Incorporation



2020 Business Report



Corporate Governance
Report



<https://www.samsungsds.com/en/index.html>
- Sustainability
- Samsung SDS News
- Investor Relations(IR)



<https://www.youtube.com/samsungsds>



<https://post.naver.com/sdspost>



<https://www.facebook.com/samsungsds>



<https://twitter.com/ictstory>

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Cover Story

Samsung SDS is building a sustainable future together with diverse stakeholders by utilizing its core digital technologies. The eco-friendly image of Chuncheon data center, which operates at a world-class level of energy efficiency, represents Samsung SDS' aim for a sustainable future with digital technology.

About This Report

Samsung SDS has published the 2021 Sustainability Report to transparently disclose the economic, social, and environmental value and achievements generated through its business with wide-ranging stakeholders. This report serves as a communication channel to annually share Samsung SDS' sustainability management activities, accomplishments, and future plans with stakeholders.

Reporting Standards

This report has been prepared in accordance with the Core Options of the Global Reporting Initiative (GRI) standards and the Integrated Reporting Framework of the International Integrated Reporting Council (IIRC). It also has reflected the indicators of the UN Sustainable Development Goals (SDGs), the Task Force on Climate-related Financial Disclosures (TCFD), the Sustainability Accounting Standards Board (SASB), and the World Economic Forum (WEF). Financial performance data is based upon consolidated K-IFRS accounting standards.

- GRI Standards Guideline
- IIRC's Integrated Reporting Framework
- K-IFRS for Financial Data
- ESG (Environment, Social, Governance) Accomplishment Report
- Annual Report Published in Korean and English

GRI Index

SASB Index

ESG Performance

TCFD Index

WEF Index

Download Sustainability Report

Korean(KOR)

English(ENG)

Reporting Period

This report covers ESG performances and activities from January 1, 2020 to December 31, 2020, and some achievements in this report may include information dated to April, 2021. Quantitative data for the latest 3 fiscal years are provided to allow for trend analysis over time.

Reporting Cycle

Annual (last report issued in June, 2020)

Reporting Scope

This report covers Samsung SDS headquarter and all global worksites. Some portion of the sustainable performance data covers only domestic worksites. Financial performance data is based upon consolidated K-IFRS accounting standards. Data that require additional attention in terms of reporting scope and boundary were annotated separately for the convenience of readers.

Assurance

To ensure the reliability of the reporting process and information included in the report, Samsung SDS engaged with Korea Management Register (KMR), an independent external assurance provider to conduct the assurance review. The review was conducted in accordance with International Standard on Assurance Engagements (ISAE) 3000 and AA1000AS Type II.

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OUR BUSINESS

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Over the past 3 decades Samsung SDS has led digital transformation in a range of areas, and has evolved into a global IT solution provider with a presence in more than 40 countries across the globe. With enterprise solution to innovate productivity and disruptive technologies leading the 4th industrial revolution such as AI, Cloud, and Blockchain, Samsung SDS affords the most innovative insights to customers in different business areas and is recognized for its technological competitiveness in each service area.



CEO Message



Enabling our digital technologies,
Samsung SDS will create sustainable future.

Dear Stakeholders,

I extend sincere gratitude to our stakeholders for abiding trust and support to Samsung SDS.

Recently, Environmental, Social, and Governance (ESG) has risen as an important criteria for a corporate along with the rapidly-shifting business landscape. That is, corporate environmental and social responsibilities and transparent disclose of corporate governance are ever more emphasized.

Especially, given the challenging circumstances brought on by the global outbreak of the COVID-19, safety and social equality have become important issues for corporate management.

To meet the expectations of our stakeholders, Samsung SDS strives to build a company-wide ESG management system and conduct businesses focusing on ESG.

Samsung SDS has strengthened climate change response activities. We are targeting 30% reduction of greenhouse gas (GHG) emissions by 2030. Samsung SDS aims to systematically reduce GHG by expanding environmentally conscious investments in data centers, expanding the use of renewable energy, and utilizing energy monitoring systems.

Moreover, in line with our CSR vision, 'Together for Tomorrow!', we promote educational programs for the next generation, continue social contributions for local community, and support suppliers for shared growth.

Strengthening ESG responsibility of the Board of Directors while reinforcing ethics and compliance management has enabled Samsung SDS to build transparent governance.

These efforts paid off as we were listed on DJSI Korea and was graded A by MSCI.

On this year's sustainability report, we included our business cases delivering social values with digital technology and followed TCFD and SASB, the global ESG disclosure recommendations and standards. Samsung SDS will constantly fulfill its role as a member of society and continue to disclose corporate ESG activities through different communication channels.

We look forward to your continued interest and support to grow into a global ICT company driving towards sustainable future with digital technology.

Thank you.

President & CEO of Samsung SDS Co., Ltd.

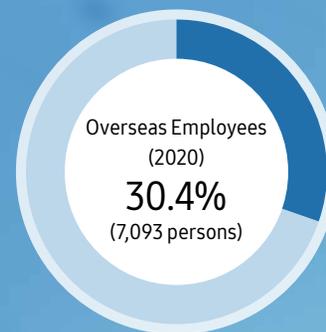
Sungwoo Hwang



Samsung SDS at a Glance

Company Overview

For 35 years Samsung SDS has continuously developed its capabilities as an IT services provider, and today is a leader in enterprise-level digital transformation. With enterprise solution to innovate productivity and disruptive technologies leading the 4th industrial revolution such as AI, Cloud, and Blockchain, Samsung SDS affords the most innovative insights to customers in different business areas, and is recognized for its technological competitiveness in each service area.



- 39.5% Korea
- 20.9% America
- 10.6% Europe
- 19.5% Asia & Africa
- 9.5% China

23,370 persons
(including overseas: 7,093 persons)
Total 23,370 persons



Samsung SDS Overview

2020 ESG Management Activity

Samsung SDS has been expanded its investments and activities in areas relevant to ESG, and strengthening communication with stakeholders in response to the Social Responsible Investment (SRI) trend that emphasizes environmental and social performance disclosure.

Samsung SDS was newly listed in the Dow Jones Sustainability Korea Index in 2020 after disclosing key information on sustainability management and ESG activities. In addition, the company received a Silver medal in the EcoVadis, a Grade A in the MSCI ESG evaluation, and a Grade A in the KCGS (Korea Corporate Governance Service) ESG evaluation.

Newly Listed on Dow Jones Sustainability Korea Index in 2020

DJSI was developed by S&P Dow Jones Indices, a global financial information company, and Robeco SAM, a leading company in sustainability assessment, and has been evaluating the corporate sustainability of the top 2,500 companies according to global market capitalization since 1999.

Samsung SDS was newly listed on DJSI Korea* following the 2020 DJSI evaluation of ESG management performance, enhancing corporate credibility with internal and external stakeholders.

* Invites 30% of the 200 listed companies in Korea

Member of
**Dow Jones
Sustainability Indices**
Powered by the S&P Global CSA

SAM
Now a Part of **S&P Global**

Awarded Silver Medal in EcoVadis Rating

EcoVadis is a global research organization that evaluates the social performance of 150 countries, 190 industries, and 50,000 companies around the world. EcoVadis evaluates ESG performance based on 4 topics: supply chain, Environmental Safety and Health (ESH), labor and human rights, and ethics and fair operation.

In 2020, Samsung SDS was presented a Silver medal, which is given to the top 26% of companies in the EcoVadis evaluation.



Received a Grade A in MSCI ESG Evaluation

MSCI divides about 8,500 listed companies around the world by industry every year and assigns them ratings from AAA to CCC based on an evaluation of their management status related to environment, social responsibility, and corporate governance.

As of December 2020, Samsung SDS received a Grade A from the MSCI ESG evaluation.



Received a Grade A in the KCGS ESG Evaluation

Since 2011, KCGS has annually evaluated the sustainable management level of listed companies in Korea through ESG evaluations that include social responsibility and environmental management. In 2020, Samsung SDS received a Grade A in the KCGS ESG evaluation, an increase of one grade compared to the previous year, in recognition of improvements made in its sustainable management system.

Rating



Environment



Society

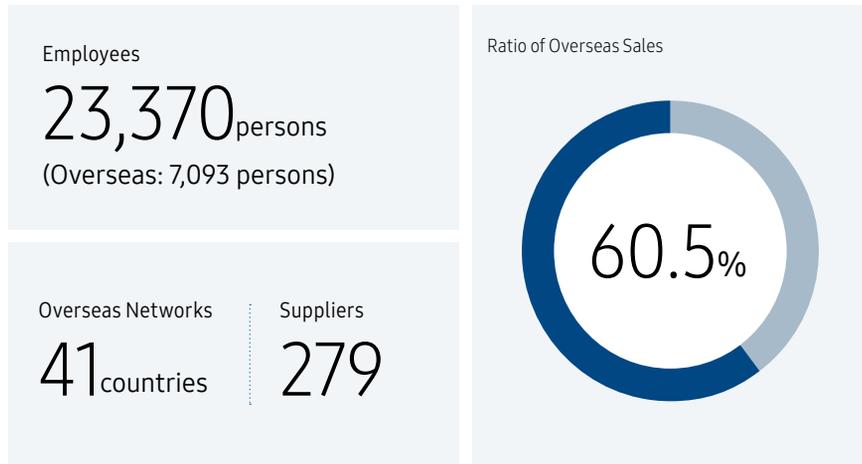


Governance

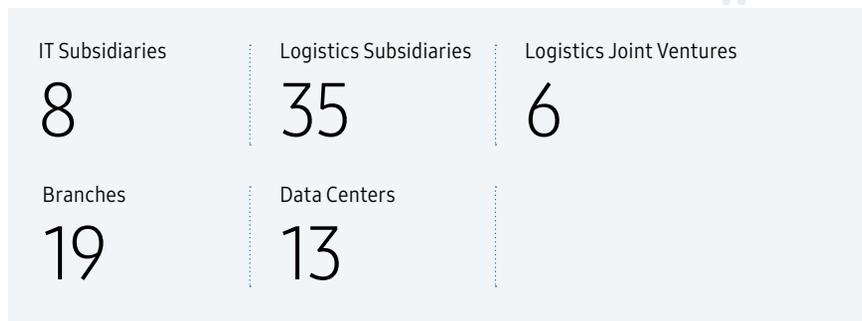


Global Network

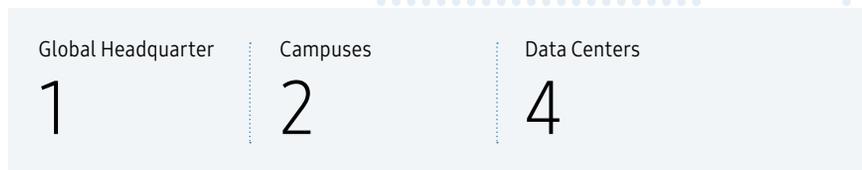
We operate globally with 69 offices including 8 regional HQs and 17 data centers worldwide.



Overseas Infrastructures and Worksites



Domestic Worksites and Data Centers



Domestic Data Centers

· Sangam · Suwon · Gumi · Chuncheon

Global Data Centers

USA

· New Jersey · Dallas
· Virginia · Austin

Latin America (Brazil)

· Sao Paulo

Europe

· London , UK
· Frankfurt , Germany

India

· Delhi
· Bengaluru

China

· Beijing
· Shanghai

Southeast Asia

· Singapore

Vietnam

· Hanoi

GDCs (Global Development Center)

· Seoul, Korea · New Delhi, India · Hanoi, Vietnam · Xi'an, China

Regional Headquarters

· SDS America: New Jersey, USA
· SDS Latin America: Sao Paulo, Brazil
· SDS Europe: Surrey, England (Waybridge)
· SDS Middle East: Dubai UAE
· SDS India: New Delhi, India
· SDS China: Beijing, China
· SDS Vietnam: Hanoi, Vietnam (Bac Ninh)
· SDS Asia Pacific: Singapore

Business Overview

Technical Training Programs

SW Qualification Exam
(2016-2020, a total of 2,205 passed)

5 core technologies training (2018-2020, 1,053 persons)

In 2018, Samsung SDS established the Data Scientist Certification Program

Certified data scientists (2018-2020, 441 persons)



Awarded in Technology Field

Awarded 1st prize in the English (HotpotQA) and Korean (KorQuAD1.0, 2.0) AI Natural Language Machine Reading Assessment

Awarded 1st prize 'iDASH 2020' in the international genome (genomic) information analysis security contest with our homomorphic encryption technology.

Key Partnerships

Signed MOU with IBK and KOTRA for online export support in China

Signed an industry-academic agreement for digital transformation with Sungkyunkwan University, Hanyang University, and Korea University

Strengthened cooperation with NHN in digital transformation business

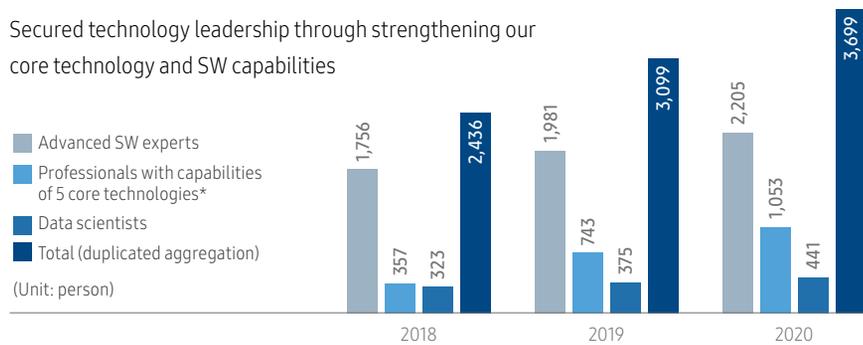
Strengthened cooperation with DGB Finance for digital finance business development

Business Competitiveness

Samsung SDS continues to build technological leadership by recruiting and nurturing key technical professionals, applying patents for core technologies with publication of papers, and expanding strategic investments and partnerships.

Human Resource Competitiveness

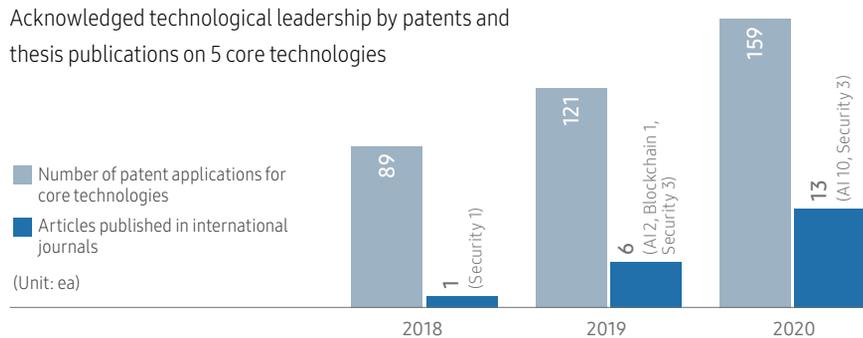
Secured technology leadership through strengthening our core technology and SW capabilities



* AI, Blockchain, Cloud, Data Analytics, Security

Technological Competitiveness

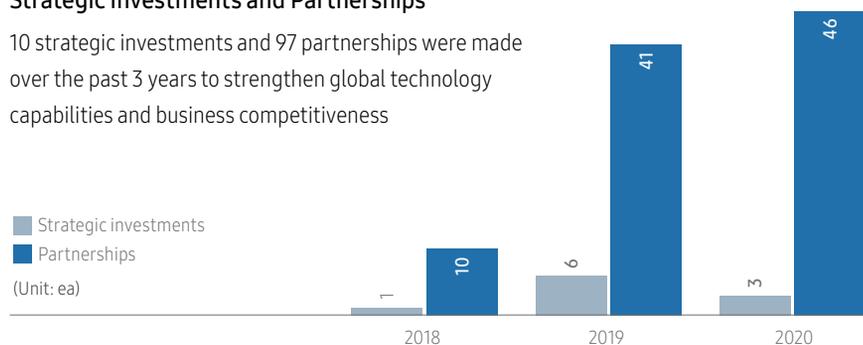
Acknowledged technological leadership by patents and thesis publications on 5 core technologies



* Limited to top-tier academies and journals: 1) Top 20 by H5-index technical field
2) SCIE listed + Impact Factor 3.0 ↑, 3) listed on Samsung Thesis Award, etc.

Strategic Investments and Partnerships

10 strategic investments and 97 partnerships were made over the past 3 years to strengthen global technology capabilities and business competitiveness



Business Portfolio

Samsung SDS offers integrated IT services and global logistics BPO to serve clients in a diverse range of industries.



Cloud-based IT Services

Integrated cloud-based IT services ranging from consulting and implementation to operation serving private and public sector clients based on experiences from Samsung affiliates



Cloud-based Solutions and Platforms

A wide variety of industry and function specific solutions to provide synergy and efficiency leveraging standard platforms (AI, Blockchain, IoT, etc.)



Security Solutions and Services

Proven security solutions and managed services to protect information. Companies must defend information against cybersecurity threats amid emerging of new technologies and increasing the amount of data that corporates should assure.



Logistics Services

End-to-end logistics service covering international/inland shipping, warehouse management, and 4PL services including consulting and IT services.

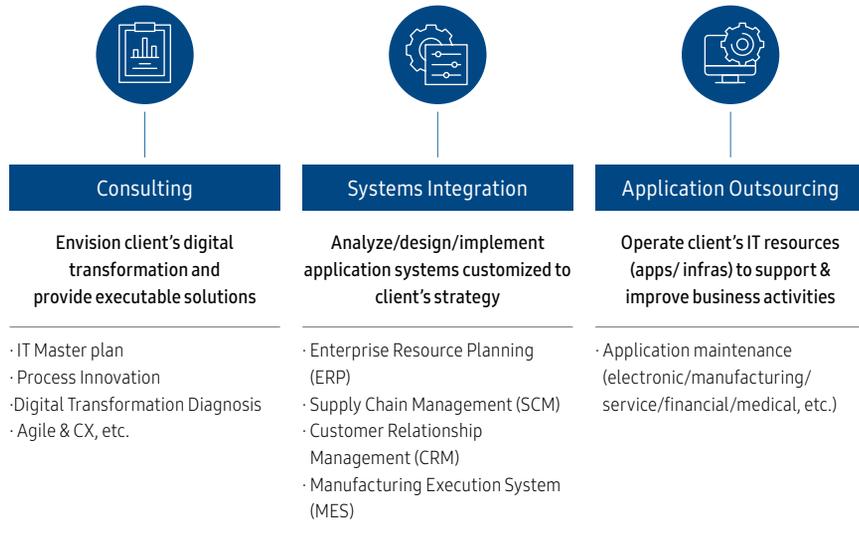
Gartner Market Share (2020)

IT Services
Ranked 25th in Global, 3rd in APAC

Manufacturing IT
Ranked 3rd in Global, 1st in APAC

Business Portfolio 1 — Cloud-based IT Services

Samsung SDS provides cloud-based IT innovation services optimized for the customer business environment based on experiences in diverse industries and digital technology capabilities.



Forbes Blockchain 50(2019-2021)

Blockchain
Selected for 3 consecutive years

Gartner Market Share(2020)

RPA
Ranked 8th in Global, 3rd in APAC

Business Portfolio 2 — Cloud-based Solutions and Platforms

We provide the latest in technology-driven Digital Transformation Solutions, including a state-of-the-art Digital Transformation Engine to enable successful digital transformations for our clients.

Digital Transformation Solutions		Digital Transformation Engine	
Manufacturing Nexplant	Finance Nexfinance	Automation & Collaboration BrityWorks	
Logistics Cello	Retail Nexshop	AI Analytics & IoT Brightics(AI/IoT)	Blockchain Nexledger
Customer Service Innovation AICC	Healthcare Nexmed	Security SDS Security	Cloud SDS cloud



BrityWorks



Brightics AI



AI solution free trials

Frost & Sullivan (2020)

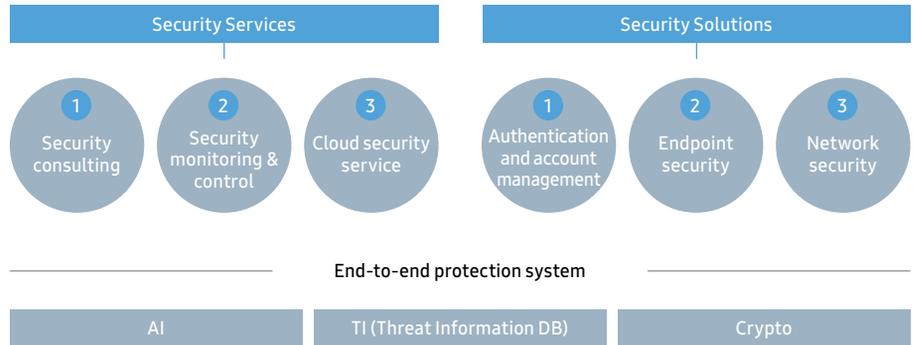
Managed Security Service Sector
4th in APAC



Security

Business Portfolio 3 — Security Solutions and Services

With world-class security solution and managed services, Samsung SDS helps clients to proactively respond to sophisticated security threats and changing market conditions and needs.



JOC* Top 50 Global (2020)

*Journal of Commerce:
global logistics specialized media

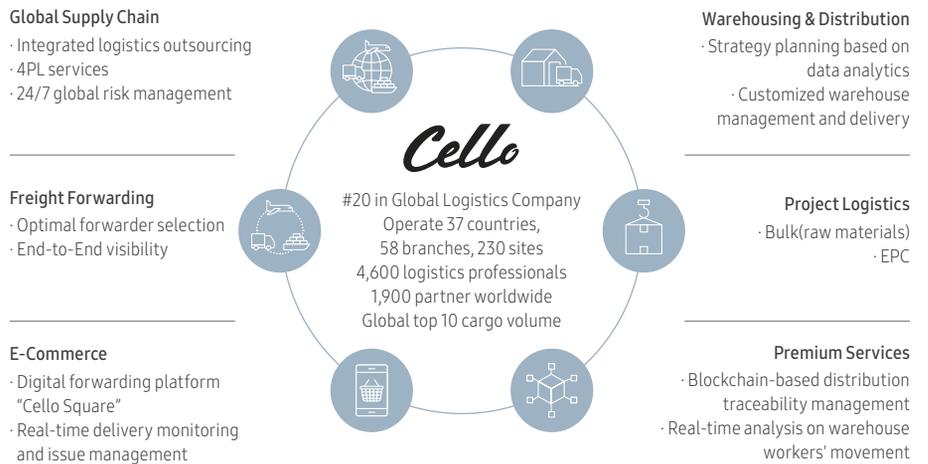
3rd Party Logistics Sector
20th in the world



Cello

Business Portfolio 4 — Logistics Services

Samsung SDS provides an innovative approach to logistics services based on our unique IT capabilities



Air Cargo (14th largest in the world)	Ocean Cargo (9th largest in the world)	Truck	Warehouse
410,000 ton/year	1.01 million TEU/year	1.28 million truckloads/year	2,101 km ²

Samsung SDS Digital Transformation Framework

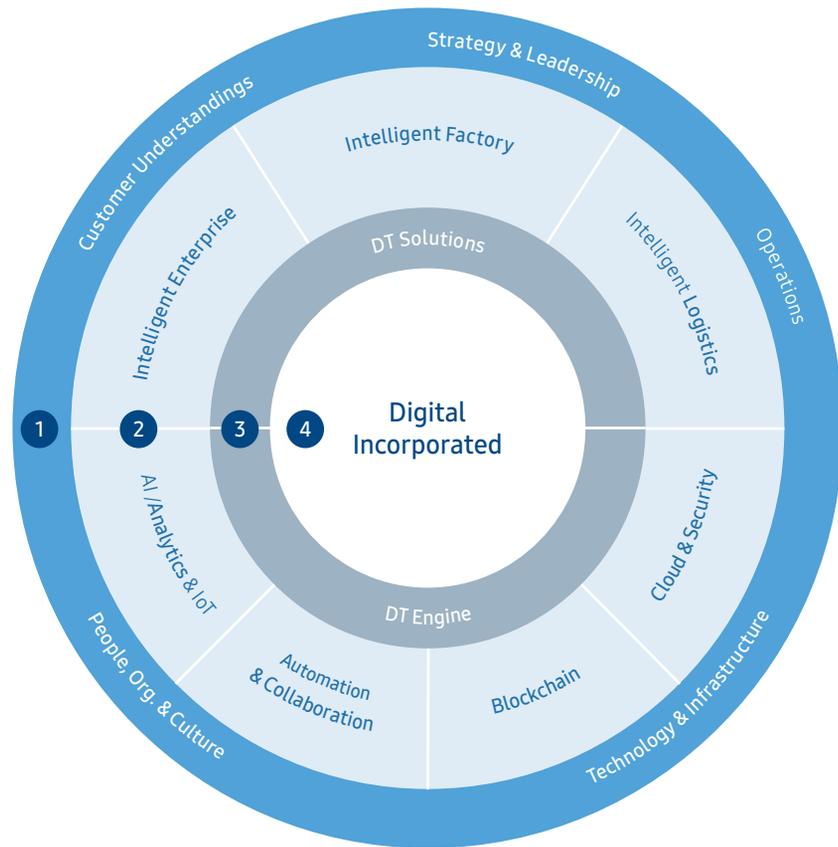
Samsung SDS has selected core innovative technologies to enhance business competitiveness and realize the transformation into a digital company, and continues to make long-term and preemptive investments. The company plans to nurture technical professionals to overcome the limitations of current technology and improve global business competitiveness.

Digital Transformation Framework Configuration

- 1 Area/target to apply digital transformation
- 2 Directions for business transformation of companies
Digital technologies that companies need to secure
- 3 Solution/platform provided by Samsung SDS for digital transformation
- 4 Core vision and objectives for digital transformation (transformation to a digital corporation to create customer value)



Digital Transformation Engine



Securing digital technology competitiveness, Samsung SDS supports customers' digital transformation through cutting-edge digital technologies, strategic investments and partnerships.

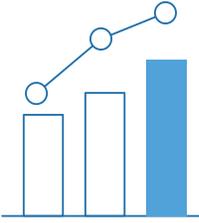


Values of Digital Transformation Technology

Item	Description	Customer Value	Social Value	
Digital Transformation Solutions	Intelligent Enterprise	<ul style="list-style-type: none"> - Analyze customer data based on an analytics platform and provide an in-store interactive experience - Adopt comprehensive access and control policies for all apps and devices - Adopt Cloud Enterprise Mobility Management to manage the enterprise mobility environment 	<ul style="list-style-type: none"> - Support for a strategic marketing approach - Reduce customer communication costs - Improve convenience for security managers - Reduce security management costs 	<ul style="list-style-type: none"> - Strengthen competitiveness of the nation's industry and security - Improve efficiency in resource consumption through the replacement of unnecessary promotion materials - Increase efficiency in energy consumption
	Intelligent Factory	<ul style="list-style-type: none"> - Deep learning-based quality inspection and intelligent process - Preemptively detect facility anomalies through IoT platform - Data management throughout product life cycle 	<ul style="list-style-type: none"> - Improve in shop floor quality - Prevent facility failures and improve in operational efficiency - Flexibly adapt changes in product sales and the supply chain - Reduce security costs and improvement in the convenience of security management - Reduce delivery time and operating costs 	<ul style="list-style-type: none"> - Increase efficiency in resource/energy consumption - Reduce generation of process-induced pollutants - Improve competitiveness of the nation's manufacturing industry
Digital Transformation Engine	Intelligent Logistics	<ul style="list-style-type: none"> - Provide analytical information to determine optimal transport route - Secure real-time visibility/arrival prediction/crisis response throughout logistics - Technology to prevent document forgery (distribution/source verification) - Optimize logistics execution through supply chain management/WMS1 	<ul style="list-style-type: none"> - Reduce carbon emissions by improve transport routes and improving loading efficiency - Minimize risks through avoiding logistics accidents - Guarantee quality of fresh cargo 	<ul style="list-style-type: none"> - Increase efficiency in resource/energy consumption - Improve economic productivity
	AI / Analytics & IoT	<ul style="list-style-type: none"> - Provide integrated AI platform that collects, analyzes, visualizes large amounts of information - Provide a integrated single platform for IoT data analysis 	<ul style="list-style-type: none"> - Reduce business costs and improved adaptation to market changes - Improve data accessibility and analyzability - Increase daily life and work convenience - Improve response to emergency situations 	<ul style="list-style-type: none"> - Support for transition into high value-added industry - Increase efficiency in resource/energy consumption - Strengthen competitiveness of the nation's industry - Elevate perceived safety of the general public
Automation & Collaboration	<ul style="list-style-type: none"> - Provide core collaboration tools and business system alignment service with BrityWorks, our work platform - Automate repetitive tasks with AI-based chatbots and RPA 	<ul style="list-style-type: none"> - Improve customer satisfaction based on swift business handling - Improve efficiency and quality of HR - Reduce travel/space arrangement costs 	<ul style="list-style-type: none"> - Improve accessibility to service on the national level - Support for transition into high value-added industry - Increase efficiency in resource/energy consumption - Improve economic productivity 	
Blockchain	<ul style="list-style-type: none"> - Enable up to 15 times faster processing compared to open source by applying Samsung SDS' distributed consensus algorithms and accelerators - Equip with Hyperledger and Ethereum in addition to its distributed consensus technology (NCA) - Apply and expand easily (applicable to Azure, AWS, and Oracle cloud) 	<ul style="list-style-type: none"> - Establish reliable multilateral networks - Improve work efficiency across different industries (paperless, etc.) 	<ul style="list-style-type: none"> - Ensure service transparency and reduce social costs 	
Cloud & Security	<ul style="list-style-type: none"> - Provide end-to-end cloud services including cloud-based consulting, migration, and integrated operations - Adopt security solutions and services with world-renowned white box encryption and homomorphic encryption technology 	<ul style="list-style-type: none"> - Reduce TCO (Total Cost of Ownership) - Manage resources with a focus on core business - Use safe cloud services - Reduce corporate security costs 	<ul style="list-style-type: none"> - Increase efficiency in resource/energy consumption - Strengthen competitiveness of the nation's industry - Improve economic productivity 	

Key Figures

Financials



Sales
KRW **11.0174** Trillion



Operating Profit
KRW **871.6** Billion



R&D Investment
(Ratio Compared to Sales)
KRW **131.4** Billion (1.2%)

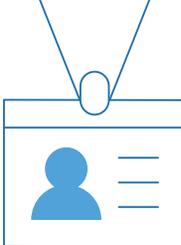


Number of Patents
Registered
(Cumulative)
1,717 Cases



Ratio of Overseas
Sales
60.5 %

Employees



Number of Employees
23,370 Persons



Average Tenure of Employees
15 Years



Ratio of Female
Employees
28.1 %



Employment of
Disabled
413 Persons



Average Training
Hours
55.4 Hours

Environment



Water Usage

326,406 Ton



Energy Consumption

1,954,497 GJ(1.7%↓)



Waste Discharge Amount

1,575 Ton



Data Center PUE (Chuncheon)

1.27

Customers



Customer Satisfaction

93.3/100 Points



Number of Privacy Data Leakage

0 Cases

Security Management System Certification

ISO 27001
ISO 28000

Social Contribution



Social Contribution Expenditures

KRW **6.17** Billion



Beneficiaries of Social Contributions

22,107 Persons

Mutual Growth Fund

KRW **60** Billion



Shared Growth Index

Most Excellent

Number of Suppliers Participating Code of Conduct (Ratio)

203 (73%)

COMMITMENTS

20 COVID-19 Response

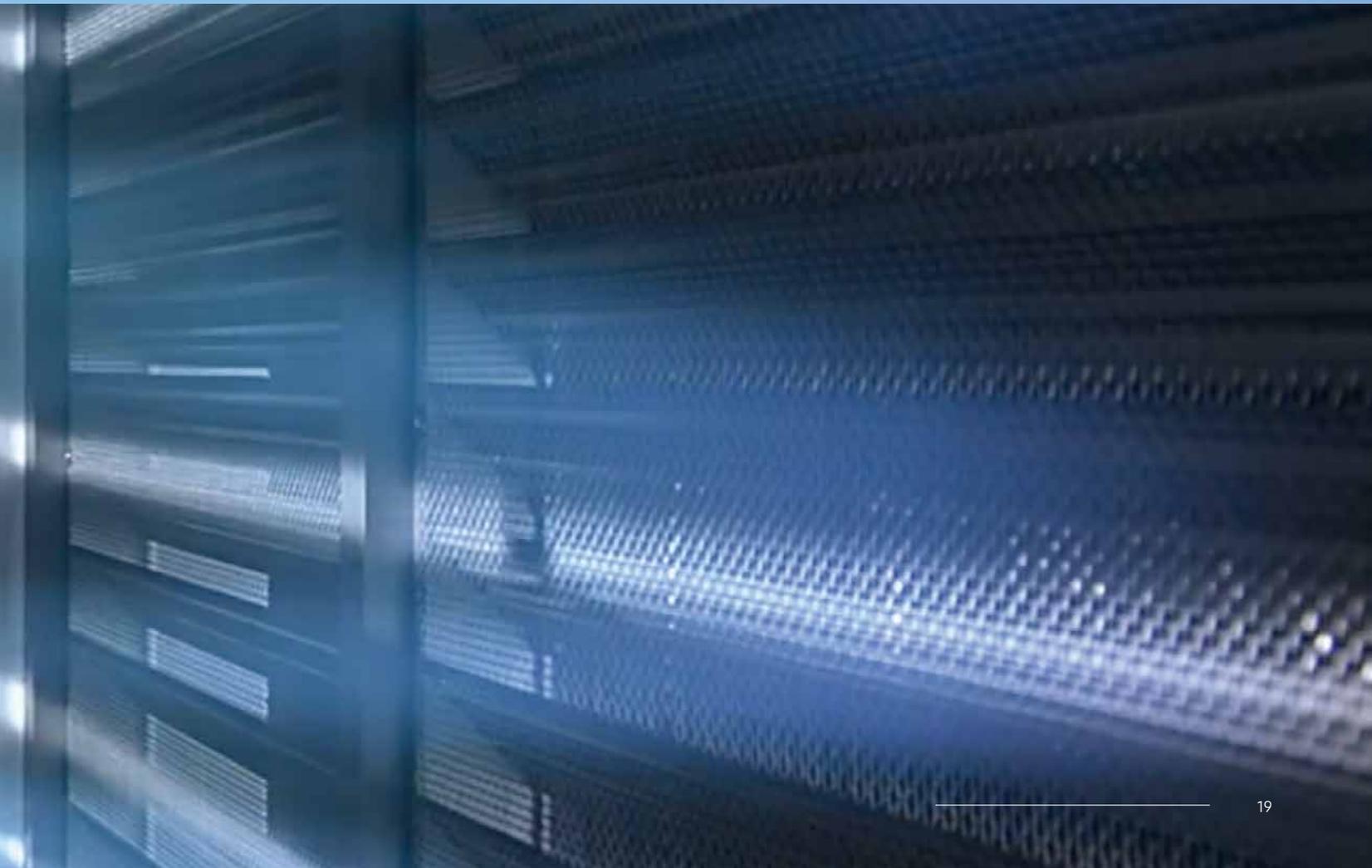
22 Digital Technology for ESG

32 UN SDGs

38 Materiality Analysis

40 Value Creation

Samsung SDS continues to strengthen communication and cooperation with its stakeholders in order to proactively identify and respond to issues related to business sustainability, and to build consensus. In 2020, the company successfully ensured the safety of its employees and minimized the business impact of the COVID-19 pandemic through establishing a COVID-19 infection response system and providing a un-tact work environment based on its information technologies. Going forward, Samsung SDS will think beyond simple CSR to improve sustainability across the ESG sectors, creating differentiated values. In addition, Samsung SDS innovatively develops technologies that are leading the 4th industrial revolution era, such as AI, blockchain, and IoT while continuously creating future growth engines by converging existing industries and digital technologies to solve social problems based on ICT. The company will promote 'Digital Transformation' for resolving social issues and creating ESG values.



COVID-19 Response

Response System to Minimize Business Impact

The initial outbreak of the COVID-19 took place in December 2019, and the global pandemic continues to this date. Samsung SDS is committed to preventing the spread of the disease among our employees and minimizing the business impact based on a solid response system in an unprecedented pandemic situation.



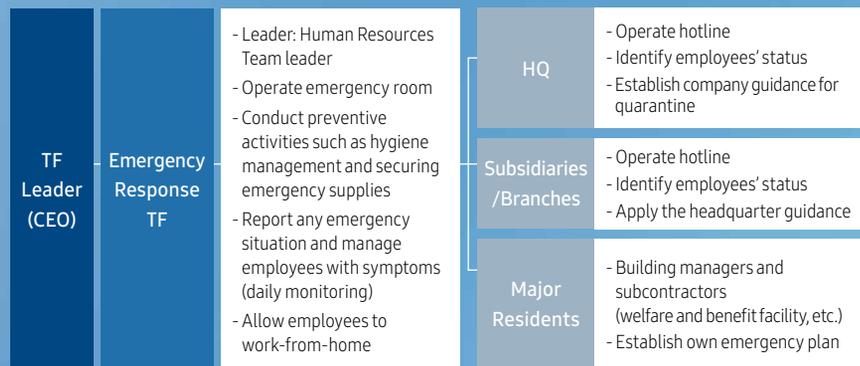
Announcement of measures to be taken in response to the spread of COVID-19

1. Suspend on-site training
2. Allow family-care leaves
3. Restrict both domestic and international business travel
4. Limit operation of meetings; however, meetings may be held with no more than 5 persons (with masks and distancing)
5. Prohibit all group activities including eating, meeting, or any type of small gatherings.
6. Minimize travel among worksites
7. Limit visitors
8. Close in-house daycare center
9. Report and self-quarantine if having any type of symptoms of COVID-19 such as fever/respiratory symptoms/ sore throat/chills/muscle pain

Key Response Measures to COVID-19

Emergency Response System	Organize emergency response TF / Establish response process for emergency situations / Operate in-house quarantine center and resident medical staff / Prepare contingency plan	
Infection Prevention Activities	Infection prevention in operation sites - Guidelines for employees - Close down common areas, and restrict group activities - Weekly inspection	Preliminary diagnosis survey and temperature check for employees and visitors - Daily self-check through SMS - Weekend diagnosis survey to check compliance with hygiene and quarantine rules - Diagnosis survey for visitors through mobile app
	Quarantine activities to prevent infection - Disinfect the entire worksites once a week and public spaces 3 times a day	Measuring body temperature with thermal imaging camera when entering and exiting workplaces
Support for Quarantine Supplies	Provide quarantine products such as masks to employees, necessities such as masks and healthy foods to employees in self-isolation, and hand sanitizers at workplaces	
Minimization of Supply Chain Impact	Offer un-tact collaboration system (Samsung SDS Brity Messenger) to SMEs for free of charge, provide quarantine products to suppliers, and replace offline monthly Health and Safety Council meeting to email communication	

Configuration and Roles of Emergency Response TF



Communication with employees through the company notice board, broadcasting, and SMS (including Chatbot), etc.

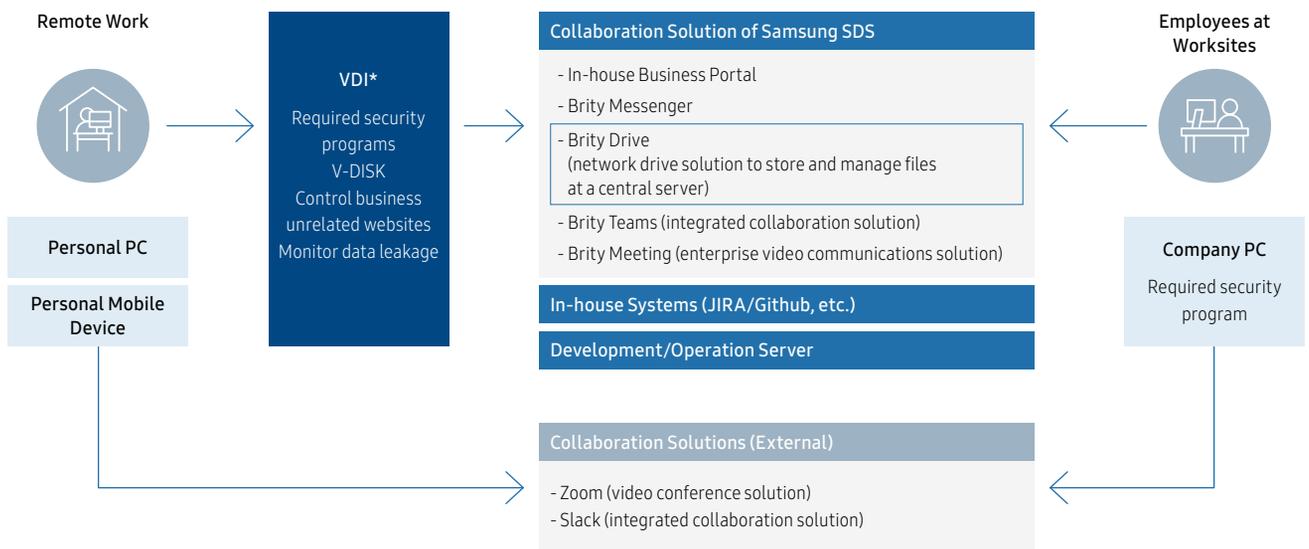
Internal/external support from Safety and Environment Research Center (establishing common guidance for all Samsung affiliates), and Communication Team (run communication channels, respond to external media, etc.)

IT Infrastructure Support for Remote Work

To prevent the spread of infectious diseases and protect the health of employees, Samsung SDS has been gradually introducing telecommuting since September 2020, starting with employees with underlying conditions who are vulnerable to infectious diseases and employees whose spouses are pregnant. Rotational telecommuting has been implemented since December of the same year. The company provides Virtual Desktop Infrastructure (VDI) and collaboration solutions for off-site/telecommuting work to create a work environment that is the same as the in-house environment for employees' convenience.



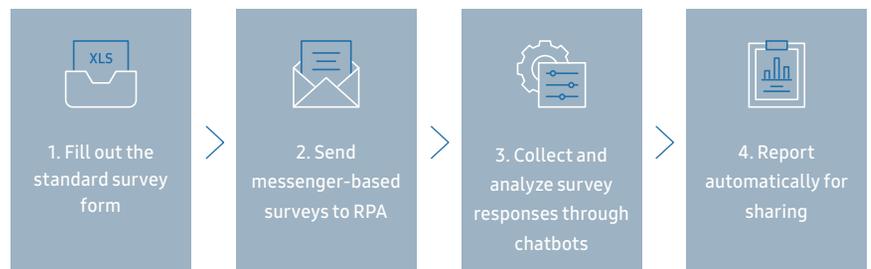
Brity Meeting



*VDI: a virtual desktop environment that can be accessed through the network to achieve the same work environment both inside and outside the company

Real-time COVID-19 Survey

Samsung SDS utilized Brity RPA/Assistant to automate a real-time COVID-19 diagnosis survey for 12,000 employees, which ensured a timely 75% response rate within 10 minutes. When an issue is identified through the survey, the relevant employee's department head and HR manager are notified immediately. In this way, Samsung SDS strengthens the early identification of visitors from areas where COVID-19 is spreading and takes preemptive countermeasures.



Digital Technology for ESG

Samsung SDS maximizes ESG value based on digital innovation. The company creates eco-friendly value by applying advanced IT to manufacturing sites, finance, and buildings. In addition, Samsung SDS contributes to creating a development ecosystem and bridging the digital divide through open source AI, etc., and pursues customer satisfaction based on our accumulated technical know-how.

1. Eco-friendly Solutions

Manufacturing Environment Monitoring: Nexplant

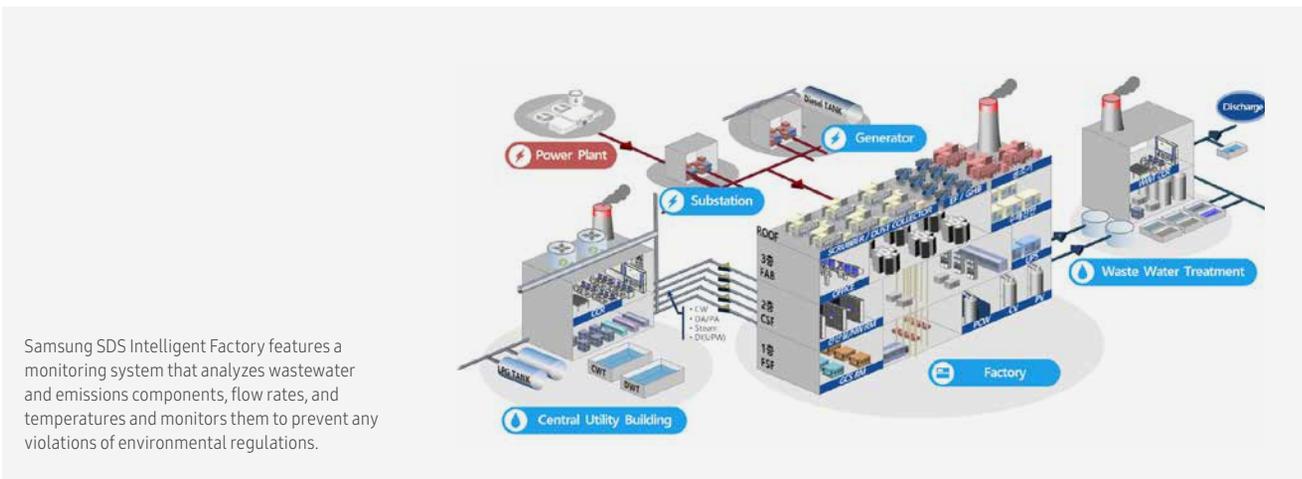
Samsung SDS is working to develop an advanced Intelligent Factory business. To this end, we realize intelligence in all areas of manufacturing based on the Nexplant platform, which integrates new information technologies such as big data, AI, IoT, blockchain, and cloud.

Nexplant provides an automatic control system for safe and smart operation by monitoring and controlling the facilities used in factories (electricity, air conditioning, water, wastewater, etc.) and enables real-time IT-based monitoring and management of air/water pollutants with its own state-of-the-art remote monitoring system. 20 workplaces of 7 companies use Samsung SDS' Nexplant platform to detect anomalies in real-time and predict failure to increase the facility operation rate, while improving quality by optimal control and analysis.



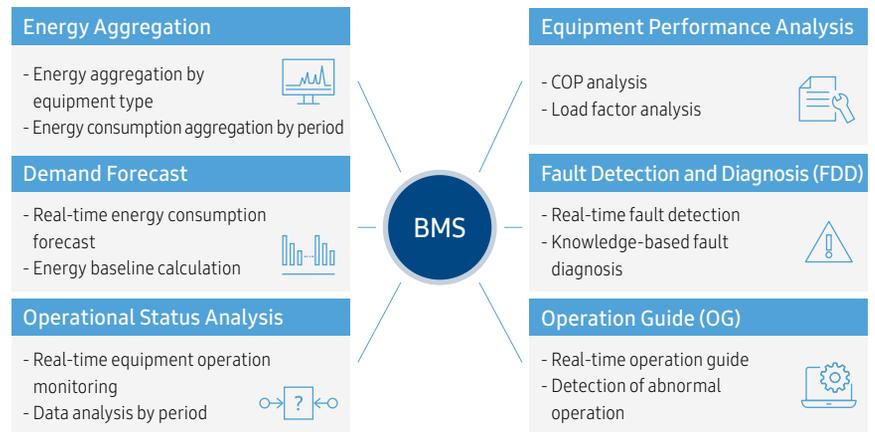
Nexplant

 Gas & Chemical Monitoring System	 Facility Monitoring & Control System	 Specialty Gas Monitoring & Control System	 Tele Monitoring System
Real-time monitoring system for stable supply to gas and chemical supply facilities	Integrated management system for controlling and monitoring the supply from utility to facilities (ELEC, AHU, UTIL, WWT, etc.)	Real-time gas safety detection system to monitor gas leaks for gas supplies and production facilities	Monitoring system that analyzes the components of wastewater discharged and gas emissions and monitors allowable concentrations



Building Energy Efficiency Management System: Brightics IoT BMS

Samsung SDS contributes to building energy efficiency through the Brightics IoT BMS (Building Management System) based on its accumulated IoT technology. With Brightics IoT BMS, we can collect and analyze building energy data to come up with our saving plan, as well as improve the energy management level. Energy aggregation, demand forecasting, and operational status analysis can reduce energy use by 9~13% per year on average.



Eco-friendly Digital Door Lock: Smart Lock

Samsung SDS pursues customer satisfaction by offering home IoT services that help families to use a variety of home devices at any time, from anywhere, to check the safety of families, use energy efficiently and live a convenient life. In particular, all Smart Home and Smart Door Lock products, a representative Samsung SDS home IoT service, are subject to the Restriction of Hazardous Substances directive (ROHS), which limits the use of the top 10 most harmful substances.

To comply with the recycling standards for products, Samsung SDS applies marking appropriate to the WEEE (Regulation on the Mandatory Recycling of Used Home Appliances) guidelines. To provide the information required on recycling products, Samsung SDS makes the indication of external components compulsory and fulfills recycling obligations by paying a share of recycling expenses for KERC (Korea Electronics Recycling Cooperative). Soybean oil printing is applied to unit boxes for product packaging, and eco-friendly recycled paper is used for subsidiary materials in the product packaging box.



Smart Lock



RoHS is applied to all Samsung SDS' Smart Home and Smart Door lock products to completely limit the use of 10 hazardous substances.

Home IoT Service Smart Lock Services



Smart access certification: NFC- mobile key enables to enter house safely without entering a password and to check access history.



Notification service for family arriving home: a family arrival notice is sent in real time



Check access history: check and confirm visitors and their access logs on mobile app

2. Sharing Digital Technology For the Future Generation

Integrated AI Platform: Brightics Studio

Brightics AI is an integrated AI platform that collects and processes a vast amount of scattered information, analyzes quickly using AI, and provides an easy-to-understand visualization for users. The platform was listed on Gartner and Forrester firstly in Korean. Brightics Studio is a lightweight analytics tool and is developed as an open-source version of Brightics AI. Brightics Studio makes it easy to access and to perform AI analysis. Users can easily create workflows with drag and drop without program coding and freely utilize user-created analysis functions within the workflow. In addition, Brightics Studio provides rich learning materials including 300 scenario-oriented tutorials and advanced analysis model simulations.

Brightics Studio Average of 1,000 downloads/week	Brightics Tutorial Average of 10,000 views/week	Listed in the Gartner Magic Quadrant	Acquired 1st Grade of GS Certification
		Listed in Forrester Wave	163 Patents Related to Brightics AI

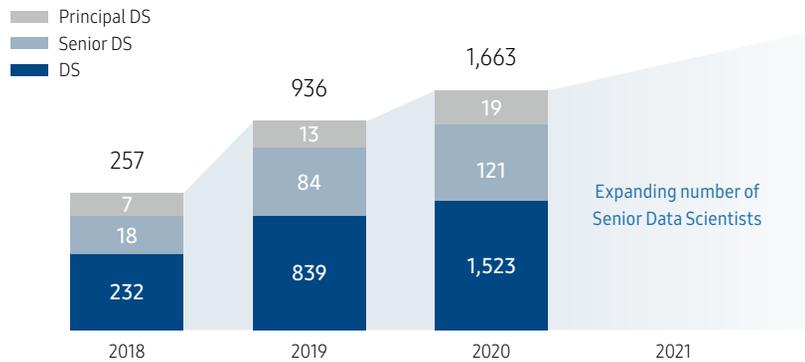
Brightics Academy	Brightics Supporters	Trial	Tutorial	Brightics TV
22 universities		Free trials	300 scenarios	Tutorials and cases
	 Micro-dust concentration analysis after COVID-19	 US crime rate analysis case www.samsungds.com > MyTrial		

Samsung SDS conducts AI lectures and joint research at 7 Korean major universities including Seoul National University, Yonsei University, and KAIST through 'Brightics Academy' (as of December, 2020).

School	Program
Sungkyunkwan University	Joint lecture on AI
Big Data Research Institute at Seoul National University	Capstone project
Hanyang University Business School	(Management) Joint research
KAIST Business School	Lectures on data analysis
Future Convergence Institute at Yonsei University	(Medical School, Business, Physical Education) Joint research
Ewha Womans University Business School	Joint lecture & research
Department of Management and Engineering at UNIST	Joint research and capstone project

Samsung SDS has conducted joint lectures and research activities since 2017 to train Data Scientists (DS) majored in different subjects through Brightics Academy. As of December 2020, 1,700 data scientistis had been trainedAs a result data-driven culture of Samsung SDS is reinforced.

Total of 1,663 internal DS certifiers (Principal DS 19 persons, Senior DS 121 persons, DS 1,523 persons)



In May 2020, Data Scientist Certification was registered as a private qualification at the Korea Research Institute for Vocational Education and Training. Samsung SDS started an external project for private certification of ProDS contributing to nurturing AI data analysis experts.

Grade	Role	Training/Certification
Principal DS	Data analysis management and consulting	Interview screening for analysis experience, consulting competency
Senior DS	Independent data analysis and problem solving	Written/practical evaluation after online/offline lectures
DS	Data analysis under the guidance of Senior DS	

Brightics Studio contributes to revitalizing the data analysis ecosystem and nurturing data analysts. In addition, Brightics Academy is contributed to minimizing digital gap and support the next generation by training competent data scientists

Brightics Supporters

Brightics Supporters is a program for college students interested in data analysis. Students can be trained as data scientists by clearing various tasks given each week for 5 months and sharing the process on social media.



3. Trusted Consumer Value

Proof of Origin: Cello Trust

Samsung SDS contributes to increasing the integrity of transactions between producers and consumers by leaving the distribution process transparent on the blockchain. Cello Trust, a blockchain-based distribution history management platform, is widely used in pharmaceuticals, bottled water, and agricultural and marine products. In 2019, it was introduced to Chungsanbada, the abalone producer in Jeollanam-do, Korea. Cello allows final buyers to use a QR code to check the entire distribution process of abalone spanning aquaculture, sorting and shipping. In 2020, the blockchain was also applied to the distribution of fruit and wine, enabling customers to check the distribution history simply by scanning the QR code.

The blockchain-based distribution history management platform requires a subject to verify that recorded information is true. Samsung SDS allows only public institutions or non-profit organizations to participate in its Validator. Cello Trust contributes to eco-friendly distribution by leaving what are essentially handwritten records on the block chain in the distribution process. It also includes the World Wildlife Fund (WWF)* in its Validator, contributing to the reduction of illegal fishing.

* WWF: the world's largest non-governmental organization established for the conservation of nature



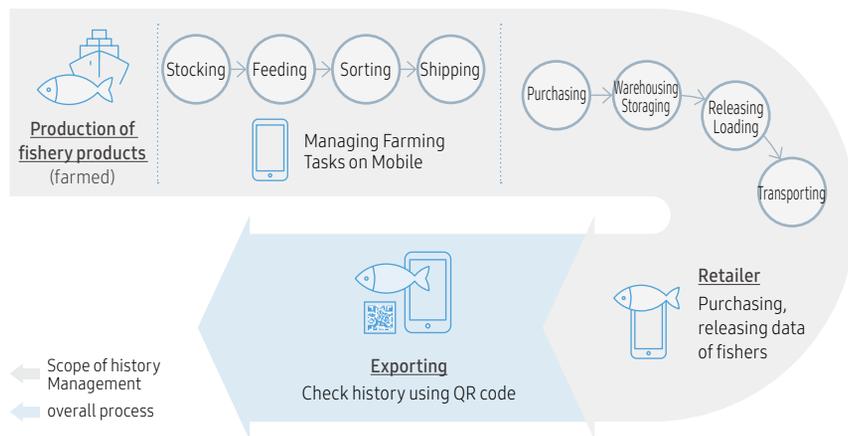
Chungsanbada, a Korean abalone producer, has become the first in Asia to be certified ASC*

* ASC (Aquaculture Stewardship Council) certification is organized by the Aquaculture Stewardship Council, an international organization based in the Netherlands, to maintain sustainable aquaculture worldwide. It is a very strict and demanding international certification system for abalone spanning aquaculture, processing, and distribution.

ASK Export Council's Seafood History Management



Cello Trust



One-stop Mobile Automated Medical Insurance Claims: Nexledger

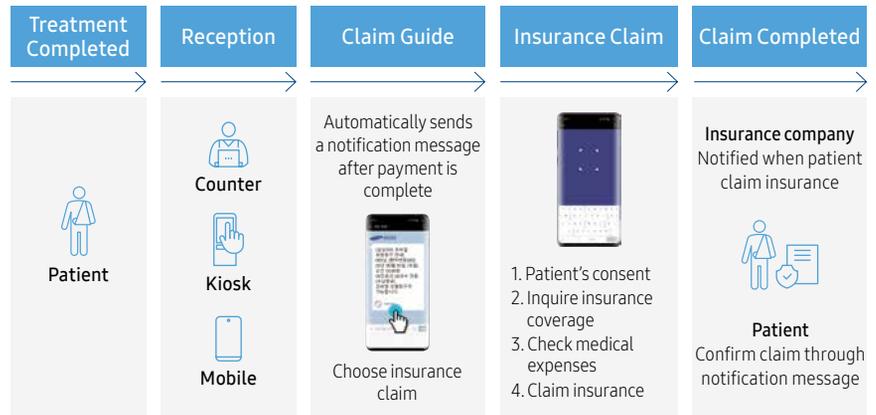
Samsung SDS offers a block chain platform, Nexledger, for automated medical insurance claim service on mobile. The blockchain-based 'automated medical insurance claim service' was established by a consortium formed of medical institutions, insurers, and digital healthcare companies. A patient can send a claim request after he or she pays money to a hospital, receives a mobile notification, and makes a simple identification on his or her smartphones.

As of December 2020, Samsung SDS provided the blockchain-based insurance claim service to 10 medical institutions including Samsung Hospital, Ewha University Hospital, and Hallym University Hospital, and digital health specialists such as 4Cgate.

Using the mobile automated medical insurance claim system, the medical institution sends hospital bills to the blockchain network through an encrypted connection, and patients can send a claim request without a cumbersome application process.



Nexledger



Simplifying the Loan Process for Small Business: Shared Data Exchange

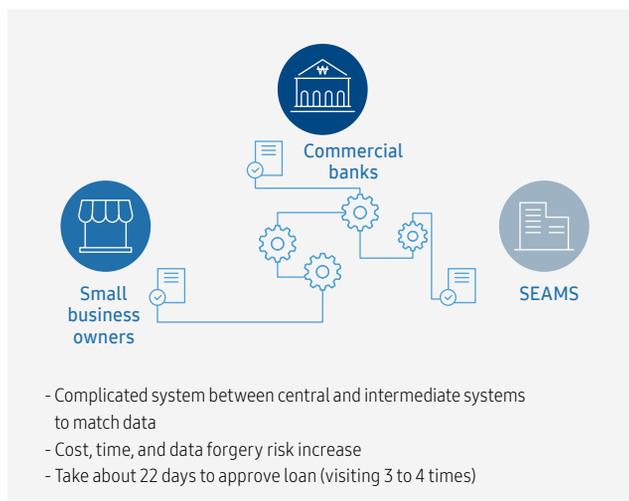
Samsung SDS has dramatically shortened the loan approval period for small business owners with its blockchain-based shared data exchange while greatly improving efficiency of commercial banks business.

The conventional data exchange process were very complicated. Bank, business owner, and Small Enterprise And Market Service (SEAMS) had to access the central/brokerage system to match one another's data. This process required more cost and time, and risk of data leakage was high.

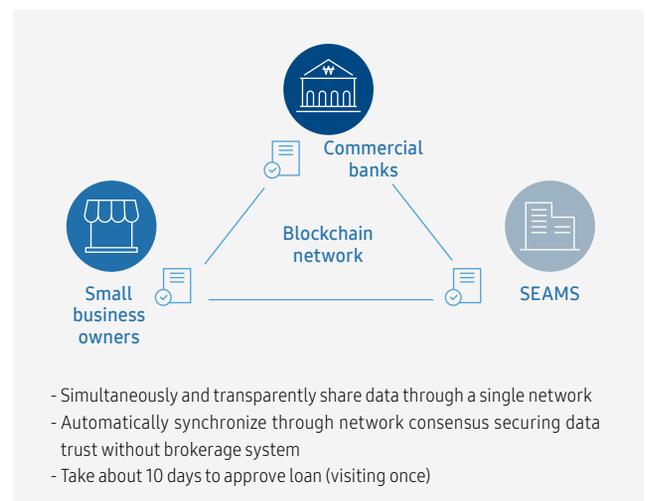
However, Samsung SDS' blockchain-based shared data exchange allowed automatic data synchronization and improvement in data reliability without brokerage system by transparently sharing data. As a result, the loan approval process were shortened from 22 days to 10 days as well as the number of bank visits from 4 times to go through complicated loaning process to once.

Currently, Shinhan Bank adapted the service and improved the satisfaction of their branches and small business owners. Further, the service contributes to improve financial status of small business owners by reducing the approval period.

Conventional Complex Data Exchange



Blockchain-based Shared Data Exchange



4. Digital Technologies for Social Security

Various social problems and disasters, such as hacking, deepfakes,* and new infectious diseases have threatened our health and safety. To fundamentally solve these social problems, internal and external demands for ICT has become more crucial. Digital technology-based innovation and expanding the role of ICT increases the possibility of solving global challenges. Samsung SDS is contributing to solving major social problems based on its accumulated ICT.

* Deepfake combines the terms 'Deep Learning' and 'Fake'. A 'deepfake' is a fake video made using artificial intelligence technology that is difficult to identify as a fake.

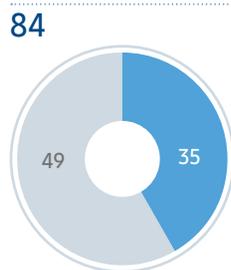
Virtual Environment-based Bug Bounty Platform: Hackingzone

In the era of the 4th Industrial Revolution, which is characterized by hyper-connectivity and hyper-intelligence cybersecurity threats such as hacking are continuously being raised. Since June 2020, Samsung SDS has been operating 'Hackingzone,' a bug bounty platform that rewards white hackers for reporting security vulnerabilities, on a pilot basis. Hackingzone has its advantages: It can develop into a platform that can discover vulnerabilities of other companies as well as Samsung SDS products. It can be used to identify as many vulnerabilities as possible through the collective intelligence of a large number of security experts (white hackers).

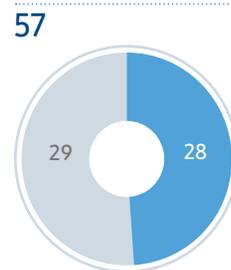
Compared to conventional methods such as mock hacking and security checks, a bug bounty has high cost-effectiveness due to increased vulnerability reports and reduced expenditure. However, the lack of the manpower and systems needed for self-operation of a bug bounty results in loss of trust in white hackers and causes adverse effects that reduce participation in the bug bounty. Meanwhile, Hackingzone provides services such as strengthening the expertise factors required for a Bug Bounty such as vulnerability reception, evaluation, and compensation, as well as required man-hours and cost minimization, so that companies can implement a bug bounty with much less process management than they do with their bug bounty operations.

In particular, the Hackingzone leverages virtual environments to provide a bug-bounty service that is safer for companies and less restrictive for white hackers than the actual service operation. Since June 2020, Samsung SDS has operated a pilot 'Hackingzone' service for 10 companies and 15 programs (SW products, web portals, etc.) and proved its excellence by receiving 400 effective vulnerability reports. Hackingzone can be found at hackingzone.net.

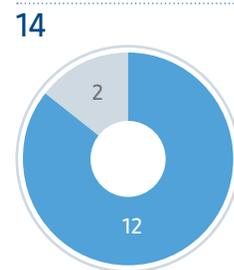
Vulnerabilities Found



Effective Vulnerabilities

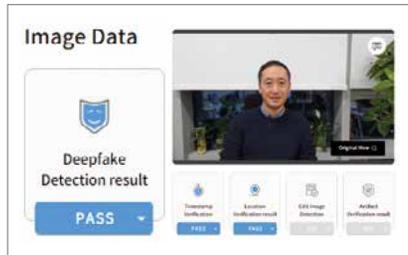


Critical Vulnerabilities

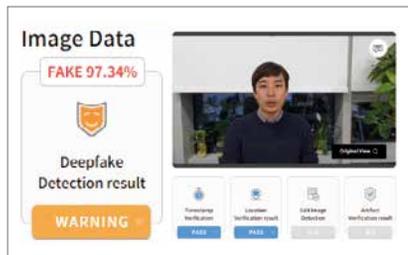


■ General
■ Virtual Environment

(As of March 2021)



Real Portrait Detection Result



Virtual Face (Deepfake) Detection Result

* Photo) SDS supplier: DOB studio, Virtual Human Startup

Deepfake Detection Solution: Team9

In 2020, Samsung SDS' in-house venture 'Team9' announced a deepfake detection solution. Deepfake technology can be used to create special effects in the media to improve the quality of contents through image optimization and anonymization. However, deepface technology can be used for crimes such as sexual materials or fake news reports which cause serious social problems.

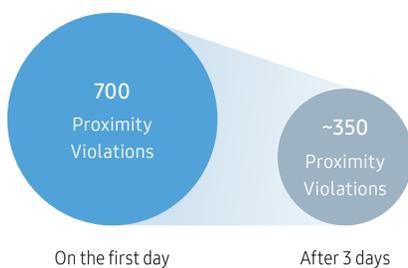
Deepfakes have been regularly reported in Korea in relation to malicious fake news about K-Pop stars and celebrities. On May 26th, the National Intelligence Service warned people to beware of deepfake crimes such as swindling money by pretending to be members of the victim's family and acquaintances and threatening to release pornography based on deepfake technology.

Team9 has developed a frequency-based detection method that detects deepfake images of people, dogs, cats, and cars. The technology is comparable in accuracy to technologies presented in global conferences. Team9 plans to improve the detection of partial forgery and Face Swap images and videos. Team9's deepfake detection technology helps users identify deepfakes of AI characters or virtual friends through deep learning technology. Team9 expect the solution to contribute to creating a safe AI environment and minimize abuse of deepfakes.

Social Distancing Solution for Enterprises: Social Distancing

Companies have considered various ways to maintain corporate productivity in the pandemic situation while complying with social distancing regulations. Samsung SDS supports business-friendly social distancing. Samsung Galaxy Watch's RFID app and cloud-based monitoring and reporting solution send warnings in real time when the distance between employees is less than 6 feet or when more than 10 employees are gathered. The solution has been found to be effective in changing employee distancing behaviors. On the first day of use, about 700 warning messages were sent to employees, but this was decreased to less than 350 violations after 3 days. The solution regularly sends personal hygiene management reminder messages to prevent the spread of the virus, while identifying the movements and contacts of confirmed cases. Samsung SDS contributes to social distancing and personal hygiene management in the company based on its accumulated ICT technologies.

Number of warning messages



Employees

- If the distance between employees is less than 6 feet, wearable devices vibrate and/or send a warning message.



Manager

- Collecting information on social distancing and monitoring of crowding situations in the workplace
- Sending a warning to contacts when a confirmed case occurs
- Sending a warning when more than 10 people are gathered

5. Engage with Digital ESG Platform

Samsung SDS plans to pursue data and digital ESG management with customers in the era of the 4th industrial revolution. We will continuously share information and insights with experts to quickly identify changes brought by ESG and will promote long term ESG management based on digital technologies.

Samsung SDS ESG Platform

To effectively respond to the growing demands for ESG management in the global market, Samsung SDS plans to build “ESG platform” that digitizes ESG management processes, including strategy, information management, monitoring, task management, and disclosure management. The data-based digital ESG platform will be launched on a pilot at the end of 2021. Samsung SDS plans to attempt a more structured and systematic approach to ESG management.



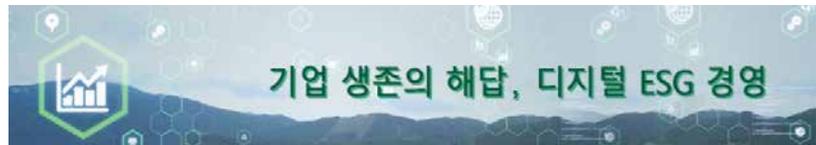
Samsung SDS' definition of data-based digital ESG is effective response to ESG issues and promotion of innovative activities by reorganizing data and systems of business activities including development, purchase, manufacturing, disposal, sales, logistics, and service at ESG point of view. With data-based digital ESG, Samsung SDS plans to communicate with a range of stakeholders including customers, investors, governments, and employees by establishing ESG strategy, managing information risk, and participating in ESG evaluation/disclosure.

Samsung IT Insight Forum on ESG Management

Led by Samsung SDS, experts in Samsung affiliates have exchanged knowledge and provided insights on their expertise subjects at Samsung IT Insights Forum. The forum is for management to understand the latest IT industry trends and discuss business countermeasures.

This year's Samsung IT Insight Forum was held online in March, and the theme was 'New Global Paradigm, ESG Management.' Recently, global leading companies focus on sustainable growth reflecting their stakeholders demands and changing environmental circumstances and regulations. The participants shared and discussed the insights needed to establish a new direction in response to the paradigm. Samsung SDS presented a data-based digital ESG at the forum. After the presentation, the participants discussed the topic and ESG management direction. The participants agreed on systematic management of ESG data is crucial for successful ESG management innovation, and reconfirmed their needs of establishing digital ESG management environment. That is, it is necessary to structure, integrate, and reorganize data and systems across corporate activities into value chain in terms of ESG.

Samsung SDS will continue to interact with the experts through the forum to identify global ESG management trends and pursue the measures to take a lead in ESG management.



UN SDGs

Samsung SDS' Alignment with UN SDGs

As a global corporate citizen, Samsung SDS aims to take account of the United Nation Sustainable Development Goals (UN SDGs) in how we run our business. We focus on the UN SDGs most relevant to our businesses and established approaches to help achieve them. Based on these approaches, we have engaged in a variety of sustainability activities to contribute to international society, and the activities are of 5 main areas (5Ps): Partnership, Peace, Prosperity, People, and Planet.



Partnership

Samsung SDS is determined to mobilize the means required to implement this agenda



SDGs17.
Strengthen the means of implementation and revitalize the global partnership for sustainable development

17.17 Encourage effective partnerships: Encourage and promote effective public, public-private and civil society partnerships, building on experience and resourcing strategies

In 2020, Samsung SDS delivered pop-up books introducing IT jobs to 125 children in Mundok Day Care Center and Stefan Day Care Center in San Pedro, Philippines, a lower-income area, in collaboration with The Promises, an international private volunteer organization.

Peace

Samsung SDS is determined to foster peaceful, just and inclusive societies



SDGs16.
Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels

16.6 Develop effective, accountable, and transparent institutions at all levels.

Samsung SDS has adopted an electronic contract system by applying the standard subcontractor agreement recommended by the Korean Fair Trade Commission in order to establish a culture of fair and transparent trading with suppliers.

The electronic contract system is based on its supplier collaboration portal 'smartTogether.com' to avoid verbal agreements, unreasonable order cancellations, and other unfair trade practices.

16.7 Ensure responsive, inclusive, participatory and representative decision-making at all levels

Samsung SDS operates the Labor-Management Council in order to build sound labor relations and promote labor-management communication. Council members serve 3 years. The Labor-Management Council holds regular meetings (4 times a year) to improve the company's system and working environment, handles employee grievances through the council's communication channel, and conducts a range of activities to revitalize the organizational culture.

Prosperity

Samsung SDS is determined to ensure that all human beings can enjoy prosperous and fulfilling lives



SDGs7.
Ensure access to affordable, reliable, sustainable and modern energy for all

7.2 Substantially increase the share of renewable energy in the global energy mix

Samsung SDS has expanded its renewable energy-based energy supply to increase the eco-friendliness of its data centers. The company meets the energy needs of data centers through a variety of renewable energy-based energy sources such as solar water heating, photovoltaic power generation, geothermal cooling/heating system, fuel cell technology, natural lighting, geothermal heat pump, etc.



SDGs8.
Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

8.3 Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation

Samsung SDS operates a number of financial support systems including Mutual Growth Fund and an indirect financial support (network loan program) to stabilize the management of its suppliers.



SDGs9.
Build resilient infrastructure, promote sustainable industrialization and foster innovation

9.1 Develop quality, reliable, sustainable and resilient infrastructure, including regional and trans-border infrastructure, to support economic development and human well-being, with a focus on affordable and fair access for all

Samsung SDS has implemented real-time bulk transaction processing, smart contracts that automatically execute transactions, and management monitoring through the Nexledger enterprise blockchain platform with blockchain identification cards and payment services to strengthen security. The company contributes to advancing the 4th industrial revolution by realizing fast and convenient financial transactions and addressing financial security vulnerabilities based on its accumulated ICT.



SDGs10.
Reduce inequality within and among countries

10.2. Empower and promote social, economic and political inclusion for all

Samsung SDS strengthened supplier communication by hosting Supplier Council CEO discussion meetings, and obtained the 'Most Excellent' grade in the 'Korea Win-Win Growth Index' for 3 consecutive years starting in 2018 through finance/training/technology support and payment condition improvement. In doing so, the company was selected as the 'Best Honorary Company for Win-Win Growth.'

People

Samsung SDS is determined to ensure that all human beings can fulfill their potential in dignity and equality and in a healthy environment



SDGs2.
End hunger, achieve food security and improved nutrition and promote sustainable agriculture

- 2.2 End all forms of malnutrition that cause stunted growth and wasting in children under 5 years of age, and address the nutritional needs of adolescent girls, pregnant and nursing women, and the elderly
- 2.3 Double the agricultural productivity and the incomes of small-scale food producers through supporting secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets, and opportunities for value addition and non-farm employment

Samsung SDS provides breakfast/dinner foods or meal kits to underfed teenagers in local communities to support the balanced growth and development of teenagers. In 2020, the company provided meals to 80 underfed teenagers from 6 different schools in Songpa-gu, Seoul (approx. KRW 70 million).

Samsung SDS participated in a relay campaign to deliver flowerpots to 31 welfare facilities in Songpa-gu to help local flower farmers who were suffering due to the COVID-19 pandemic. The company operated online/offline local specialty markets on Lunar New Year's Day and Chuseok holiday (twice a year) for sisterhood villages to support the revitalization of the economy in farming and fishing villages where agricultural and fisheries markets were closed due to COVID-19.



SDGs3.
Ensure healthy lives and promote well-being for all at all ages

- 3.3 By 2030, end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases, and combat hepatitis, water-borne diseases and other communicable diseases
- 3.4 By 2030, reduce premature mortality from non-communicable diseases by one-third through prevention and treatment and promote mental health and well-being

Samsung SDS protects the safety of its employees based on a solid emergency response system, which it has been able to maintain even under unprecedented pandemic conditions. To prevent the spread of infectious diseases and protect the health of employees, the company introduced telecommuting in phases beginning in September 2020. Rotational telecommuting was implemented beginning in December of the same year.

Samsung SDS operates an 'in-house mental health shelter' to promote the mental health of its employees. Employees can share concerns together in the in-house mental health shelter. Counseling is held at the location most convenient and nearest to the counseling applicant, and the contents of the counseling are strictly confidential.



SDGs4.
Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

- 4.4 By 2030, substantially increase the number of youths and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship
- 4.5 Eliminate gender disparities in education and ensure equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities, indigenous peoples and children in vulnerable situations
- 4.7 Ensure that all learners acquire the knowledge and skills needed to promote sustainable development

Samsung SDS contributes to AI analysis with easy access to anyone through 'Brightics Studio,' an open-source version of Brightics AI, its massive data analysis platform. This open-source version is expected to contribute to bridging the digital divide in the long run.

To ensure that developers do not lose sight of rapidly shifting IT technology trends and build their work-related expertise, Samsung SDS operates on-site training programs. To help these developers become able to leverage multiple languages, the company offers an opportunity to learn and practice, and put them to work. These training sessions allowed Samsung SDS to train nearly 1,160 employees in 2020.

The 'Samsung SDS Special Lecture on Algorithms for Undergraduates' was initiated in 2018 as a semi-annual program targeting junior and senior undergraduates as well as graduates who wish to become IT professionals. Samsung SDS employees serve as lecturers to provide systemic algorithm education from basic-level knowledge to practical exercises to help students improve their software programming capabilities.

Samsung SDS provides 'Coding Campus,' a customized coding education program for elementary, middle, high school and juvenile students, in conjunction with JA Korea, an NGO specializing in youth education. In 2020, approximately 5,700 teenagers from 90 schools completed the Coding Campus, which was held in online contactless classes.

Samsung SDS provides all employees with annual training to prevent verbal, physical violence and sexual harassment in order to enhance their human rights awareness and practice. The company also conducts a campaign to respect human rights for leaders, and includes human rights training in the curriculum for new leaders.



SDGs5.
Achieve gender equality and empower all women and girls

- 5.4 Value unpaid care work and promote shared domestic responsibilities
- 5.5 Ensure women's full and effective participation and equal opportunity for leadership at all levels of decision-making

Samsung SDS guarantees paid parental leave (10 days) to male employees, and approves their use of paternity leave (1 year) in order to promote the sharing of domestic responsibilities among family members and recognize the value of unpaid care work.

Samsung SDS does not discriminate based on gender, age, or origin. The number of female managers and executives is steadily increasing.

Planet

Samsung SDS is determined to protect the planet from degradation

	<p>SDGs6. Ensure availability and sustainable management of water and sanitation for all</p>	<p>6.3 Improve water quality by reducing pollution, eliminating dumping and minimizing the release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally</p>	<p>Samsung SDS has established a water consumption management system and prepared measures to reduce hazardous substances and sewage. Before its discharge, sewage is first processed in septic tanks in the workplace; it then is discharged to the public sewage terminal disposal plant. Samsung SDS conducts regular cleaning of septic tanks, disinfection and effluent water quality measurement.</p>
	<p>SDGs12. Ensure sustainable consumption and production patterns</p>	<p>12.5 Substantially reduce waste generation through prevention, reduction, recycling and reuse</p>	<p>Samsung SDS monitors waste generation and emissions by buildings and data center units, and strives to reduce waste generation and increase recycling rates. All old laptops and monitors used by Samsung SDS employees are collected by recycling companies. Employees also participate in the waste cell phone collection campaign every year to increase the recycling rate of electronic products. All reusable IT equipment and outdated racks generated during data center maintenance are collected, and the amount of reusable waste is managed by the department responsible on a quarterly basis. Scrap and rare metals generated at the workplace are 100% recycled through a melting process.</p>
	<p>SDGs13. Take urgent action to combat climate change and its impacts</p>	<p>13.3 Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning</p>	<p>Samsung SDS has been participating in the Carbon Disclosure Project (CDP) since 2016 to cooperate in the international response to climate change, and to disclose its climate change response strategy, goals, and activity performance to stakeholders.</p>
	<p>SDGs14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development</p>	<p>14.4 Effectively regulate harvesting and end overfishing, as well as illegal, unreported and unregulated fishing and destructive fishing practices, and implement science-based management plan with the goal of restoring fish stocks in the shortest feasible period of time, at least to levels that can produce maximum sustainable yield as determined by their biological characteristics.</p>	<p>Samsung SDS operates 'Cello Trust,' which allows the actual distribution history to be checked with just one QR code by making the distribution process transparent on the blockchain. A blockchain-based distribution history management platform requires a subject to verify that recorded information is true. Samsung SDS includes the WWF in its Validator, contributing to the reduction of illegal fishing.</p>

Key Activities of 5Ps



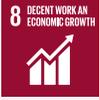
<p>Planet Contributed to the reduction of illegal fish in collaboration with the WWF based on 'Cello Trust,' a blockchain-based distribution platform</p>	<p>People Operated 'Coding Campus,' a customized coding education program for elementary, middle, high school, and juvenile students in cooperation with JA Korea (NGO)</p>	<p>Prosperity Compensated for security vulnerabilities in the financial certificate system through Nexledger</p>	<p>Peace Conducted a range of activities for the public development of the company by the Work Council (Labor-Management Council)</p>	<p>Partnership Provided opportunities for IT career exploration for children in lower-income areas in the Philippines in collaboration with Promise, an International private volunteer organization</p>
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Attainment of UN SDGs and Stakeholder Communication

Samsung SDS defines 6 groups of key stakeholders as communities, customers, employees, partners, shareholders & investors and compliance & ethics management, and take account of their invaluable feedback to establish robust trust relationships. In addition, Samsung SDS is fully committed to attaining the UN SDGs that are related to the stakeholders to and taking a part to resolve challenges that the entire international community faces.

Communication by Stakeholder Group

5Ps	Item	Major Communication Channels	Photo
Partnership		<p>Samsung SDS conducts compliance and ethics management to implement indirect economic benefits, compliance management policy engagement, and transparent information disclosure.</p>	
	<p>Compliance and Ethics Management</p>	<ul style="list-style-type: none"> · Participation in policy discussion (yearly) · Society/association activity (non-regular) · Electronic disclosure (non-regular) 	
Peace		<p>Samsung SDS communicates with shareholders and investors on financial performance, investment strategy, risk management and sharing of business information, and communicates with suppliers for fair trade and the creation of a mutually-growing IT ecosystem.</p>	
	<p>Shareholders & Investors</p>	<ul style="list-style-type: none"> · General shareholders meeting (yearly) · Electronic disclosure (regularly) · Regular/year-round IR meetings (quarterly/regularly) · NDR (quarterly) · Conference hosted by securities firms (yearly) 	 <p>36th Annual General Shareholders Meeting</p>
	<p>Suppliers</p>	<ul style="list-style-type: none"> · Supplier portal (smartTogether.com) (regularly) · CEO discussion meeting (non-regular) · Supplier discussion meeting (yearly) · Fair trade-related whistleblowing channel (regularly) 	

5Ps	Item	Major communication channels	Photo
Prosperity	 	<p>Samsung SDS communicates with customers on service and solution quality, after-sales management service, latest technology and trends, and information disclosure for complete sales.</p>	
	Customers	<ul style="list-style-type: none"> · Customer invitation events (REAL 2019, IT Insight Forum, C-level meetings, etc.) · Customer visit meetings · Customer satisfaction survey · Contact center · Samsung SDS solution exhibition · Samsung SDS website and social network channel 	 <p>CES 2020 Exhibition</p>
People	 	<p>Samsung SDS communicates with employees to ensure a sound employment and labor environment, career development, diversity and equal opportunity, respect for human rights, and labor relations.</p>	
	Employees	<ul style="list-style-type: none"> · Work Council (regularly) · SDS NEWS (TALK-anonymous bulletin board) (regularly) · Global SDS NEWS (weekly brief mail) (weekly) · Talk with CEO, Vision & Talk (yearly) · Corporate in-house portal (regularly) · Online portal for developers (DEV+, OPS+) (regularly) · Offline developer meeting (regular) (Techtonic, Meetup, Hackathon, etc.) · Employee family invitation event (3 times a year) (Coding Camp, etc.) · Mental health shelter and online portal (regularly) · Grievance-handling and whistle-blowing channels (regularly) 	 <p>Work council</p>  <p>Family photo contest</p>
People & Planet	 	<p>Samsung SDS communicates with communities to support local economy revitalization, environmental protection, social contribution, and right to know concerning corporate ESG impact.</p>	
	Communities	<ul style="list-style-type: none"> · Media Day (yearly) · Press releases (regularly) · Employee Volunteer (regularly) · Contest (non-regular) (Brightics Academy, etc.) · Samsung SDS website and social media channel (regularly) 	 <p>Coding Campus</p>  <p>Flower Bucket Challenge Campaign</p>

Materiality Analysis

Materiality Analysis

Samsung SDS conducted a materiality analysis to identify sustainability issues and to meet the expectations of stakeholders. We would like to communicate with stakeholders regarding our 2020 activities, achievements, and future plans in relation to these material issues, and continue sustainable management by reflecting these material issues.

- Step 01.
Creating a Pool of Issues
- Step 02.
Analyzing the External Environment
- Step 03.
Analyzing the Internal Environment
- Step 04.
Determining Priorities and Material Topics
- Step 05.
Performing Validity Reviews

To create a pool of issues, Samsung SDS summarized the key issues identified based on sustainability management trends and international standards. In doing so, the company created a pool of 66 sustainability management issues in the economic, environmental, and social areas.

Analyzing international standards

Samsung SDS reviewed the reporting requirements of ISO 26000, SASB, TCFD, UN SDGs, WEF SCM, and other relevant standards as well as the sustainability reporting guidelines suggested by the GRI Standards.

Analyzing media reports

Samsung SDS analyzed 1,714 media reports between January 2020 and January 2021 concerning its sustainability management: the company categorized these reports into positive/negative/neutral from an economic, environmental, and social perspective, and created a list of material topics.

Analyzing industry peer reports

Samsung SDS looked at the sustainability reports published by industry peers to analyze the topics managed from a sustainability perspective.

Surveying expert groups

Samsung SDS used expert network to conduct a survey of external experts, and to reflect the sustainability topics that highly interested those experts.

Analyzing BOD agenda items and conducting employee awareness surveys

Samsung SDS analyzed the agenda items reported to and discussed by BOD in 2020 to identify whether sustainability management-related topics were discussed. We also surveyed employees regarding their awareness of sustainability management to measure the impact sustainability topics have on its business operations.

Samsung SDS created the materiality analysis matrix in accordance with stakeholder concerns and business impact. In doing so, the company chose 10 material issues that took precedence within this report.

The chosen material issues were reported to senior management to review their validity.

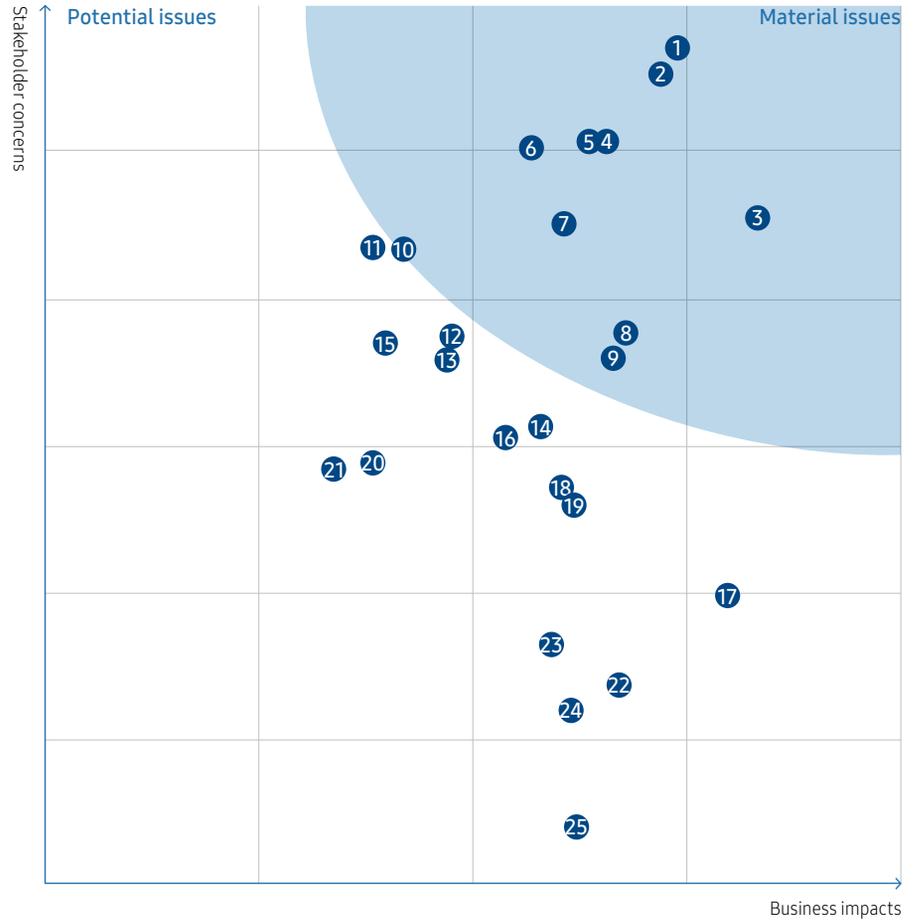
Materiality Analysis Results

Material Issues	Detailed Ranking			Key Stakeholders Impacted by the Topic					
	Total ranking	Stakeholder concerns	Business impact	Customers	Shareholders/ Investors	Communities	Employees	Suppliers	Governments
Career development	1	1	3	●	●		●		
Safety and Health in workplaces	2	2	4			●	●	●	●
Compliance and business ethics	3	6	1	●	●	●	●	●	●
Shared growth	4	3	8			●		●	●
Social contribution	5	4	9			●			●
ESG for suppliers	6	5	17		●			●	
Diversity and effectiveness of the Board of Directors	7	7	13		●		●		
Human rights protection	8	10	5	●		●	●	●	●
Diversity and inclusion	9	14	7				●	●	
Climate change governance	10	9	21		●	●			●

Materiality Analysis Matrix

Materiality Analysis Ranking

1. Career development
2. Safety and health in workplaces
3. Compliance and business ethics
4. Shared growth
5. Social contribution
6. ESG for suppliers
7. Diversity and effectiveness of the BOD
8. Human rights protection
9. Diversity and inclusion
10. Climate change governance
11. Use of renewable energy
12. PUE management
13. Economic contribution to society
14. Business development and growth
15. Reduction in GHG emissions
16. Labor-management relations
17. Work-life balance
18. Protection of shareholder rights
19. Fair evaluation and compensation
20. Recycling industrial waste
21. Water management
22. Customer satisfaction
23. Stakeholder engagement and communication
24. Eco-friendly IT service
25. Advanced risk management



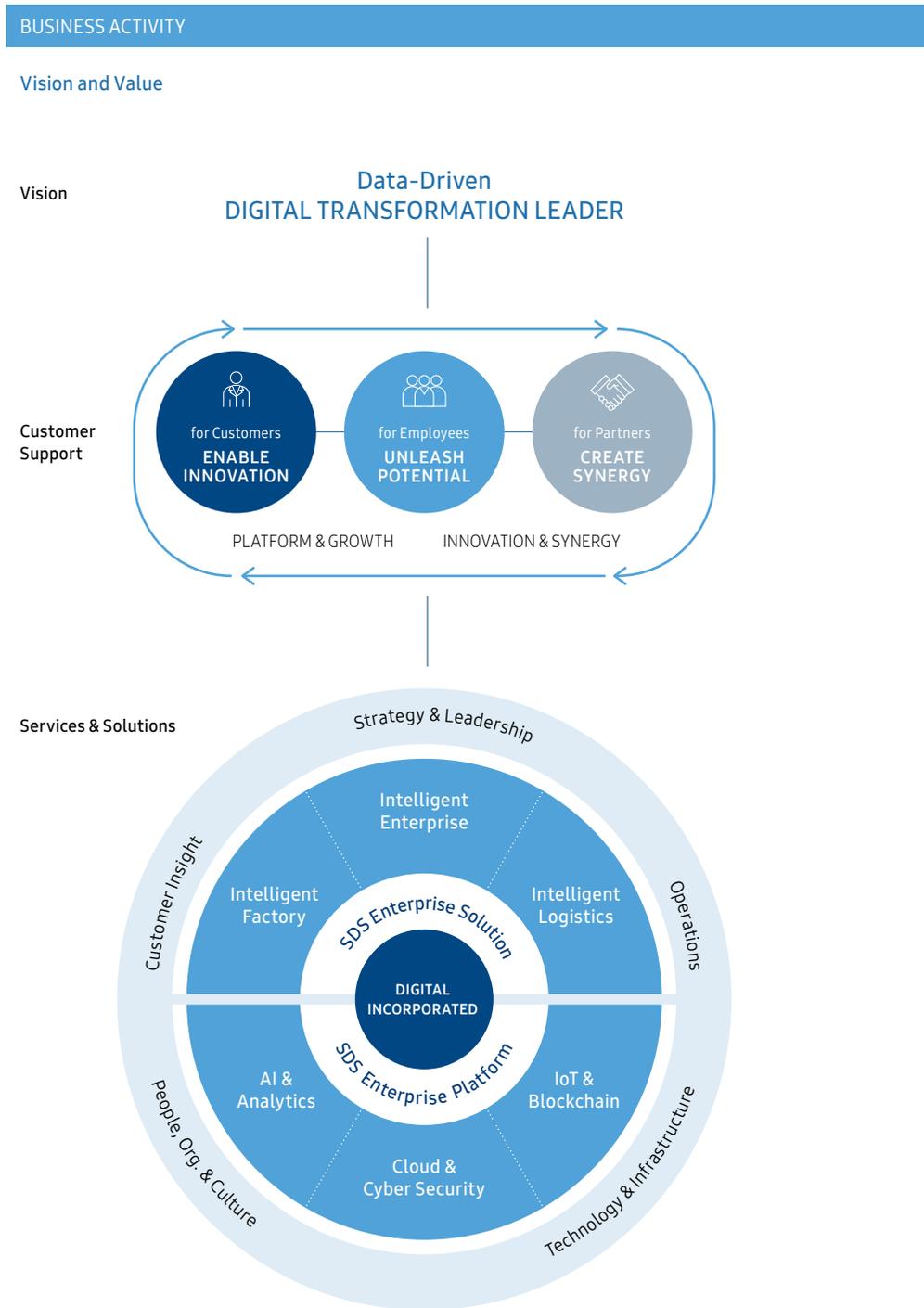
2020 Major Activities and Achievements	2021 Goals	Report Pages	GRI Standards
Expanded training in key technologies and Data Scientist Certification Program	To expand the scale of DS certification	65-68	404 Training and Education
Expanded the scope of certification of the safety and health management system overseas, and established a response system for COVID-19	To strengthen safety and health inspections	78-79	403 Occupational Health and Safety
Established and operated Samsung Compliance Committee, and strengthened the Code of Conduct of suppliers	To expand CP training opportunities	111-115	419 Socioeconomic Compliance
Selected as the best honorary company for shared growth, and provided the innovator development methodology	To enhance the competitiveness of suppliers	97-101	203 Indirect Economic Impacts
Added in-depth IT education to Coding Campus, and strengthened education support for the underprivileged	To become a company that is recognized for its community contribution	81-85	413 Communities
Established ESG assessment/improvement process of suppliers, expanded Mutual Growth Fund (KRW 60 billion)	To conduct supplier ESG inspections	95-96	308 Supplier Environmental Assessment 414 Supplier Social Assessment
ESG management role to the Board of Directors, and general shareholder simultaneous on and offline meeting	To expand the diversity/expertise of Board of Directors	105-108	102 Governance
Prepared human rights policies and declarations for human rights protection of employees	To conduct human rights due diligence	74-76	408 Child Labor 409 Forced or Compulsory labor 412 Human Rights Assessment
Reinforced evaluation system and created remote work environment	To enhance mutual understanding among employees	69-70, 77	405 Diversity and Equal Opportunity
Suwon Data Center: overachieved 9% GHG reduction compare to the 2020 target	To promote Zero Carbon policy	53-55	302 Energy 305 Emissions

Value Creation

Value Creation Process

Samsung SDS outlines its financial and non-financial value creation process in accordance with the Integrated Reporting Framework recommended by the IIRC (International Integrated Reporting Council). The company expects that this will provide stakeholders with a comprehensive overview of efforts in value creation.

INPUT
<p>Financial Capital</p> <ul style="list-style-type: none"> Listed on the Korea Stock Exchange in 2014 Total number of shares issued (common stock): 77,377,800 shares Financial capital procured through shareholders and investors Disclosure of business status through General Shareholder Meetings, etc.
<p>Manufacturing Capital</p> <ul style="list-style-type: none"> Tangible assets: KRW 1,116 billion IT subsidiary: 8 subsidiaries Logistics subsidiary (including Logistics Joint Ventures): 41 subsidiaries Data center: 4 in Korea, 13 overseas
<p>Intellectual Capital</p> <ul style="list-style-type: none"> Intangible assets: KRW 736.7 billion Acquisition of intangible assets: KRW 36.4 billion R&D expenditures KRW 131.4 billion
<p>Human Capital</p> <ul style="list-style-type: none"> Number of employees: 23,370 persons Total employee training hours: 699,557 hours Average years of service: 15 years In-house idea contests, in-house ventures, and other developer support programs
<p>Natural Capital</p> <ul style="list-style-type: none"> Eco-friendly data center development Energy consumption: 1,954 TJ Waste generation: 1,575 tons Water consumption: 326,406 tons
<p>Social Relations Capital</p> <ul style="list-style-type: none"> Global network of 68 locations across 41 countries Strategic alliances and equity investments KRW 48.2 billion invested in Mutual Growth Fund Support for suppliers through training, technology, patent application, recruitment, and advancement into new markets Total social contribution expenditures: KRW 4.25 billion





OUTPUT/OUTCOME



STAKEHOLDER IMPACT

**Financial Capital**

- Sales: KRW 11,017 billion
- Net income: KRW 452.9 billion
- Earnings per share: KRW 5,733
- Total assets: KRW 9,155 billion

Manufacturing Capital

- Sales by major product
- Business solution: KRW 1,372 billion
- Cloud & ITO: KRW 3,942 billion
- Logistics: KRW 5,703 billion

Intellectual Capital

- 1,717 patents granted (cumulative)
- Ranked 1st in International Genome Information Analysis Security Contest (2020) for homomorphic encryption technology
- Development of new technology – original encryption technology, remote facial recognition, and analytics engines, etc.

Human Capital

- Female manager: 19.1%
- 2,205 advanced software developers
- 360 employees Mini-MBA completed
- 1,053 trainees of the 5 core technologies

Social Relations Capital

- Strategic agreements and investments with global IT companies in Vietnam, the U.S., India and China
- Rated Most Excellent in the Win-win Growth Index
- Rated Most Excellent in fair trade agreement assessments
- 22,107 beneficiaries from social contribution

Natural Capital

- GHG emissions: 95,277 tCO₂eq
- Reduction in energy consumption from the previous year: 33,935 GJ

**Financial Capital**

Procure business funds from shareholders and investors in a stable and consistent manner, and properly distribute the economic and social value created among the relevant stakeholders

**Manufacturing Capital**

Use manufacturing capital efficiently and expand such capital as needed to continue to deliver high-quality services and solutions

**Intellectual Capital**

Develop exceptional services and solutions to drive customers' growth and innovation in order to cater to the needs of existing customers, while identifying needs that are not being met with conventional services and solutions to create new customers and markets

**Human Capital**

Recruit and develop talented individuals based on respect for employees' human rights and diversity, and create a great workplace for developers to pursue mutual growth between employees and the company

**Social Relation Capital**

Assist teenagers in understanding and accessing information technology, and constantly pursue mutual cooperation with suppliers to create a healthy IT ecosystem

**Natural Capital**

Minimize the environmental impact generated from business operations, including the operation of data centers, and achieve operational innovation

Economic Value Created

Economic Value Created

(Unit: KRW million)

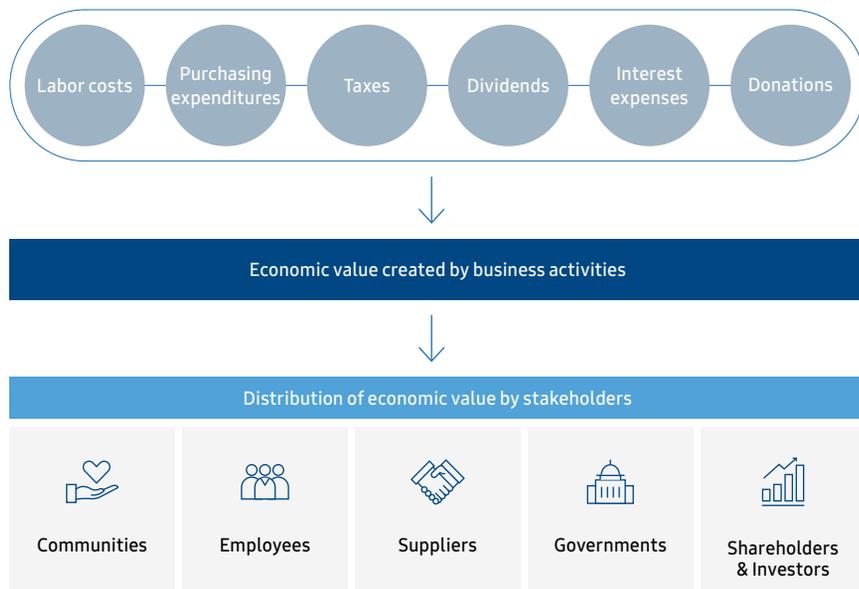
Item	2018	2019	2020
Sales	10,034,219	10,719,632	11,017,432
Operating profits	877,356	990,089	871,618
Net incomes	638,792	750,449	452,909

Economic Value Distributed

(Unit: KRW million)

Stakeholder	Item	2018	2019	2020
Communities	Donations by Samsung SDS	1,973	3,396	5,160
	Donations by employees	1,067	1,024	1,007
Employees	Wages	1,888,760	1,973,832	1,937,121
	Welfare & benefits	341,768	372,099	398,738
Suppliers	Purchases	1,491,297	1,655,343	1,534,602
Governments	Income taxes, etc.	317,738	285,839	433,209
Shareholders & Investors	Total cash dividends	154,700	185,640	185,640
	Interest expense	1,667	15,073	16,360

Economic Value Distributed

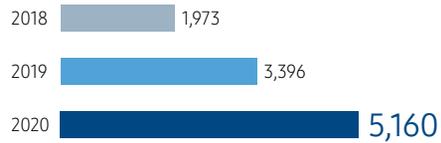


(Unit: KRW million)

Communities



Donations by Samsung SDS



Donations by employees



Employees



Wages



Welfare & benefits



Suppliers



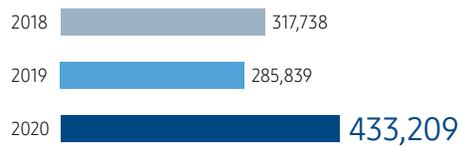
Purchases



Governments



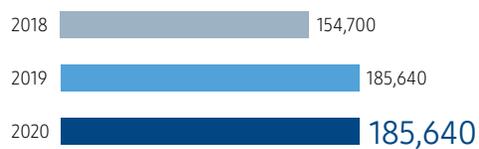
Income taxes



Shareholders & Investors



Total cash dividends



Interest expenses

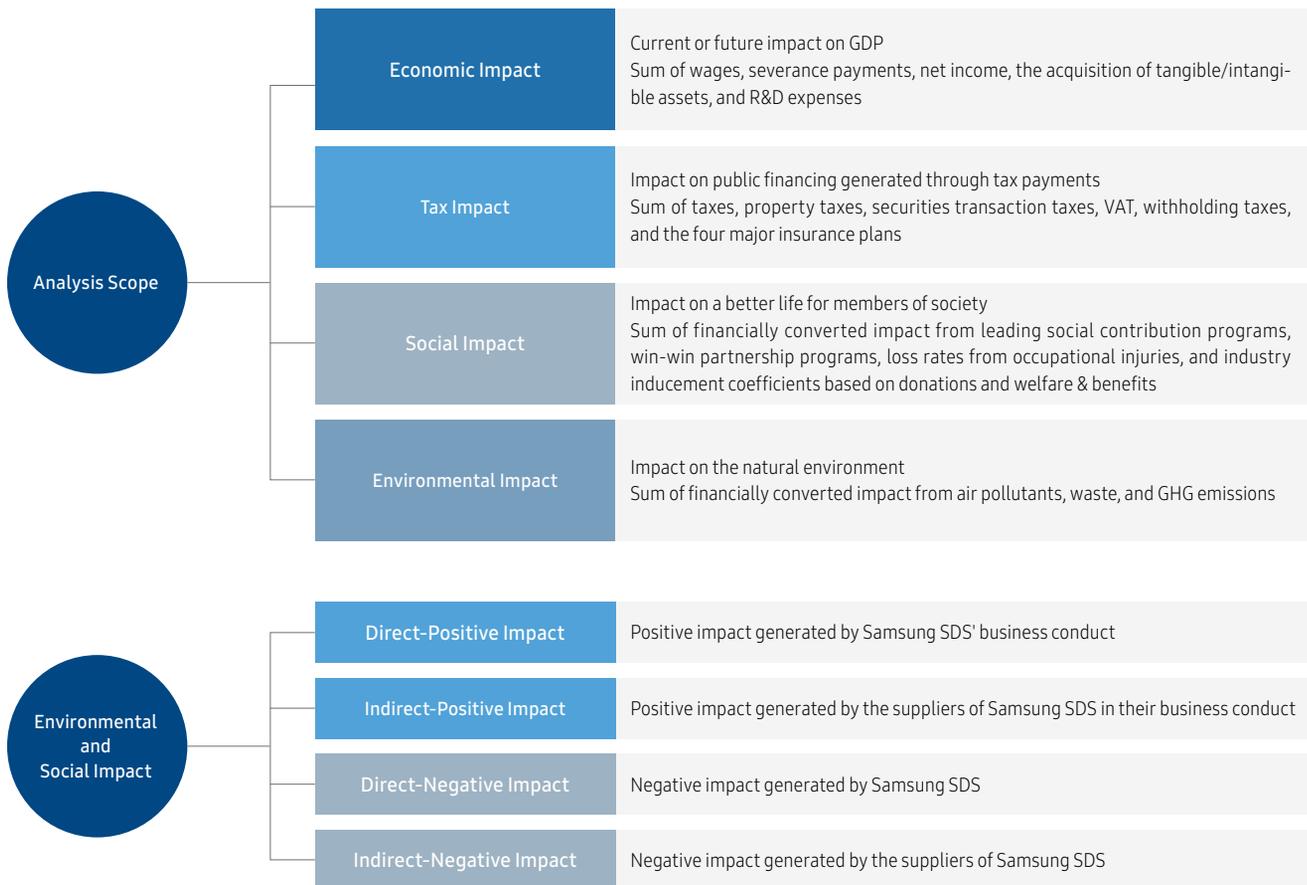


Environmental and Social Impact Assessment

Samsung SDS conducts regular reviews to manage the environmental and social impacts of business activities. As part of our efforts, we strive to raise ESG management level through quantification analysis of financial performance as well as non-financial impacts. In 2020, Samsung SDS aggregated and analyzed representative ESG data to quantitatively analyze economic, tax, social, and environmental impacts as a member of a society that keeps up with various stakeholders. We aim to share the results with our stakeholders through this report. Through quantifying the ESG core performance of Samsung SDS, and translating such impact in financial terms, Samsung SDS can communicate with stakeholders in the language of business and make better business decisions in the mid-to-long term. The impact from Samsung SDS' business conduct can be categorized into Economic Impact, Social Impact, and Environmental Impact, and measured based on the scope of the positive and negative impact on stakeholders.

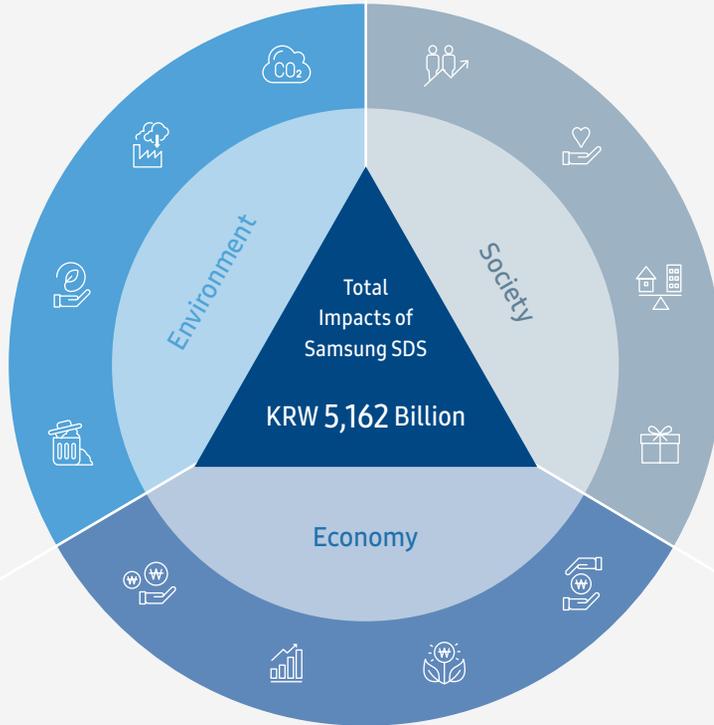
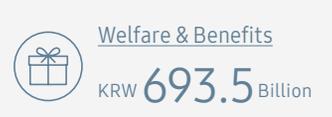
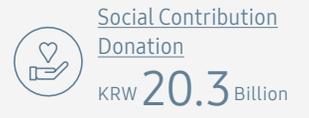
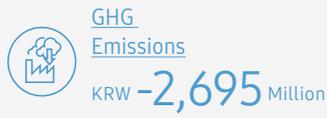
Environmental Social Impact Analysis Results

Period: January 1st, 2020 to December 31th, 2020



Total Amount of Social and Environmental Value Created by Samsung SDS in 2020

KRW 5.1618 Trillion



SUSTAINABLE PILLARS

48	Environment
62	Labor/Human Rights
80	Social Contribution
86	Customers
94	Suppliers

Samsung SDS is committed to create sustainable values in economic, social, and environmental areas, and fulfill the expectations of the stakeholders. For sustainable growth, Samsung SDS will continue to make diverse efforts for sustainability management to minimize environmental impact, to ensure Labor/Human Rights, to improve organizational culture, and to enhance social contributions.



Environment

Why Important

Corporate management on environment has emerged from passive approach to reduce negative effects to proactive management to improve environment. Respond to energy and climate change demands corporates support the Paris Agreement, RE100 and TCFD.

What's Achieved

Item	2020 Achievement	Achievement
To operate eco-friendly data center	(Chuncheon Data Center) Achieved world-class data center energy efficiency (Dongtan HPC Data Center) Commenced the construction in May, 2021	Achieved
To participate in global environmental initiatives	- Participated in the Carbon Disclosure Project (CDP) - Performed climate change risk analysis in accordance with TCFD recommendations	Achieved
To satisfy the GHG reduction targets	(Suwon Data Center) Overachieved the GHG reduction target by 9%	Achieved
To expand smart work environment	- Implemented File Life-Cycle Management system(FLCM) - Operated 'Development Platform Catalog' for reusable software management	Achieved

How to be Better

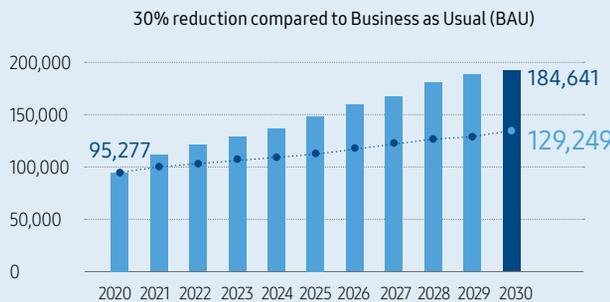
Samsung SDS launched the Zero Carbon Initiative to target the data centers more eco-friendly.

- Management of the GHG emissions at all workplaces including the offices and the data centers
- Zero violation of environmental laws and regulations in workplaces, continuous maintenance of ISO 14001, and waste and water reduction activities



Key Figures

GHG Emission Target by 2030



Focus Strategies

- Establish the integrated energy management system
- Increase the use of renewable energy
- Construct eco-friendly data centers
- Improve on energy efficiency of server room and IT equipment

■ BAU emission projection ● Target emission (after reduction) (Unit: tCO₂eq)



Suwon Data Center
Carbon emissions
9% Reduction



Dongtan Data Center
Energy efficiency target
PUE 1.12

Environmental Management

Environmental Management System

4 Key Safety and Environment Policies

Samsung SDS is clearly aware that achieving a safe and healthy workplace with eco-friendly management is one of the top priorities. We strive to contribute to a better quality of daily life and the environmental protection through business activities considering people and nature in all domestic and international business areas.

1	<p>Compliance with Domestic and International Laws</p> <p>Samsung SDS fulfills its social and ethical responsibilities as a trusted ICT company by implementing strict internal company regulation following domestic and international environmental laws and agreements.</p>
2	<p>Clean and Safe Workplaces</p> <p>Samsung SDS provides financial and technical support to eliminate occupational hazards at workplaces, and continues to review and improve management process for improvement in employees' health and quality of life.</p>
3	<p>World-class Management System of Workplace Safety</p> <p>Samsung SDS establishes a world-class management system of safe work environment and keeps trying to further improve the workplace safety with preparing precise goals in all business areas.</p>
4	<p>Creating a culture of workplace safety</p> <p>Samsung SDS raises awareness of the workplace safety among employees, suppliers, stakeholders to build an organizational culture which encourages the voluntary participation in workplace safety management activities.</p>

Stakeholder Collaboration for Environmental Management



Employees

All Samsung SDS employees recognize the importance of the environment and cooperate to achieve environmental sustainability with diverse training programs and opportunities offered from the company.



Suppliers

Suppliers should recognize potential impact on the environment and strive to minimize the damage to protect natural resources for future generations. Suppliers are required to carefully manage/release air pollutants in accordance with designated laws and regulations by monitoring the efficiency level of air pollution control facilities. In addition, they need to find cost efficient methods to minimize energy consumption and GHG emissions while improving energy efficiency.

Major Areas of Environmental Management



Environmental Safety Management System

Samsung SDS has achieved and maintained ISO 14001 and ISO 45001 certifications to establish and develop environmental management system. Through these achievements, the company strives to reduce its environmental impact and increase the operating efficiency such as reduction in the level of environmental pollution and the use of recycling materials in their major business areas

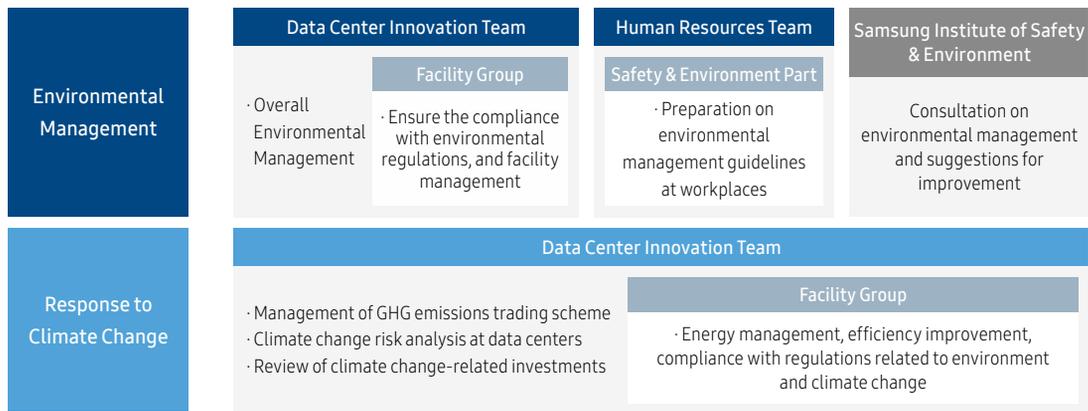


GHG Emission and Energy Management

Samsung SDS effectively manages and reduces GHG emissions to respond to the 'GHG and Energy Target Management System' and the 'Emissions Trading Scheme'. The company also strives to improve energy efficiency level at workplaces with reducing the energy consumption.

Environment and Climate Change Governance Structure

The Data Center Innovation Team oversees environmental and climate change strategy. The Environmental Part of the Human Resources Team establishes and operates company-wide environmental management policies. The Facility Group of Data Center Innovation Team responds to various environmental regulations, measures pollutants, conducts regular audits, and oversees the environmental management activities at workplaces. Senior management makes an overall decision on ESG related matters through the ESG Council which include the environmental division. Starting 2021, the BOD directly reviews and supervise important ESG issues.



Key Environment Management Objectives

Ranking	Environmental Sector	Key Objectives	Management Cycle
1	Environmental Management System	Continuous application of company-wide ISO14001 Environmental Management System	Yearly
2	Compliance	Zero violation of workplace environmental regulations	Regularly
3	Energy	Construction of eco-friendly data center to achieve world-class energy efficiency	Yearly
4	GHG	30% reduction compared to BAU by 2030	Yearly
5	Waste	Utilization of waste reduction and recycling activities	Regularly
6	Water	Application of cutting-edge technology to reduce water usage at data centers	Regularly
7	Air Pollution Prevention	Operation of monitoring and management system on nitrogen oxide (NOx) reduction devices in combustion facilities at all data centers	Regularly
8	Water Pollution Prevention	<ul style="list-style-type: none"> - Outsourcing designated wastes such as refrigerants and antifreeze - Regular measurement and management of the effluent quality 	Yearly
9	Soil Pollution Prevention	Installation of leakage prevention facilities and regular measurement and management of surrounding soil contamination	Yearly
10	Compliance with International Regulations	Chemical ODP/GWP management in accordance with the Montreal Protocol and the Kigali Amendment	Yearly

Circular Economy

As natural resources are become scarce and the social pressure to use eco-friendly energy grows, Samsung SDS is working to improve resource utilization throughout all business processes (purchase, development, manufacturing, distribution, use and disposal) related to its products and services.

Waste Management

Samsung SDS monitors waste generation and disposal at each building and data center. In 2020, the use of disposable products such as lunch boxes for employees was temporarily increased due to global pandemic. However, the company continuously seeks to manage waste such as replacing plastic packaging with paper.

Recycling of IT Equipment and Consumables in Data Centers

- All reusable IT equipment and consumables used for data center maintenance are collected for recycling, and responsible department manage the amount of waste which can be reused on a quarterly basis.
- Scrap and rare metals used at operation sites are 100% recycled through a melting process.
- Blanking panels that keep the cold air in server racks are collected and recycled into other server racks.
- To reduce unnecessary waste, Samsung SDS checks whether the aged standard racks in the server room are in a good condition which may be discarded.
- When removing, relocating, and installing server equipment, the condition of existing power cables is checked and suitable products are reused.
- When installing equipment, all boxes or dismantled cables are collected by vendors and managed for reuse.

Water Management

Water Resources Management

Samsung SDS manages its water consumption at the workplace. By comparing the water consumption to the past, the company aims to effectively reduce overall water consumption. The company also installed water-saving devices at workplaces and run a save-water campaign by attaching save-water stickers to encourage employees to manage their water use. Samsung SDS uses local cold water at data centers (i.e. Suwon and Sangam Data Center) and implements fresh air intake technology at Chuncheon Data Center to reduce water use.

Water Pollution Prevention

- Sewage discharged from the workplaces are processed through sewage screening and then discharged to the public sewage terminal disposal plant. Samsung SDS regularly cleans of septic tanks, disinfection, and effluent water quality measurement.
- Samsung SDS entrusts water pollutants such as refrigerants and antifreezes generated during facility maintenance to a specified waste management company, and monitors to ensure safe final disposal.



SW Asset Reuse Campaign, 'Go Go Reuse' and Character

SW Asset Reuse

Since 2018, Samsung SDS has pursued an enterprise reuse system for previously developed software, aiming to minimize inefficiencies in resource use related to unnecessary software development. The company operates reuse systems such as SDS Development Platform Catalog (software asset) and OPUS 3.0 (design asset) to facilitate the reuse of various source code, APIs and designs, and runs the 'Go Go Reuse' campaign to promote reuse.

Response to Climate Change

Climate Change Response Organization

Corporate Governance

Samsung SDS is fully aware of the importance of corporate roles in response to climate change. The CFO is given the responsibility and authority to make important decisions such as investment in climate change mitigation. The ESG Council under the CFO reviews the climate change agenda each quarter. The BOD reviews Samsung SDS' climate change response strategy on a quarterly basis, manages and supervises the related initiatives.

Governance at Data Center: Data Center Innovation Team

As approximately 90% of Samsung SDS' GHG emissions is generated from data centers, the Data Center Innovation Team leader is in charge of climate change mitigation strategy by each data center for better efficiency. The Data Center Innovation Team leader reviews the overall risks of climate change related to the data centers while making detailed planning and investment decisions. In addition, the team leader is responsible for receiving reports on GHG emissions and emission rights, making decisions on emissions trading, and reporting important issues to the BOD.

GHG Management Department

There is a separate team responsible for data center facility operation and management. The team is also in charge of responding to climate change regulations, including the emissions trading scheme, and promoting energy management activities. The team manages the energy consumption at facilities in real time and seeks to improve operational efficiency. Additionally, energy saving measures are constantly developed and applied and the outcome (energy savings and GHG reduction performance) is reviewed periodically. When building a new data center, the latest energy efficiency technology is applied to the building design.

GHG Reduction Target and Major Strategies

In the era of the 4th Industrial Revolution, Samsung SDS continues to carry the burden of GHG emissions due to expansion of new data centers. Therefore, Samsung SDS has established mid-to long-term GHG reduction targets and major strategies throughout the company.



* Business as Usual (BAU): What Samsung SDS' GHG emissions forecast for 2030 would be, if there were no active reduction efforts.

Samsung SDS Major GHG Reduction Strategies

Establishment of integrated energy management system	Construction of eco-friendly data centers
Expansion of renewable energy use	Server room and IT equipment energy efficiency improvement

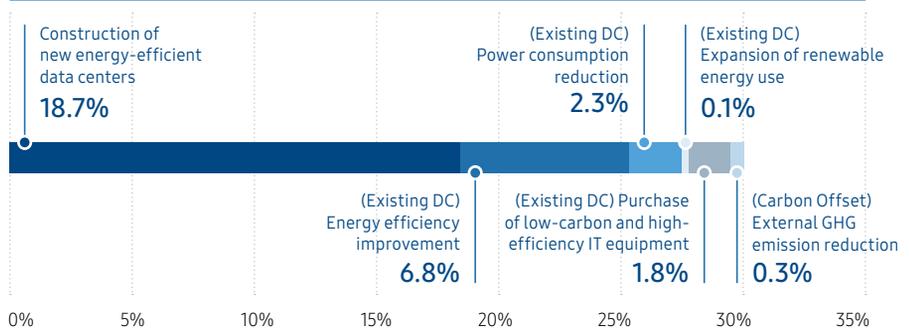
To reduce GHG emissions, Samsung SDS performs various activities such as establishing an integrated energy management system, expanding eco-friendly data centers, implementing energy-efficient IT equipment and infrastructure, improving the way energy consumption facility operates, using renewable energy-based strategies, and promoting external GHG reduction projects to offset carbon emissions. These wide range of activities will enable the company to achieve its GHG reduction target (30% reduction compared to BAU) by 2030.

Carbon Emission Management

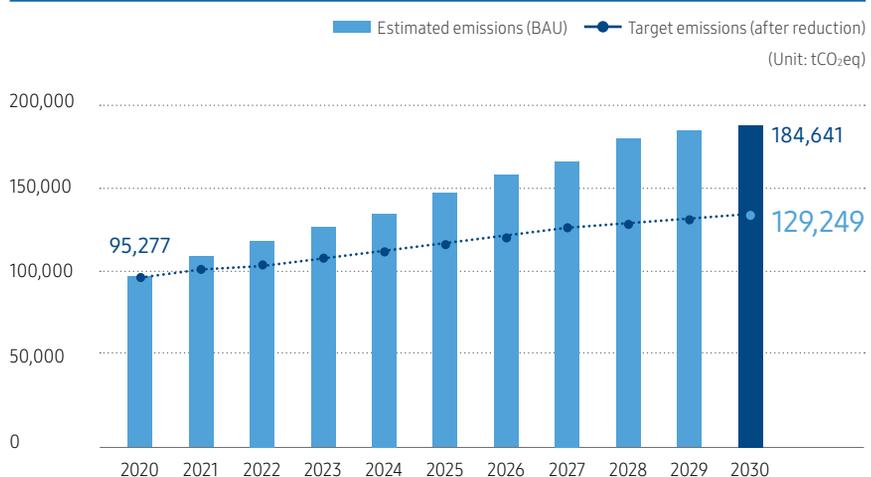
Management of GHG Emissions Trading Scheme

As Samsung SDS has been subjected to the GHG emissions Trading Scheme since 2015 in accordance with Framework Act on Low Carbon, Green Growth, the company has been reporting GHG emissions Scope 1, 2 to the Ministry of Environment. Designated workplaces where GHG emissions must be reported include 4 data centers, headquarter, 2 campuses, and communication hubs distributed throughout the country. The company established a GHG inventory system which aggregates data center energy and GHG emission data in real time. This enabled Suwon Data Center to reduce more carbon emissions by 9% than the government GHG emission quotas.

GHG Emission Reduction Plan by 2030



GHG Emission Target by 2030



Samsung SDS GHG emissions in 2020

Item	2020	
GHG	Total emissions*	95,277 tCO ₂ eq
	Scope 1	3,488 tCO ₂ eq
	Scope 2	91,795 tCO ₂ eq
Energy	Total energy consumption	1,954,497 GJ

* There could be a minor difference between the total amount of Scope 1, 2 and "total energy consumption" referenced above due to aggregation criteria.

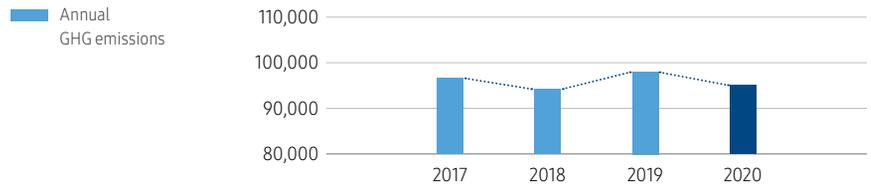
Management of GHG Emissions

GHG Emissions Scope 1, 2

Direct GHG emissions are mainly caused by boilers, business vehicles, and emergency generators, and indirect GHG emissions are caused by power consumption at the data centers and use of hot water. The total GHG emissions (Scope 1, 2) in 2020 were 95,277 tons which decreased by 1,796 tons (or 1.9%) compared to 2019 (97,073 tons). The decrease was mainly due to data center energy saving activities and work from home policy caused by the COVID-19 pandemic. Direct emissions account for 3.7% of GHG emissions, and indirect emissions account for 96.3%. Data centers account for 89.7% of the total emissions. Indirect emissions account for 99% of emissions from data centers.

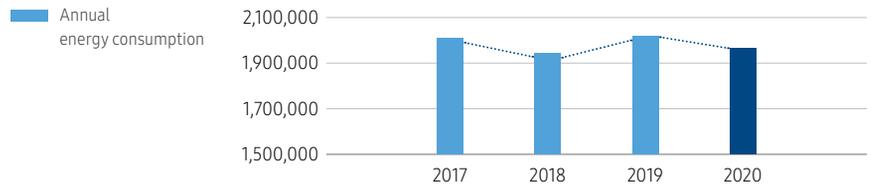
GHG Emissions Scope 1, 2

(Unit: tCO₂eq)



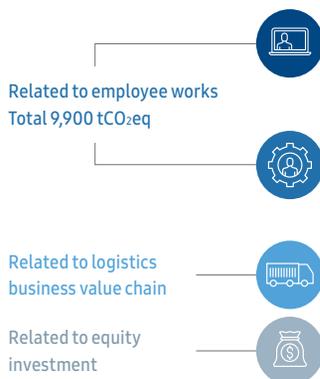
Samsung SDS Energy Consumption

(Unit: GJ)



GHG Emissions Scope 3

Samsung SDS calculates and manages indirect GHG every year for a total of 15 categories indirectly related to the company's business.



Categories of GHG Emissions Scope 3	GHG Emissions (tCO ₂ eq/2020)	Description
Purchased products and services	41,761	Emissions from the manufacturing of externally purchased goods
Capital goods	96	Emissions from the manufacturing of externally purchased capital goods
Waste generated in operations	9	Emissions from treatment of waste generated in company's operations
Business travel	1,470	Emissions from the transportation of employees on business trips
Employee commuting	6,169	Emissions related to transportation for employees between their homes and worksites
Domestic transportation and distribution	123,350	(Including 3PL and 4PL) Emissions related to Samsung SDS domestic transportation and distribution
Investments	34,664	Indirect GHG emissions of equity investment companies, taking Samsung SDS' equity ratios into account

Eco-friendly Data Centers

In the era of the 4th Industrial Revolution, the data center outsourcing business is expected to grow along with data usage increase. Samsung SDS plans to build additional data centers and has established a 'Carbon Zero Initiative' strategy to proactively manage environmental impact such as increased demand on data center energy and GHG in order to achieve a sustainable business.

Major Activities in 2020

Samsung SDS continues to improve PUE* by expanding the use of renewable energy, implementing high-efficiency power facilities, controlling the number of thermo-hygrostats using CFD (Computational Fluid Dynamics), and exploring optimal cooling conditions through machine learning.



Chuncheon Data Center

* PUE (Power Usage Effectiveness, DC power efficiency indicator) Total power usage at data center ÷ IT equipment power usage



Achieved global top-tier

PUE 1.27

Open	2019
Server room	4,462m ²
Total floor area	18,060m ²
Scale	Building with 1 story below and 2 above ground
Stability	Tier-III
Power usage	20MW

Grade 1 in building energy efficiency

Excellent grade in green building certification

Open	2015
Server room	11,616m ²
Total floor area	83,432m ²
Scale	Building with 8 stories below and 13 above ground
Stability	Tier-III
Power usage	40MW



Suwon Data Center



9% Reduction of carbon emissions

compared to 2020
GHG emissions target (46ktCO₂eq)

Open	2007
Server room	13,001m ²
Total floor area	42,018m ²
Scale	Building with 1 story below and 7 above ground
Stability	Tier-III
Power usage	30MW



Data Center
Safety
Certification

Energy Saving and GHG Reduction Activities at Data Centers

Energy Efficiency of Server Room

Cooling performance is optimized through the separation and containment of cold and hot aisles within the server room and through the minimization of cool air leaks, while the use of cooling energy within data centers is improved through the direct/indirect use of fresh air.

Expand the Application of Renewable Energy

The company utilizes a wide range of renewable energy-based energy resources such as solar water heating, photovoltaic power generation, geothermal cooling/heating system, fuel cell technology, natural lighting, geothermal heat pump, etc. to meet the energy needs of data centers. Sangam Data Center saves up to KRW 140 million in operating expenses annually by applying a 400RT geothermal heat pump that uses groundwater that has very small temperature changes throughout the year.

Energy Reduction on IT System

The company uses power-saving flash memory and Solid State Drives (SSD) for IT systems to improve energy efficiency while only purchasing equipment that has acquired the 80 Plus, high energy efficiency certification for computer power supply devices. In addition, idle equipment is turned off or operated in power saving mode to minimize unnecessary energy use.

Establishment of Integrated Energy Management System

In January 2020, Samsung SDS established a Data Center Infrastructure Management System (DCIM) to monitor the energy consumption of IT devices and data center facilities in real time in order to measure, evaluate, and reduce energy use in all components (air conditioning, electricity, firefighting, and security). Samsung SDS also developed an energy management system that is based on PUE to effectively respond to climate change policies and other regulations.

Optimization of Energy Use based on Monitoring Data

The company operates real-time power consumption monitoring solutions on a device, rack, panel board unit basis to reduce power losses and implement high-efficiency modular equipment for Uninterrupted Power Supply (UPS) to maximize energy efficiency through the application of modular operation, suspension, and high-efficiency mode operation.

Use of Cloud Computing Technology

The Cloud Division strives to improve server utilization through cloud computing technology to reduce energy use and GHG emissions.

Use of Air-Conditioning Simulation

The company uses CFD-based data center air conditioning simulation tools to optimize the flow of air within the server room while automatically controlling the speed and air volume of ventilators installed on the thermo-hygrostat to reduce power consumption.

Worldclass Eco-friendly Data Center

Samsung SDS has established PSM (Power Status Monitoring) to monitor IT equipment usage and data center facility usage in real time for efficient energy management to measure, evaluate, and manage energy usage for each component, while monitoring the results of various energy efficiency improvement activities.



Dongtan Data Center (by the end of 2022)

Energy efficiency
Target PUE 1.12

Open	2022 Goal
Server room	7,035m ²
Total floor area	33,840m ²
Scale	Building with 1 story below and 5 above ground
Power usage	40MW

Worldclass Power Usage Effectiveness (PUE)

- Use high-temperature cold water (22°C) and implement free cooling system for effective cooling: PUE for air cooling 1.19 and for water cooling 1.12.

Photovoltaic System

- Place solar panels on the rooftop and on the data center property for power usage. Total capacity: 703kW (Step 1: 350kW, Step 2: 353kW)

Financial Impacts of Dongtan HPC Data Center's PUE

- Reducing energy consumption at server rooms is the key to improving PUE
- Compared to GHG emissions of Suwon Data Center, that of Dongtan Data Centers can be saved about 27% (KRW 2.8 billion) for air cooling and 31% (KRW 3.2 billion) for water cooling.

Data Center	PUE
Chuncheon	1.27
Sangam	1.38
Suwon	1.63
Gumi	1.89
Dongtan (under construction)	1.12
International average	About 1.7
Competitor (M, G)	About 1.1~1.2

Data Center GHG Reduction Initiative: Carbon Zero Initiative

Carbon Zero Initiative is a strategy to offset the amount of GHG emissions with energy produced by Samsung SDS. To achieve carbon neutrality, we will ① reduce GHG emissions at most, ② join RE100, and ③ expand partnerships.



GHG Reduction	RE100 Activities	External GHG Reduction Projects (Carbon Offset)
<ul style="list-style-type: none"> · Steady improvement of data center energy efficiency (PUE) · Application of new DC technologies · Application of current DC reduction technologies and Improvement on operations · Reduction in energy use by IT equipment 	<ul style="list-style-type: none"> · Expansion of renewable energy power generation facilities · Participation in green premium system · Purchase of Renewable Energy Certificate (REC) · Power Purchase Agreement (PPA) · Participation in renewable energy generation projects 	<ul style="list-style-type: none"> · Participation in forest carbon offset projects · Support for suppliers' low carbon activities · Participation in global initiatives in response to climate change

Solar Power Energy Utilization

Samsung SDS is expanding the use of clean energy by installing photovoltaic system and solar water heating systems on rooftops.

	Solar Power Facilities	2018	2019	2020
Suwon DC	Outdoor solar water heating system	390 GJ	351 GJ	400 GJ
Sangam DC	Rooftop photovoltaic power generation	49.4 MWh	54.8 MWh	57.5 MWh
Chuncheon DC	Rooftop photovoltaic power generation	-	92.5 MWh	139.6 MWh



(Suwon DC) Solar Water Heating System



(Sangam DC) Photovoltaic Power Generation



(Chuncheon DC) Photovoltaic Power Generation

GHG Emissions at Data Centers in 2020

Samsung SDS reduced GHG emissions by 2,398tCO₂eq last year through free cooling system, solar water heating, and use of renewable energy (solar power and geothermal energy). Suwon Data Center is subjected to the Carbon Emissions Trading Scheme. The data center reduced GHG emissions by investing on facilities such as free cooling system, containment, solar water heating system, ventilation inverter, and improving data center operation.

	Reduction Activities	2020 Key Performance	GHG Reduction
Suwon Data Center	Free cooling system	Stopped 2 out of 3 chillers by intaking outside cold air during winter into server rooms.	1,183 tCO ₂ eq
	Cooling water temperature adjustment with containment	Reduce the power consumption of chillers and cooling towers by separating cold and hot aisles with containment within the server room and by adjusting the cold-water temperature of the freezer from 8°C to 11°C	266 tCO ₂ eq
	Extension of the operation period of spray pumps in cooling towers	Reduce power consumption by extending the operation period of the spray pump in the cooling tower from March to April and converting the operation method of freezers to outdoor cooling	274 tCO ₂ eq
	Optimal operation of server room cooling	Reduce power consumption by controlling the number of thermo-hygrostats according to the environment, and stopping the close cooling of air-cooling thermo-hygrostats coolant pumps on some floors	189 tCO ₂ eq
	Solar water heating	Reduce LNG consumption by boilers through preheating hot water with the solar water heating system	19 tCO ₂ eq
Sangam Data Center	Indirect free cooling system	Reduce cooling power consumption by extending the outdoor air introduction period	271 tCO ₂ eq
	Photovoltaic power generation	Power generation through solar panels installed on rooftops.	27 tCO ₂ eq
	Geothermal cooling/heating	Saving energy by exchanging office heating and cooling method with geothermal cooling/heating system	15 tCO ₂ eq
Chuncheon Data Center	Expansion of direct outdoor air introduction period	Reduce power consumption by raising the outdoor air intake from 25°C to 27°C to extend the outdoor air intake period	40 tCO ₂ eq
	Shading device/water spray for outdoor chillers	Reduce condensation pressure and compressor energy by installing shading device at the top of chillers and by spraying water on condenser coil of outdoor chillers	49 tCO ₂ eq
	Photovoltaic power generation	Power generation through solar panels installed on rooftops	65 tCO ₂ eq
All	Virtual meeting platform implementation	Minimize the use of vehicles as well as business/out of office trips through implementation of internally developed virtual meeting platform (Know Meeting)	125 tCO ₂ eq

Special 01

TCFD Recommendations

Samsung SDS' Climate Change Risk Management System



1 Climate Change Risk Analysis Scenario

Samsung SDS establishes climate change scenarios on 2 major environmental areas (① physical environment, ② business environment such as regulation, market, technology level, etc.) and analyzes the risks of environments in reference to existing global standards such as CDP and TCFD. There are two scenarios for each environmental area and the company manages risks by comparing risks in 'RCP 2.6 and IEA Sustainable Development Scenario' to risks in 'RCP 8.5 and IEA Scenario based on current standards'.

Physical Risk

Risk Type	Natural disasters related to climate change, such as typhoons and floods
Analysis Criteria	RCP 2.6(2°C scenario) RCP 8.5(4°C scenario)
Focused Subjects	Samsung SDS data centers

Transition Risk

Risk Type	Climate change risks related to government regulation, market, technology, industry and corporate reputation
Analysis Criteria	IEA Sustainable Development Scenario IEA Scenario based on current policies
Focused Subjects	[Policy] Carbon regulation [Market] IT and logistics market

Samsung SDS 2020 Climate Change Risk Analysis Results

Temperature and weather changes: Risk of cooling cost due to global warming

Cooling a server room consumes the most energy to operate a data center. Climate change causes global warming which could result in a cooling cost increase at the company's data center due to overall temperature increase. If the average temperature rises by 2°C, the energy cost could increase by about 500 million won per year, and if the average temperature rises by 4°C, the cost will increase by about 800 million won.

Natural disaster: Facility management risk due to climate change

Climate change which can causes natural disasters such as typhoons, torrential rains, and abnormally high temperatures, can also damage buildings or facilities. Samsung SDS manages expenses incurred by natural disasters. Further, frequency of replacing data center air filtration can be increased due to Yellow Dust and Micro-dust caused by global warming and use of fossil fuel, and solar power generation may decrease due to lack of sunlight. When the data center maintenance cost rises by 10% due to the previously mentioned risks, an additional cost of about KRW 1.7 billion per year can be incurred in the RCP 8.5 scenario.

Carbon Regulation by the Korean Government

GHG Emissions Trading Scheme can be a financial risk which may provoke the purchasing cost of emission rights, investment in GHG reduction facilities and verification. Particularly, carbon credits are expected to be insufficient despite the carry-over from the previous year due to a 10% paid allocation of carbon credit in Phase 3. The current carbon credit price (approximately KRW 24,100/tCO₂e, the average transaction price of the Korean GHG emissions trading scheme KAU20 in 2020) based on the 'RCP 8.5 and IEA policy standard Scenario' is a risk, however, approximately KRW 82,500/ton may cost more to achieve the goal of a temperature rise within 2°C by 2030.

Climate technologies: Growing social demand for eco-friendly data centers

Samsung SDS improves energy efficiency through the construction and operation of eco-friendly data centers. Corporate reputation, market power, and corporate value can be strengthened when satisfying stakeholders' increasing demands for low-carbon data centers.



2 Impact Analysis of Climate Change Risks on Samsung SDS

Corporate Reputation: Correlation analysis between climate change management and corporate reputation

As social demands for companies to respond to climate change have increased, reputation and relationships with stakeholders of company that emit a lot of carbon adversely will be negatively affected. Also, it is obvious that the impact is expected to be greater in the future. Samsung SDS is carrying out various climate change response activities, such as using renewable energy and reducing GHG to take a lead in the response to climate change.

Management strategy

Samsung SDS is working on activities to analyze and respond to risks and opportunities in its business activities (service development, workplace operation, R&D and financial management, etc.) in order to respond to variability due to climate change. We have established a 'Carbon Zero Initiative' strategy to pursue sustainable business through eco-friendly management.

Workplace: Applying climate technology to existing data operations and new data centers

Samsung SDS closely analyzes utilities such as air conditioning, electricity, firefighting, and security on data centers, considering the impacts of abnormal temperatures or disasters caused by climate change. Additionally, we strengthen the integrated monitoring system over infrastructure, security facilities and data center management and conduct activities in response to climate change risks when selecting new data center locations.

Products and services

The impact of climate changes has resulted in an increase of social demands to improve resource utilization efficiency related to carbon emissions such as consumables, raw materials, and energy. As a result, the market value of Samsung SDS' technologies and services is becoming more closely related to these social demands.

R&D investments

Investment in the development of Samsung SDS IT solutions related to energy use efficiency, such as corporate ESG monitoring solutions, smart building solutions, and intelligent factory solutions is expected to be increased.

Financial impact

(Cost) Loss of climate change risks and recovery, increased operating costs of business establishments, and expenses from the implementation of GHG reduction activities and renewable energy expansion.
 (Benefit) Additional financial benefits of Dongtan data center is expected to be approximately KRW 2.8 billion per year compared to existing data centers of similar size, by improving PUE.

3 Operation and Improvement of Samsung SDS Climate Change Risk Management System



Labor/Human Rights: Employees

Why Important

Samsung SDS strives to hire and foster talented individuals who think outside of the box and are ready to rise to new challenges based on their understanding of IT, digital platforms and solutions. The company operates a number of programs to quickly find and foster excellent IT professionals, and strives to provide an employee-friendly working environment through enhanced labor right and policy for promoting a balance between life and work.

What's Achieved

Focus Area: Employees

Item	2020 Achievement	Achievement
To develop specialized knowledge and skills in core technology areas	Expanded the development in core technology areas	Achieved
To develop Data Scientist certification program	Expanded Data Scientist certification program	Achieved
To innovate ways of working in the COVID-19 pandemic situation	Implemented smart workplaces with 'BritiWorks'	Achieved
To facilitate the horizontal organizational culture based on mutual respect	Expanded the use of the title 'Pro' in all worksites, and established Chatbot survey system to manage the level of institutionalization.	Achieved
To strengthen the employee communication channels	Resolved over 100 reported employee grievances	Achieved
To improve employees' work & life balance	· Launched flexible work hours · Enhanced maternal protection program	Achieved
To support new employees settle down to the company	Operated mentoring program and Global Help Desk	Achieved

How to be Better

Samsung SDS will strengthen the competence of employees for nurturing top-notch talent through the programs that support development of specialized knowledge and skills in core technology areas. To increase the number of talented software workforce, Samsung SDS will reorganize human capital development programs and training system. Samsung SDS will leverage BrityWorks, work automation solution, to automate simple tasks while preventing excessive workload through predicting work hours. Further, we will continue to communicate and present new improvement measures to increase employee satisfaction.



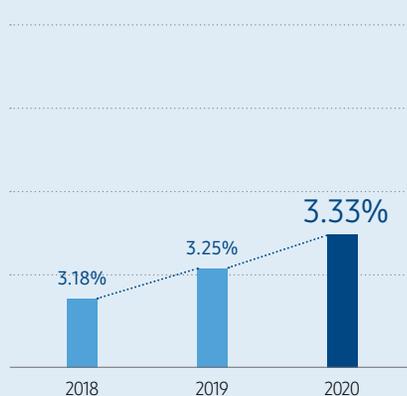
Key Figures



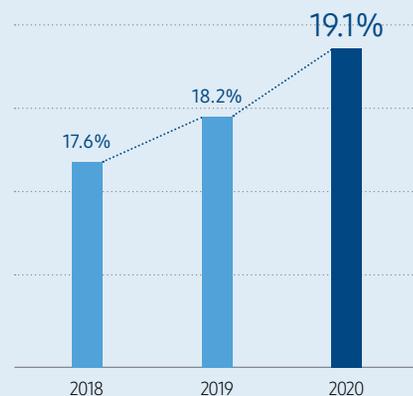
Open Hands Co, Ltd.* received the 2021 Expanded Disabled Recruitment Competition award from the Ministry of Employment and Labor.

* A subsidiary for disabled employment

Recruitment of disabled



Female Managers



Labor/Human Rights: Diversity and Health and Safety

Why Important

Corporates can enhance their competitiveness by reducing risks that may be directly or indirectly involved in human rights violations, and improving sustainability through human rights management. They can also increase productivity by attracting outstanding talented individuals and increasing employees' continuous service rates. In addition, they can have virtuous cycle effects, such as reducing business risk, enhancing corporate and brand reputation, and increasing investment opportunities.

What's Achieved

Focus Area: Diversity and Equality

Item	2020 Achievement	Achievement
To provide fair evaluation system for employees	Strengthened individual performance-based evaluation system	Achieved
To stop and prevent negative practices involved in conventional corporate culture (verbal violence, excessive alcohol consumption, and sexual harassment)	Strengthened reporting and action process to curb these negative practices	Achieved
To establish human rights policy	Disclosed declaration of human rights	Achieved

Focus Area: Safety and Health

Item	2020 Achievement	Achievement
To expand recertification and maintenance of health, safety and environment management system	<ul style="list-style-type: none"> Recertificated and maintained OHSAS 18001 (health & safety management system) and ISO 14001 (environmental management system) Expanded the scope of ISO 45001 certification to overseas logistics subsidiaries 	Achieved

How to be Better

Diversity and Equality - Human rights risks will be fully managed through the due diligence process. Health and Safety Management - Samsung SDS encourages employees to participate in health and safety activities including regular disaster evacuation drills, first aid training, and safety campaigns, and will continue to promote the importance of health and safety and employee responsibility, while constantly conducting workplace health and safety audits.



Key Figures

Recertification and maintenance of the environmental management certification system and the occupational health and safety management system



ISO 14001 Certification (Environmental Management System)



ISO 45001 Certification (Occupational Health and Safety Management System)

Number of Employees who Completed Training



Safety Management Level Improvement Framework for Overseas worksites



Employees

Samsung SDS does not discriminate against employees based on academic background, gender, nationality, or religion, but selects outstanding talents with humanity, morality, creativity, and a constant passion for the future. We also strive to revitalize the development culture and development ecosystem. Samsung SDS supports developers to improve their work competency by solving issues and creating a smooth learning environment for developers and operators with promoting exchanges between internal and external developers through engineer portal, meetup, conference, and sponsorship.

Recruitment Process

Samsung SDS provides equal opportunity to any individuals seeking work, and operates a fair and transparent recruitment process to secure outstanding talents in various fields. New hires are recruited through open recruitment in the first and second half of the year, and experienced hires are recruited from time to time according to the needs of jobs or business divisions. In 2020, Samsung SDS successfully progressed recruitment process through contactless interviews using 'Brity Meeting' solution.

Open Recruitment Process for New Hires



Announcement of Samsung SDS Special Lecture on Algorithms for Undergraduates in 2020



The 2021 Samsung SDS Special Lecture on Algorithms for Undergraduates was conducted through an online(video).

Recruiting Outstanding IT Talents

In accordance with widely-recognized technologies including AI, analytics, cloud, and security, Samsung SDS strives to recruit top-notch global talent in order to spearhead digital innovation across financing, manufacturing, retail and other diverse industries. We promote to build a network with experts from global leading companies while presenting its career development vision to attract the best and talents who are capable of growing into leaders in R&D and business development.

Recruiting Master's and PhD

Through campus recruiting, Samsung SDS recruits mater's and PhD students with high capabilities in the key business areas twice a year. In the recent pandemic situation, Samsung SDS adapted online recruitment system to retain highly talented individuals.

Special Lecture on Algorithms for Undergraduates

Launched in 2018, Samsung SDS Special Lecture on Algorithms is for students wants to be IT professionals. Providing lectures on advanced and practical algorithm, Samsung SDS help students to improve programming competency. The lecture is also a channel to recruit talented students.

Operation of Strategic Talent System

Item	Description
Samsung MBA	MBA from top 30 overseas universities
Samsung EMBA	MBA from top-level universities in Korea (4 universities)
IT Master's degree	Domestic master's degree course in Data Analysis/Security, etc.
Samsung Regional Specialist	Dispatched to strategic countries such as Vietnam, China, and India



6th Completion Ceremony of Samsung SDS-KAIST Technical Management Course

Competency Development System for Employees

My ProWay, an In-house Career Development Portal

Samsung SDS operates nearly 1,000 group/online training courses based on its job-specific competency system. Its employees can access My ProWay to freely take any courses of training that may improve job capabilities and help career development.

Fostering Global Talents

Samsung SDS operates practical language course, 'Business Communication', to nurture globally competitive talents with online language courses and telephone-based one-on-one English coaching. The 'Global Lounge' is operated in the form of a private education institute to assist employees with the self-directed study of English, Chinese, Japanese, Vietnamese, and other languages.

Strategic Talent Nurturing System

Samsung SDS selects and supports Samsung MBA/EMBA, IT Master's degree and Samsung Regional Specialist to discover the outstanding talents who will lead the company's future, and nurture them into experts armed with theoretical knowledge and practical experience.

Core Technology Courses

Samsung SDS core technology courses intend to identify individuals with high growth potential and nurture them into new technology experts. In-house and external professionals provide lectures and wide-ranging practice sessions are offered in the technologies leading the 4th Industrial Revolution such as AI, Blockchain, Cloud, Data Analytics, and Security, to help trainees develop into experts in their own fields. Nearly 1,050 employees have completed these courses since 2018. (as of December 31, 2020)

Next Generation Leader Training

To nurture tomorrow's leaders armed with IT and business competency, Samsung SDS launched the SDS-KAIST 'Mini-MBA' program in 2016 in suppliership with the KAIST Graduate School of Management. In consideration of the unique business characteristics of Samsung SDS, this techno-MBA program is focused on AI/Analytics and blockchain to nurture their ICT trends and predictive capabilities with strengthening their strategic development and executive capabilities.

Software Development Capacity Support System

SW Capacity Test : Samsung SDS operates the SW Qualification program to assess employees' algorithm and coding capabilities. Developers are provided with phase-specific training programs to evaluate their current level and make improvements. Those who achieve higher-level certifications are granted additional promotion points and financial rewards. **Data Scientist (DS) Certification** : To systematically nurture DSs, Samsung SDS independently developed a DS Certification program in collaboration with the Korea Advanced Institute of Science and Technology (KAIST) in 2018. The in-house DS Academy provides a range of learning contents and educational programs, and certification examinations are offered regularly.

SCP(SDS Certified Professional) System

Samsung SDS operates the SCP system to create better organizational culture with advanced growth vision by selecting the best skilled professionals. The SCP system was launched in 2003 and SCP has been selected as the top 1% of the company's technical workforce every year. In 2021, Samsung SDS launched Junior SCP to expand the SCP system.

A Great Workplace for Developers

Engineer Portal Operation



Engineer Portal Screen

Samsung SDS created the developer portal (DEV+) and operation portal (OPS+) in 2016 and 2019. In addition, Samsung SDS established an integrated portal for developers in 2020. Integrated portal serves as a venue for communication to enable developers and operators to share the latest technology trends and knowledge and discuss major issues spanning the technology and regulatory landscape. Also, it portal was made accessible to employees at overseas/domestic subsidiaries to expand the base of information sharing.

Developer Meetups

Samsung SDS has hosted and supported meetups for developers to share and constantly learn IT technologies such as blockchain, AI, cloud, data analytics, CX, and Agile as well their development practices. In 2019, 48 meetups were held, and nearly 2,100 developers attended. In 2020, 25 online meetups were held (attended by 2,303 developers).

Developer Conference

Samsung SDS hosted the 'Techtonic 2020' developer conference to share its latest technologies and extensive development know-how. Attended by nearly 5,468 software developers, researchers, undergraduates, and graduate students, this conference allowed Samsung SDS to share recent IT trends, technology platforms enabled by its 5 core technologies (AI, blockchain, cloud, data analytics, and security), and their real-life applications. The company also sponsored a range of external developer events featuring the latest data processing technologies that have captured the interests of developers.



Samsung SDS Developer Conference: Techtonic 2020

X-Change Open Seminar

Samsung SDS has provided developers and operators with a monthly opportunity to learn new skills and share their best practices on development and operation. Rather than formal auditoriums or training rooms, these gatherings are held at in-house cafes or broadcast live on YouTube to create a comfortable environment where developers and operators can freely share the knowledge and know-how they have gained over the years, which in turn generates positive synergies among developers and operators. Though it was tough to hold offline seminars due to COVID-19, Samsung SDS held a total of 20 seminars. 3,258 developers attended the seminar through Knox Meeting, own video conferencing solution.



2020 Online Meetup



X-Change Online Seminar



YouTube Live

On-site Developer Training

To ensure that developers do not lose sight of rapidly shifting IT trends and learn work-related know-how, Samsung SDS operates a number of on-site training programs. To help these developers become digital polyglots who can leverage multiple languages including Vue.js, Golang, and Python, the company offers an opportunity to learn and practice, and put them to work. These training programs allowed Samsung SDS to train nearly 1,160 employees in 2020.

Algorithm Competitions

Over the past 9 years (since 2013), Samsung SDS has hosted developer competitions, in which developers compete on the algorithms they develop from new technology. In 2020, the company held an online driving algorithm competition, and expanded these competitions to invite nearly 1,000 contenders from its overseas/domestic subsidiaries, helping it to evolve into a developer festival worth celebrating.

							
2013	2014	2015	2016	2017	2018	2019	2020
Omok	Yut game	Othello	F1 Race	StarCraft	StarCraft	race	race
9 teams	17 teams	45 teams	186 teams	245 teams	270 teams	339 teams	409 teams
(23	(50	(99	(500	(609	(631	(792	(1,000
contenders)	contenders)	contenders)	contenders)	contenders)	contenders)	contenders)	contenders)

SW Reuse

Since 2018, Samsung SDS has been dedicated to creating an in-house ecosystem conducive to the reuse of software. This helps recycle diverse source codes, APIs, and design assets to improve development productivity and assists developers in achieving a better work & life balance. By doing this, the company was able to save more than KRW 13 billion, an improvement of 200% compared with the previous year. The company has established reuse processes and systems to consistently pursue its SW Reuse initiative, including SDS development platform Catalog (SW asset), OPUS 3.0 (design asset), and is further driving this initiative through in-house campaign, 'Go Go Reuse'.



SW Asset Reuse Portal

Agile Core Team

Agile Core Team (DEV: CRAFT), organized in 2015 to bring innovation to Samsung SDS development culture, has collaborated with industry leaders to learn systemic and efficient methods such as Lean Startup, Agile, and Design Thinking Process and to adapt these methods to reflect Korea's domestic conditions as a way of pioneering organizational innovation. From its inception to the end of 2018, the team has developed AI-enabled MVP products and executed company-wide process improvement for capacity-based refactoring and bottleneck-free development through MSA CoE (Center of Excellence). In 2019, the team is engaged in elevating the operation and performance of the Agile/DevOps system, supporting external business with Agile/DevOps competency, improving the system-based product management system, and assisting in system/asset-based project undertakings. Beyond this, collaboration continues across diverse areas from CVC (Committed vs. Completed)-based consulting to product development through Agile for digital transformation. The Agile Core Team promotes the qualitative improvement of the development environment through wide-ranging attempts to take the lead in development processes and technologies, experiment with advanced HR and assessment systems, create a collaboration-driven open development environment, and has been spreading its know-how to a variety of companies that wish to make a digital transformation with IT.

XEED-LAB

XEED-LAB was launched in 2016 as Samsung SDS in-house contest to discover new technology and business ideas with the goal of promoting employee entrepreneurship and a spirit of challenge. This event receives future business ideas from employees, chooses them through a total of 3 screening rounds, and initiates the prototyping of selected ideas. Following deliberations by senior management, these ideas are commercialized through different pathways, including transferring to the responsible department, intrapreneuring (in-house venture system), and spin-off (startups outside).

As of 2020, a cumulative total of nearly 950 ideas had been submitted to XEED-LAB. Out of these ideas, 15 were given a chance to move on to the prototyping phase; of those, 9 were commercialized through intrapreneuring, transfer to the responsible department, and spin-off. With the conclusion of the 5th contest, 3 ideas are currently in the prototyping process. Going forward, Samsung SDS will leverage XEED-LAB to combine the creative ideas of its employees with digital technologies to pursue innovation.

XEED-LAB Operation Process



Digital Transformation to Improve Ways of Working

More and more corporations seek for an un-tact collaborating infrastructure due to the COVID-19. Samsung SDS aims to leverage BrityWorks to innovate the way employees work by implementing un-tact collaboration and seamless mobile work environment. Business continuity and flexibility for employees are improving based on 'BrityWorks', with support for collaboration functions such as messenger and meetings in the pandemic situation.

Employee Communication

Organizational Culture TF

Samsung SDS organizes and operates an organizational culture TF on a semi-annual basis to support employees' voluntary organizational culture improvement. We strive to create a sound organizational culture by planning and operating various participatory events such as lectures for children of employees and radio counseling centers, and sharing in-house news.

Smart Work Culture

To keep pace with the changing environment and culture, Samsung SDS conducts various campaigns to establish a smart work culture more efficiently. We ran our 'Paperless Campaign' in pursuit of environmental protection and work efficiency, and an 'Untact (contactless) Work Etiquette Campaign' focused on etiquette in online work.

Horizontal Organizational Culture

Since March 2019, Samsung SDS has expanded use of the title of 'Pro' in all worksites to establish a free workplace culture of mutual respect. A chatbot is used to listen to the opinions of employees to establish and continuously improve the free organizational culture.

Reliable Organizational Culture

Samsung SDS operates 'SDS NEWS,' an online communication platform that enables all employees to communicate freely. SDS NEWS is a content hub through which employees can easily access to diverse information of the company within single place. It is an employee communication channel that can be accessed anytime, anywhere from PCs and mobile devices in real time. An online bulletin board in which all employees can participate freely under their real name or anonymously is provided to enhance mutual understanding. Various issues within the company are fed back in real time through official responses from a designated department contributing to form a reliable organizational culture.

Newsletter on Organizational Culture for Employees' Communication



Evaluation and Compensation System

Samsung SDS conducts employee evaluations twice a year: in the first half (June), core value evaluations are performed to see whether employees have developed the capabilities required of a Samsung SDS employee and put them to use; in the second half (December), performance evaluations are conducted to measure whether employees have successfully attained their annual work target. If an employee raises any objection to the evaluation outcomes, the Evaluation and Deliberation Committee will deliberate on such objections before finalizing the evaluation rating. In addition, Samsung SDS provides differentiated compensation based on individual evaluation results to enhance the efficiency of employees.

Evaluation Item		Evaluation Details
Core Value	Core Values	Core values shared and pursued by all employees
	Behavioral Competency	Organizational engagement, communicative collaboration, global competency, learning ability
	Leadership	Organizational management, talent development, performance management, future preparation
Performance	Annual Work Assigned	Attainment of the set work target for the year

Employee Relations

Work Council

Samsung SDS operates the Work Council to build sound labor relations and promote labor-management communication. The council is tasked with holding regular meetings (4 times a year) in conformity with governmental regulations on employee involvement and cooperation to improve the company's system and working environment. In 2020, the council reorganized communication channels, such as solving grievances of employees through the improvement of the website, and carried out various activities to revitalize the organizational culture such as contactless surprise visits to the families of employees and morale-boosting visits to overseas employees who have returned from business trips.



Improved the Work Council Portal (2020.7.28)

Major Activities and Outcomes in 2020

- Held Employee discussions for grievances approximately **200** times
- Handled grievances **100** cases
- Provided surprise visits to the family of employees **6** times
- Paid visits to the establishments and project sites **9** times
- Paid morale-boosting visits to overseas employees who returned from business trips **76** persons
- Paid morale-boosting visits to worksites on traditional holidays **24** projects

Change Agent (CA)

Samsung SDS operates a departmental CA system that serves as a bridge among the company, employees, and their department to enhance the agility and transparency in communication. CA listens to grievances of department members and works with the Work Council to deliver the Voice of Employee (VoE) to the management, and shares company news and management's voice with department members. CA is leading a vibrant organizational culture by eliminating obstacles to organization and creating a unique organizational culture.

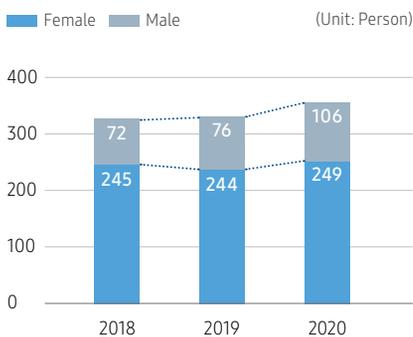
Work and Life Balance

Samsung SDS is introducing and operating work & life balance systems for childcare and household participation that go beyond the related legal standards, and protect the rights of new mothers by providing welfare facilities such as in-house daycare centers. The company is improving work & life balance by providing vacation time for long-serving employees and opportunities for employee growth. Samsung SDS was first certified as a Family-friendly Enterprise by the Korean government in February 2013 and was re-certified in December 2018.

Maternity Protection

Samsung SDS is operating wide-ranging programs to prevent turnover and retirement and for ensuring a successful work & life balance with employees by supporting their childbirth and childcare.

Employees who Took Childcare Leave



Major Maternal Protection Programs

- Specified working hours
- In-house daycare center
- Prenatal testing leave
- Child-care leave
- Subfertility leave
- Spouse maternity leave



Flexible Work Hours

Based on the fundamental business philosophy that employees should be recognized for their work performance, rather than work hours, with the goal of creating an innovative and creative corporate culture, Samsung SDS launched its flexible work hours system in 2011 to allow employees to customize their work schedules. In July 2018, the company introduced the alternative work schedule to comply with the Korean government's 52-hour workweek policy: employees' weekly work hours were reduced to 40 hours on average, and all Samsung SDS employees can now come to work any time between 6 AM and 6 PM. This shortened total work hours and improved work efficiency, which ultimately increased employees' satisfaction with their work environment.

Adaptive Working Zone

Samsung SDS operates Adaptive Working Zone in 6 office buildings to overcome physical limitations, minimize time-loss, and to support effective and flexible working environment.

Employee Onboarding

Retaining exceptional talent is only possible once they become fully acquainted with the organization. As such, Samsung SDS provides all its new hires with one year of mentoring and pays the related expenses. During this one-year period, new recruits receive mentoring from 3 mentors: a buddy mentor from whom they may seek advice in relation to their work life, a boss mentor who can offer advice concerning career development, and an HR mentor who may help with administrative work for their successful onboarding. In addition, new international hires can use the Global Help Desk to receive guidance on their work life as well as their new life in Korea in general.

Welfare & Benefits

To motivate employees and boost their morale, Samsung SDS offers wide-ranging welfare & benefit programs and accommodations under such diverse themes as livelihood support, healthcare, and leisure.

Major Programs

Tuition support for children of employees	Support tuition payment for preschoolers, middle/high school students, and undergraduate students
Cafeteria plans	Welfare points are given for employees to benefit on their preferences
Support for family events	Offer expenditure support and special leave for family events involving the immediate family members of employees and their spouses as well as supplies and personnel services for major family events
Health care support	Medical expense support for employees and their spouses and children as well as comprehensive medical check-up expense support for employees and their spouses, medical expense support for fertility treatment, and in-house clinics (i.e., flu vaccination)
Accommodations	Cafeterias, childcare centers, gyms, healthcare facilities, and pregnant employees' lounge, 'Dodamibang'
Work & life balance	Reduced working hours to enable employees' family care, personal health, retirement preparation, study, and support for leave and expenses for long-term service employees

Insurance and Pension

Samsung SDS is faithfully fulfilling its obligations to register employees for the 4 major insurance policies as stipulated by the Korean government, and is operating retirement pension and individual pension plans to ensure a stable retirement for its employees. We also hold a collective insurance policy to support its employees in the event of disease, injury, or death.

Collective Insurance	Pay for the diagnosis of major diseases, hospitalization, and death benefits	
Pension Program	Retirement Pension	Defined Benefit (DB) and Defined Contribution (DC) plans
	Personal Pension	When an employee purchases a personal pension plan, the company pays half of the premium

Retirement Pension Funds under Management¹⁾

(Unit: KRW million)

Indicator	2018	2019	2020
Defined Benefit (DB)	881,184	1,002,506	1,251,858
Defined Contribution (DC)	29,922	45,999	53,833

1) On a non-consolidated basis

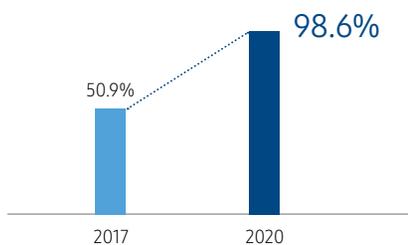


Best Leaders of Samsung SDS

Mental Health Center Programs

Pleasant communication	Pleasant appreciation	Treasure hunt
Healing maru	Meditation experience	Meditation 'Rest(Heu)' program
Happy companion	Men's chat	Working mom's break time

Response Rate for Employee Satisfaction Survey



Support for Retirement Planning

Through the career consulting center, Samsung SDS ensures that retirees or those nearing their retirement can confidently open a new chapter in their lives by offering training and consulting on life planning, career planning, outplacement, startup, and returning to farming. Between 2016 and 2020, a total of 229 employees attended 60 related training sessions.

Training Course for (Future) Retirees	Training Details
Outplacement Support	Life planning including change management and financial planning, job seeker know-how development, understanding of SMEs
Startup Support	Business model development, feasibility analyses, introduction to startup case studies and relevant support systems
LDP (Life Design Program) Support	Knowledge development in 6 major life domains, re-identification through a view from the past, preparation of pledge for future life, action plan development
CDP (Career Development Program) Support	Importance of CDP and alternative exploration, improved understanding of the self, looking for opportunities in the social economic sector, career alternative organization, life career planning
Support for Returning to Farming	Provision of information on returning to farming and of experience and career exploration opportunity
Professor with Industry Experience	Understanding the role and work of professors with industry experience, student guidance methodology, coaching leadership

Resolving Grievances

Samsung SDS operates a variety of communication channels to quickly and fairly gather information on and resolve the grievances that employees experience. The 'Organizational Culture Keeper' section on the main page of the in-house e-mail system allows employees to receive counseling on their individual grievances and to submit whistle-blowing reports concerning the workplace culture. In addition, the communication channel of the Work Council works to resolve grievances of employees. The Council handled about 100 grievances in 2020. Once reports are submitted, the facts of the matter are confirmed through interviews, and the necessary actions are taken, including disciplinary measures where needed. In terms of the details of submitted grievances and the information of individual whistle-blowers, the principle of confidentiality is strictly observed.

Mental Health Center

Samsung SDS operates a mental health center and provides a number of programs to protect and promote the physical and mental health of 'Mindfulness Letters' are delivered periodically to promote the mental health of employees.

Samsung Culture Index

Samsung SDS conducts an annual employee survey called Samsung Culture Index (SCI). Covering a total of 6 areas, the survey helps to identify strength and weakness areas for improvement in our corporate culture. Samsung SDS successfully improved the participation of the survey from 50% to over 90% in 2018 by strengthening anonymity and participating campaigns. In addition, employee sentiment is investigated in detail through the FGI (Focus Group Interview). Best practices from excellent SDS leaders are shared to promote activities to enhance employee satisfaction activities by managers and executives. Samsung SDS plans to foster a virtuous cycle in which the voices of its employees lead to actual changes in the organizational culture.

Diversity and Equality

Human Rights Policy

Samsung SDS has prepared and implemented 11 human rights policies to protect the human rights of our employees. Human rights policies protect the human rights and dignity of employees at a level befitting a world-class company. This policy applies to all types of employees, including temporary employees, migrant employees, trainees, and dispatched employees. Employees must be guaranteed that all demands they are subject to in the workplace are legal, and that their rights are protected in accordance with the laws and regulations. Suppliers also continue to carry out activities such as assessment and monitoring to prevent human rights violations.



Environment

Labor/Human Rights

Social Contribution

Customers

Suppliers

Special 02

Declaration of Human Rights

Samsung SDS seeks to find mutually beneficial relationships with customers, employees, shareholders and investors, suppliers, and the local community, honoring the intrinsic rights of all interested parties. Samsung SDS supports and observes the principles of human rights suggested in the Universal Declaration of Human Rights and the UN Guiding Principles on Business and Human Rights. To observe the principles of business and human rights, Samsung SDS shall establish the required internal system to collect the opinions of the interested parties, according to this declaration of business and human rights. Rather than simply collecting opinions of the interested parties, Samsung SDS shall also monitor, evaluate, and improve the business and human rights status on a regular basis and share the results internally and externally.

Voluntary labor

All labor must be voluntary. Forced workers, workers under contracts involving confinement (including for debt repayment), involuntary inmates, and victims of human trafficking must not be employed. The prohibition applies to all acts exploiting the socially vulnerable for their labor by threatening, forcing, abducting, or deceiving them.

Wages and welfare

Wages provided to employees must include minimum wage, overtime allowances, and the welfare benefits specified by law, in compliance with all local laws and regulations. All overtime labor must be provided voluntarily with the agreement of the employees, and the overtime allowance must be higher than the regular hourly wage in compliance with local laws and regulations.

Freedom of association

In compliance with local laws, employees are allowed to establish or join an employee council or a union. They have the right to freedom of peaceful assembly, as well as the right not to join such activities.

Prohibition of child labor

Employment of children is strictly prohibited. "Children" refers to persons younger than 15 years of age, persons younger than the age of compulsory education or the minimum age for legitimate hiring, whichever age is oldest. Juveniles older than the age for legitimate hiring may be employed. However, employees younger than the age of 18 must not participate in tasks that may endanger their health and safety (including overtime and night shift tasks).

Humane treatment

Inhumane treatment, including sexual harassment, sexual assault, physical punishment, mental or physical suppression, and swearing, must not be made to employees, and a threat to such treatments must not be made.

Compliance with the work hours

Weekly work hours must not exceed the maximum hours specified by the local laws of the relevant country. In addition, weekly work hours, including overtime, must not exceed 52 hours, except in cases where an emergency or a special situation exists. Also, a minimum of one-day holiday must be provided to employees for every 7 days of work.

Prohibition and discrimination

Employees must not be exposed to harassment or unlawful discrimination. In the general practices of employment, including the hiring process, wages, promotion, bonus, and training, there must be no discrimination based on race, color, age, sex, sexual preference, ethnicity, disability, pregnancy, religion, political beliefs, union participation, marital status, etc.

Workplace safety and environment

In all activities for the company's official business, measures to ensure the safety of employees are essential. Efforts must be made to create a safe and healthy workplace in compliance with local laws and regulations.

Distribution channel management

Continuous management of the suppliers is required so they can also practice the principles of business and human rights.

Protection of customers' human rights

Special care must be made to ensure that the products and services do not harm the life, health, and safety of the customer, and reasonable measures must be taken to protect the collected personal information of customers.

Protection of local residents' human rights

In the regions of business operation, make efforts to honor and protect the human rights of local residents and abide by laws and regulations of the region.

Employee Human Rights Protection

Samsung SDS respects human rights and freedom of association, and complies with the standards and regulations of Labor/Human Rights organizations suggested in the “Universal Declaration of Human Rights,” the International Labor Organization (ILO) Core Conventions, the Responsible Business Alliance (RBA) Code of Conduct, and local labor laws. To this end, the company conducts annual inspections by the head office or its workplaces to prevent violations of human rights in areas such as child and forced labor, work hours, wages and welfare, humane treatment, discrimination, and freedom of association.

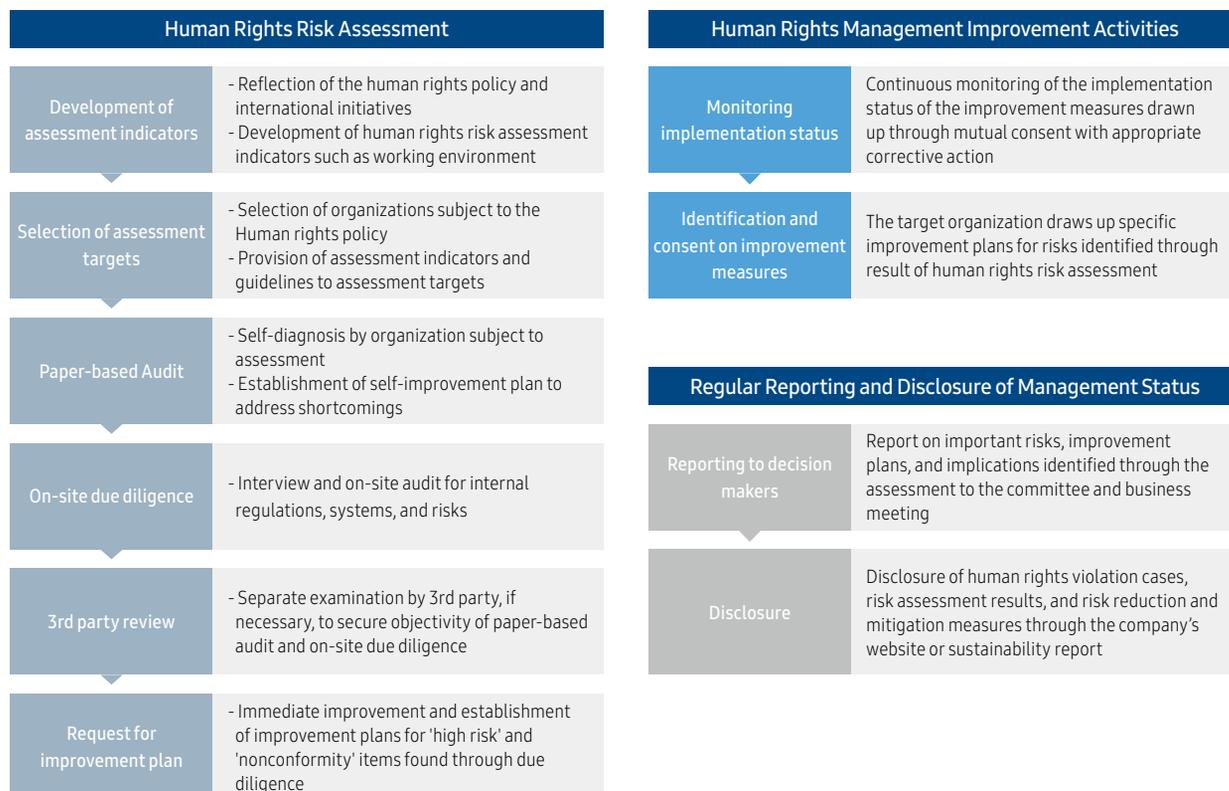
Human Rights Training and Protection

Samsung SDS annually provides all its employees with training to prevent verbal, physical violence, and sexual harassment to enhance their human rights awareness. Furthermore, we conduct a campaign to respect human rights through regular mailings for leaders; in particular, we include human right training in our curriculum for new leaders.

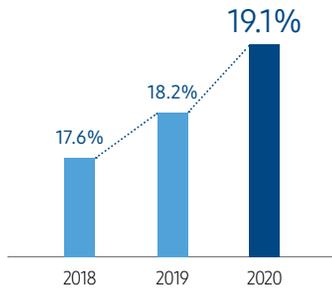
Item	Unit	2017	2018	2019	2020
Employees subjected to human rights training ¹⁾	No. of persons	12,472	12,177	11,974	12,319
Number of employees completed training (ratio)	No. of persons(%)	12,388(99%)	11,991(98%)	11,917(99%)	12,319(100%)

1) Domestic employees

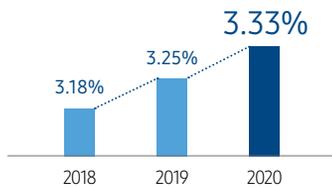
Human Rights Assessment, Due Diligence, and Risk Management Process



Female Managers



Recruitment of disabled



Open Hands Co, Ltd.* received the 2021 Expanded Disabled Recruitment Competition award from the Ministry of Employment and Labor.

* A subsidiary for disabled employment

Employee Diversity Policy

Samsung SDS employees are not discriminated against on the grounds of gender, race, nationality, religion, age, or health conditions.. We provide programs and training to help establish a culture of diversity and mutual respect. The number of female executives at Samsung SDS has increased from 10 in 2018 to 13 in 2020, and the ratio of female managers has increased from 18.2% in 2018 to 19.1% in 2020. The ratio of disabled employees has also increased, from 3.12% in 2018 to 3.27% in 2020).

1) According to the criteria of the Korea Employment Agency for Persons with Disabilities

Anti-discrimination Training for Locally Hired Employees

On a half-yearly basis, employees approaching their expatriation are trained in global etiquette on diversity and equality and on locally appropriate behaviors so that they can work in harmony with their local coworkers. Overseas worksites also provide training to locally hired staff once or twice a year on accident prevention, understanding of Korean and other cultures, and human rights protection.

Open Hands Co, Ltd., a Standard Workplace for Disabled

In November 2010, Samsung SDS founded Open Hands Co., Ltd., a standard workplace for the disabled as designated by the Korean government, as its subsidiary with the aim of fulfilling its corporate social responsibility and creating good jobs for people with disabilities. In January 2017, the company moved its headquarters and consolidated office spaces to provide a better work environment and improve convenience for its employees with disabilities across rest rooms, parking spaces, elevators, and cafeteria services. These endeavors were recognized when Open Hands was chosen as a great employer of people with disabilities in 2018 and received the Iron Tower Order of Industrial Service Merit at the Expanded Recruitment of the Disabled Competition in 2020, and an award from the Ministry of Employment and Labor at the Expanded Recruitment of the Disabled Competition in 2021.



Handrail



Guidance Blocks



Accessible Parking Space



Defibrillator



Protective Gear Box



Emergency Evacuation Drill

Health and Safety Management

Health and Safety Manual/ Guidelines

- Enterprise Health and Safety Management Regulations
- Health and Safety Management Guidance of Suppliers
- Safety Environment Policy
- Incident Response Guideline
- Health Checkup Management Guideline
- Health and Safety Manual
- Working Environment Management Guideline
- Infectious Disease Management Guideline
- Fire Fighting Safety and Management Guideline

연도	대상 지역	비고
11	전국	ISO 14001:2005, 환경안전기후구 세분화기 관리지침, v1.0
12	북한	ISO 14001:2005, 환경안전기후구 관리지침, v1.0
13	전국	중대사건 예방보전 중요사항 가이드
14	전국	ISO 14001:2005, 환경안전기후구 관리지침, v1.0
15	전국	ISO 14001:2005, 환경안전기후구 관리지침, v1.0
16	7개년	안전문화경영론
17	7개년	ISO 14001:2005, 환경안전기후구 관리지침, v1.0
18	7개년	ISO 14001:2005, 환경안전기후구 관리지침, v1.0
19	북한	ISO 14001:2005, 환경안전기후구 관리지침, v1.0
20	북한	ISO 14001:2005, 환경안전기후구 관리지침, v1.0



ISO 14001 Certification (Environmental Management System)



ISO 45001 Certification (Occupational Health and Safety Management System)

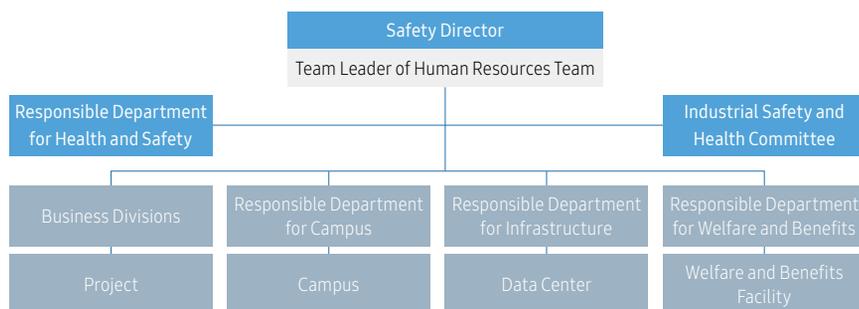
Safety and Health Management System

To ensure safe workplaces, Samsung SDS set forth the workplace safety policy and 10 safety rules for all employees to abide by. In addition, the Occupational Safety and Health Committee was established, and management and employee representatives meet every quarter to discuss and decide important matters related to safety and health in the workplace. The committee establishes occupational accident prevention plans, safety and health management regulations while providing relevant educations for a better working environment. In addition, the committee investigates the causes of occupational accidents, and performs activities to prevent the recurrence of problems. In addition, relevant guidelines/manuals are disclosed internally to encourage employees to voluntarily comply with health and safety requirements. In 2014, the company first certified OHSAS 18001 (health & safety management system) and ISO 14001 (environmental management system), and in 2017 transferred to ISO 45001, an upgraded version of the conventional OHSAS 18001 standard. The scope of these certifications was expanded to its overseas logistics areas and bases in 2020.

Safety Environment Policy	Realizing a safe and healthy workplace and perceiving eco-friendly business management as the top priority of the corporation. "Fulfilment of corporate activities that respect people and nature"		
Major Task	Compliance with domestic and international laws	Realization of pleasant and safe workplaces	World-class safety environment management
10 Principles	<ol style="list-style-type: none"> Any accident or infectious disease designated as reportable should be reported immediately for prompt action. Certified products for electrical devices should be used, and the use of unauthorized personal heating devices is prohibited. Regular fire evacuation drills must be performed. It is forbidden to bring unauthorized hazardous materials into workplaces. Restricted areas are subject to prior approval. Prior approval should be obtained for new installations or changes to equipment. Hot work should be carried out only for pre-approved work in accordance with relevant guidelines. Personal protective equipment should be worn in its intended manner. Safety devices of facilities/plants should not be arbitrarily modified or canceled. Safety-related standards should be observed when ordering and receiving construction orders. 		

Health and Safety Organization

Samsung SDS has established a company-wide health and safety organization under the team leader of the Human Resources Team. Workplaces with more than 300 employees shall have a dedicated health and safety organization.



Health and Safety Activities and Programs for Employees and Suppliers

Safety Check and Risk Factor Analysis

Samsung SDS conducts safety checks of the risk factors that have been identified as threatening the safety of domestic workplaces and logistics centers. Risk factors are audited through special safety checks for hazards that may occur on traditional holidays or in the event of damage from storms and floods. In addition, the scope of safety checks was extended to include data centers and project sites, and senior management from headquarters are proactively engaged in performing on-site safety checks as a way to raise company-wide awareness on workplace safety.

Emergency Response Drill

Responsible executives and emergency response organizations at respective establishments are engaged in semi-annual exercises based on scenario-based manuals developed for fires, earthquakes, and other disaster situations. Data centers perform comprehensive emergency response training more than once every year. Specifically, data centers have emergency power sources and establish emergency power supply plans that consist of more than 3 different phases. Samsung SDS strives to keep both employees and corporate facilities out of harm's way in the event of an emergency.

CPR and AED Training

(No. of persons)

Item	Employees who completed training
2018	1,542
2019	1,148
2020	Suspended due to the COVID-19 pandemic



Emergency Drill

Health & Safety Training

To assist employees in developing their interest and capacity in the area of health & safety, Samsung SDS develops relevant training contents and offers annual online training to all employees. The company provides practical training in CPR (cardiopulmonary resuscitation) and the use of an AED (automated external defibrillator).

Enhancement of Health and Safety Management of Suppliers

Samsung SDS operates an In-house Supplier Council to strengthen the health and safety management of suppliers. The Council is attended by the health and safety managers of headquarters and suppliers, and consists of monthly meetings on risk assessment, emergency contact network, and evacuation methods. The company conducts a weekly audit for suppliers and a quarterly joint audit with suppliers to check risk and hazard factors.

Health and Safety System for Overseas Subsidiaries

Samsung SDS has established a safety management system for overseas subsidiaries to prevent various safety accidents, clarify the safety reporting system and improve their safety management level. The company has designated responsible managers in overseas subsidiaries and established the safety reporting system to conduct health and safety activities for specific situations. The head office receives quarterly reports on the health and safety activities of overseas subsidiaries and encourages them to continue to implement health and safety activities.

Safety Management Level Improvement Framework for Overseas Worksites



Social Contribution

Why Important

As the social influence of corporations expands further, the interest and demand for corporate social responsibility have been increased worldwide. Social contribution to the local community, where the company conducts the business, becomes an essential part of business survival and growth. Creating and sharing social values while pursuing profits are what the global society demands from corporations. Therefore, Samsung SDS tries to meet the needs of the community through social contribution.

What's Achieved

Item	2020 Achievement	Achievement
To launch online IT education programs for teenagers	Converted adolescent IT education programs to online and expanded the education programs nationwide to enhance the understanding of IT technology among various teenagers	Achieved
To provide education on core future technology: AI and data analytics	Developed new AI and data analytics training courses based on 'Brightics Studio', Samsung SDS AI-based data analytics solution, and operated 'Coding Campus' education program	Achieved
To spread appropriate IT culture of youth	Disseminated the appropriate IT culture and promoted academic performance of youth through specialized youth education curriculum such as 'Take a Smart Break Talk Concert' and 'Blue Elephant'	Achieved

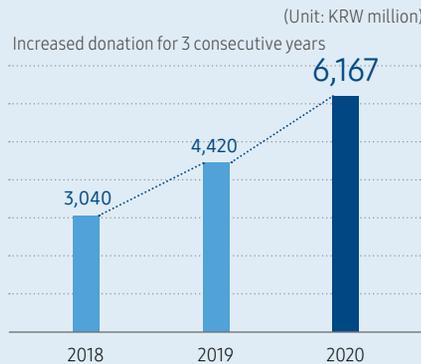
How to be Better

Samsung SDS will provide Coding Campus for teenagers allowing them to learn core digital technologies of the 4th Industrial Revolution including AI and data analytics. In addition, the company will achieve a certification of the Community Contribution Recognition System organized by the Ministry of Health and Welfare and the Korea National Council on Social Welfare, and continue to make efforts to create social values.

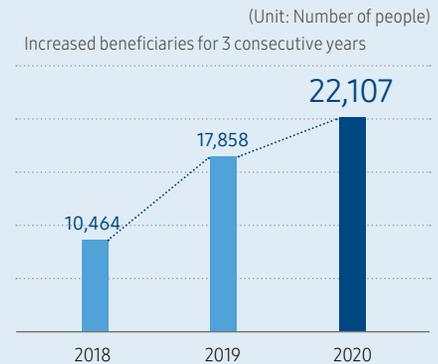


Key Figures

Social Contribution Donation



Number of Beneficiaries



Vision and Program

‘Go Together for the Future! Enabling People’

Under the company’s vision “Go Together for the Future! Enabling People”, Samsung SDS tries to empower teenagers to lead better society. The company is also developing a variety of high-quality IT education programs to nurture ICT future generations and provide children and teenagers with opportunities to strengthen their competencies.

The company not only has expanded the social contribution programs on youth education, but also has operated the program providing an education content customized for vulnerable social groups to have the equal learning opportunities among teenagers. In addition, the company continues to develop various programs to help future generations developing IT capabilities through collaboration with NGO partners.

함께가요 미래로!

Enabling People

Samsung CSR Vision in line with its business philosophy (Enabling) and core values (People and Co-Prosperity)

Item	Program	Partners	
 Education	Coding Campus	Conducting customized IT and coding educational curriculum of block coding, text coding, AI and data analytics to nurture computational thinking and creativity and to bridge the IT education gap from vulnerable social groups	JA Korea (elementary, middle and high school, youth detention center,) Kids & Future Foundation (local children center), World Vision (overseas)
	Smart Break Talk Concert	Providing education programs allowing IT experts, teachers, and students gather to communicate on how to use smartphones properly to prevent teens from developing overdependence on or addiction to smartphones	National Association of Local Children Centers, and National Information Society Agency
	Blue Elephant	Supporting the cyberviolence prevention education in accordance with the joint program by 5 Samsung IT affiliates (SDS, Samsung Electronics, SDC, SDI and Samsung Electro Mechanics)	Blue Tree Foundation, Ministry of Education
 Community Contribution	IT Education Environment	Supporting to build IT education environment for children and teenagers in the Songpa-gu community, including video/webtoons, 3D printing, drones, AI, coding courses and educational aids and programs * Talent Donation of SDS Technical Society Education Video and Education for Women who have experienced career disruptions	Heart to Heart International, Songpa-gu Office
	Meal Support for Underfed Teens	Providing breakfasts and dinners for underfed middle school students and supporting for their psychological and emotional stability in collaboration with the Songpa District Office of Education	World Vision, and Songpa District Office of Education
	Support for Youth Detention Centers	Providing IT education and scholarships for residents at youth detention centers (for their social rehabilitation), and supporting gifts under the ‘Happy Santa’ program	Korea Juvenile Protection Association, Ministry of Justice
	Hand-On Volunteer Day	Conveying Braille books, sneakers, T-shirts, tile murals, IT pop-up books, and Goma dolls for children and teenagers from employees and their family members.	The Promise, Compassion, Dream IN GongZone, and Heart to Heart International
	PC Donation	Since 1995, PCs used by employees have been repaired through cleaning and storage replacement and donated to local communities and overseas teen education institutes on an annual basis for the purpose of offering IT education. *Korea (3,442 ea), Overseas (645 ea)	JA Korea, Kids & Future Foundation, World Vision, Heart to Heart International
	Support for Sisterhood Relationship Villages	Samsung SDS lends a helping hand, provides experience programs, and operates online/ offline local specialty markets on national holidays for 12 sisterhood relationship villages in 10 regions of the nation, including Yangpyeong, Jeongan, Yeosu, Hoengseong, and Seosan.	
	Support to Promote Reading for Children Blind or Visually Impaired	Samsung SDS offers ‘health care (massaging) service’ as part of its employee welfare & benefits programs, and donates the entire fees paid by employees using such service to welfare centers for the visually impaired. The donations are used to manufacture Braille books in order to promote reading for adults and children with visual impairments.	Korean Braille Library
	Blood Donation	Samsung SDS launches blood donation campaigns in the 1st and 2nd half each year. Furthermore, blood donor cards offered by employees are donated to Samsung Seoul Medical Center, underprivileged individuals in local communities and employee families in need of such help.	Blood Management Headquarters of the Republic of Korea National Red Cross
 Grand Volunteer Festival	Sharing of True Love Festival (Apr.)	In celebration of the establishment of Samsung SDS, employees have volunteered for the month of April since 1994 to serve local communities in diverse ways, from IT education and hands-on programs to blood donation and family-engaging volunteering.	
	Global Volunteer Festival(Oct.)	The Samsung Global Volunteer Festival is joined by all Samsung affiliates, both domestic and overseas establishments, during the one month of October each year. A variety of volunteer activities are undertaken, from talent donation and environmental clean-ups to education for teenagers by respective domestic and overseas worksites.	

Major Activities and Achievements



Bridged the IT education gap and provided opportunities to explore IT-related careers
 Number of participants: 5,965

Education course development
 Number of employee volunteers: 23

*No face-to-face education volunteer activity due to COVID-19 (645 volunteers in 2019)



Campus visits to provide prevention education
 (11 schools, 2,334 persons)

Voluntary violence prevention education:
 11,793 persons

Participants in the forum: 2,000 persons



Number of schools where concert was broadcast live (17 schools, 6,940 persons)

Number of schools where concert was broadcast on tape (1 school, 900 persons)

Number of employee volunteers: 5 persons

Education

'Coding Campus', Bridging the Gap in Educational Inequality for Children and Adolescents from Vulnerable Social Groups

Samsung SDS provides a wide range of software educational curriculums for teenagers, including block coding, text coding, AI and data analytics, for elementary/middle/high schools, juvenile detention centers and local children centers teens in collaboration with JA Korea and the Kids & Future Foundation, NGOs with a focus on youth education. The company designed this curriculum to help the teenagers to have computational thinking, cultivate problem-solving skills, explore their career paths and achieve the sustainable developments.

In 2020, Samsung SDS internally developed AI/data analytics educational curriculum using Brightics Studio and operated pilot career exploration curriculum of data analysts for 12 middle schools. The company plans to expand the educational curriculum to high schools in 2021.

'Blue Elephant', Cyberviolence Prevention Education for Teenagers

In February 2020, Samsung SDS launched the 'Blue Elephant' project in collaboration with Blue Tree Foundation (NGO), Ministry of Education, Community Chest of Korea and 5 Samsung IT affiliates to present international standards for youth cyber-violence eradication and prevention education.

The company developed a mobile application for cyber-violence prevention education and organized a pool of experts in the fields of culture, IT, education, counseling, research and policy analysis. Cyber-violence survey was conducted on 10,000 elementary, middle and high school students across the country to understand the current status of cyber violence, create a public discussion, and establish the foundation of cyberviolence prevention education. Samsung SDS developed the cyber-violence preventive education curriculum and workbook, and conducted online and offline prevention education for parents, teachers, and students.

Meanwhile, the company organized a monitoring team and cyber peer mentoring program to induce internal changes among teenagers and provided a counseling service and recovery manual for the cyberviolence victims. The company also provided family therapy for families and contributed to prevention and elimination of cyber violence in various ways, including social media campaigns, supporting cyber-violence prevention clubs, and holding forums for personnel working in adolescent education.

'Take a Smart Break Talk Concert', Proper Use of Smartphone for Teens

Samsung SDS held the '2020 Take a Smart Break Talk Concert' to create a culture of proper Smartphone use among teens in 18 middle and high schools in conjunction with the National Information Society Agency and the National Association of Local Children Centers.

The 'Take a Smart Break Talk Concert' was broadcast live on YouTube at 17 schools, and a recorded broadcast at 1 school. The concert is designed to reduce teenagers' overdependence on smartphone, suggest proper use of smartphones and provide various methodologies and guide for teenagers to enjoy their healthy digital culture.

Community Contribution

Improving Creative and Convergent Thinking Skills and Fostering Human Resources Based on IT Educational Environment

While IT education has become more common and important for children and teenagers, vulnerable social groups have relatively limited access to IT education, which could create the knowledge gap. To solve this problem, Samsung SDS offers a wide range of educational programs such as coding, 3D printing, drone, Artificial Intelligence (AI), webtoon, video and media production to children and teenagers from vulnerable social groups in Songpa-gu, Seoul to nurture the IT-related skills and creative thinking.

We donated idle PCs for coding education and provided various digital and IT education programs in collaboration with the Heart to Heart International Foundation for women who have experienced career disruption. The company also produces/supports the educational videos related to the 4th Industrial Revolution including data security, data analytics and artificial intelligence at existing IT education classrooms in Songpa-gu.

Meanwhile, the Company opened an IT education space, 'IT Maker Space (2nd)', at the Geummaru Library in Jangji-dong, Songpa-gu in 2019, and opened 2 additional spaces in Macheon 2-dong Community Center (5th) and Garak-2 dong Heart to Heart International Foundation (6th) in 2020. Samsung SDS named these locations as 'Songpa Future Education Center' to nurture creative, future talents and make them as representative youth IT education spaces in the community.

Samsung SDS conducts periodic meetings with Songpa-gu Office and the Songpa District Office of Education (local community groups) to discuss IT education matters and also holds discussions with JA Korea and Heard to Heard International Foundation regarding the social contribution programs on a monthly basis.



Number of students who attended the program: 423 persons

Opened 2 Future Education Centers



Breakfast and dinner support
(6 schools, 80 persons)

Support for "Breakfast and Dinner" for Underfed Teens

Samsung SDS provided free breakfasts and dinners to the underfed middle school students in Songpa-gu, Seoul in collaboration with World Vision, an international relief organization for children and teenagers. The company organized breakfast/dinner meal plans based on their preferences and nutrition guidelines and provided free meals to 80 underfed teenagers from 6 different schools (about KRW 70 million).

Case 1 — A single-parented child had to prepare his meal for himself. He often starved himself because he was very stressed out of preparing meal and eating alone. However, when he received free lunch and dinner boxes provided by Samsung SDS, he could eat and focus on studying. The child's mother who knew that her child often skip meals, was relieved. The child now enjoys his school life and gets along well with his classmates. He even requested first the lunch box support for next year.

Case 2 — A student living only with father often had to take care of himself when his father went on business trips. Due to frequent absence of his father, he often skipped meals, was late for school, and had problem with hygiene as well. In particular, he had food obsession caused by lack of affection. He could not control his obsession with foods even when eating with others. However, his issues were resolved after receiving the lunch boxes through Samsung SDS meal support program. His school achievements and interpersonal relationship were improved noticeably. Also, his food obsession has been getting better.



Number of Residents at juvenile detention centers who received "Happy Santa" gifts
1,400 persons

Scholarship per person (20 students)
KRW 1 million

"Happy Santa" & "Scholarship" to Support for Residents at Juvenile Detention Centers

Happy Santa is a social contribution project that allows Samsung SDS employees to deliver a message of hope along with gifts directly to residents of juvenile detention centers who have experienced isolation from society and their families. The company helps the students feel grateful and get the emotional support through sponsors' gifts and message of hope, so that they can settle down in society. In 2020, employees provided "Message of Hope Calligraphy Postcard" with necessary items through contact-free delivery due to COVID-19, while making 'Hope Carol of the Symphony Orchestra' for juvenile detention centers. Meanwhile, Samsung SDS provides scholarships for college students from juvenile detention center so that they can have a better college life. Responsible team establishes the guidance of self-reliance and divided them into 3 levels (Crisis/Cautious/General) based on school performance and lifestyles. Based on these grades, the company provides living expense to these recipients, which enable them to have a stable college life and become more independent.



Number of braille books produced: 24

Number of record books produced: 18

Number of books with braille label: 144

Number of book rentals: 1,450

Create an Inclusive, Equal Reading Opportunities to People Blind or Visually Impaired

Providing an equal reading opportunity and bridging the knowledge gap for visually impaired children, Samsung SDS created a culture of equal reading culture. We provided braille books and other forms of books for braille literacy, and shared books with other library for disabled. The biggest achievement is that the company produced electronic braille and recording books and provided online/streaming services available on DREAM (Direct Rapid Easy Accessible Material Service) platform, mobile service which provides materials to the people who are blind or visually impaired in an accessible format. This enabled them to read anywhere and anytime. They can also read novels, essays, and bestselling books through electronic braille books and recordings (i.e. DAISY, Digital Accessible Information System). Furthermore, the company have placed internally produced children braille books at moving library, "BookSori Bus", and support disabled children to develop interests in reading.



Number of donated items: 332 cases

Number of employees participated in Sharing Festival: 110 employees

Samsung SDS' Online Sharing Festival

Samsung SDS held an 'Online Samsung SDS Sharing Festival' to celebrate its Foundation Day in April in which all employees share their thoughts under the theme of 'Sharing'. The company shared photos of its past social contribution activities, recalled the memories, and promoted its social contribution activities through NGO's introductory videos to strengthen the company's partnership with NGOs. In addition, the company increased the awareness on social contribution by sharing its social contribution vision and sustainability goals with employees. The company also launched resource recycling campaign in which the company installed and operated unattended donation bins at 5 operation sites (Jamsil, Suwon, Sangam, Pangyo, and Umyeong). A large number of employees have donated various items such as books, clothing and miscellaneous goods to the community. Through various social contribution campaigns, Samsung SDS continues to make a contribution to the community.



The 29th 'Songpa-gu Resident's Day'

Samsung SDS Won Songpa-gu Resident Award

Samsung SDS was awarded the 'Songpa-gu Resident Award' at the 29th 'Songpa-gu Resident's Day' in September 2020 in recognition of its continuous contribution to the local community and contribution to IT education for the children. The company will continue to serve the local community based on the company's capabilities. In 2021, the company plans to achieve the Community Contribution Recognition System certification issued by the Ministry of Health and Welfare and the Korea National Council on Social Welfare and continues to create social values.

Global Social Contribution

Support for 'IT Education' & 'Infrastructure' to Foster Digital Cultural Information in Mongolia and Vietnam

Samsung SDS supported IT devices and educational programs for students who have limited IT education and lack awareness of proper Internet use in Mongolia and Vietnam.

In Mongolia, many students at public schools in Ger villages (traditional Mongolia town) were suffering from poor IT education environment. Public school No. 37 and No. 72 started construction to build computer rooms, but no computer equipment or desks were supplied so that computer rooms were still empty. Samsung SDS offers Infrastructure support program to allow those schools properly to prepare their computer rooms and to create educational environment where students can effectively learn knowledge and skills in information and communication technology and engineering. Students plan to participate in major competitions such as national engineering contests in their country.

In Vietnam, Samsung SDS presented IT infrastructure support to 4 middle schools, which are facing the poorest educational environment in Da Long. A total of 63 computers were provided to 4 middle schools to increase the efficiency of IT education. In addition, the company provides programs for proper use of computers and the Internet and prevention of child sexual exploitation to lay the foundation for recognizing and improving seriousness of violation of children's rights in Vietnam.



Number of child beneficiaries in Mongolia:
1,724 persons

Number of child beneficiaries in Vietnam:
1,121 persons



Number of child participants: 800 persons

'Bridging the Information Gap' among Children through IT Education Teaching Aids Created by Employees

Samsung SDS' employees participated in 'hands-on' social contribution campaign to provide teaching aids for the children in local children's centers, and international children in developing countries. In the era of 4th Industrial Revolution and information explosion, the company provided equal educational opportunities for children who are at risk of being alienated depending on their local and economic conditions to bridge the information gap and dream of the future.

The company delivered pop-up books to a local daycare center in San Pedro, Philippines. The center is located in a 'Garbage Village' where the poor people live together to make a living through a garbage disposal site. Children who have poor living conditions without external support received these IT education pop-up books as a gift for the first time in their lives. This enabled children to explore diverse career paths beyond traditional jobs such as farmers and teachers as they learned more about IT industry and related professionals (e.g. developers, programmers, etc.)

Case — Stephanie, a seven-year-old girl, used to play with her younger brother by picking up stones, leaves, and garbage from the roadside. She said she wanted to grow up and make money as soon as possible, just like her parents. She replied that she wanted to earn a lot of money to eat delicious food with her younger brother and buy toys. When Stephanie received the pop-up book as a gift, she touched the book and played with it for a long time, and said that she wanted to become a programmer like Ada Lovelace in the book. This project helps her to see a new world she never experienced before.



Support for Teaching Aids for International Underprivileged Children

Customers

Why Important

In today's digital era, information technology is evolving rapidly and new technology is emerging constantly. As a result, customer needs shift quickly, and customers expect even better experience every step of the way. Samsung SDS leverages its abundant IT expertise and deep understanding of customer business to offer tailor-made services in wide-ranging professional areas and to relentlessly pursue change to deliver innovative customer experience.

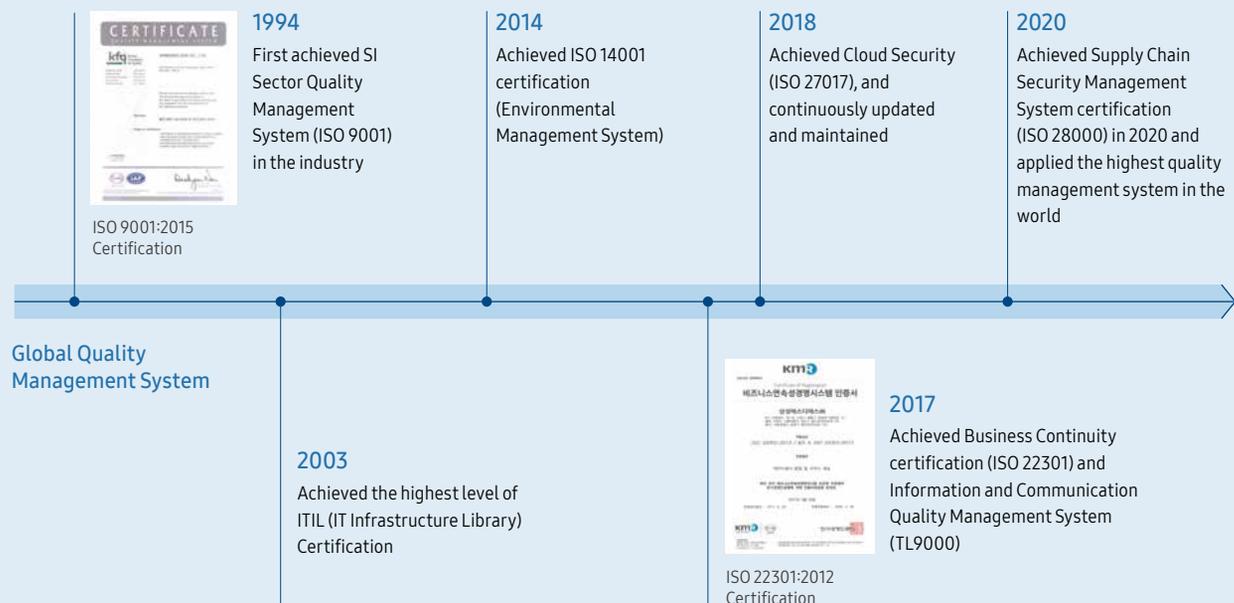
What's Achieved

Item	2020 Achievement	Achievement
To reach 93 points in customer satisfaction	Scored 93.3 points in customer satisfaction	Achieved
To reach 0.060ppm in failure rate	Reached 0.053ppm in failure rate	Achieved
To reach 25% in the ratio of quality certification examiners	Achieved 25% in the ratio of quality certification examiners	Achieved
To reach 40% in the ratio of ISTQB-certified testers	Reached 44% in the ratio of ISTQB-certified testers	Achieved
To advance the contact center	Enhanced AICC of AI platform-based intelligent contact center	Achieved

How to be Better

Samsung SDS will advance AICC (AI Contact Center) to improve customer satisfaction. We will manage the systemic risks from technology disruptions based the IT monitoring system. In the event of IT infrastructure incidents, rapid response and recovery actions will be implemented. Besides, to achieve revised customer satisfaction target, we will further improve our quality risk management.

Key Figures



Quality Management

Quality Charter

Samsung SDS sets forth quality vision of delivering impressive customer experience through continuous quality innovation, and faithfully abides by the following 5 action principles of quality management.



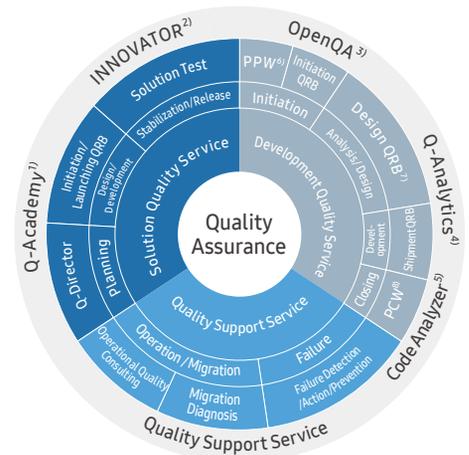
Project Management and Quality Activities through OpenQA



Quality Management System

Under the quality management principles of quality, customer satisfaction, and sustained innovation, Samsung SDS operates a quality management system by building the quality assurance frame by service type.

- 1)Q-Academy Samsung SDS unique training system designed to nurture quality experts
- 2)INNOVATOR Samsung SDS unique methodology
- 3)OpenQA Integrated quality management system
- 4)Q-Analytics Quality analysis system for risk prevention
- 5)Code analyzer Code analysis and inspection tools
- 6)PPW Project Planning Workshop
- 7)QRB Quality Review Board, essential activities to achieve quality goals
- 8)PCW Project Closing Workshop



INNOVATOR Development Methodology

Samsung SDS effectively manages the quality of its business areas by utilizing the innovator methodology which standardize operation methodology and procedures based on its experience and know-how. Through smartTogether.com, the company share the methodology with business partners and also provided the training and guides on how to execute the innovator methodology, which strengthen partners' technology competitiveness.

International SW Process Model Samsung SDS Management Philosophy Various Business Experience	> > >	Samsung SDS' Unique Methodology INNOVATOR	Smart Factory FA Consulting / BIM Consulting / PLM Level Diagnosis / MES Implementation	Logistics Logistics System (GTM) / SCM	Solution Product Development (SW) / Terminal Product Development
			AI / Analytics / IoT Product Development (SW) / Application (Agile) / Big Data Platform / Chatbot / RPA / IoT Implementation	Cloud Product Development (SW) / Cloud Transformation / Cloud Infrastructure	Incubation Product Development (SW) / Application Implementation (Agile)
			Infrastructure Data Center / Network / Security / Telecom NW / Telephony	ITO Consulting / MIS / IT Development / APP Operation	General Proposal / R&D / Project Management / Other



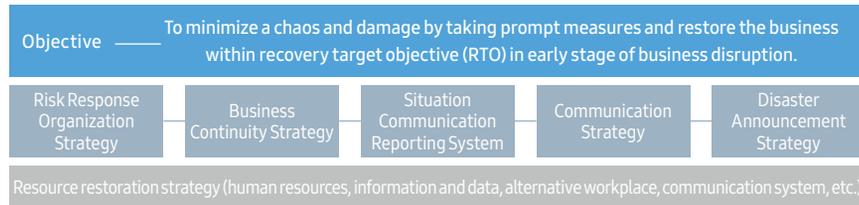
Systemic Risk Management from Technology Disruptions

At Samsung SDS, systemic risk management from technology disruptions is performed as part of the daily business routine to prevent any service or system failures even before they occur. Failure and disaster recovery drills are conducted regularly every year to take swift countermeasures and recovery measures in the event of IT infrastructure incidents in order to minimize their impact on customers' business operations. To swiftly respond to technology disruptions, Samsung SDS performs constant monitoring on infrastructure equipment and applications 24/7. If any sign of anomaly is detected, this is shared in real time with relevant departments to promptly take necessary actions. Following these actions against IT infrastructure incidents, Failure Review Board (FRB) meetings are held with Root Cause Analysis (RCA) experts present in order to review technical causes, operational conditions, countermeasures, and preventive measures, from the occurrence of failures to the actions taken, and to identify the action items to be disseminated across the board to prevent similar failures from taking place in the upcoming years.



Business Continuity Plan

Samsung SDS reviews the optimal responses for various risks based on the organizational structure analysis, Business Impact Analysis (BIA) and risk assessment (RA). The company also establishes and operates measures to minimize possibility and damage of business interruption and to secure business continuity.



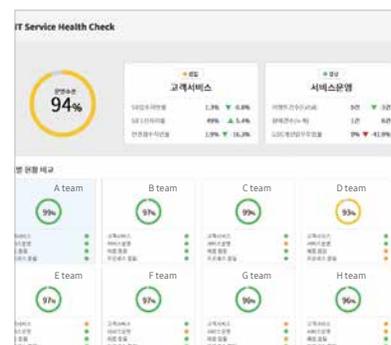
Number of technology disruptions and Customer Downtime (2020)

Item	Indicator Description	Number of Occurrences
Performance issues	Number of failures between 10 ~ 30 minutes	19 times
Service disruption	Number of failures over 30 minutes	48 times
Customer downtime	Reflect on duration of failures and the number of affected SW or IT service licenses	277 hours

Quality Management System

Samsung SDS uses its Open QA system to manage quality issues and risks by business type. Open QA system expanded into mobile platform which enables the company to register and analyze the inspection results and take necessary actions in real time. The company monitors and manages its quality delivery level by utilizing 'IT Service Health Check' that provides the real time status/level of operation - customer service, service operation, product quality, and process quality - by department.

IT Service Health Check Dashboard

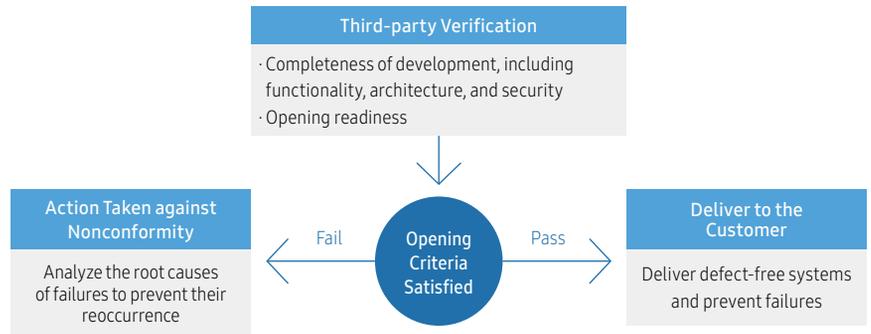


Quality Risk Management

Samsung SDS is managing quality risks through regular quality improvement activities and securing stable quality by applying quality management processes for each business type.

Quality Management Process by Business Type	System Development Business	<ul style="list-style-type: none"> Quality checks in each of the major project phases and takes corrective actions on nonconformities prior to advancing to the next phase Continuously undertakes quality innovation initiatives including system-based risk management and advanced process quality reinforcement.
	Operation/Service Business	<ul style="list-style-type: none"> Provide stable operation of its products and services and to reach the service level agreed upon with its customers Conduct quality inspections at the time of migration and service opening (guarantee the stable operation of services) Regularly improve operational quality and fundamentally eliminate the occurrence of failures in order to deliver even greater customer satisfaction.
	Solution Business	<ul style="list-style-type: none"> Implement its quality management process from solution planning to development and release With the DevOps framework under operation, constantly monitor the status of development quality Perform quality inspections on product functionality, CX, performance, and security prior to their release Secure source codes with exceptional maintainability and development productivity through code quality management (improving the quality of its solutions)

Quality Review Process (System Integration Project)



Migration Diagnosis Process (Operation/Service Business)

Plan and Prepare	<ul style="list-style-type: none"> In transferring a developed system into the operational phase In shifting to a new system operator
Diagnose and Analyze	<ul style="list-style-type: none"> Check essential maintenance deliverables Check application functionalities Diagnose security vulnerabilities Diagnose the architecture
Take Corrective Actions	<ul style="list-style-type: none"> Take action against all nonconformity areas Deliver a defect-free, failure-free system

Solution Testing Process (Solution Business)

Test Preparation	<ul style="list-style-type: none"> Establish a process and an organization Secure testing scenarios Create an automated test environment
Test Execution	<ul style="list-style-type: none"> Test based on scenarios Achieve automated regression testing
Test Performance	<ul style="list-style-type: none"> Reduce test effort Increase test coverage

Quality Innovation Case

With the DevOps framework, Samsung SDS improves development productivity and code quality by providing an integrated development environment that supports convenient application development. Continuous monitoring enables performance change analysis before and after application deployment, and also supports early response to service failures.

Support for Integration of Standard Development Tools in PaaS Environments	Simple Configuration of Development Environment	Convenient Build/Release
<ul style="list-style-type: none"> - Support for integrated linkage of key tools for CI/CD - Securing accessibility through integrated authentication 	<ul style="list-style-type: none"> - Automatic configuration of development projects based on Dev. Starter - Support for major development languages and F/W 	<ul style="list-style-type: none"> - Automatic configuration of build/release pipeline - Support for various release methods and rollback

Improved Quality Awareness among Employees

Samsung SDS is clearly aware that all its employees should contribute to completing their project as a lead agent of quality management. As such, the company offers special quality training every year to help domestic and overseas employees strengthen their quality competency.

Education for Improved Quality Awareness among Employees

Quality mindset training	· Focus on problem-solving based on quality management case studies and aims to improve employees' quality awareness
Professional training	· Training for fostering professionals working in relation to operation/quality management
Code review training	· Code review training to quality personnel to establish top-notch quality
Root Cause Analysis (RCA) training	· Training for nurturing RCA professionals and in-house risk managers · Improving capacity to analyze root causes and solve problems (online format)

Global Quality Management System

Samsung SDS first achieved SI Sector Quality Management System (ISO 9001) in 1994, and Master Level of ITIL (IT Infrastructure Library) in 2003. The company achieved Environmental Management System (ISO 14001 certification) in 2014, and Business Continuity Management System (ISO 22301 certification) and Communication Quality Management System (TL9000 certification) in 2017. These certifications have been continuously updated and maintained. In 2020, Samsung SDS achieved Cloud Control Matrix-based Maturity Assessment (CSASTAR certification) and Supply Chain Security Management System (ISO 28000 certification), while applying/expanding the world's best quality management system.



Quality Management System (ISO 9001)



Business Continuity Management System (ISO 22301)



Supply Chain Security Management System (ISO 28000)



Cloud Control Matrix-based Maturity Assessment (CSA STAR)

Improved Customer Service

VOC Handling Data

Item	VOC Received	
	(Number of Cases)	Resolution Rate(%)
2018	943,702	100
2019	936,844	100
2020	851,751	100

Customer Satisfaction Status and Target

Item	Customer Satisfaction (Point)
2018	93.7
2019	92.5
2020	93.3
2021	94.0(Target)

Customer Service

Customer Service Channel

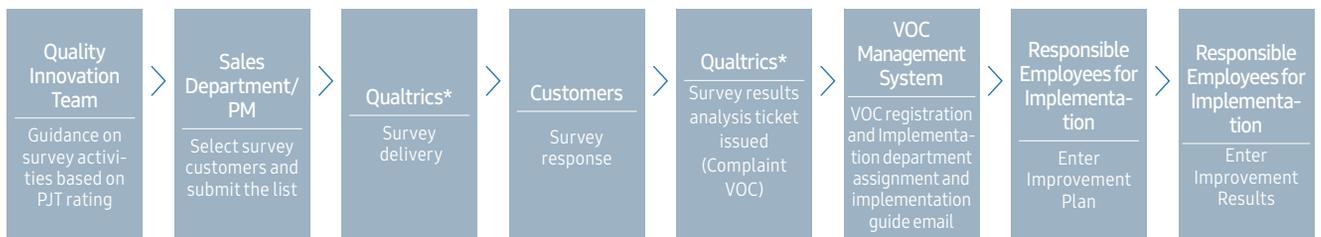
In 2020, Samsung SDS improved AICC powered by AI technology to automate customer consultation and to pave the way to bring innovation to customer support operations. Diverse VOC collection channels were made available including the online customer support portal, chatbots, and chats. Furthermore, the AI Assistant/Analytics helps increase the accuracy of responses while AI analytics allowed for the real-time monitoring and automated assessment of counseling quality.

Customer Communication and Customer Satisfaction (Yearly/Regularly)

Samsung SDS has requested Gallup Korea to conduct annual surveys that comprehensively measure customer satisfaction by industry, position, and business type since 2008. In 2020, we reached 93.3 points in customer satisfaction. The score has been above the 90 points for the past 3 years.

For better customer satisfaction, Samsung SDS established internal customer satisfaction survey process to receive feedbacks from customers and identify customer experiences in real time. In recognition of this effort, Samsung SDS awarded the CIO100-Customer IT Innovation category hosted by IDG for 6 consecutive years.

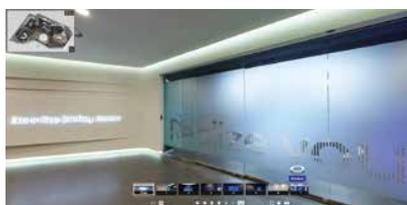
Internal Customer Satisfaction Survey Process



* Enterprise survey management solution for 24/7 customer experience management

Content Released in 2020

Item	Number of Production (Case)
Sales presentation	29
Brochure/leaflet	81
Video	85
Insight report	56



Virtual EBC

Customer Communication

For customers and suppliers to better understand our businesses and to build trusted relations, Samsung SDS have strengthened communication through digital channels. The official website was renewed for user friendliness and accessibility. We achieve Web Accessibility Certification every year. That is, convenience for disabled and socially disadvantaged people were deeply concerned. The company provides a mobile optimization environment that fits the trend of the mobile era.

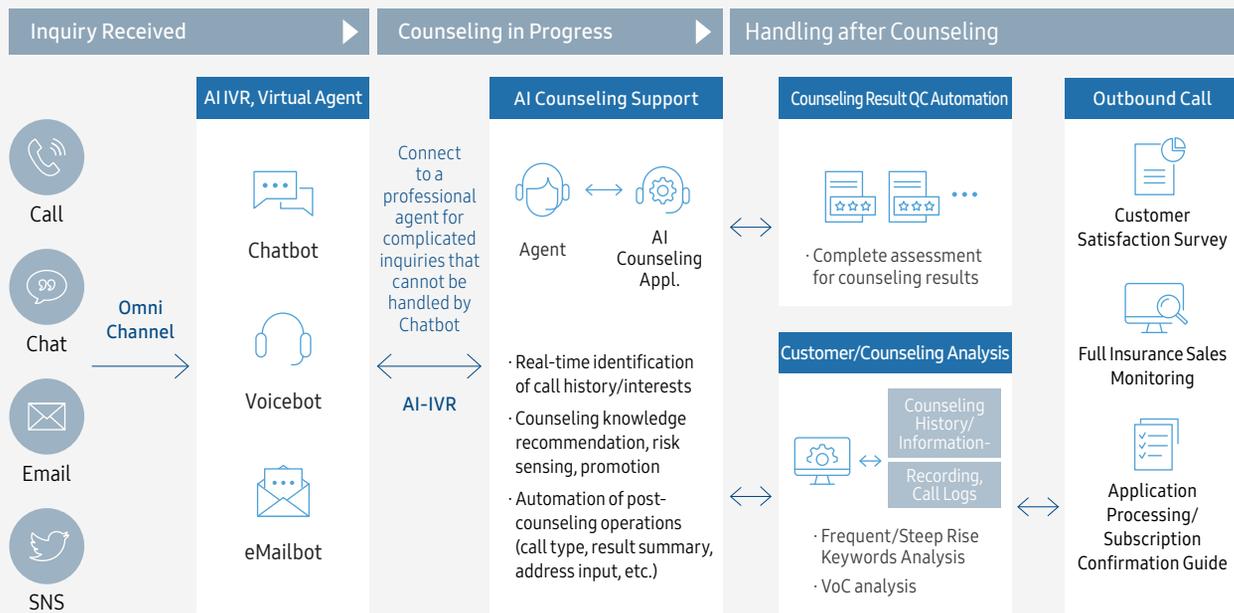
Samsung SDS' businesses and services are introduced at EBC (Executive Briefing Center) at Jamsil and Pangyo campuses. The EBC at Jamsil established online live demo environment in respond to untact era. Also, we have a YouTube channel and send newsletters to 150,000 potential customers. Samsung SDS strives to strengthen digital marketing such as publishing IT Insight Report and creating contents to introduce our business and solutions.

Special 03

AICC
(AI Contact Center)

AI-based Customer Contact Center

Un-tact and remote work culture have become common due to COVID-19 so that AI is rapidly applied to contact center. Samsung SDS implemented 'New Normal Customer Service' through the AICC. AICC is a solution that combines AI technology (voice recognition, natural language understanding, etc.) with existing call center systems to provide automated customer support services which include virtual counseling, counseling support, and counseling analysis as its key functions.



In November 2020, AICC's was implemented to Samsung SDS Contact Center and large Samsung affiliates' contact centers. AICC was first applied to Samsung SDS Contact Center to realize intelligent the entire process of customer consultation through various channels such as e-mail, chatbot, and phone. Once AICC receives an inquiry, an AI agent (chatbots or voicebots) performs tasks including inquiry response, subscription screening, and service application process.

More complicated inquiries like technical support will be automatically connected to professional agents. AI then analyzes the conversation to recommend appropriate answers and contents needed for handling the inquiries. AI also improves quality by analyzing customer complaints (VoC) in real time and evaluating customer service results.

AICC of Samsung SDS allows the advantages of the following: reduce more than 50% of simple and repetitive tasks; reduce 20% of counseling time through real-time classification of customer inquiries and answer recommendation; new product planning and marketing based on conversation analysis. For example, AICC can remarkably enhance the efficiency of an insurance company with AI performing full insurance sales by monitoring phone calls while auditing the quality of calls as well.



AICC

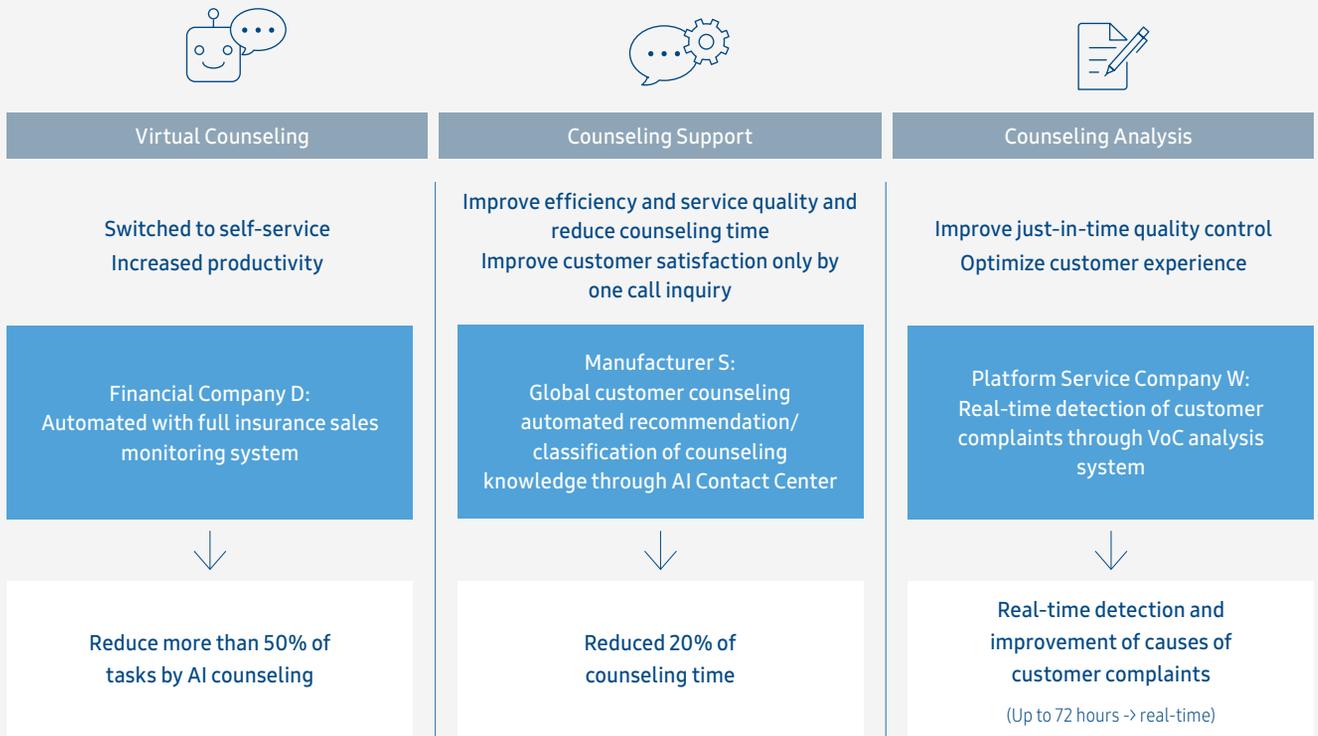
Environment

Labor/Human Rights

Social Contribution

Customers

Suppliers



Samsung SDS will apply AICC to manufacturing and financial industries. The company introduces a system that enables 24/7 counseling to improve efficiency of counseling, and enhance customer satisfaction and service quality.

SDS Contact Center Chatbot Counseling Screen



Suppliers

Why Important

Social and environmental factors of suppliers are evolving as corporate risks for global companies. As a result, global companies are demanded to manage social and environmental risks throughout their product and service processes. One critical factor that strengthens a company's competitive edge lies in its ability to network with suppliers for mutual growth. This implies that businesses should follow transparent criteria and procedures and establish fair trade principles to maintain mutually-trusted relationships. Samsung SDS needs to generate synergy effects with its suppliers in order to elevate mutual cooperation into a whole new level and to pursue shared growth as the company can be only as competitive as its suppliers.

What's Achieved

Item	2020 Achievement	Achievement
To maintain the 'Most Excellent' rating in the Win-Win Growth Index	Rated 'Most Excellent' for 3 consecutive years	Achieved
To share the Innovator Methodology	42 companies with 6 methodologies	Achieved
To expand financial support	Expanded Mutual Growth Fund by 33% compared to 2019 (KRW 45 billion → KRW 60 billion)	Achieved
To develop new shared growth programs	Supported corporate contactless collaboration solution for free of charge	Achieved

How to be Better

Samsung SDS will continue to conduct ESG self-assessment and on-site due diligence for suppliers to strengthen their ESG management. ESG audit results will be used for supplier evaluation. ESG management is recommended for suppliers to manage their social and environmental factors resulted by corporate activities when signing contracts between Samsung SDS and suppliers. The company will continue launching programs to strengthen sustainability and competitiveness of suppliers.



Key Figures

Rated 'Most Excellent' in the Win-Win Growth Index for 3 consecutive years

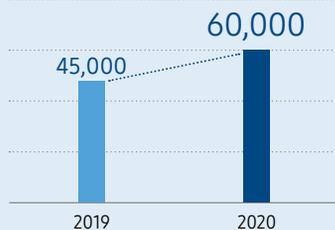
Supplier ESG Performance Assessment Process



Amount of Mutual Growth Fund

(Unit: KRW million)

Expanded **33%** compared to 2019



4 Fair Trade Principles

<p>Follow best practices for signing contracts</p> <p>We introduce and implement the 'best practices for signing contracts' recommended by the Korean Fair Trade Commission.</p>	<p>Create and operate the Subcontract Deliberation Committee</p> <p>We perform preliminary deliberations on subcontractor deals that exceed the set value to promote the fairness and legality of such transactions.</p>
<p>Select and manage suppliers</p> <p>We ensure fairness and transparency in selecting and managing suppliers, and operate partner management policies in a reasonable and transparent manner.</p>	<p>Follow best practices for document issuance and preservation</p> <p>We introduce the 'best practices for issuing and preserving written documents in signing subcontractor agreements and making subcontractor deals' recommended by the Korean Fair Trade Commission to take the initiative in establishing fair trade principles.</p>

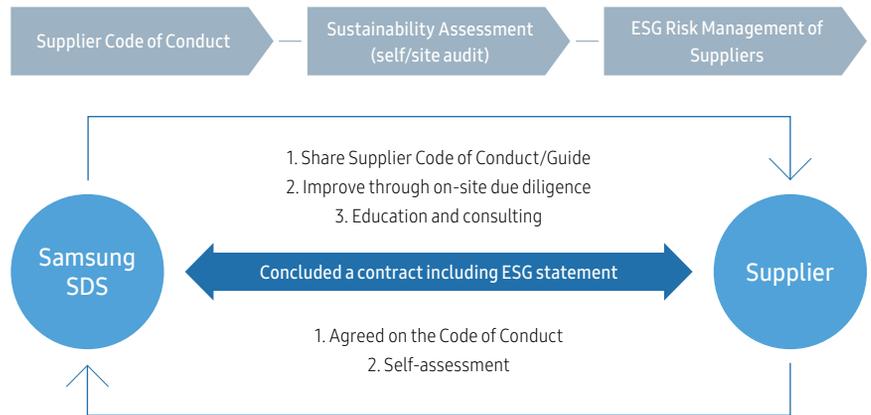
Supply Chain Management



Supplier Sustainability System
 Acquired Silver rating at EcoVadis, a global ESG evaluation initiative including sustainable supply chain

Sustainable Supply Chain

Sustainable management is evolving as a very important value for suppliers that are engage in business activities with Samsung SDS. As a result, Samsung SDS has established a company-wide policy and institutional system to effectively spread the social and environmental sustainability management capabilities of its supply chain to its suppliers. The company promotes activities to cooperate in the sustainable management of suppliers in the overall process of its business, such as evaluation, selection, and contract of suppliers.



Supplier Code of Conduct

Samsung SDS published the Supplier Code of Conduct for suppliers to clearly present level and value of ESG management system pursued by Samsung SDS. The Supplier Code of Conduct consists of 17 topics (voluntary work, prohibition of discrimination, etc.) in 4 areas (Labor & Human Rights, Safety & Environment, Ethics, and Management System).

<u>1. Labor and Human Rights</u>	<u>2. Safety and Environment</u>	<u>3. Ethics</u>	<u>4. Management System</u>
1.1. Freely Chosen Employment 1.2. Young Workers 1.3. Working Hours 1.4. Wages and Benefit 1.5. Humane Treatment 1.6. Non-Discrimination 1.7. Freedom of Association	2.1. Emergency Preparedness 2.2. Environmental Permits 2.3. Pollution Prevention	3.1. Business Integrity 3.2. Intellectual Property 3.3. Protection of Identity 3.4. Privacy	4.1. Company Commitment 4.2. Corrective Action Process 4.3. Supply Chain Responsibilities

Key Values of Samsung SDS' Sustainable Supply Chain System

- Establish a management system to protect employees' rights and respect employee by complying with the provisions of laws relating to employee's human rights, occupational safety and environmental protection.
- Establish safe and healthy workplaces recognizing that the safety of workers is essential in business activities.
- Recognize the environmental impact of purchasing activities, protect resources and minimize environmental negative impacts for future generations

Sustainability Assessment

Samsung SDS systematically evaluates suppliers' ESG management performance by considering suppliers' self-assessment, on-site due diligence and ESG related innovation activities. Additional points are reflected in the supplier selection assessment according to whether a supplier participate in the ESG assessments and its results.



Supplier ESG Assessment Criteria: 35 items in 4 area

Area	Number of Items	Item
Labor and human rights	23	Prohibition of childlabor, conclusion of labor contracts, minimum wage compliance, etc.
Safety and environment	4	Emergency preparedness, environmental permits, etc.
Ethics	4	Business integrity, no improper advantage, intellectual property, etc.
Management system	4	Corrective action, supply chain responsibilities, etc.

Supply Chain ESG Targets

Assessment criteria of responsible department	ESG items are included in KPI of Partner Collaboration Team (Purchasing department)
Number of suppliers practicing the Code of Conduct	203 suppliers
Ratio of contracts with ESG criteria	Automatically added through Samsung SDS' purchase system (100%)
Self-assessment rate (outsourced, home IoT)	Target: 107 out of 203 suppliers (53%)
On-site due diligence rate (outsourced, home IoT)	Target: 42 out of 203 suppliers (20%)
Training on sustainable procurement	All people in charge of purchase participated (100%)

ESG Risk Management of Suppliers

To encourage establishing ESG management system protecting suppliers' labor rights, safety, and environment, Samsung SDS incorporates items related to sustainable management in all contracts.

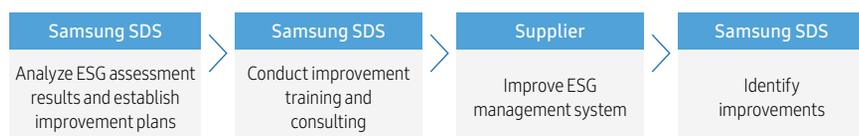
ESG-related Provisions added in Contracts with

'Supplier' shall protect employee' rights, create a safe and healthy work environment, recognize their impacts on the environment in order to establish a sustainable supply chain, and strive to protect resources for the next generation.

ESG Management of Suppliers

Samsung SDS constantly monitors suppliers' ESG status and management system from supplier selection to contract implementation including inspection and improvement in current ESG status along with the entire process. For further ESG management of suppliers, we are also in the process of building and developing suppliers' ESG management system.

ESG Improvement Process of Suppliers



Shared Growth



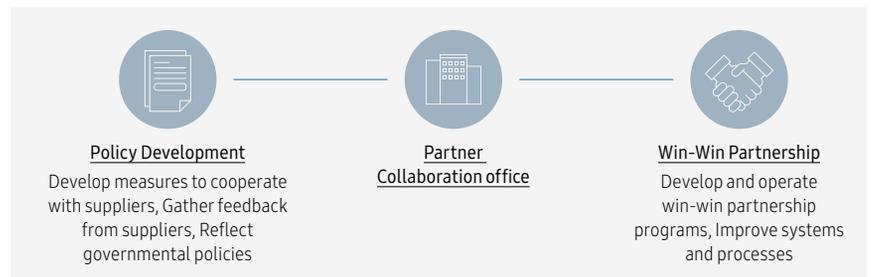
Shared Growth Policy

To advance partnerships that contribute to shared growth and development, Samsung SDS formulates and implements relevant policies. The company sets sustainable and mutual growth implementation strategy based on trust from fair trade culture to share its vision with suppliers.

Policy Goal	Generate synergy effects with suppliers to pursue shared growth		
Policy Keyword	Fairness	Collaboration	Value creation
	Create a fair and transparent business environment	Strengthen the competitiveness of suppliers through cooperation and assistance	Create future values through creativity and innovation
Detailed Action	<u>Fair Trade</u> 4 Fair Trade Principle Practices Unfair Practice whistleblowing system	<u>Financial (Funding) Support</u> Mutual Growth Fund Make cash payments	<u>Business Support</u> Discover and nurture solution suppliers Performance sharing program
	<u>Technical Support /Protection</u> Share the development methodology Technology escrow program	<u>Education/Training, Welfare & Benefits</u> Support suppliers with training Welfare & Benefits Program	<u>Win-Win Culture (Communication)</u> Supplier collaboration portal Supplier Council

Shared Growth Implementation Framework

Samsung SDS develops and implements company-wide shared growth policies through the Partner Collaboration office which serves as a dedicated shared growth organization. We also operate the Partner Council as a regular consultation body to exchange opinions with its suppliers and periodically provide them with information on possible business opportunities on Samsung SDS's major business.



Rated 'Most Excellent' for 3 consecutive years in the 'Win-Win Growth Index'

External Performance of Shared Growth Initiatives

Samsung SDS has been rated 'Most Excellent' for 3 consecutive years in the 'Win-Win Growth Index' evaluation performed in 2020. The index quantitatively evaluates large businesses for their performance in promoting shared growth with their small and medium-sized suppliers with an aim to facilitate mutual growth and partnership, and is published every year by the Korea Commission for Corporate Partnership. Samsung SDS vows to uphold the principles of fairness and transparency in conducting business and to create a culture of win-win partnership with suppliers.

Fair Trade Policy

To establish transparent and fair trade practices with suppliers, Samsung SDS has introduced the 4 Fair Trade Principles to comply with subcontracting and other relevant regulations and to prevent any unfair practices from occurring in doing business with suppliers.

4 Fair Trade Principle Practices

<p>1. Follow best practices for signing contracts</p> <p>We introduce and implement the 'best practices for signing contracts' recommended by the Korean Fair Trade Commission, and set an example in doing business with suppliers in a reasonable and fair manner and facilitating shared growth with them.</p> 	<p>2. Select and manage suppliers</p> <p>We ensure fairness and transparency in selecting and managing suppliers, and operate partner management policies in a reasonable and transparent manner.</p> 
<p>3. Create and operate the Subcontract Deliberation Committee</p> <p>We perform preliminary deliberations on subcontractor deals that exceed the set value to promote the fairness and legality of such transactions.</p> 	<p>4. Follow best practices for document issuance and preservation</p> <p>We introduce the 'best practices for issuing and preserving written documents in signing subcontractor agreements and making subcontractor deals' recommended by the Korean Fair Trade Commission to take the initiative in establishing fair trade principles.</p> 

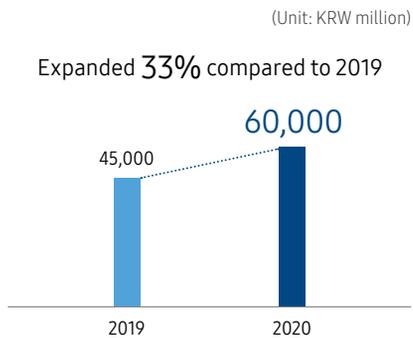
Fair Trade and Fair Contract

To prevent any unfair trade practices or unjustified behaviors that may occur in doing business with suppliers, Samsung SDS always includes ethics management action principles in signing subcontractor agreements with these suppliers. In 2012, the company participated in the public-private task force team project undertaken to improve standard software business subcontracting practices: not only did the company introduce the standard subcontractor agreement forms recommended by the Fair Trade Commission, but also expanded their application to construction (3 types), manufacturing (2 types), and logistics (2 types) agreements in addition to software (4 types). Furthermore, the company adopted an electronic contract system through its supplier collaboration portal 'smartTogether.com' to prevent verbal order awards, unreasonable order cancellations, and other unfair trade practices.

Improved Payment Terms

To help suppliers reinforce their financial stability, Samsung SDS made 3 times of subcontractor payments per month, and makes such payments within 10 days on average. If a supplier requests early payment, the company accepts the request following reviews. Furthermore, Samsung SDS makes 100% full cash payments.

Amount of Mutual Growth Fund



Support for Suppliers

Samsung SDS pursues sustainable mid- to long-term growth with suppliers by supporting various financial support systems, new market expansion support, and communication expansion while strengthening technological competitiveness of suppliers.

Financing Support for Suppliers

Samsung SDS offers wide-ranging financing support programs to help suppliers stabilize their business operations. Mutual Growth Fund, operated in conjunction with financial institutions, allow to financially support suppliers to strengthen their competitive edge through technology and research development. Samsung SDS also operates the network loan program to provide indirect financing support: suppliers can extend low-interest loans from financial institutions based on the track records of doing business with Samsung SDS.

Exemption from Contract-related Guarantee Insurance: Samsung SDS exempts suppliers from guarantee insurance required as part of the contract-signing process so that they can lessen their financial burden in issuing such insurance policies.

Support for Suppliers in Tapping into New Markets

Samsung SDS assists suppliers in tapping into new markets both in Korea and abroad by promoting their solutions and products and joining hands in advancing into such new markets. Samsung SDS's executives in charge of solution business attend the presentations and discussions hosted to introduce suppliers' solutions in a bid to explore ways to collaborate to expand common markets. We also host IT exchange events to identify new overseas markets and forge closer ties with local customers. This allows Samsung SDS suppliers to introduce their outstanding solutions and project experiences to these customers and to demonstrate their solutions and engage in customer counseling so that they can advance into untapped territories and enhance their brand awareness.

Communication with Suppliers

Samsung SDS undertakes a range of communication initiatives to build trust and pursue shared growth with suppliers. Supplier collaboration portal 'smartTogether.com' helps to share information and exchange opinions, and whistle-blower system within the portal serves to allow suppliers to report any grievances or unfair practices that occurred in doing business with Samsung SDS.

Support for Suppliers to Overcome COVID-19

Samsung SDS provided self-developed collaboration solutions and quarantine products free of charge to minimize business impact of suppliers even under unprecedented pandemic conditions.

Free Support for Un-tact Collaboration Solutions: As the demand for telecommuting increases due to the COVID-19 crisis, the need for un-tact communication has increased more than ever before. However, SMEs and small business owners are struggling to adopt collaborative solutions due to cost issues. Samsung SDS provides free support for 'Brity Works' and 'Marimba', which are corporate collaboration solutions, to SMEs, public institutions, and schools, with the aim of supporting companies struggling to establish their collaborative environment.

Quarantine Supplies: Samsung SDS provided quarantine supplies such as masks and disinfectants in the first and second half of the year to promote safety and health of employees of suppliers.



Free enterprise collaboration solution support to minimize business impact of suppliers under Pandemic situation

Special 04

Best Practices for Shared Growth

Environment

Labor/Human Rights

Social Contribution

Customers

Suppliers

Innovator Development Methodology Shared with Suppliers

Samsung SDS willingly provides its Innovator Methodology, a standardized business processes and methods based on its experiences and knowledge, to support suppliers to improve quality. Through smartTogether.com, the Samsung SDS' supplier portal, the methods and deliverables required for business are provided to suppliers while Samsung SDS's quality experts assist them to learn how to use the development methodology and relevant guidelines. The company has shared 6 development methodologies and contributes to the quality competitiveness of 42 suppliers.

Innovator Development Methodology



INNOVATOR

Samsung SDS Unique Methodology

Development Methodology Components				
Procedure (Define Steps and Activities)	Responsibility (Define Personnel R&R)	Outputs (Define Results)	Technique (Technique Guide)	Method (Method Utilization Guide)

Shared Development Methodology with Suppliers

Item	Details
Project Management	Provide project management methods, processes, guides, and deliverables along with the entire project cycle, from project initiation, execution, control and termination, to help to effectively manage software and system development projects
Information Engineering	Information engineering-based methodology to analyze, design, and develop data and business centeric applications
Object Oriented	Methodology to develop Java-based applications through UML modeling
Component Based Development	Methodology with additional processes to develop and assemble reusable components based on the Object Oriented Methodology
Application Development (Package Application)	Provide processes and procedures to identify and resolve differences between packages and customer requirements based on the basic flow of information engineering
Application Development (Generic Agile)	Methodology to swiftly identify user-centric requirements and to effectively perform deployment and validation by using short iteration cycles

Free Support of Automation & Collaboration Solution (BrityWorks & Marimba)

To support SMEs struggling to build un-tact collaboration environment, BrityWorks and Marimba were provided to improve corporate productivity and reducing costs, and these solutions contributed to business continuity and productivity and to reducing cost and risks. Samsung SDS also provided Brity RPA, an AI-based business automation solution, to realize innovation in business productivity, resource efficiency, and quality improvement for its suppliers. Likewise, the company has identified and supported RPA projects suitable for each supplier while providing organized consulting for stable operation. In 2020, BrityWorks and Marimba were implemented to 117 and 114 suppliers free of charge. Thereby, suppliers reported improvement in productivity and reduction in costs such as strengthening business continuity and reducing security risks.



2020 Core Job Training (Video Training)

Training Support for Suppliers

To help suppliers to build their own competitive edge, Samsung SDS offers wide-range of training programs for suppliers. The company supports online and offline training on information systems and software through Multicampus, a software professional training institute. Samsung SDS also provides variety of training courses for each job competency level including core technology and service training and introductory training for new recruits for free of charge.

Core Job Training for Suppliers

Core Job	Project Manager Training	Proposal Capability
	Analysis/ Design	Latest IT Trends (4th Industrial Revolution and IT)
Introductory Training for New Hires	Learn the attitudes/roles required for new hires including workplace relationships, communication skills, and latest IT trends	
Training by Professional IT Trainers	Take big data, JAVA, and other IT-related online/offline training courses (165 courses)	

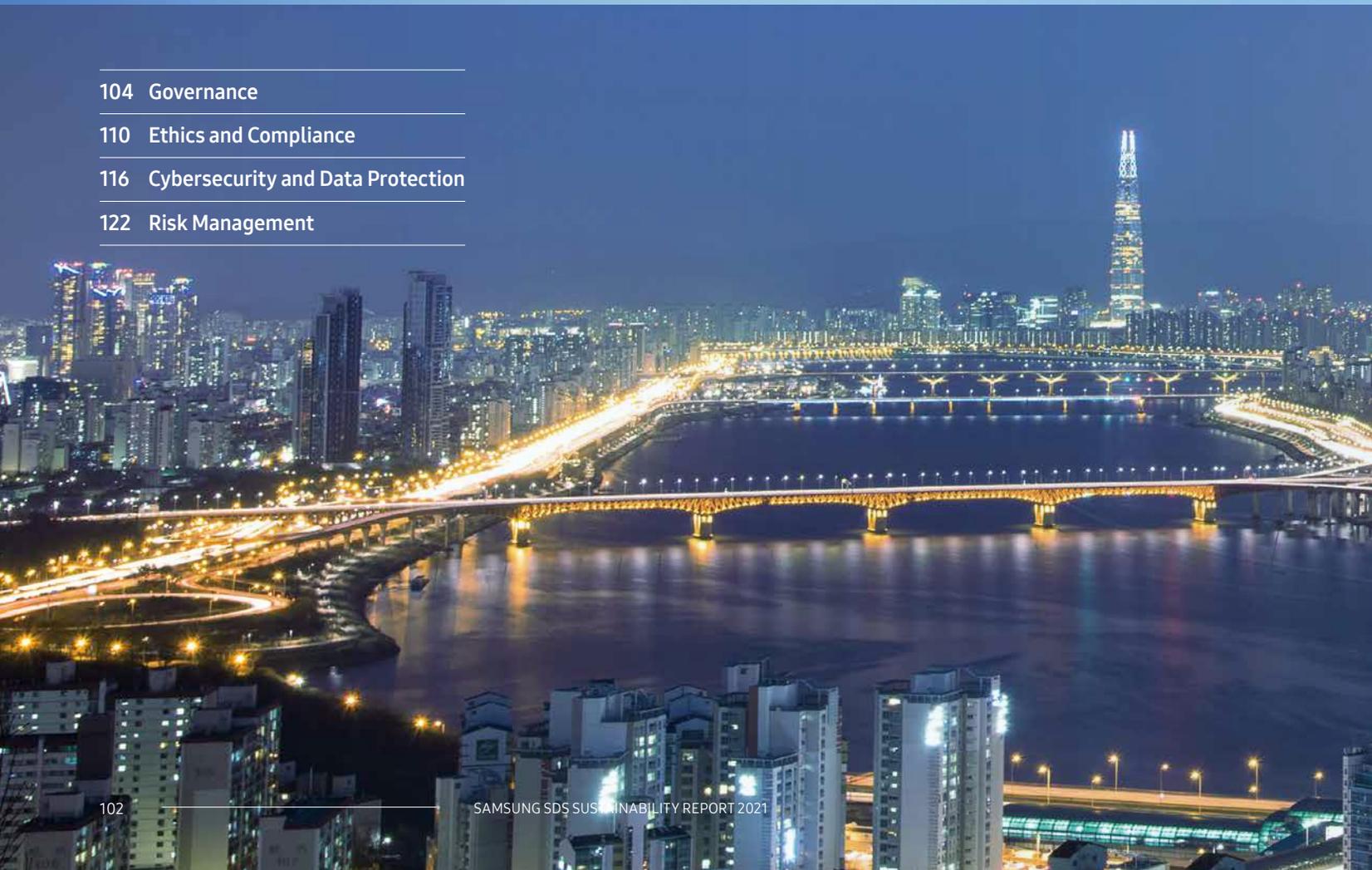
SUSTAINABLE FOUNDATION

104 Governance

110 Ethics and Compliance

116 Cybersecurity and Data Protection

122 Risk Management



Samsung SDS has established an industry leading corporate governance system to create sustainable values and to fulfill responsible management activities as a leading company. The company has set a firm risk management system to cope with economic, social, and environmental risks flexibly and has built trust with stakeholders by securing information and data. Furthermore, Samsung SDS is committed to promoting the foundations for sustainable management and reinforcing corporate value beyond the present.



Governance

Why Important

Investors' interests on ESG have grown, introducing Stewardship Code and promoting responsible investments. Corporates should create non-financial value by fulfilling social responsibilities as well as improve its financial value amidst uncertain business conditions. Samsung SDS strives to protect shareholders and investors' rights and satisfy the expectations of stakeholders by transparently disclosing information on corporate governance.

What's Achieved

Item	2020 Achievement	Achievement
To reach over 90% attendance rate of the outside directors	Reached 98.1% attendance rate of the outside directors	Achieved
To train the directors to perform their roles	Trained the BOD 4 times	Achieved
To strengthen trust of shareholders and investors	Strengthened IR activities and disclosed the corporate governance report.	Achieved

How to be Better

For independency and expertise of the board of directors, Samsung SDS promises to continue to review and implement diverse measures in order to establish sound governance. Samsung SDS' management and IR team will together promote in IR activities to strengthen trust relation with stakeholders. We also disclose corporate information in English for foreign stakeholders.



Launch of the BOD's supervision on the ESG area and support management participation

Samsung SDS will extend the role of the BOD to supervising the ESG, and will commence quarterly reporting of the ESG plan through an in-house ESG consultative body from 2021.



Introduction of electronic voting system for the general shareholder meetings and online broadcasting

Samsung SDS is encouraging shareholders to participate in the general shareholder meetings by introducing the electronic voting system and online live broadcasting in COVID-19 pandemic situation.



Key Figures

The Board Operations



Board of Directors (BOD) Board Composition

The Board of Directors is composed in accordance with Article 542 of the Commercial Act. Though the Commercial Act stipulates that the Board only need 3 or more members, the board is consist of 7 directors: 3 Executive Directors and 4 Independent Directors. The Board is constitutes 4 Independent Directors for sound and transparent corporate governance. Sungwoo Hwang, the CEO of Samsung SDS was elected as the Chairperson of the Board through in accordance with Article 33 of the Articles of Corporation. Among the Independent Directors, whoever appointed first serves as the leader of Independent Directors. The Board composition, as of end of March, 2020, is as follows.

Members of the BOD (as of March, 2021)

	Director (Male/Female)	Name	Position	Tenure	Specialty	Career Experience
	Executive Director (M)	Sungwoo Hwang	President & CEO (BOD Chairperson)	2021.03.17~ 2024.03.16	IT, Electronic Engineering	- President of Samsung Advanced Institute of Technology - PhD in Electronic Engineering, Princeton University
	Executive Director (M)	Jung Tae Ahn	Executive VP & CFO	2020.03.18~ 2023.03.17	Business Strategy, Financial Management	- Team Leader of the Audit Team, Samsung Electronics - University of Illinois at Urbana-Champaign MBA
	Executive Director (M)	Hyung Joon Koo	Executive VP & Leader of the Cloud Biz Unit	2021.03.17~ 2024.03.16	IT, Information Systems, Cloud Business	- President of Samsung SDS America - MSc in Information Systems, Hawaii Pacific University
	Independent Director (M)	Jae-Man Yu	Chair of the Related Party Transactions Committee	2017.03.31~ 2023.03.30	Lawyer	- (Current) Partner, Lee& Ko - BA in Law, Seoul National University
	Independent Director (M)	Hyuck Yoo	Chair of the Independent Director Recommendation Committee	2020.03.18~ 2023.03.17	IT, Computer Science	- (Current) Professor at Korea University, College of Informatics - PhD in Computer Science, University of Michigan
	Independent Director (M)	Hyun-Han Shin	Chair of the Audit Committee	2020.03.18~ 2023.03.17	Finance, Accounting	- (Current) Professor at Yonsei University, School of Business - PhD in Business Administration, Ohio State University
	Independent Director (F)	Seung-Ah Cho	Chair of the Compensation Committee	2020.03.18~ 2023.03.17	Business Strategy	- (Current) Professor at Seoul National University, College of Business Administration - PhD in Business Administration at Columbia University (business strategy)

Board Committees

At Samsung SDS, the BOD established 5 committees in accordance with relevant regulations in order to ensure efficient decision-making. As of March 2021, the Audit Committee, the Related Party Transactions Committee, the Independent Director Recommendation Committee, the Management Committee, and the Compensation Committee are operated under the BOD.

The Roles and Composition of the Board Committees

Committee	Composition	Role
Audit Committee	Outside directors (3 directors): Hyun-Han Shin , Jae-Man Yu, Seung-Ah Cho	The Audit Committee supervises and holds in check business operations to assist executive management in improving corporate and shareholder value through legitimate procedures and reasonable decision-making.
Management Committee	Inside directors (3 directors): Sungwoo Hwang , Jung Tae Ahn, Hyung Joon Koo	The Management Committee carries out deliberations and arrives at decisions on major business issues delegated by the BOD to ensure expedient and smooth decision-making on such issues.
Related Party Transactions Committee	Outside directors (3 directors): Jae-Man Yu , Hyuck Yoo, Hyun-Han Shin Inside director (1 director): Jung Tae Ahn	The Related Party Transactions Committee carries out deliberations and decides on important internal transactions to ensure fairness in the dealings with related parties.
Compensation Committee	Outside directors (3 directors): Seung-Ah Cho , Hyuck Yoo, Hyun-Han Shin	The Compensation Committee deliberates and decides on the limit imposed on the remuneration for registered directors and their remuneration system to establish transparency in managerial remuneration and to properly calculate remuneration levels.
Independent Director Recommendation Committee	Outside directors (3 directors): Hyuck Yoo , Jae-Man Yu, Seung-Ah Cho Inside director (1 director): Jung Tae Ahn	The Independent Director Recommendation Committee recommends outside director candidates at the general shareholder meeting to ensure the BOD's independence.

* Name of the committee chairman is marked in bold.



BOD Meetings Held in 2020

13 Meetings

(10 meetings in 2019)



BOD Agenda Items in 2020

29 Items

(18 items in 2019)



Attendance of Outside Directors in BOD Meetings in 2020

98.1%

(97.5% in 2019)

Independence of the Board

The Chairman of the Board listens to the opinions of the Executive Directors and the Independent Directors and acts as an intermediary so that he can supervise the company's management activities more objectively. The Independent Directors hold separate meetings where they can freely exchange their opinions on a wide range of business matters, including how to enhance shareholders' value.

Directors are appointed by a resolution of a general meeting of shareholders in accordance with Article 382 of the Commercial Act. Executive Directors are elected from among the candidates recommended by the Board, while Independent Directors are appointed from among the candidates recommended by the Independent Director Recommendation Committee pursuant to Article 542-8 of the Commercial Act. According to the same Article, the majority of the Independent Director Recommendation Committee must be composed of Independent Directors. Following the Article, our Independent Director Recommendation Committee consists entirely of Independent Directors and nominates candidates through fair procedures.

Diversity and Expertise of the Board

We believe a Board with a diverse array of skills and expertise is a powerful enabler in making important strategic decisions in a rapidly changing business environment. Our businesses are run by our best experts in the field. The Executive Directors participate in the Board's activities to practice responsible management.

Our Independent Directors are appointed from various fields, such as finance, legal, IT, and Business Strategy. They are chosen regardless of race, gender, age, nationality, level of education, religion, disability, or political preference to provide their diverse view in Board discussions. This composition ensures the Directors can discuss the Board's agenda from a variety of perspectives and to supervise and advise the management both objectively and professionally.

Characteristics of the Board		
<p>Independence</p> <p>Full-time employees, affiliated to the company's largest shareholder or has important interests linked to the company itself, or recently worked at the company within the past two years are prohibited from serving as Independent Directors</p>	<p>Diversity</p> <p>Candidates for the Board of Directors are not discriminated according to race, gender, age, nationality, level of education, religion, disability, or political preference</p>	<p>Expertise</p> <p>Independent Directors are appointed from among individuals with extensive knowledge and experience in the fields of IT, management, finance, legal, sustainability, etc</p>

Board Operation Policy

The BOD convenes and hosts both regular and ad-hoc meetings. Regular meetings are held on a quarterly basis. At the BOD, decisions are made based on approvals of a majority of the incumbent directors as well as the attending directors; however, some decisions require a 2/3 majority vote. In 2020, the BOD met 13 times to discuss a total of 29 agenda items, including 'Approval of Agreements and Regulations on the Establishment and Operation of the Samsung Compliance Committee', 'Contributions to the COVID-19 Emergency Relief Fund', and 'Contribution to Social Contribution Funds.' The attendance of outside directors reached 98.1% in 2020.

Support for Independent Directors

Samsung SDS has designated a support department that will provide necessary information and resources in order to assist outside directors in fulfilling their role as set forth. Notably, the company provides regular training on the company's management plans and business areas to help outside directors better understand its business operations.

Training Period	Participants	Training Topics
2020.01.30	All outside directors	Performance in 2019 and management plan for 2020
2020.03.18	All outside directors	Management status and the main business areas
2020.04.23	All outside directors	Introduction to the company's IT business and its progress status
2020.07.23	Hyuck Yoo, Hyun-Han Shin, Seung-Ah Cho (Targeted for new outside directors)	Management status of Chuncheon Data Center and business areas

Board Assessment and Remuneration

Samsung SDS pays the inside and outside directors with remunerations within the amount approved by the general meeting of shareholders according to the remuneration regulations considering their positions and tasks. The remuneration is also determined at the general meeting, reviewed by the board in accordance with legal regulations. Details regarding remuneration are disclosed in 'Executive Remuneration' of the annual report.

Board Remuneration

※ The total amount of remuneration is the income paid to inside directors/outside directors/Audit Committee members who have been in office or retired during the current business year, and it includes remuneration outside of the tenure of the registered executives.

Item	Number of People (Persons)*	Total Remuneration (KRW million)	Average per-Capita Remuneration (KRW million)
Registered directors**	4	10,089	2,522
Outside directors***	2	85	43
Members of Audit Committees	5	247	49
Total	11	10,421	947

*The number of people includes the directors and auditors who resigned during the current period.

The outside directors and members of the Audit Committee are excluded *The members of the Audit Committee are excluded.

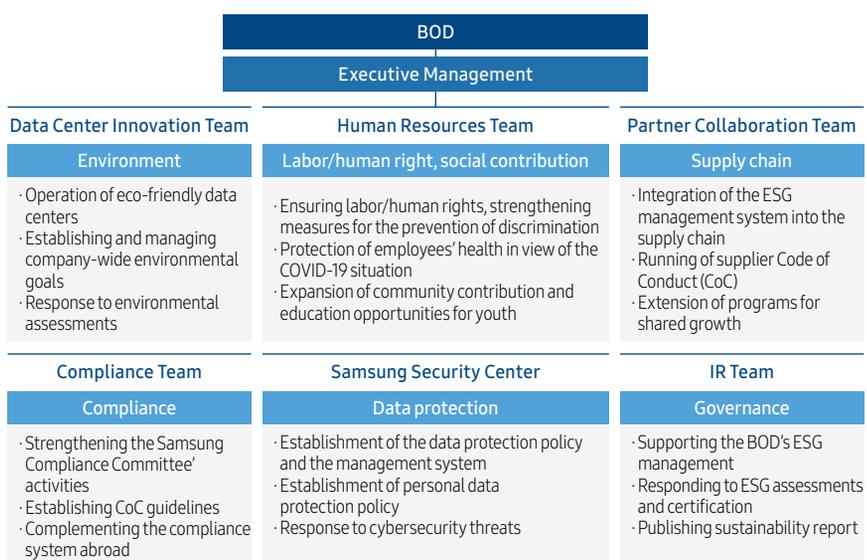
Executive Liability Insurance

The BOD is covered by Executive Liability Insurance to operate company stably and to mitigate risks in the decision-making process. When the members of the BOD perform their duties, the scope of compensation applies to damages caused to shareholders and other stakeholders on account of the violation of the duty of care as a good manager and the duty in good faith to the company.

ESG Management of the BOD

Starting 2021, the BOD of Samsung SDS will take on the role of supervising the ESG to fulfill our social responsibility as a global corporate citizen. The ESG Council reports ESG plans to the BOD on a quarterly basis, and the ESG performances in 2020 and ESG plans for 2021 were reported at the regular board meeting in the second quarter of 2021. Going forward, we plan to continuously expand the role of the BOD by measures such as making it mandatory to obtain approval from the Board of Directors for important issues.

ESG Management System



Executive Management/ Shareholders



The 36th Regular General Meeting of Shareholders (March 17, 2021)

Assessment and Remuneration of Executive Management

Performance assessments on the executive management including the CEO are conducted comprehensively. The factors for assessment include short-term performance such as achievement of annual management goals, etc. and innovations of the business structure to enhance mid-term business competitiveness (e.g. establishment of the business growth strategy, securing new technology and platform, etc.).

Protecting Shareholders' Rights and Interests

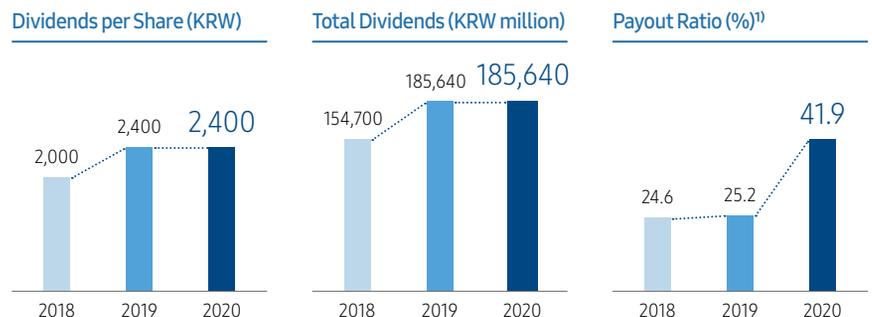
Samsung SDS ensures that its shareholders are provided with sufficient and timely information necessary to exercise their rights through IR activities, in accordance with due process. The date, venue, agenda and other general details of the general shareholder meeting are announced 4 weeks in advance to allow shareholders to thoroughly review the agenda items and exercise their voting rights. Reference proxy documents are also disclosed to promote proxy solicitation so that shareholders who could not attend such meetings may cast their votes by proxy. Furthermore, with a view to increasing the attendance of stakeholders, Samsung SDS schedules its general shareholder meetings so that they do not overlap with similar meetings of other companies.

As a part of our shareholder returns policy, the dividends policy is disclosed through occasional public disclosures apart from the public disclosures of decisions on cash dividends to improve the predictability of dividends for investors. After the determination by the BOD, the dividend policy announced by the company in January 2020 stated that dividend payouts would stay above 25% for the next 3 years between 2019 and 2021. The company periodically announces its quarterly performance based on tentative business results through electronic disclosure systems (DART by Financial Supervisory Service and KIND by KRX) or corporate website. In addition, through IR activities such as NDR (Non-Deal Roadshow) for domestic and foreign investors, on-site investor meetings, and attendance at conferences held by securities firms, we have transparently disclosed information related to our management status.

Electronic Voting System and Online Annual General Meeting

Samsung SDS held the 36th Annual general meeting of shareholders blending online and offline modes (Jan. 17, 2021) to strengthen shareholder-friendly management in a situation where on-site attendance is limited due to the COVID-19 pandemic. We also introduced an electronic voting system that allows shareholders to exercise their voting rights electronically. And, we encouraged shareholders to participate in the annual general shareholder meeting through live broadcasting.

Dividends Paid (On a consolidated basis)



1) Payout Ratio : total dividends divided by net income in controlling interests

Ethics and Compliance

Why Important

Samsung SDS recognizes that a corporation has the responsibility to ensure the observance of laws and ethical behavior and that it is a basic requirement for sustainable management. To maintain trust from the market and customers, we believe that it is of paramount importance to embrace an organizational culture founded in ethics and compliance management. Accordingly, we have strived to establish relevant principles, standards, and systems, and recognize and follow the regulations and precautions to be observed when conducting business.

What's Achieved

Item	2020 Achievement	Achievement
To provide trainings for improving employees' awareness on ethics and compliance management	Provided each ethics and compliance management training at least once. · Number of employees completed ethics management training: 33,707 · Number of employees completed compliance management training: 21,390	Achieved
To strengthen suppliers' compliance with business ethics	Applied supplier CoC including business ethics topics for all suppliers	Achieved
To strengthen compliance management monitoring	Monitored risks of violation related to fair trade, subcontracting, personal information (17 times).	Achieved
To operate a whistle-blowing channel	Total of 70 cases were reported.	Achieved
To prevent business risks associated with order-type	Applied an automated fair trade and anti-corruption guidance system	Achieved

How to be Better

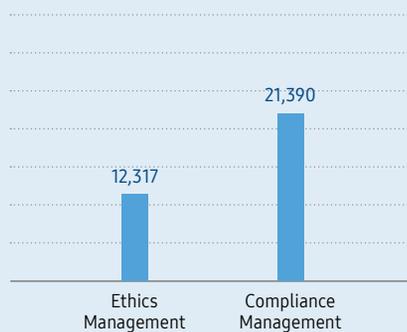
Samsung SDS will establish and share the Code of Conduct Guidelines and detailed policies in order to support employees to realize the correct judgment and behaviors. In addition, we will endeavor to raise employees' interests and participation in ethics and compliance management through intensive assessments and training for high-risk areas/personnel, and applying IT technology to various fields including the in-house developed training platform.



Key Figures

Completed Ethics/Compliance Management Training

(Unit: Persons)



Number of fines, lawsuits and non-monetary sanctions for violating laws and regulations regarding compliance in the last 4 years:

Zero



Cases of corruption and bribery

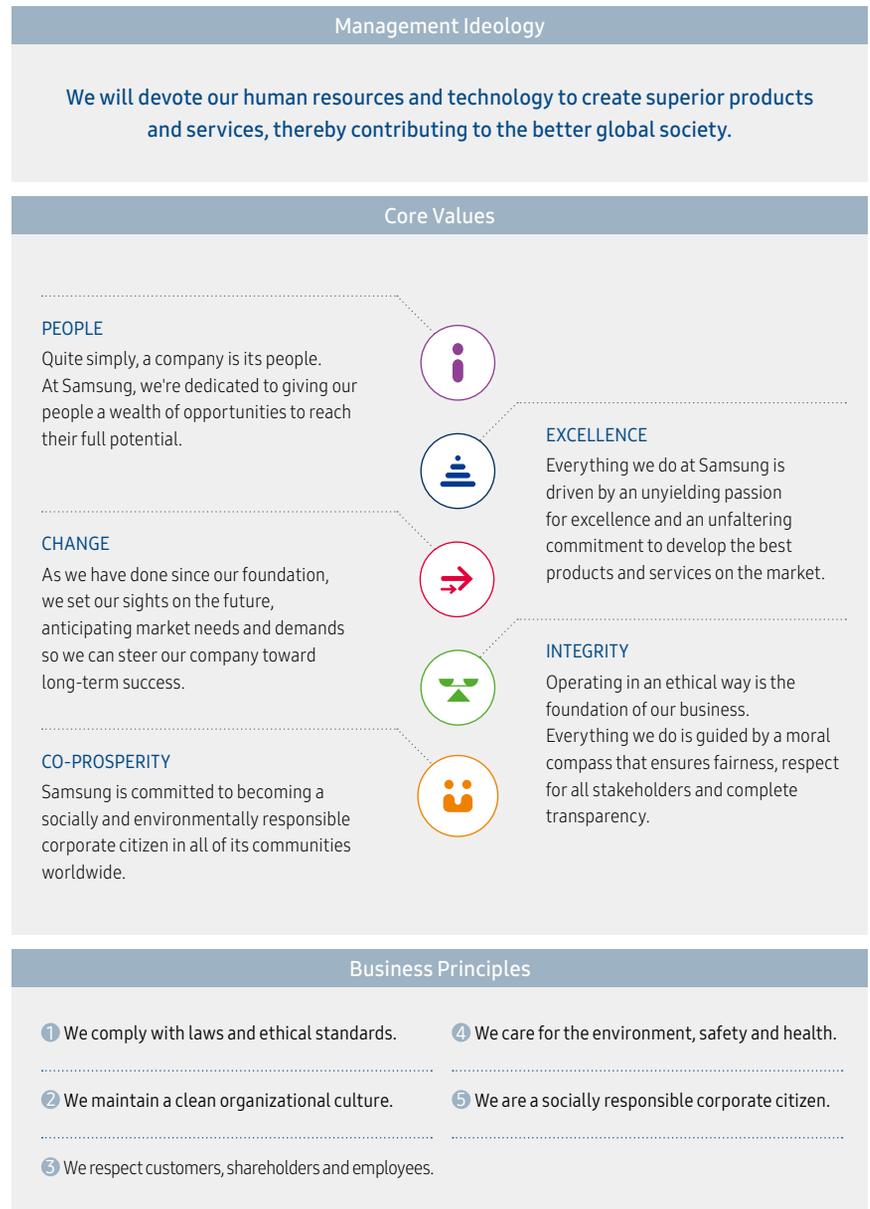
Zero



Ethics Management

Management Philosophy

Samsung follows a simple business philosophy: to devote its talent and technology to creating superior products and services that contribute to a better global society. To achieve this, Samsung sets a high value on its people and technologies.



Ethics Management System

Principles of Ethics Management

Samsung SDS devotes its talent and technology to creating superior products and services that contribute to the formation of a better global society. To this end, the company stipulates and implements the 5 Samsung SDS Business Principles that will guide its employees in making decisions and taking actions so that it abides by legal and ethical standards and fulfills its essential role and social responsibility across the entire spectrum of business operations. These principles set the standard for employees' behavior and value judgment in all management activities of Samsung SDS.

<p>1. We comply with laws and ethical standards.</p> <p>1-1. We respect the dignity and diversity of individuals. 1-2. We complete fairly in accordance to laws and business ethics. 1-3. We maintain transparent accounting through accurate accounting records. 1-4. We do not intervene in politics and maintain neutrality.</p>	<p>2. We maintain a clean organizational culture.</p> <p>2-1. We strictly keep one's private and public life separate from all business activities. 2-2. We protect and respect the intellectual property of the company and other people. 2-3. We create a healthy atmosphere.</p>
<p>3. We respect customers, shareholders, and employees.</p> <p>3-1. We make customer satisfaction our top priority. 3-2. We pursue shareholder value oriented management. 3-3. We make efforts for the improvement of the 'quality of life' of our employees.</p>	<p>4. We care for the environment, safety and health.</p> <p>4-1. We pursue eco-friendly management. 4-2. We put emphasis on people's safety and health.</p>
<p>5. We are a socially responsible corporate citizen.</p> <p>5-1. We perform basic obligations faithfully as an enterprise citizen. 5-2. We build relationships of co-existence and co-prosperity with business partners. 5-3. We respect the present social and cultural characteristics and have cooperative management (mutual prosperity/cooperation).</p>	



Number of employees that participated in ethics management training in 2020
12,317 Employees

Ethics Management Process

Samsung SDS provides the 'Samsung Business Principles' to external stakeholders, including suppliers and customers, while operating a channel to report any violation of the Principles. Furthermore, we post 'Employee Business Conduct Guidelines' on our in-house intranet to encourage our employees maintain integrity in practice. The Samsung Business Principles and the channel to report violations are available in 2 different languages, including English and Korean, and the Employee Business Conduct Guidelines are available in 4 different languages.

Improved Employee Awareness on Ethics

Samsung SDS stipulated the Business Principles on the Global Code of Conduct section of its website to elevate employees' awareness on ethics management practices. This enables the company to check violations of ethics management regulations, from embezzlement of company funds or misappropriation of assets involving the company or its partners to deterioration of work discipline and information leaks, and to offer ethics management training and publicity events. In 2020, 12,317 employees participated in the training.

Business Ethics of Suppliers

Suppliers associated with Samsung SDS are to adhere to all applicable laws and regulations in their business activities. To meet social responsibilities and to achieve success in the marketplace, suppliers and their agents are to uphold the highest standards of ethics. To this end, Samsung SDS includes business ethics items and defines the principles of 'Business Integrity', 'No Improper Advantage', 'Intellectual Property', 'Protection of Identity', and 'Privacy' in the Supplier Code of Conduct.

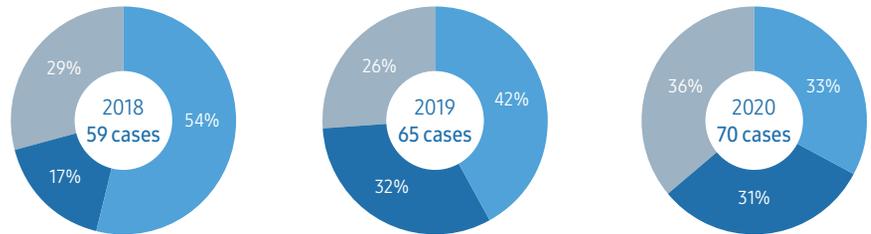
Operation of the Whistle-Blowing Channel

Samsung SDS operates an anonymous whistleblowing channel on its corporate website for stakeholders to report any corrupt practices, including any unfair business practices, unjustified requests made by abusing one’s authority, or any other corrupt practices on the part of Samsung SDS employees. These reports should concern Samsung SDS domestic and overseas establishments and subsidiaries, and cover any unethical practices committed by its employees in general.

The company strictly protects the confidentiality of whistleblowers, ensures that whistleblowers never suffer disadvantages due to their reports, and handles reports behind closed doors. If such reports prove to be true following investigations, disciplinary measures are taken according to the severity of the violation, and relevant measures are taken against the partner who offered money or other valuables to a Samsung SDS employee(s) to prevent the recurrence of such unjustified practices.

Types of Corruption Reported

■ Fraud ■ Complaints ■ Others



Establishment and Operation of Code of Conduct Guidelines

Samsung SDS establishes and operates the Code of Conduct Guidelines, in accordance with Samsung SDS business principles, to ensure compliance with laws and ethics and fulfill its corporate and social responsibilities.

	Code of Conduct	Code of Conduct Guidelines
	Compliance with laws and ethics	Fair competition, information security, protection of assets
	Transparent or ganizational culture	Prevention of corruption and conflicts of interest
	Respect for human rights, customer service and quality control, technology innovation	Respect for human rights, customer service and quality control, technology innovation
	Environment, safety and healthcare	Green management, health and safety
	Performance in the area of social responsibility	Co-prosperity, contribution to the community

Compliance Management

Organizational Structure of the Compliance Management Team



Compliance Management System

Samsung SDS recognizes that establishing compliance management as an organizational culture is integral to sustainable management. Accordingly, the company operates systems, standards, and organizations that reflect related legal requirements and standards for effective compliance management.

Compliance Control Standards and Operational Regulations

Samsung SDS is implementing detailed policies such as anti-corruption and fair trade principles to support executives and employees in their efforts to realize correct value judgment and behavior based on the company's business principles. In addition, the company operates compliance control standards and operational regulations that include the requirements of relevant laws according to the Board of Director's resolution.

Principles/Policies



Standards



Compliance Management Organization

As stipulated by the Commercial Law, Samsung SDS appoints a Compliance Officer through the Board of Directors, and operates an in-house Compliance Council. The Council consists of executive members, and serves to conduct reviews and make decisions on major compliance issues. In order to achieve effective compliance management, the company established the Compliance Team as a dedicated company-wide compliance organization directly under the CEO. The company also operates a Field Compliance Specialist (FCS) system where organization-specific compliance managers and on-site staff are designated to manage preventive compliance activities within their respective business departments.

Samsung Compliance Committee

On January 30, 2020, Samsung SDS signed an agreement with 7 major Samsung affiliates to establish the Samsung Compliance Committee in accordance with the decision made by its Board of Directors to prevent the top management from engaging in any illegal activity and further strengthen compliance supervision. The Samsung Compliance Committee is established as a separate independent organization outside Samsung SDS to ensure independence and autonomy. The Committee consists of 6 outside members including the chairman and one internal member. The outside members are the specialists with expertise in law, accounting, economics, and other areas of compliance monitoring.

The Committee directly reviews the company's external sponsorship expenditure and internal transaction issues and presents its independent opinion to the Board of Directors. In addition, the Committee makes recommendations to improve the effectiveness of the company's compliance system based on the review. Going forward, Samsung SDS will follow up on the requests and recommendations made by the Compliance Committee to advance ethics and integrity management.

Focus Areas

Samsung SDS identified 5 focus areas, viz. fair trade, subcontracting, personal data protection, intellectual property, and anti-corruption and business regulations that are highly relevant to the sound operation of the company's business. The company conducts various activities such as training, providing guidance to prevent the violation of compliance regulations and self-directed reviews, which help employees to raise compliance awareness on the focus areas.

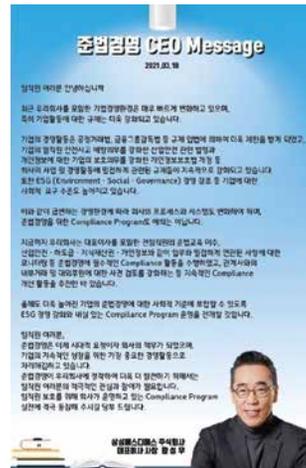
Item	Major Violation Risk
Fair Trade	Collusion, unfair trade, agency transactions, insider trading
Subcontracting	Failure to issue written documents, prohibition of unjustified price cuts, prevention of technical data leakage, payment delays
Personal Data Protection	Collection, management, use and disposal of personal information
Intellectual Property	SW license, open-source, copyrights, infringement into trade secrets
Anti-corruption Measures	Anti-graft law, other domestic/foreign anti-corruption laws
Business Regulations	Strategic material management

Compliance Management Organizational Culture

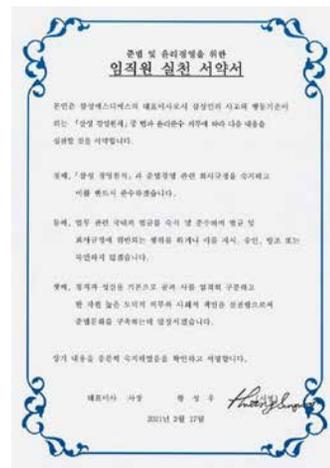
In order to promote the importance of compliance management, all management including the CEO, announce their will to practice compliance, and all executives and employees write a pledge every year to practice compliance management. In addition, the company operates various systems such as organizational/executive evaluation and awards for outstanding employees based on the results of compliance management activities so that compliance management is firmly established as part of the organizational culture. The company also operates reporting channels including the company website, Compliance Program Management System (CPMS), and hotlines to report any compliance violations.

2020 Compliance Management Training

Item	Training programs	Number of employees
Executives	Special training course for executives and team leaders	347
	Special training course for sales team leader and external project members	1,731
Employees	Online Compliance Training	16,001
	Field Compliance Expert (FCS) development program and introductory courses for new/experienced hires	605
	On-site training	2,706
Total		21,390



CEO's Message on Compliance Management



Employee's Practice Pledge for Compliance and Ethics Management

Compliance Management Training

Samsung SDS conducts regular and ad-hoc training programs for executives and employees to enhance awareness of compliance matters, regulations that employees should be aware of in their daily business operations and the latest trends every year. The company offers a range of training programs such as company-wide training, exclusive training for executives, a special program for employees tasked with subcontracting, training courses in fair trade and anti-corruption, training course for -house compliance experts and introductory courses for new/experienced hires.

Compliance Program Management System (CPMS)

To integrate compliance management into employees' daily business operations, Samsung SDS has developed the Compliance Program Management System (CPMS) and operates the "My Compliance" mobile service. These platforms provide wide-ranging functionalities and contents including introduction to the company's compliance activities, relevant guidance, self-directed assessments, FAQs, Q&As, and compliance management trends and news. In addition, Samsung SDS operates the 'Compliance Index' program for all employees to help them recognize the importance of compliance.

CPMS



Compliance Review

The company conducts ongoing inspections to prevent compliance violations in advance. In 2020, a total of 17 inspections were performed on major focus areas including fair trade/subcontracting, intellectual property and anti-corruptions, and the company made improvements based on the inspection results.

Cybersecurity and Data Protection

Why Important

In the era of the 4 Industrial Revolution where everything is connected and utilized by information systems, cybersecurity is one of the most important factors that determine the success or failure of business. In addition, the importance of protecting and securing customer data, therefore IT companies capabilities to strong security and data management system, is more emphasized.

What's Achieved

Item	2020 Achievements	Achievement
To achieve and retain security certification	Achieved ISMS and ISO 27001 certifications	Achieved
	Achieved ISO 28000, the international standard for supply chain management systems	
To create a safe in-house security environment and maintain strong customer data protection	Recorded zero data leakage in 2020	Achieved

How to be Better

Samsung SDS aims to protect information assets more safely by competently responding to evolving information security threats. The company also plans to proactively respond to potential cyber threats by increasing employee awareness.



Key Figures

Operation of the Global Information Security System



<p>Number of privacy information leakage in last 4 years</p> <p>0 cases</p>	<p>Established Privacy Management Group and appointed Chief Privacy Officer (CPO) in 2020</p> <p>Appointment of CPO</p>	<p>Completion rate for cybersecurity and data protection training in 2020</p> <p>98.9%</p>
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Cybersecurity and Data Protection

Samsung SDS has established and operated a physical, managerial, and technical data protection system to protect important information and assets, minimizing security risks through regular inspections and improvement activities. In addition, the company supports employees to recognize the importance of cybersecurity and data protection and to follow related policies and regulations in business practice.

Information Security System

Samsung SDS is committed to protecting customers' data assets in full compliance with domestic and overseas regulations, including Korea's Personal data protection Act and the Information and Communications Network Act, and is determined to bring security incidents to zero as a way to improve the company's competitive edge.

Global Information Security System

Since 2006, Samsung SDS has been certified against ISO 27001, the international standard for an Information Security Management System. The company also achieved Korea's Information Security Management System (ISMS) certification in 2013, the ISO 27017 certification (cloud security) in 2018, and the Public Cloud (IaaS) Security Certification in 2019, continuously receiving recertification audits to remain certified. Further, the company achieved the cloud Service Security Certification (ISO 27018), Cloud Security Alliance (CSA STAR) certification, and the Health Care Information Security Certification (ISO 27799) in 2020. Our information security management system satisfies globally recognized standards.



Information Security Management System (ISO 27001)



ISMS Cloud Security (ISO 27017)



Management System for Protection of PII in Public Clouds Acting as PII Processors (ISO 27018)



Information Security Management for Personal Health Information (ISO 27799)



Public Cloud (IaaS) Security Certification

ISO 27001	The Gwacheon Center became the first to be certified in 2006. The Gumi Center was certified in 2007. The Suwon Center acquired certification in 2008.
Infrastructure Safety Assessment	Received the Grand Prize in the VoIP sector in 2012.
IDCSafety Assessment	Received the ICT Infrastructure Center Grand Prize in 2012.
Designated as key information and communications infrastructure	ICT Suwon/Gwacheon Centers in August 2013.
ISMS	Achieved in December 2013.
ISO 27017	Achieved in December 2018.
Public Cloud (IaaS) Security Certification	Achieved in September 2019.
ISO 28000	Achieved in October 2020.

"Improve Samsung SDS Competitive Edge" by Reducing Security Incidents to Zero

- ① Development and management of security policy**
Development of security strategy, security performance assessment, training/promotion
- ② Security check**
Corporate website, IT infrastructure, establishments, products, personal information
- ③ Security system management**
PC security software, firewall, MDM
- ④ Physical security**
Management of check-in/out, access control, protection of the establishment
- ⑤ Responding to security incidents**
Response to security breaches and malicious code, forensics

- Workforce (Organization)
- Establishment
- User Devices
- Networks
- Servers
- Applications

Information Security Monitoring System

Samsung SDS information security check process allows the company to select targets and perform checks accordingly to identify and eliminate any security vulnerabilities found in its products and systems and thereby address security incidents preemptively. Furthermore, the company uses its internal information security portal to encourage employees to conduct self-directed checks and make necessary improvements to reinforce information security.

Item	Details	Responsible Team	Period
Meeting Support	<ul style="list-style-type: none"> Confirm the targets for security check and provide guidance Provide assistance using security requirements/design checklists ※ In case of interim release, consult with the security verification team regarding the need for mock-hack test 	Quality Control/ Development/ Security Verification Team	Setting Development Plans
Request for Security Verification	<ul style="list-style-type: none"> Request security verification for internal systems Conduct self-review to define security requirements 	Development Team	After integrated meeting support
Inspection of the Security System Design	<ul style="list-style-type: none"> Check that security conditions meet the criteria on the design checklist 	Development/ Security Verification Team	Interim Check
Perform Preliminary Security Checks	<ul style="list-style-type: none"> Conduct security checks on the source code and take measures 	Development Team	Before Requesting Security Verifications
Perform Final Security Verifications	<ul style="list-style-type: none"> Perform checks on the source code (Source code security, open-source security) Perform mock hack attacks (WEB, mobile) Perform infrastructure checks (server, DBMS, WEB, WAS) Perform security checks for personal information and cloud ※ In case of interim release, perform mock hack attacks for security verification application targets. 	Security Verification Team	Before Deliberating on Release
Notify Results	<ul style="list-style-type: none"> Notify the results of security verification 	Security Verification Team	In Completing Security Verifications

Samsung SDS has developed the Security Index System to prevent security incidents and strengthen credibility in its security operations through the sustained management of customers' information system. The system spans a total of 79 items in 8 areas.

Area	Domain	Details	Check Item
Management	Security Policy	Security regulations and compliance	4
	Security Organization	Organizational structure and job capacity	4
	Awareness Improvement	Security training for employees and business suppliers	5
	Incident Response	Incident reporting system	1
	IT Security	Security checks	5
IT	Authority Management	Authority management activities	43
	WEB / WAS		17

Prevention of Security Incidents and Response to Incidents

Samsung SDS has established a Security Management System to constantly monitor and respond to outside infiltrations into customers' IT systems, information leaks, and other security risks. Furthermore, the company sends e-mails containing malicious codes to employees on a monthly basis as part of the mock drill against such threats and put them on alert regarding the risk of these malicious codes. The company also performs a separate inspection and operates a security training program for suppliers.

Information Security Training for Employees

Samsung SDS offers regular security awareness training to help employees improve their awareness on the importance of information security. Department-level security managers and developers are specifically provided with security capacity-building and on-site training in security checks. Furthermore, the company requests all employees to sign and submit the security pledge each year.

Number of employees subject to training: 12,474 persons

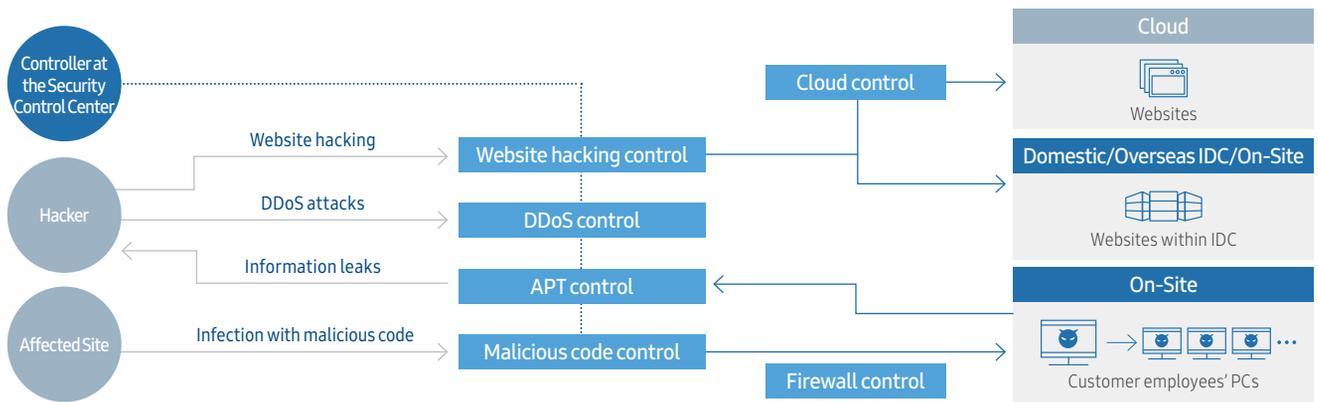
Number of employees completed the training: 12,338 persons

(Completion Rate 98.9%)

Offline Information Security Training

Training	Trainees	Benefits
Capacity-building in security diagnosis	Department-level security managers	Build capacity to implement mock hack attacks
Personal information security and development security	Department-level system operators	Improve awareness on development security among application operators
Improve awareness on development security among application operators	Developers and security managers	Assist developers in building the capacity to work with mock hack attacks
Improvement of security awareness at subsidiaries	Subsidiary developers	Assist subsidiaries in building security capacity
Mock hack attacks	Department-level security managers	Build capacity to perform mock hack attacks
Security training for in-house subcontractors	Subcontractors working at establishments	Raise awareness regarding data protection
Security training for business partners	Business partners	Raise awareness regarding data protection
Introductory training	New hires	Develop basic awareness regarding data protection

Security Management System



Strengthened Management of Customer Personal Information

In 2020, Samsung SDS established the Privacy Management Team under the Legal Service Team and appointed a Chief Privacy Officer (CPO) and a Chief Information Security Officer (CISO), who are responsible for responding proactively to the information security issues. They prepare the policies in accordance with the Personal Data Protection Act, conduct inspections of the implementation status of PI protection policies and convene the Personal Data Protection Council every year. Samsung SDS recognizes the importance of personal information and has adopted various stringent measures to ensure the use/protection of personal information in accordance with relevant policies and regulations.

Personal Data Protection Council

Item	Details
Name	Personal Data Protection Council
Chairman	Legal Team Leader (Secretary: Head of the Privacy Management Group)
Composition	Department heads related to the protection of personal information *Legal, Compliance, Integrated Security, Quality Innovation, Information Strategy, Human Resources, CR teams
Agenda	Regulatory amendments and considerations related to the use and protection of personal information
Period	Regular meeting: quarterly; Ad-hoc meeting: when issues arise

<p>Policy Making</p> <ul style="list-style-type: none"> Establish operational standards Provide the standard form for personal information activity Develop a process to address any leakage of personal information 	<p>Regulatory Monitoring</p> <ul style="list-style-type: none"> Analyze the current status of the enactment and revision of relevant regulations Monitor domestic/overseas trends
<p>Training</p> <ul style="list-style-type: none"> Provide training programs for employees and personnel handling personal information Raise awareness among executives and employees by providing PI protection rules and guidance 	<p>Audit and Improvements</p> <ul style="list-style-type: none"> Conduct status checks on the application and operation of PI protection policies Take remedial actions in areas that require improvement

Leak of Personal Information

Item	2017	2018	2019	2020
No. of cases pertaining to leak of personal information	0	0	0	0

Global Data Protection Compliance Response

Samsung SDS responds systemically to the global personal data protection regulations that were tightened recently to run overseas business operations. Especially, the company recognizes the important areas where compliance risk must be minimized based on the EU General Data Protection Regulation (GDPR) and Chinese Cybersecurity Law, prepares strategic response plans and performs thorough inspection activities.

Response to EU General Data Protection Regulation (EU GDPR)

Key Areas	
Guarantee Rights of the Data Subject · Right of access by the data subject · Right to rectification · Right of erasure · Right to be informed	· Right of restriction of processing · Right to data portability · Right to object · Right in relation to automated decision-making and profiling
Establish a Response Plan in Case of a Breach of Personal Information	
Action Plans	
· Ensure access to personal information, correction, deletion and transfer · Establish the process of receiving and responding to requests related to processing from data subjects · Implement measures for protection and minimize the collection of personal information	· Transfer personal information only through certification of appropriates, use of EU standard contracts, upon consent from the data subject in case of external transfer · Monitor administrator accounts and access rights · Define types of privacy violations and establish plans for response · Report to the relevant organization within 72 hours in case of a breach of personal information

Chinese Cybersecurity Law

Key Areas	
· Respond to breaches of network security · Network safety management	· Network Safety Infringement Prevention Technology · System for management of personal data protection
Action Plans	
· Implement a critical information classification system · Establish a vaccine and malware response system · Conduct vulnerability checks periodically and establish a monitoring structure · Executed a confidentiality agreement (March 2021)	· Establish personal data protection policies · Obtained consents from all employees (March 2021) · Identify and provide training programs for personnel handling personal information

Certificate of Compliance Program AAA Rating



Wassenaar Arrangement Compliance

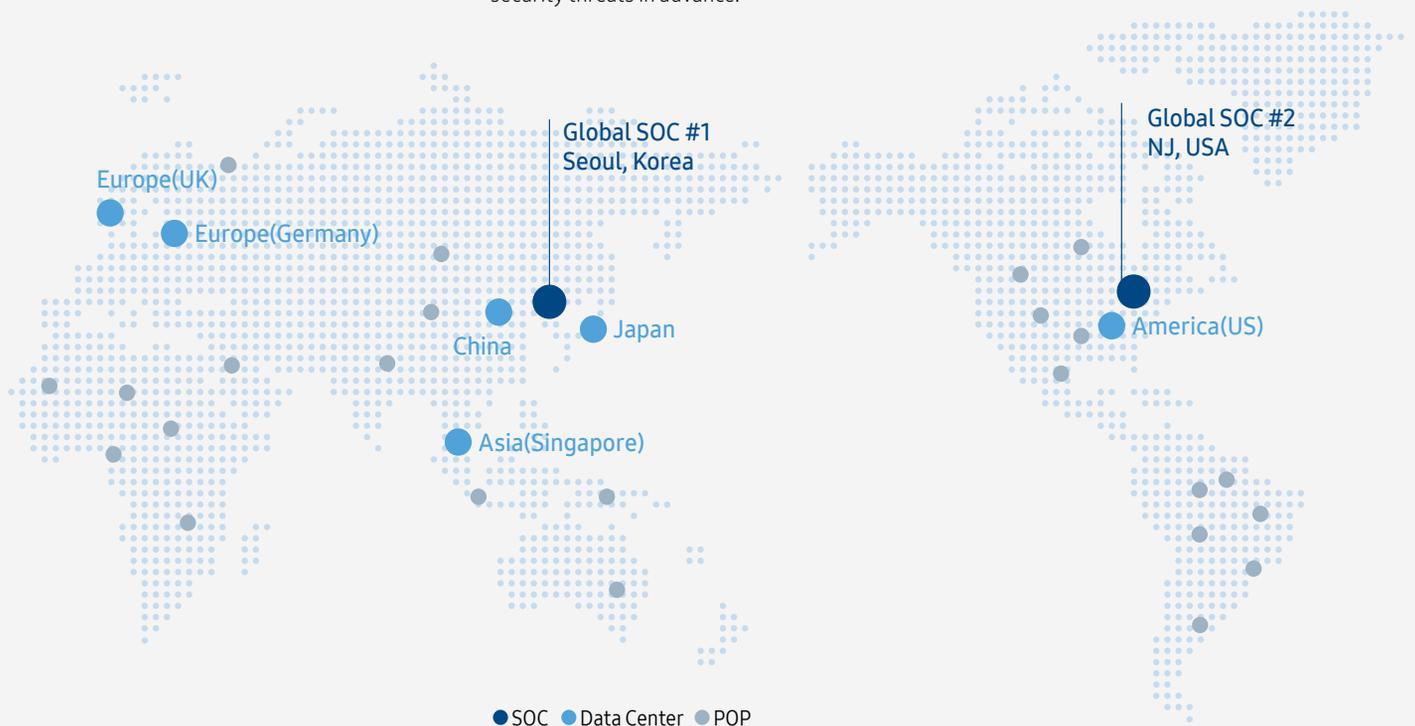
Samsung SDS is a Compliance Program (CP) company designated by the Korean government, and complying with the Wassenaar Arrangement; an international export control system. The company controls the export of weapons of mass destruction and dual-use goods and technologies that can be used in responding to sanctioned countries and targets (Denial List) such as North Korea, Iran, Sudan, Cuba, and Syria.

Special 05

Managed Security Service

Samsung SDS Cybersecurity Service

In the era of the New Normal due to COVID-19, threats targeting non-face-to-face environments are increasing around the world, and cyber threat techniques such as hacking using AI technology are becoming more sophisticated. In addition, effective cybersecurity is vital to a company's business competitiveness given that the importance of protecting industrial facilities and sensitive data such as privacy data against the rising incidence of threats. While cybersecurity threats are on the rise, Samsung SDS provides stable security solutions/consulting/monitoring services and cloud security service offerings based on more than 20 years of security consulting experience in all industries including electronics, manufacturing, and finance; Managed Security Service implementation know-how across 63 countries; and world-leading encryption technology. In particular, the company provides successful information security services to 28 Samsung affiliates, around the globe including 2 Security Operation Centers (SOC) located in Seoul and New Jersey, USA. In average, 17 billion security events and 6.6 million security logs of Samsung affiliates are collected. Samsung SDS minimizes the business impact on customers by preventing and taking actions against security threats in advance.



* Point of Presence: Transmitting overseas subsidiaries' data (logs) to nearby data centers

- Collect an average of 17 billion security events per a day
- Analyze an average of 6.6 million security logs per a day
- Analyze an average of 3,000 suspected infections per a day
- Monitor and control 500,000 PCs
- Run penetration tests at over 3,000 websites
- Provide intrusion countermeasures within 30 minutes

Risk Management

Why Important

Companies should establish measures of risk management to minimize uncertainty. As uncertainty of the global business environment grows, the importance of risk management has increased even more. Furthermore, risk management goes beyond preventive dimension and is directly related to corporate value.

What's Achieved

Item	2020 Achievements	Achievement
To strengthen constant riskmanagement	Reinforce measures of risk management followed by responsible departments for financial and non-financial risks	Achieved
To response preventively to new risks in business and regulatory environments	Identified new risks in advance and established action plans	Achieved

How to be Better

Samsung SDS will extend reinforcing constant risk management with responsible departments playing a leading role in addressing both financial and non-financial risks that may occur in conducting business while preventively identifying new risks caused by changes in the business and regulatory environment, and developing countermeasures.



Key Figures

Risk Management Council pre-emptively identify major risks which may need company-wide cooperation.



Operating Cycle

2 in a Month



Mandatory Participants to Risk Management Council

9 Team Leaders



Risk Management

Agendas

- Major risks expected to impact the entire business
- Major risks that require timely resolution through close collaboration between the relevant departments

Operating Cycle

- 2 in a month

Risk Governance

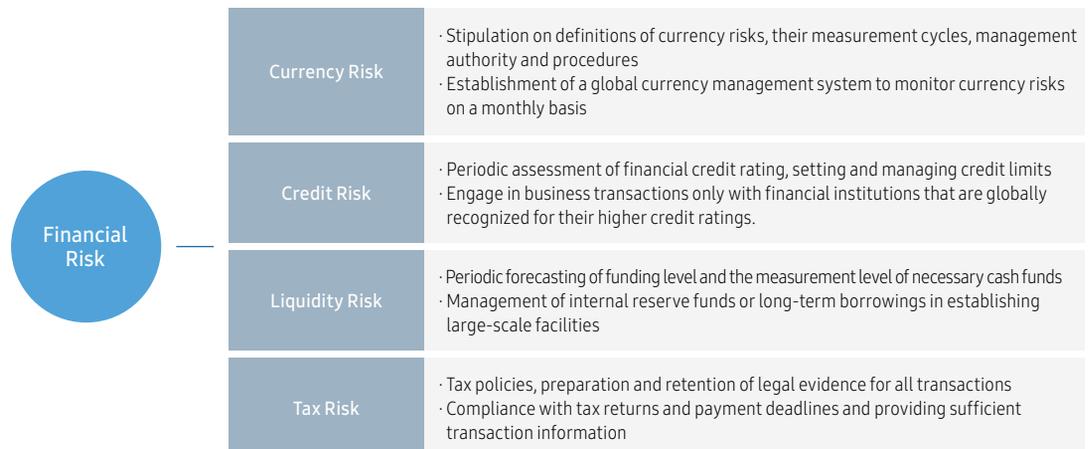
Samsung SDS designated the head of the management support team as the Chief Risk Officer (CRO), and established a risk management unit that works with responsible departments to share major business risk issues and respond to them.

Structure of the Risk Management Council



Financial Risk

Samsung SDS categorizes financial risks as market risks, credit risks and liquidity risks that may occur in the financial sector, and operates risk management policies and programs to respond to such risks. The Financial Management Team serves as the responsible supervisor and is tasked with policy development as well as measurement and assessment of financial risk and hedging in cooperation with respective business departments and individual companies in Korea and abroad.



Compliance with Taxation Laws, Tax Return and Payment Duties

1. We file tax returns and make timely payments in many countries in which we run our business through a normal tax structure
2. All employees in charge of tax matters comply with local laws and regulations, and maintain transparent relationships with local tax authorities in each country.
3. We actively respond to tax policy changes, adhere to local laws and regulations and do not transfer income to the countries that have lower income tax rates such as tax havens.

Tax Risk Management System

The importance of tax risk management has increased due to the rise in global business activities. Samsung SDS complies with tax regulations and fulfills its tax return and payment obligations sincerely. The company strives to improve the identified problems by establishing tax risk policies and evaluating potential tax risks in each country through an internal team of specialists. In addition, the company contributes to the development of local communities by creating jobs and paying legitimate taxes based on projects carried out by each country.

Non-Financial Risks

In addition to the financial risks that arise in conducting business, Samsung SDS defines non-financial risks as risks that occur in relation to compliance, human rights, safety accidents, and the environment, and controls the associated risks under the leadership of the respective organizational functions.



Compliance Risk	<ul style="list-style-type: none"> · Operation of the Compliance Council · Pre-reviews the procedures related to subcontracting, intercompany transactions and external sponsorship
Security Risk	<ul style="list-style-type: none"> · Regular inspections on the physical, administrative and technical data protection systems · Encourage employees to adopt self-review and improvement activities
Health and Safety Risk	<ul style="list-style-type: none"> · Enactment and operation of ten major safety regulations and establishment of the Occupational Safety and Health Committee · Quarterly discussions between management-employee representatives on key health safety issues
Environmental Risk	<ul style="list-style-type: none"> · Preparation of environmental management guidelines and monitoring of the system through regular inspections · Detailed environmental management activities for the Data Center

Compliance Risk Management

Compliance Council

Samsung SDS operates a Compliance Council consisting of 9 executives including the Compliance Officer, General Counsel, and the Collaboration Team Lead. The Council evaluates and decides on key compliance issues. On a quarterly basis, this also issues resolutions on major business-related agendas, revision of company's rules and regulations and sanctions and awards.

Pre-review Procedures

Samsung SDS operates pre-review procedures to prevent potential compliance violations during intercompany transactions, subcontracting or external sponsorship. In 2020, the company conducted pre-review on 6 intercompany transactions, 20 subcontracts, and 6 transactions involving external sponsorships.

Compliance Requirements for Third Parties

In order to minimize the risk of compliance violations in the course of normal business or entering into a new contract, Samsung SDS requires a contract to reflect compliance provisions and practices ethics/compliance management in sales/subcontract related transactions.

2020 Results of Pre-review



Number of subcontracting agreements
20 cases



Number of intercompany transactions
6 cases



Number of external sponsorships
6 times

APPENDIX

126	ESG Performance
132	Independent Assurance Statement
134	GRI Index
137	SASB Index
137	TCFD Index
138	WEF Index

ESG Performance

Financial Position

Item	Unit	2018	2019	2020	
Consolidated Basis	Sales	KRW million	10,034,219	10,719,632	11,017,432
	Operating profits	KRW million	877,356	990,089	871,618
	Net income	KRW million	638,792	750,449	452,909
	Total liabilities	KRW million	1,865,297	2,296,079	2,295,811
	Total assets	KRW million	8,013,849	9,021,236	9,154,919
Non-consolidated Basis	Sales	KRW million	5,083,718	5,096,158	4,549,427
	Operating profit	KRW million	666,607	691,675	582,117
	Net income	KRW million	534,497	520,825	266,592
	Total liabilities	KRW million	1,007,455	1,093,672	993,400
Credit Rating	Total assets	KRW million	6,178,103	6,576,534	6,510,161
	Korea Ratings	-	AA+	AA+	AA+
	Moody's	-	-	-	A1

Dividends

Item	Unit	2018	2019	2020	
Stock	Issued shares	No. of shares	77,377,800	77,377,800	77,377,800
	Outstanding shares	No. of shares	77,350,186	77,350,186	77,350,186
Dividend	Total dividends	KRW million	154,700	185,640	185,640
	Dividend payout ratio	%	24.6	25.2	41.9
	Dividends per share	KRW	2,000	2,400	2,400

Board Operation

Item	Unit	2018	2019	2020	
Board of Directors	BOD Meetings Held	Number of times	9	10	13
	Attendance of Directors in BOD Meetings*	%	94.4	97.5	98.1

* Outside directors

CEO Remuneration

Item	Unit	2018	2019	2020*
Total CEO Remuneration	KRW million	1,620	1,687	5,731

* Total CEO remuneration in 2020 includes retirement income

Distribution of Economic Values

Item	Unit	2018	2019	2020	
Employees	Wages		1,888,760	1,973,832	1,937,121
	Welfare & benefits		341,768	372,099	398,738
Suppliers	Purchases		1,491,297	1,655,343	1,534,602
Shareholders & Investors	Total cash dividends	KRW million	154,700	185,640	185,640
	Interest expense		1,667	15,073	16,360
Governments	Income taxes, etc.		317,738	285,839	433,209
Communities	Donations		1,973	3,396	5,160

R&D Expenditures

Item	Unit	2018	2019	2020
R&D Expenditures	KRW million	135,262	141,389	131,383
R&D Expenditures against Sales	%	1.35	1.32	1.19
Patent Registrations by Year	No. of Cases cumulative	1,517	1,650	1,717

Contributions and other Expenditures

Item	Unit	2018	2019	2020
Expenditures on External Organizations	Interest groups (or similar groups)	178	178	163
	Korea International Trade Association or Tax-exempt organizations	50	48	50

Employees Status

Item	Unit	2018	2019	2020	
Employees	Total	No. of persons	23,197	23,403	23,370
By Region	Domestic	No. of persons	16,664	16,523	16,277
	Overseas	No. of persons	6,533	6,880	7,093
By Gender	Male	No. of persons	16,646	16,809	16,808
	Female	No. of persons	6,551	6,594	6,562
By Age	Under 30	No. of persons	3,801	3,283	2,390
	Between 30~50	No. of persons	17,837	18,127	18,301
	Over 50	No. of persons	1,559	1,993	2,679
By Contract	Regular	No. of persons	22,721	22,906	22,908
	Non-regular (temporary)	No. of persons	476	497	462

Employee Diversity

Item	Unit	2018	2019	2020	
Employment Status	Employees with disabilities	No. of persons	406	409	413
		%	3.18	3.25	3.33
	Female executives	No. of persons	10	10	13
		%	11.4	10.9	14.4
	Female managers	No. of persons	1,525	1,656	1,817
		%	17.6	18.2	19.1
	Female employee related to STEM*	No. of persons	758	715	699
		%	24.8	25.1	25.8

* This item is calculated by reflecting the number of males with mild disabilities x ½ + the number of males with severe disabilities x 2 in the Open Hands Co., Ltd., a standard workplace for the disabled.

Gender Pay Gap

Item	Unit	2018	2019	2020
Ratio of Female Employees' Base Pay against that of Male Employees	%	100	100	100

Energy Consumption

Item	Unit	2018	2019	2020
Total	GJ	1,936,189	1,988,432	1,954,497
HQ (including Pangyo Campus and Seoul R&D Campus)	GJ	252,013	249,607	228,650
Sangam Data Center	GJ	414,063	494,797	495,707
Suwon Data Center	GJ	809,897	800,459	862,028
Gwacheon Data Center	GJ	289,693	221,564	11,808*
Gumi Data Center	GJ	170,523	167,783	172,993
Chuncheon Data Center	GJ	-	54,222	183,310
Percentage of Renewable Energy Used in Data Centers	%	-	-	0.11

* Gwacheon Data Center sold in March 2020.

GHG Emissions

Item	Unit	2018	2019	2020
Total Direct & Indirect Emissions (Scope 1+2)*	tCO ₂ eq	94,590	97,073	95,277
Scope 1	tCO ₂ eq	4,429	4,300	3,488
Scope 2	tCO ₂ eq	90,161	92,778	91,795
Scope 3	tCO ₂ eq	-	-	207,518

* The above 'Total direct and indirect emissions' may differ from the sum of Scope 1 and 2 depending on calculation criteria by workplaces.

Waste Generation

Item	Unit	2018	2019	2020
Total	ton	1,446	1,300	1,575
General	Incineration	1,079	1,295	1,568
	Landfill	0	0	0
Designated	Incineration	367	5	6
	Landfill	0	0	0

Water Consumption

Item	Unit	2018	2019	2020
Total	ton	307,458	254,365	326,406

Child-care Leave

Item		Unit	2018	2019	2020
Employees who took Child-care Leave	Subtotal	No. of persons	317	320	355
	Male	No. of persons	72	76	106
	Female	No. of persons	245	244	249
Employees Reinstated after Taking Child-care Leave	Subtotal	No. of persons	248	288	294
	Male	No. of persons	48	68	76
	Female	No. of persons	200	220	218
Reinstatement Rate after Taking Child-care Leave	Subtotal	No. of persons	78.2	90.0	82.8
	Male	No. of persons	66.7	89.5	71.7
	Female	No. of persons	81.6	90.2	87.6
Employees who Worked 12-month or Longer after Reinstatement	Subtotal	No. of persons	241	265	286
	Male	No. of persons	44	66	74
	Female	No. of persons	197	199	212

Employee Training

Item		Unit	2018	2019	2020
Training Expenditures	Total	KRW Million	25,343	23,130	29,456
Training Hours	Total	Hours	838,689	583,130	699,557
	Training time per person	Hours/persons	64.3	45.2	55.4
General Training (Duty, Leadership, etc.)			62	44	52
Ethical Management			1	0.5	1
Anti-sexual Harassment	Training time per person	Hours/persons	1	1	1
Fair-trade Compliance			1	0.5	1
Data Protection			1	1	1

Individual Performance Appraisal

Item		Unit	2018	2019	2020
Employees who Received Regular Performance Assessments		No. of persons	23,197	23,403	23,370
Ratio of Employees who Received Regular Performance Assessments		%	100	100	100

Turnover Rate and Employee Tenure

Item		Unit	2018	2019	2020
Turnover Rate		%	3.1	2.2	1.8
Employee Tenure		Year	12.8	13.7	15

Retirement Pension Funds under Management

Item		Unit	2018	2019	2020
Retirement Pension Funds under Management	DB Type (on a non-consolidated basis)	KRW Million	881,184	1,002,506	1,251,858
	DC Type (on a non-consolidated basis)	KRW Million	29,922	45,999	53,833

Workplace Safety and Health

Item	Unit	2018	2019	2020
Industrial Accident Rate (domestic)	%	0	0	1.6
Industrial Accident Rate (overseas)	%	0	0	0
Accident Intensity Rate*	%	0	0	1.4
Number of Days Lost	Days	0	0	375
Total Working Hours	Hours	26,568,960	26,925,888	26,389,440
Lost-Time Injuries Frequency Rate (LTIFR)**	%	0	0	7.6

* Accident intensity rate* Number of days lost/total working hours * 1000

** Lost-Time Injuries Frequency Rate (LTIFR) = Number of Medical Accidents / Annual Working Hours × 1,000,000

Social Contribution

Item	Unit	2018	2019	2020	
Donations (by Donator)	Total donations	KRW million	3,040	4,420	6,167
	Donations made by Samsung SDS	KRW million	1,973	3,396	5,160
	Donations made by Samsung SDS employees	KRW million	1,067	1,024	1,007
Donations (by Donation Type)	Cash	KRW million	1,966	2,446	4,254
	Business expenses	KRW million	1,067	1,974	1,907
	Investment in kind	KRW million	7	-	6
Social Contribution Performance	Total participation time	Hours	182,026	124,673	21,345
	Volunteers	No. of persons	13,135	12,812	10,956
	Beneficiaries	No. of persons	10,464	17,858	22,107
Employee Volunteers	Volunteers	No. of persons	10,956	10,257	3,221
	Volunteer hours per employee	Hours	17.0	12.2	6.6

* The above figures may be slightly different from the figures published in the '2020 Sustainability Report' last year due to change in the method of counting social contribution donations this year.

Customer Satisfaction Survey Results

Item	Unit	2018	2019	2020
Customer Satisfaction	Point	93.7	92.5	93.3

Failure Rate

Item	Unit	2018	2019	2020
Goal	ppm	3.4	0.07	0.06
Achievements	ppm	0.018	0.034	0.053

Suppliers

Item	Unit	2018	2019	2020
Number of Suppliers	ea	270	292	279
Total Purchases from Suppliers	KRW hundred million	4,023	4,453	3,676

Shared Growth

Item	Unit	2018	2019	2020	
Mutual Growth Fund	Investment from financial institutions (A)	KRW million	3,600	4,300	11,800
	Investment from Samsung SDS (B)	KRW million	36,400	40,700	48,200
	Total (A+B)	KRW million	40,000	45,000	60,000
	Funds spent	KRW million	40,000	45,000	45,404
Training Support	Training programs	No. of programs	27	44	65
	Training sessions	No. of times	23	21	20
	Trainees	No. of persons	2,410	2,823	2,128
Technology Support	Support provided	No. of times	170	231	231
	Technology data escrow	No. of cases	29	27	22
	Free-of-charge patent use	No. of cases	26	26	33
Recruitment Support	Recruitment	No. of persons	77	89	69
Joint Endeavors to Advance into the Global Market	Companies that made joint endeavors to advance into the global market	No. of companies	156	132	140
Consulting (Diagnosis)	Consulting provided	No. of cases	2	4	2

Fines and Non-monetary Sanctions Imposed for Violations of Laws and Regulations

Item	Unit	2018	2019	2020	
Violation of Laws and Regulations	Total fine	KRW million	0	0	0
	Number of lawsuits filed	Case	0	0	0
	Number of non-monetary sanctions	Case	0	0	0
	Total cases of corruption and bribery	Case	0	0	0

Data Protection

Item	Unit	2018	2019	2020	
Personal Information Leaks	Case	0	0	0	
Information Security Violations or Cybersecurity Incidents	Case	0	0	0	
Number of Customers Affected by Data Breaches	No. of persons	0	0	0	
Total Fine Due to Violations or Cybersecurity Incidents	KRW million	0	0	0	
Security Professional	Number of security professional	No. of persons	125	158	135
	Number of security professional who have completed human rights training	No. of persons	125	158	135

User Information and Data

Item	Unit	2018	2019	2020
Number of User Information Used for Secondary Purposes	Case	0	0	0
Number of Law Enforcement Requests for User Information from Government and Law Enforcement Agencies*	Case	71	29	47

* When requesting data from government agencies, the company cooperates with provision of related materials in accordance with the legal provision standards and methods in accordance with the "Telecommunications Business Act (Article 83) and the Protection of Communications Secrets Act (Articles 2 and 13)" (submission rate of requested information: 100%). (The statistical data on the provision of information has been reported to the Ministry of Science and ICT once every half year.)

Independent Assurance Statement

To readers of Samsung SDS Sustainability Report 2021

Introduction

Korea Management Registrar (KMR) was commissioned by Samsung SDS to conduct an independent assurance of its Sustainability Report 2021 (the "Report"). The data and its presentation in the Report is the sole responsibility of the management of Samsung SDS. KMR's responsibility is to perform an assurance engagement as agreed upon in our agreement with Samsung SDS and issue an assurance statement.

Scope and Standards

Samsung SDS described its sustainability performance and activities in the Report. Our Assurance Team carried out an assurance engagement in accordance with the AA1000AS v3 and KMR's assurance standard SRV1000. We are providing a Type 2, moderate level assurance. We evaluated the adherence to the AA1000AP (2018) principles of inclusivity, materiality, responsiveness and impact, and the reliability of the information and data provided using the Global Reporting Initiative (GRI) Index provided below. The opinion expressed in the Assurance Statement has been formed at the materiality of the professional judgment of our Assurance Team.

Confirmation that the Report was prepared in accordance with the Core Options of the GRI standards was included in the scope of the assurance. We have reviewed the topic-specific disclosures of standards which were identified in the materiality assessment process. We also confirmed that the report was prepared in accordance with the TCFD recommendations and SASB.

- GRI Sustainability Reporting Standards
- Universal standards
- Topic specific standards
 - Management approach
 - Indirect Economic Impacts : 203
 - Energy : 302
 - Emissions : 305
 - Supplier Environmental Assessment : 308
 - Occupational Health and Safety : 403
 - Training and Education : 404
 - Diversity and Equal Opportunity : 405
 - Child Labor : 408
 - Forced or Compulsory Labor : 409
 - Human Rights Assessment : 412
 - Local Communities : 413
 - Socioeconomic Compliance : 419
- SASB Sustainability Disclosure Topics & Accounting Metrics
- TCFD recommendations

As for the reporting boundary, the engagement excludes the data and information of Samsung SDS' partners, suppliers and any third parties.

KMR's Approach

To perform an assurance engagement within an agreed scope of assessment using the standards outlined above, our Assurance Team undertook the following activities as part of the engagement:

- reviewed the overall Report;
- reviewed materiality assessment methodology and the assessment report;
- evaluated sustainability strategies, performance data management system, and processes;
- interviewed people in charge of preparing the Report;
- reviewed the reliability of the Report's performance data and conducted data sampling;
- assessed the reliability of information using independent external sources such as Financial Supervisory Service's DART and public databases.

Limitations and Recommendations

KMR's assurance engagement is based on the assumption that the data and information provided by Samsung SDS to us as part of our review are provided in good faith. Limited depth of evidence gathering including inquiry and analytical procedures and limited sampling at lower levels in the organization were applied. To address this, we referred to independent external sources such as DART and National Greenhouse Gas Management System (NGMS) and public databases to challenge the quality and reliability of the information provided.

Conclusion and Opinion

Based on the document reviews and interviews, we had several discussions with Samsung SDS on the revision of the Report. We reviewed the Report's final version in order to make sure that our recommendations for improvement and revision have been reflected. Based on the work performed, it is our opinion that the Report applied the Core Option of the GRI Standards. Nothing comes to our attention to suggest that the Report was not prepared in accordance with the AA1000AP (2018) principles.

Inclusivity

Samsung SDS has developed and maintained different stakeholder communication channels at all levels to announce and fulfill its responsibilities to the stakeholders. Nothing comes to our attention to suggest that there is a key stakeholder group left out in the process. The organization makes efforts to properly reflect opinions and expectations into its strategies.

Materiality

Samsung SDS has a unique materiality assessment process to decide the impact of issues identified on its sustainability performance. We have not found any material topics left out in the process.

Responsiveness

Samsung SDS prioritized material issues to provide a comprehensive, balanced report of performance, responses, and future plans regarding them. We did not find anything to suggest that data and information disclosed in the Report do not give a fair representation of Samsung SDS' actions.

Impact

Samsung SDS identifies and monitors the direct and indirect impacts of material topics found through the materiality assessment, and quantifies such impacts as much as possible. We recommend that it develop models for measuring social values considering its business characteristics to increase the effectiveness of CSR activities and continuously enhance the sustainability management system.

Reliability of Specific Sustainability Performance Information

In addition to the adherence to AA1000AP (2018) principles, we have assessed the reliability of economic, environmental, and social performance data related to sustainability performance. We interviewed the in-charge persons and reviewed information on a sampling basis and supporting documents as well as external sources and public databases to confirm that the disclosed data is reliable. Any intentional error or misstatement is not noted from the data and information disclosed in the Report.

Competence and Independence

KMR maintains a comprehensive system of quality control including documented policies and procedures in accordance with ISO/IEC 17021:2015 - Requirements for bodies providing audit and certification of management systems. This engagement was carried out by an independent team of sustainability assurance professionals. KMR has no other contract with Samsung SDS and did not provide any services to Samsung SDS that could compromise the independence of our work.

May 2021 Seoul, Korea



CEO *E. J. Hwang*

GRI Index

GRI Standard	Reporting Topic	Page	Remarks	
GRI 102: General Disclosures				
Organizational Profile	102-1	Name of the organization	About This Report	
	102-2	Activities, brands, products, and services	10-15	Posted on Samsung SDS Website
	102-3	Location of headquarters	About This Report	Posted on Samsung SDS Website
	102-4	Location of operations	8-9	
	102-5	Ownership and legal form		Published in business reports
	102-6	Markets served	8-9	
	102-7	Scale of the organization	8, 127	
	102-8	Information on employees and other workers	127	
	102-9	Supply chain	94-96, 131	
	102-10	Significant changes to the organization and its supply chain		No major changes during the reporting period
	102-11	Precautionary Principle or approach	122-124	
	102-12	External initiatives	32-37, 75	
	102-13	Membership of associations	7	
Strategy	102-14	Statement from senior decision-maker	4-5	
	102-15	Key impacts, risks, and opportunities	38-39	
Ethics and Integrity	102-16	Values, principles, standards, and norms of behavior	111-113	Posted on Samsung SDS Website
	102-17	Mechanisms for advice and concerns about ethics	112-113	
Governance	102-18	Governance structure	104-108	
	102-20	Executive-level responsibility for economic, environmental, and social topics	104-108	
	102-21	Consulting stakeholders on economic, environmental, and social topics	36-37	
	102-22	Composition of the highest governance body and its committees	106	
	102-23	Chair of the highest governance body	105	
	102-24	Nominating and selecting the highest governance body	105-107	
	102-25	Conflicts of interest	106	
	102-26	Role of highest governance body in setting purpose, values, and strategy	104-108	
	102-27	Collective knowledge of highest governance body	108	
	102-28	Evaluating the highest governance body's performance	108	
	102-29	Identifying and managing economic, environmental, and social impacts	108	
	102-31	Review of economic, environmental, and social topics	108	
	102-33	Communicating critical concerns	123	
	102-35	Remuneration policies		Published in business reports
	102-36	Process for determining remuneration	108	Published in business reports
Stakeholder engagement	102-40	List of stakeholder groups	36-37	
	102-41	Collective bargaining agreements	70	
	102-42	Identifying and selecting stakeholders	36-37	
	102-43	Approach to stakeholder engagement	36-37	
	102-44	Key topics and concerns raised	38-39	
Reporting practice	102-45	Entities included in the consolidated financial statements	8-9	
	102-46	Defining report content and topic Boundaries	About This Report	
	102-47	List of material topics	38-39	
	102-48	Restatements of information	126-131	
	102-49	Changes in reporting		No major changes during the reporting period
	102-50	Reporting period	About This Report	
	102-51	Date of most recent report	About This Report	
	102-52	Reporting cycle	About This Report	
	102-53	Contact point for questions regarding the report	About This Report	

GRI Standard	Reporting Topic		Page	Remarks
GRI 102: General Disclosures				
Reporting practice	102-54	Claims of reporting in accordance with the GRI Standards	About This Report	
	102-55	GRI content index	134-136	
	102-56	External assurance	132-133	
GRI 103: Management Approach				
Management Approach	103-1	Explanation of the material topic and its boundary	48, 62-63, 80, 86, 94, 104, 110, 116, 122	
	103-2	The management approach and its components	48, 62-63, 80, 86, 94, 104, 110, 116, 122	
	103-3	Evaluation of the management approach	48, 62-63, 80, 86, 94, 104, 110, 116, 122	
GRI 200: Economic				
Economic Performance	201-1	Direct economic value generated and distributed	42	
	201-2	Financial implications and other risks and opportunities due to climate change	60-61	
	201-3	Defined benefit plan obligations and other retirement plans	72-73, 129	
Market Presence	202-1	Ratios of standard entry level wage by gender compared to local minimum wage	75	
Indirect Economic Impacts	203-1	Infrastructure investments and services	81-85	
	203-2	Significant indirect economic impacts	40-45	
Anti-corruption	205-1	Operations assessed for risks related to corruption	96	
	205-2	Communication and training about anti-corruption policies and procedures	112-113, 115	
	205-3	Confirmed corruption cases and actions against them	113	
Tax	207-1	Management approach to tax	124	Tax Strategy is available at Samsung SDS Website.
	207-2	Tax governance, control, and risk management		Tax Strategy is available at Samsung SDS Website.
	207-3	Stakeholder engagement and management of concerns related to tax		Tax Strategy is available at Samsung SDS Website.
GRI 300: Environment				
Energy	302-1	Energy consumption within the organization	128	
	302-3	Energy intensity	17, 56-58	
	302-4	Reduction of energy consumption	59	
	303-1	Interactions with water as a shared resource	52	
Water and Effluents	303-2	Management of water discharge-related impacts	52	
	303-5	Water consumption	128	
	305-1	Direct (Scope 1) GHG emissions	55, 128	
Emissions	305-2	Energy indirect (Scope 2) GHG emissions	55, 128	
	305-3	Other indirect (Scope 3) GHG emissions	55, 128	
	305-4	Reduction of GHG emissions	59	
	306-1	Waste generation and significant waste-related impacts	52	
Waste	306-2	Management of significant waste-related impacts	52	
	306-3	Waste generated	52, 128	
	306-4	Waste Conversion	52	
	306-5	Waste disposal	128	
	Environmental Compliance	307-1	Non-compliance with environmental laws and regulations	

GRI Standard	Reporting Topic	Page	Remarks
GRI 400: Society			
Employment	401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	72
	401-3	Parental leave	71, 129
Occupational Health and Safety	403-1	Occupational health and safety management system	78
	403-2	Hazard identification, risk assessment, and incident investigation	79
	403-3	Occupational health services	72
	403-4	Worker participation, consultation, and communication on occupational health and safety	72-73
	403-5	Worker participation, consultation, and communication on occupational health and safety	79
	403-6	Promotion of worker health	72
	403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	79
	403-8	Workers covered by an occupational health and safety management system	78
	403-9	Work-related injuries	130
	403-10	Work-related ill health	
Training and Education	404-1	Average hours of training per year per employee	129
	404-2	Programs for upgrading employee skills and transition assistance programs	64-68
	404-3	Percentage of employees receiving regular performance and career development reviews	129
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	405-2	Ratio of basic salary and remuneration of women to men	127
Freedom of Association and Collective Bargaining	407-1	Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	95-96
Child Labor	408-1	Operations and suppliers at significant risk for incidents of child labor	75-76, 95-96
Forced or Compulsory Labor	409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labor	75-76, 95-96
Security Practices	410-1	Security personnel trained in human rights policies or procedures	131
Human Rights Assessment	412-2	Employee training on human rights policies or procedures	76
	412-3	Significant investment agreements and contracts that include human rights clauses or that underwent human rights screening	96
Public Policy	415-1	Political contributions	Prohibition of the use of company funds for political purposes according to management principal guidelines
Customer Privacy	418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data	119, 131
Socioeconomic Compliance	419-1	Non-compliance with laws and regulations in the social and economic area	131

SASB Index

Sustainability Disclosure Topics & Accounting Metrics

Topic	Code	Category	Reference pages and Comments
Environmental Footprint of Hardware Infrastructure	TC-SI-130a.1	(1) Total energy consumed, (2) percentage grid electricity, (3) percentage renewable	128 / (2) Power Grid Ratio: 96.7%
	TC-SI-130a.2	(1) Total water withdrawn, (2) total water consumed, percentage of each in regions with High or Extremely High Baseline Water Stress	128
	TC-SI-130a.3	Discussion of the integration of environmental considerations into strategic planning for data center needs	56-61
Data Privacy & Freedom of Expression	TC-SI-220a.1	Description of policies and practices relating to behavioral advertising and user privacy	 Privacy Policy is available at Samsung SDS Website.
	TC-SI-220a.2	Number of users whose information is used for secondary purposes	131
	TC-SI-220a.3	Total amount of monetary losses as a result of legal proceedings associated with user privacy	131
	TC-SI-220a.4	(1) Number of law enforcement requests for user information, (2) number of users whose information was requested, (3) percentage resulting in disclosure	131
	TC-SI-220a.5	List of countries where core products or services are subject to government-required monitoring, blocking, content filtering, or censoring	120
Data Security	TC-SI-230a.1	(1) Number of data breaches, (2) percentage involving personally identifiable information (PII), (3) number of users affected	131
	TC-SI-230a.2	Description of approach to identifying and addressing data security risks, including use of third-party cybersecurity standards	117-119
Recruiting & Managing a Global, Diverse & Skilled Workforce	TC-SI-330a.1	Percentage of employees that are (1) foreign nationals and (2) located offshore	127
	TC-SI-330a.2	Employee engagement as a percentage	73
	TC-SI-330a.3	Percentage of gender and racial/ethnic group representation for (1) management, (2) technical staff, and (3) all other employees	127
Intellectual Property Protection & Competitive Behavior	TC-SI-520a.1	Total amount of monetary losses as a result of legal proceedings associated with anticompetitive behavior regulations	131
Managing Systemic Risks from Technology Disruptions	TC-SI-550a.1	Number of (1) performance issues and (2) service disruptions; (3) total customer downtime	88
	TC-SI-550a.2	Description of business continuity risks related to disruptions of operations	88

Activity Metrics

Code	Activity Metric	Reference page and Comment
TC-SI-000.A	(1) Number of licenses or subscriptions, (2) percentage cloud-based	(1) N/A, (2) 38.6% (by revenue)
TC-SI-000.B	(1) Data processing capacity, (2) percentage outsourced	(1) Number of Servers: 36,818 (2) 3% (by revenue)
TC-SI-000.C	(1) Amount of data storage, (2) percentage outsourced	(1) 166.7 Petabytes (2) 3% (by revenue)

TCFD Index

	TCFD Recommendation	Reference page
Governance	a) Describe the board's oversight of climate-related risks and opportunities	108
	b) Describe management's role in assessing and managing climate-related risks and opportunities	50, 53
Strategy	a) Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term	60-61
	b) Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning	60-61
	c) Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.	60-61
Risk management	a) Describe the organization's processes for identifying and assessing climate-related risks	60-61
	b) Describe the organization's processes for managing climate-related risks	60-61
	c) Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management	60-61

	TCFD Recommendation	Reference page
Metrics and Targets	a) Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process.	53-55, 60-61
	b) Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.	53-55, 60-61
	c) Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets	53-55, 60-61

WEF Index

Item	Theme	Core Metrics and Disclosures	Reference page
Governance	Governing Purpose	Setting purpose	48, 62-63, 80, 86, 94, 104, 110, 116, 122
	Quality of governing body	Board composition	105-108
		Progress towards strategic milestones	38-39
	Stakeholder Engagement	Material issues impacting stakeholders	36-39
	Ethical Behavior	Relevance of performance standards of compensation system and economic, environmental and social impacts	70, 108-109
		Anti-corruption	110-113, 131
	Risk and Opportunity	Reporting system, etc.	110-113
Integrating risk and opportunity into business process		108, 122-124	
Environment	Climate change	Direct and Indirect GHG Emissions (Scope 1 and 3)	55, 130
		TCFD-aligned reporting	60-61
		GHG emissions target and impact, etc.	54-55
	Nature Loss	Land use and ecological sensitivity	N/A
	Fresh Water Availability	Fresh water consumption in water stressed areas	52
	Air pollution	Impact of air pollution	49-50
	Water Pollution	Impact of water pollution	52
	Waste	Single-use plastics	52
	Resource availability	Resource circularity	52
	Human resources	Dignity and Equality	Diversity and inclusion (%)
Pay equality (%)			127
Risk for incidents of child, forced or compulsory labour			131
Impact of Human Rights			113
Health and Well Being		Health and safety	130
		Impact of work-related accidents on employees, businesses and society	130
Skills for the future		Training provided	64-68, 129
Economy	Wealth creation and employment	Net number of jobs created	129
		(Total number and rate of employee turnover during the reporting period, by age group, gender and region)	
		Net Economic Contribution	42, 126
		(Revenue, operating expenses, employee wages/benefits, government financial support, etc.)	
		Net investment (Depreciation, Share buybacks, Dividend payments)	126-127
	Innovation in better products and services	Infrastructure investments and services	81-85, 130-131
		Significant indirect economic impact	45
		R&D spend ratio	16, 22-31
Community and social vitality	Community and social vitality (Corporate tax, property tax, sales tax, employee tax, etc.)	45	
	Total corporate contributions (\$) across 7 categories* of social investment as defined by CCEP 2020 Valuation Guidance	43	

* Community, Human Rights, Diversity, Inclusion, Training, Safety and Health, Labor-Management Relations

