Weaving New Sustainability

NHN 2022 Sustainability Report

Guide to Sustainability Report

Reporting Overview

By publishing its first sustainability report in 2023, NHN aims to transparently disclose its sustainability-related activities to stakeholders. The company will use this year's report as a communication channel with various stakeholders to develop its unique ESG management capabilities.

Reporting Principles

This report was prepared in accordance with the “GRI Standards 2021,” the global standard for sustainability management reports, and the industry index standard for ”Software & IT Services” of SASB, the IFRS sustainability accounting standard, and its detailed reporting standards are available on page 115~118.

Reporting Period

This report covers the sustainability management activities and performance of NHN and its subsidiaries within the Group from January 1, 2022, to December 31, 2022. It provides comprehensive information on NHN Group's sustainability-related performance, as well as NHN's core technology and financial information. Furthermore, it includes information from 2021 to the first half of 2023 for some indices.

The Scope of Reporting

This report covers activities and performance related to the sustainability management of NHN, NHN PAYCO, NHN Cloud, NHN Bigfoot, and NHN Dooray! as of 2022. The companies that fall within the scope of reporting for the last three years due to captive spin-off and statutory merger and the varying reporting scopes for some indicators are as follows.

Year	The Scope of Reporting
2020	NHN, NHN PAYCO, Game subsidiaries (NHN Bigfoot, NHN Pixelcube, NHN RPG, NHN Starfish)
2021	NHN, NHN PAYCO, NHN Dooray!, Game subsidiaries (NHN Bigfoot, NHN Pixelcube, NHN RPG)
2022	NHN, NHN PAYCO, NHN Cloud, NHN Dooray!, NHN Bigfoot*

* Merged into NHN in October 2022

Third-party Assurance

NHN has been verified by the Korea Management Registrar (KMR), an independent third-party assurance agency specializing in sustainability reports, to ensure the objectivity and reliability of its sustainability report. A Type 2 assurance level and a moderate assurance type were applied, and detailed assurance statements can be found on page 123~124.

For Inquiry

If you have any opinions on the advancement of NHN’s sustainability report or if you have any questions about NHN’s ESG management, please contact us using the information below.

NHN ESG Management Promotion Office I esg@nhn.com

2022 Sustainability Report

Contents

Weaving New Sustainability

INTRO

Company Overview	005
Business Portfolio	006
CEO Message	011
Global Network	012

ESG IDENTITY

2022~2023 ESG Highlights	014
ESG Governance	015
ESG Vision	016
ESG Division Head's Message	020

TECHNOLOGY

Technology Ecosystem	022
Technology in Everyday Life	023
Technology that Helps Innovation	030

SUSTAINABILITY

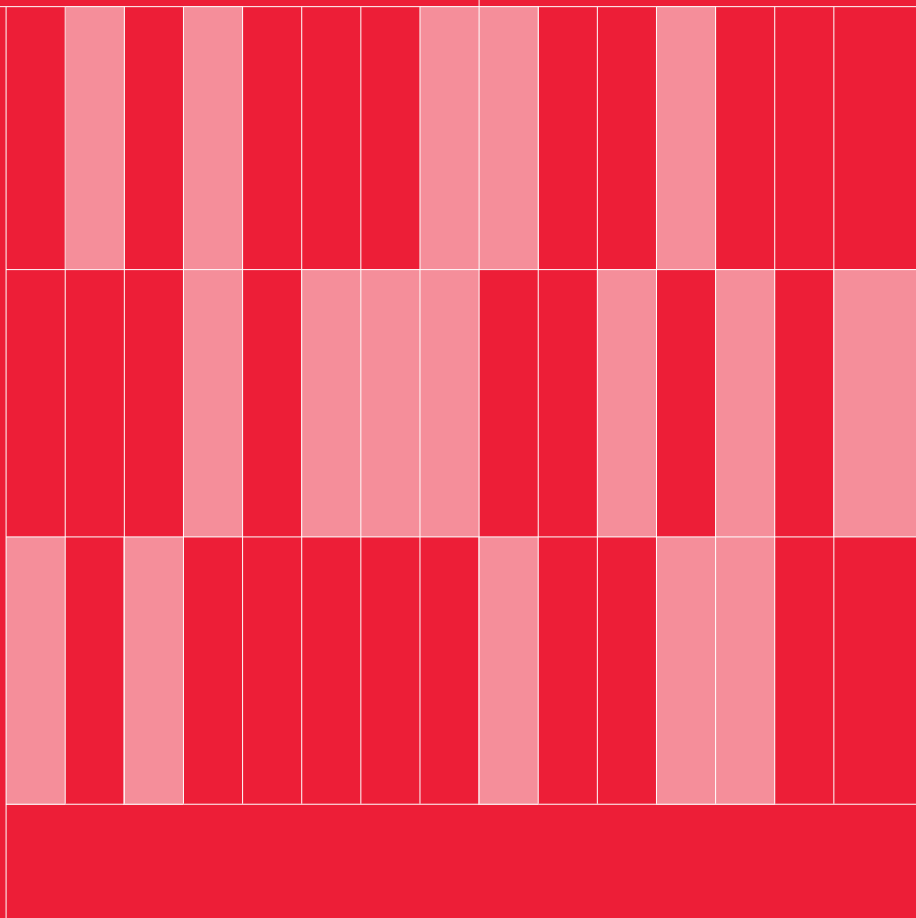
Environmental	036
Social	051
Governance	088

APPENDIX

Quantitative Data	103
Materiality Assessment	111
Stakeholder Communication	114
Initiative Index	115
Awards and Memberships	119
Verification Statement on GHG emissions	120
Third-party Assurance Statement	123

INTRO

Company Overview 005
Business Portfolio 006
CEO Message 011
Global Network 012



NHN | 2022 Sustainability Report

Company Overview

About NHN

Name of Company
NHN Corporation

CEO
Chung Ujin

Date of Establishment
August 2013

Employees
874 people (at the headquarters as of the end of 2022, excluding registered executives)

Headquarters
NHN Play Museum, 16 Daewangpangyo-ro 645beon-gil, Bundang-gu, Seongnam-si, Gyeonggi-do, 13487, South Korea

Business Sector
Software & IT services

Credit Rating
A+ (NICE Information Service Co., Ltd.)

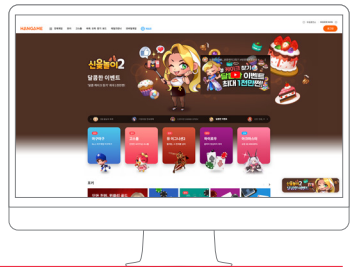
ESG Rating by KCGS

2020	2021	2022
B	B+	A

History

Aug. 2013	NHN Entertainment created through a spin-off from NHN Corporation (Currently Naver Corporation)
Feb. 2014	Established three game development subsidiaries
Dec. 2014	Launched Cloud service
Aug. 2015	Launched PAYCO, an eWallet service
Apr. 2016	Established NHN GoodFriends, the first standard workplace for people with disability in Pangyo Techno Valley
Apr. 2017	Established NHN PAYCO
Mar. 2018	Established NHN Bigfoot, a game development company, through merger
Apr. 2019	Changed company name back to NHN Corporation
Aug. 2021	Established NHN Dooray!, company specializing in SaaS tool for collaboration
Apr. 2022	Established NHN Cloud, a cloud specialized corporation
Oct. 2022	NHN Bigfoot merged into NHN

Business Portfolio



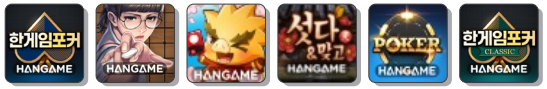
Game

Summary

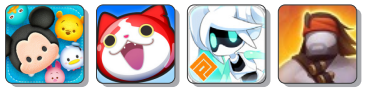
NHN began its journey in a game business sector with Hangame, South Korea's first online game portal, in 1999, which now enjoys a whopping thirty-seven million accumulated subscribers to date. It has long-accumulated an abundant experience and know-how through the development and operation of online board games and publishing and channeling of online PC games in various genres. Since successfully switching to the mobile game business in 2010, Hangame has established itself as a game brand that provides balanced services for both PC and mobile games. In 2022, the game business organization was integrated into the headquarters. Our unrivaled expertise in the domestic online board game market has helped the company expand its business presence from Asia to North America. Moving forward, NHN will target the blockchain game market by tapping into its unparalleled asset value management know-how accumulated over twenty years based on three genres: online board games, casual, and mid-core.

Hangame

- Korea's first online gaming portal and the No. 1 brand in the domestic web board game field.
- Provide a variety of games, including casual games, RPGs, and web board games such as Poker, Go-stop, and Baduk.

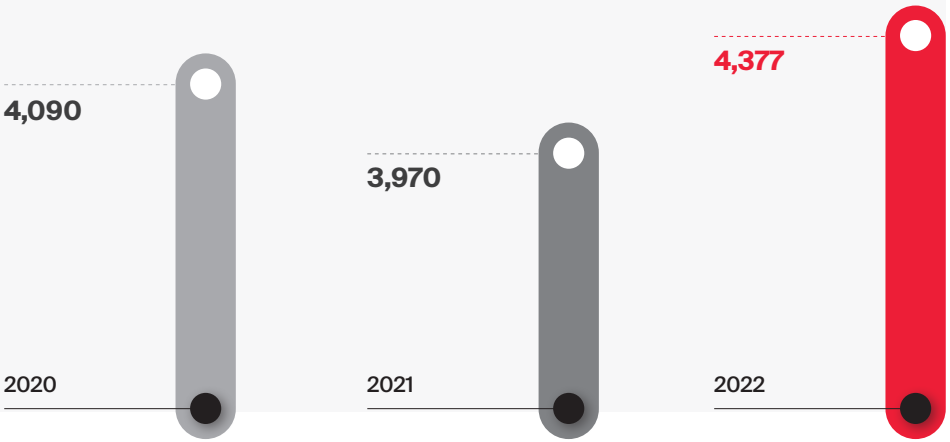


Major Mobile Games



Sales

(Unit: KRW 100 million)



* To prevent performance distortion, the sales of each business unit are based on the standard before deducting internal transactions that occurred between business units.

Major Achievements

Total number of people who have used the Hangame portal

37 million

(As of April 2023)

Hangame's domestic PC/mobile web board game market share

No. 1

(As of April 2023)

Total sale of LINE's Disney Tsum Tsum

KRW 2.8 trillion

(As of January 2023)

LINE's Disney Tsum Tsum's place in Japanese mobile puzzle sales ranking

No. 1 for 8 consecutive years

(As of January 2023)

Business Portfolio

Payment & Advertising

Summary

In the age of "Tech-Fin," where IT is central as the driving engine of finance, NHN is increasing its competitiveness in the payment field through NHN KCP's PG&VAN service that processes online/offline payment data together with PAYCO, a life-immersive platform. NHN has entered the digital advertising business jointly with PAYCO by analyzing and utilizing data gathered from game, commerce, and entertainment services. NHN is expanding its presence in the digital advertising industry through NHN ACE, a marketing platform company, and NHN AD, an advertising agency.

PAYCO

- Provide a variety of life-friendly services, such as online and offline payment services, corporate welfare solutions, and campus zones.
- As of the end of 2022, the cumulative amount used is approximately KRW 38.1 trillion

NHN KCP

- Provide electronic payment processing services through PG business and online and offline VAN business.
- No. 1 PG company in Korea since 2019.

NHN ACE

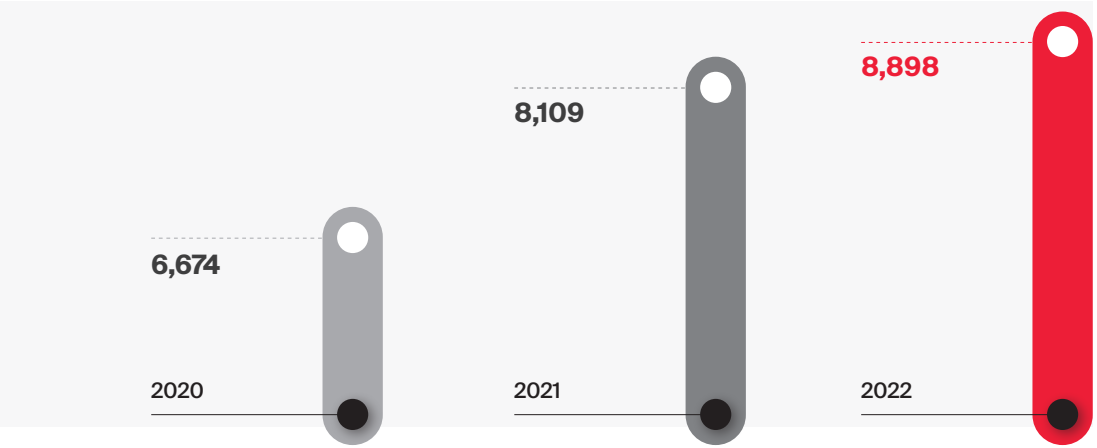
- A digital marketing platform company with the largest data and advertising marketplace in Korea

NHN AD

- An online advertising agency operating the entire digital marketing business. It provides a variety of advertising products and self-developed marketing solutions and platforms

Sales

(Unit: KRW 100 million)



* To prevent performance distortion, the sales of each business unit are based on the standard before deducting internal transactions that occurred between business units.

Major Achievements

Annual transaction volume of PAYCO

KRW 9.67 trillion

(As of 2022)

NHN KCP's share of the South Korean payment gateway market

No. 1

(As of December 2022)

Number of companies that use PAYCO's corporate employee benefits solution

1,900

(As of April 2023)

Business Portfolio

Commerce

Summary

NHN is actively developing B2B-focused global commerce businesses in China and the United States. In South Korea, NHN Commerce provides shopping mall hosting services through its hosting platform, Shopby. Our services offer a seamless customer experiences for many of its touchpoints, such as large-scale shopping malls to independent merchants. NHN Commerce is pursuing consistent growth by leveraging the Korea-China cross-border commerce opportunities offered by its subsidiary, Accommate, in China. It has demonstrated its capabilities not only on Tmall but also on various online platforms in China, including TikTok. In the US, NHN Global operates FashionGo, the top B2B marketplace in fashion in the North American region, and we are dedicated to expanding our strong foothold through expanding our service categories and launching new business.

Shopby / godomall5 shop by

- NHN Commerce's cloud-based online shopping mall solution.

NHN Accommate NHN ACCOMMATE

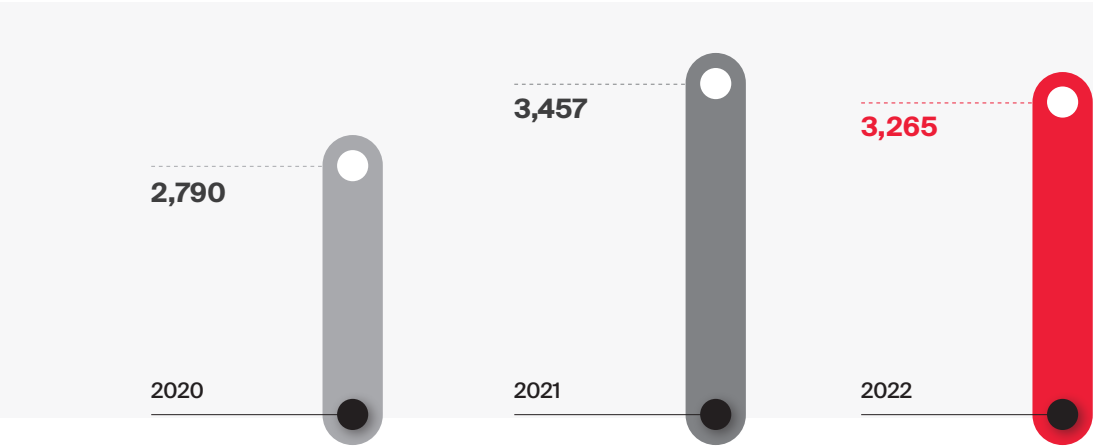
- A global cross-border e-commerce company that operates B2B2C platforms in China.

FashionGo FashionGo

- An online apparel B2B platform that enables retailers to purchase products from fashion vendors across the United States.
- Top fashion B2B marketplace in the US

Sales

(Unit: KRW 100 million)



* To prevent performance distortion, the sales of each business unit are based on the standard before deducting internal transactions that occurred between business units.

Major Achievements

Annual transaction volume* of NHN Commerce

KRW 3.9 trillion

* NHN Commerce + Accommate (As of 2022)

FashionGo's ranking in terms of transaction in fashion B2B platform in North America

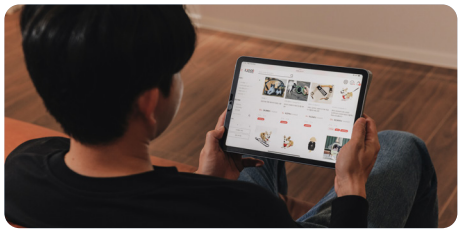
No. 1

(As of 2022)

NHN Accommate's largest transaction value ever for Singles Day in China

RMB 315 million

(As of 2021)



Business Portfolio

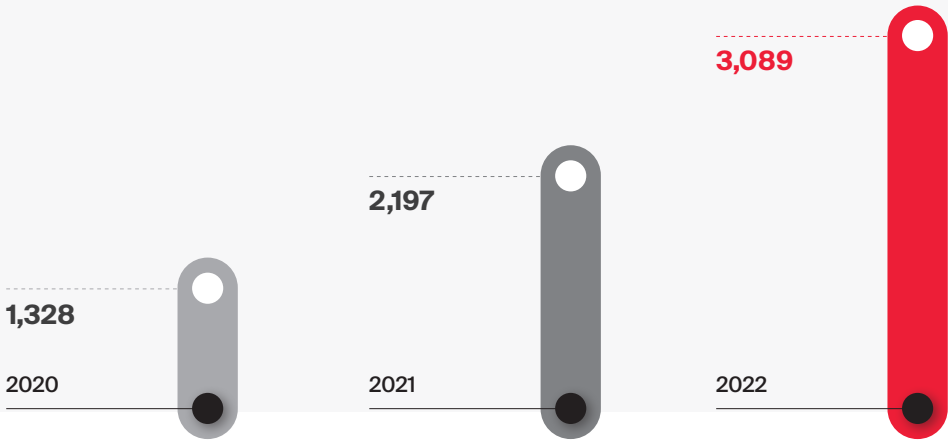
Technology

Summary

NHN has built NHN Cloud Center (NCC), an eco-friendly data center located in Pangyo Techno Valley, to provide a range of cloud-based services, including NHN Cloud, Dooray!, and Toast Cam. NHN Cloud provides OpenStack-based integrated cloud services and supports efficient conversion to cloud storage. In 2021, the domestic public cloud conversion project, led by the Ministry of the Interior and Safety, commenced and recorded a high rate of adoption. NHN aims to drive continued growth by expanding its private cloud services, including in the finance sector, encompassing both the public and private sectors. Dooray! has been adopted by various industries in recent years due to an increasing demand for untact collaboration. It has now consolidated its firm position as the collaboration solution securing the largest number of public sector clients in Korea. In addition, technology corporations, including NHN Cloud, are launching and researching various AI services that can be applied to real life, such as Baduk, fashion, and face recognition.

Sales

(Unit: KRW 100 million)



* To prevent performance distortion, the sales of each business unit are based on the standard before deducting internal transactions that occurred between business units.

NHN Cloud

- Provides an integrated cloud service based on OpenStack
- Selected by most institutions during the 2022 public institution cloud conversion project (supervised by the Ministry of the Interior and Safety)

NHN Cloud Center

- An urban eco-friendly data center

Dooray!

- An all-in-one collaboration platform

NHN Game Platform

- A game platform that assists in ensuring successful game launches

NHN DATA

- A data technology company that provides support for marketing and the establishment of business strategies through data analysis

Major Achievements

Value of NHN Cloud

KRW 1 trillion

(As of January 2023)

NHN Cloud's share of the public cloud market

39%

(of the public institutions that placed orders in 2022)

Number of orders Dooray! received in the public sector in South Korea

No. 1

(in the collaboration tools ordered in April 2023)

Business Portfolio

Content & Others

Summary

NHN offers a variety of content and entertainment businesses catering to both domestic and overseas users. The webtoon service Comico and Poket Comics are expanding their service offerings beyond Asia penetrating into North America and Europe. It began its journey with popular titles in the romantic fantasy genre. Bugs is one of South Korea's largest and most beloved music streaming service offering differentiated high-quality audio. NHN Link, which operates "Ticketlink," is making a leap as a comprehensive cultural platform that goes beyond an online ticket reservation platform to encompass offline performance environments. In addition, the company is committed to diversifying its service portfolio as represented by NHN Doctortour, a comprehensive travel agency, and I am School, a mobile notice board app, just to name a few.

Bugs
- An online music streaming service

Comico / Pocket Comics
- A global webtoon service

I am School
- Mobile notification and educational management services

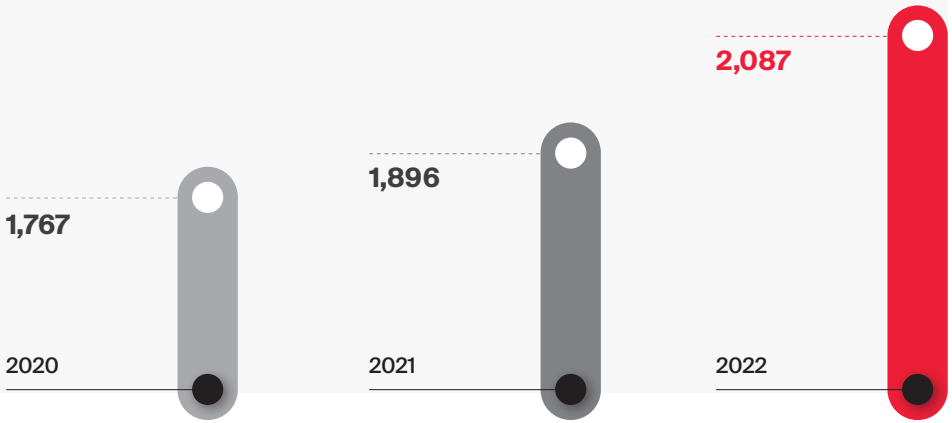
Ticketlink
- An online ticket reservation service for performances, exhibitions, sports, etc.

Pink Diary
- The official app of the Korean Association of Obstetricians and Gynecologists provides comprehensive women's health care services

Other Content Platforms

Sales

(Unit: KRW 100 million)



* To prevent performance distortion, the sales of each business unit are based on the standard before deducting internal transactions that occurred between business units.

Major Achievements

Number of global downloads of Comico/ Pocket Comics
45.42 million
(As of December 2022)

Global cumulative sales of Pocket Comics
UP 126% YoY
(As of 2022)

Number of schools using I am School
Education app No. 1
(As of 2022)

Number of downloads of Pink Diary
Women's healthcare app No. 1
(As of April 2023)

CEO Message

Greetings,
I am Ujin Chung, the CEO of NHN.

"Technology that keeps in tune with people creating a better today" is our ultimate goal and direction of the journey to become a global IT company for NHN, which started out as a game company.

Under this banner, NHN has been diversifying its business scope beyond games into fintech, including fintech, cloud and AI, commerce, content, and entertainment. This strategic expansion has resulted in significant growth and fostered organic synergy within each business category. In 2022, the company achieved a remarkable milestone by surpassing KRW 2 trillion in annual sales for the first time since its foundation. This accomplishment positions the company to embark on its next phase of growth and advancement. Its game business is showing a steady growth, maintaining its top position in the South Korean online board game market, and PAYCO's annual transaction volume is close to KRW 10 trillion. In 2022, the cloud service (CSP) revenue in the technology sector witnessed an impressive year-over-year growth of 65%, primarily propelled by the performance in the public sector business. The commerce and content business also expanded its business base by achieving remarkable results in the global market beyond the domestic market.

NHN is preparing for another leap forward without being complacent to the status quo. To this end, the game subsidiary NHN Bigfoot was acquired in 2022, centralizing the game business capabilities to the headquarters. Additionally, the cloud business was established as an independent corporation, establishing a solid foundation for future growth. NHN Cloud achieved a remarkable milestone in January 2023 by securing a KRW 150 billion investment, despite a contraction in the investment market. This achievement propelled the company's corporate value to KRW 1 trillion, earning recognition for its exceptional growth potential.

"Weaving New Play, Weaving New Sustainability"

As NHN celebrates its 10th anniversary, reflecting on a decade of fruitful financial growth, the next ten years will focus on fostering the continuity of such progress and strengthening NHN's ESG management capabilities as another key pillar for our success. Embarking on a new start in 2023, NHN publishes its first sustainability report to disclose its ESG performance and goals and demonstrate transparency in communicating with its stakeholders.

I would like to express my sincere gratitude to our fellow employees and stakeholders for your unwavering support and valuable advice throughout our journey of stable business growth. We have achieved such momentum by fostering internal stability and adaptability amidst a dynamic and ever-changing business landscape. We deeply appreciate your ongoing support as we embark on a new journey to foster collaboration and create a better tomorrow.

Thank you.

Ujin Chung
CEO,
NHN Corporation

Global Network

NHN JAPAN

NHN Japan Corporation is responsible for supporting the business strategies of NHN Group companies in Japan, including NHN PlayArt, NHN Comico, and NHN Tecorus. It strives to realize the value of "Next Human Network," which connects people and society through the infinite possibilities of the internet.

NHN PlayArt

NHN PlayArt is a company specializing in mobile game development. Since its establishment in 2000, it has built up its creative capabilities and expertise in the gaming market. Based on this, NHN PlayArt has released popular games such as 'LINE Disney Tsum Tsum,' 'Yo-kai Watch Puni Puni,' and 'Compass,' which have been well-received by users in Japan.

NHN COMICO

Launching 'Comico' in 2013, NHN Comico penetrated into Japanese webtoon market to pioneer the hometown of manga. Now being the representative webtoon platform in Japan, 'Comico' is being serviced in Korea, Thailand, Indonesia, Taiwan, France, and Spanish-speaking countries.

NHN TECHORUS

NHN TECHORUS plays a crucial role in NHN Japan's B2B business. It provides comprehensive IT infrastructure services such as multi-cloud managed hosting, data science, and security, delivering rational and effective solutions in a one-stop manner.

NHN GLOBAL

NHN Global is responsible for business in North America/Europe region business. In 2014, NHN acquired 'FashionGo', the No.1 online B2B marketplace in the United States, and expanded its global e-commerce business. Currently, NHN is engaged in e-commerce, cloud services, and entertainment businesses.

NHN ASIA

As NHN's subsidiary responsible for Southeast Asia operations, NHN Asia provide NHN's flagship games such as 'Crusaders Quest' and webtoon service 'Comico' to the Southeast Asian market.

ESG IDENTITY

2022~2023 ESG Highlights	014
ESG Governance	015
ESG Vision	016
ESG Division Head’s Message	020

2022~2023 ESG Highlights

Environmental

Established **Environmental and Energy Policy**

Acquired **ISO 14001 & ISO 50001** Certification
(Certification for Environmental and Energy Management System)

Calculated the most number of categories for **Scope 3 GHG Emissions** in domestic industry
(based on the emissions of the recent three years)

100% General Waste Recycling Rate
(2020-2022)

NCC PUE 1.32
Average of the previous 3 years
(2020-2022)

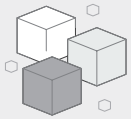
Social

Enacted **Human Rights Management Charter**

Certified by **Minister of Gender Equality and Family as Family-Friendly Company**
(Maintained the accreditation since first acquired in 2016)

Awarded by **Minister of Science and ICT for Excelling in Information Security**
(2nd time to receive the award following 2019)

Opened **NHN Academy Campus & R&D Center**
(Gyeongnam/Gwangju Campus, Gimhae/Gwangju R&D Center)



Enacted **Supply Chain Management Policy & Supplier ESG Practice Guide**

Governance

Appointed **The First Female Outside Director**

Newly established **ESG Committee & Group ESG Meeting Body**

Established **Risk Management System**

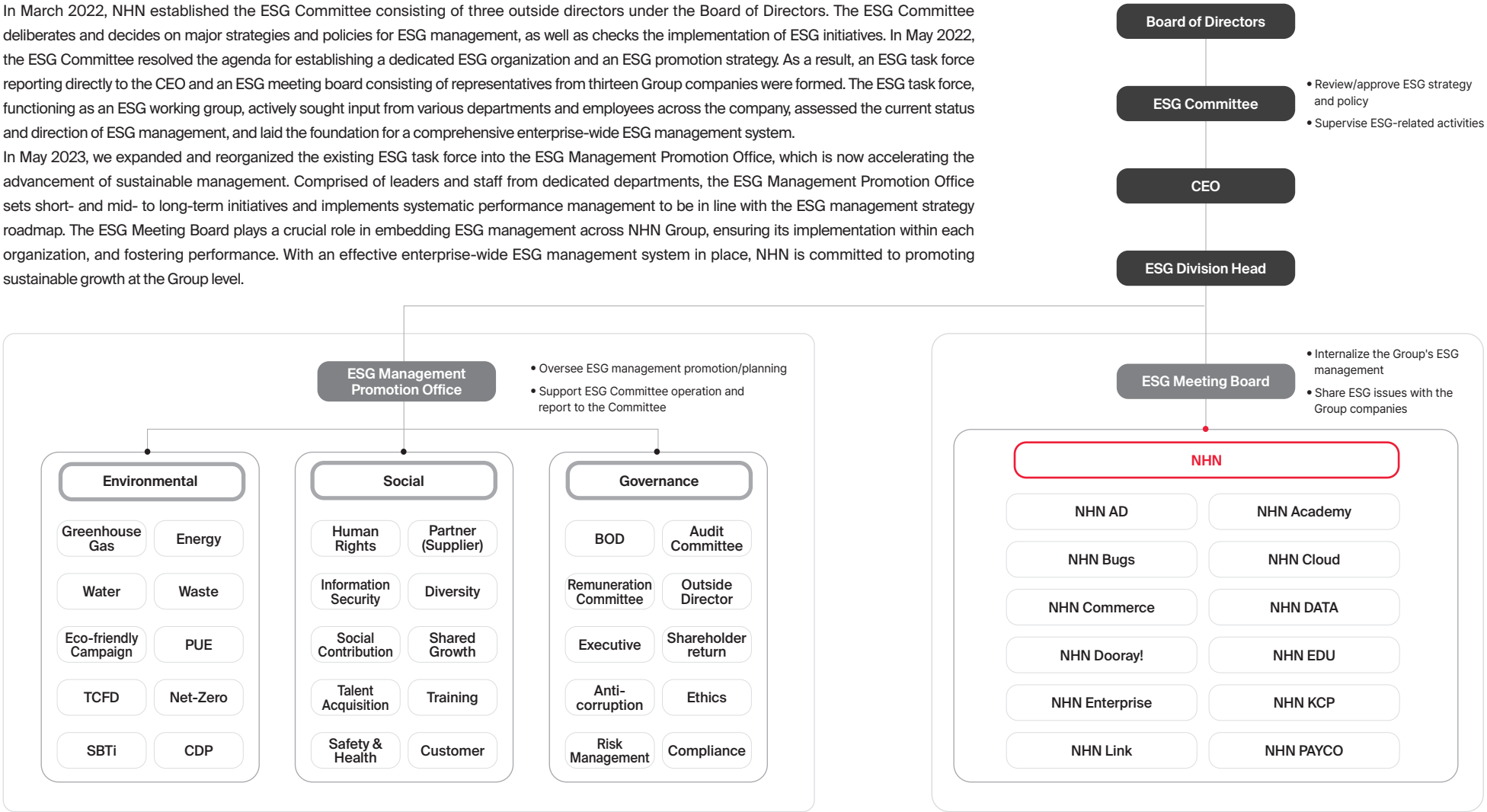
Established **Long-Term Shareholder Return Policy**

Established **Anti-Corruption Policy**
Adopted **Fair Trade Training Course**

ESG Governance

In March 2022, NHN established the ESG Committee consisting of three outside directors under the Board of Directors. The ESG Committee deliberates and decides on major strategies and policies for ESG management, as well as checks the implementation of ESG initiatives. In May 2022, the ESG Committee resolved the agenda for establishing a dedicated ESG organization and an ESG promotion strategy. As a result, an ESG task force reporting directly to the CEO and an ESG meeting board consisting of representatives from thirteen Group companies were formed. The ESG task force, functioning as an ESG working group, actively sought input from various departments and employees across the company, assessed the current status and direction of ESG management, and laid the foundation for a comprehensive enterprise-wide ESG management system.

In May 2023, we expanded and reorganized the existing ESG task force into the ESG Management Promotion Office, which is now accelerating the advancement of sustainable management. Comprised of leaders and staff from dedicated departments, the ESG Management Promotion Office sets short- and mid- to long-term initiatives and implements systematic performance management to be in line with the ESG management strategy roadmap. The ESG Meeting Board plays a crucial role in embedding ESG management across NHN Group, ensuring its implementation within each organization, and fostering performance. With an effective enterprise-wide ESG management system in place, NHN is committed to promoting sustainable growth at the Group level.



ESG Vision

NHN has published its first Sustainability Report, which includes the ESG management performance and long-term plans for 2022. We have established our own ESG vision framework, aiming to continuously enhance the ESG management level by generating not only financial but also non-financial outcomes utilizing our IT expertise and service operation know-how. Under the vision of "WEAVING NEW SUSTAINABILITY," we have set three focus areas: "Digital Inclusive Growth," "Responsible Digital Society," and "Digital Inclusion." Systematic implementation of ESG management activities will be carried out based on these areas. We are also dedicated to promoting the dissemination of the ESG vision framework throughout the entire NHN group and strive to internalize ESG management across the group.

VISION

WEAVING NEW SUSTAINABILITY

Creating a Sustainable Future as We Stay Connected

FOCUS

KEYWORD

Digital Shared Growth	Responsible Digital Society	Digital Inclusion
# Technological innovation	# Energy efficiency	# Improved quality of life
# Technology sharing and co-existence	# Enhanced information security	# Human rights management
# IT talent training	# Creating social impact together	# Promoting diversity
# Vitalization of the local IT ecosystem	# Transparent and robust governance	# Sustainable Supply chain

ESG Vision

Digital Shared Growth

KEYWORD

Technological innovation

APPROACH

To sustain its growth as a global IT company, NHN must consistently secure differentiated and innovative technologies compared to other companies. We will strengthen sustainable management while maintaining our unique technological competitiveness.

ACHIEVEMENT

- Improvement of the operating environment for Hangame Poker
- Expansion of AI Baduk program 'HanDol' application
- Development of AI-based technologies such as facial recognition, voice synthesis and recognition, virtual fitting services, etc.
- Enhancement of the PAYCO platform

TARGET

- Continued expansion of R&D investment and recruitment of personnel
- Development of new growth drivers

KEYWORD

Technology sharing and co-existence

APPROACH

NHN aims to pursue mutual cooperation and prosper with SMEs and partners through technology sharing. In various business sectors such as gaming, cloud, AI, commerce, and content, we seek to create collaborative opportunities with diverse partners and share expertise and experiences to generate greater value.

ACHIEVEMENT

- Membership in the Open Infrastructure Foundation
- Attainment of CNCF Kubernetes certification
- Hosting of technology conferences such as NHN FORWARD, NHN Cloud make IT
- Support for game platforms and AI technologies targeting SMEs

TARGET

- Continued collaboration with institutions in the gaming and IT fields
- Expansion of AI technology partnerships
- Establishment of support and training programs for partner companies' technologies

KEYWORD

IT talent training

APPROACH

NHN supports IT talents with creative and innovative ideas to grow without constraints based on their location or environment. We aim to create an ecosystem where not only internal members but also talents from diverse backgrounds can enhance their IT capabilities and achieve a sense of fulfillment by utilizing our infrastructure and programs.

ACHIEVEMENT

- Operation of training programs to enhance the technical capabilities of members
- Opening of NHN Academy campuses in Gyeongnam and Gwangju
- Participation in public-private cooperation programs for cultivating digital talents
- Establishment of long-term goals for fostering local IT talents

TARGET

- Diversification of common training programs for members
- Provision of specialized training programs based on job roles
- Strengthening the self-development support system for members
- Expansion of NHN Academy programs and recruitment

KEYWORD

Vitalization of the local IT ecosystem

APPROACH

In the face of the rapidly expanding global IT industry, our communities are presented with numerous opportunities and challenges. NHN is committed to revitalizing the regional IT ecosystem by actively collaborating with the local community, ultimately fostering balanced regional economic development.

ACHIEVEMENT

- Opening of R&D centers in Gwangju and Gimhae
- Planned opening of a national AI data center in Gwangju (second half of 2023)
- Hosting of local IT conferences
- Expansion of collaboration with local public institutions

TARGET

- Expansion of regional hub data centers and R&D centers
- Local recruitment of personnel for data centers and R&D centers
- Diversification of conference hosting locations and programs

ESG Vision

Responsible Digital Society

KEYWORD

Energy efficiency

APPROACH

To address climate change, our ultimate goal in environmental management is to achieve energy efficiency and fulfill responsibility towards the environment not only at the headquarters and data centers but also across all group companies. Ultimately, we will continue our multifaceted efforts to achieve Net-zero emissions, ensuring that we do not spare our efforts in this regard.

ACHIEVEMENT

- Establishment of Environmental/Energy Management Policy
- Acquisition of ISO 14001, ISO 50001 certifications
- Eco-friendly projects at NHN Cloud Center
- Expansion of environmentally friendly investments and the ratio of zero-emission vehicles
- Diversification of eco-friendly campaigns

TARGET

- Adoption of renewable energy
- Development and implementation of Net-zero achievement plans
- Declaration of support for TCFD and other environmental initiatives (CDP, SBTi)

KEYWORD

Enhanced information security

APPROACH

The most crucial asset in NHN's business operations is the information. NHN recognizes the importance of protecting the personal information and intellectual property rights of stakeholders. To enhance the level of information security, we aim to improve its advanced security systems unique to the company.

ACHIEVEMENT

- Conducting penetration testing and vulnerability assessments
- Operation of job-specific information security training
- Implementation of disaster recovery training and enhancement of safety measures
- Application of ISO 22301-based business continuity plans
- Successful completion of financial CSP safety valuations

TARGET

- External evaluation of information security systems by third-party assessors
- Expansion of cyber security incident response training and regular audits

KEYWORD

Creating social impact together

APPROACH

NHN always shares and considers the company's values and direction with its employees. With the belief that small actions leading to a significant impact, we are committed to fulfilling our social responsibilities by empowering our employees to generate various positive social impacts.

ACHIEVEMENT

- Operation of the "Little Action" campaign
- Donations for the Turkey Earthquake and domestic flood/wildfire damages
- Commendation as an excellent company for social contribution by Seongnam City
- Establishment of medium-term goals for social contribution and community engagement

TARGET

- Diversification of "Little Action" campaign contents
- Enhancement of member participation in social contribution activities
- Implementation of ESG training for members

KEYWORD

Transparent and robust governance

APPROACH

Protecting stakeholders' right to know and establishing a robust governance structure is no longer an option but a corporate responsibility. This necessitates the continual enhancement of sustainable management practices. We strive to be a trusted company through continuously improving internal ethics, transparency in governance structure, and disclosure of information for an enhanced reliability.

ACHIEVEMENT

- Appointment of the first female outside director
- Disclosure of the Board Skills Matrix
- Formulation of long-term shareholder returns policy
- Selection as an excellent corporation in the 2022 securities market disclosure
- 100% handling rate of reports to the Business Ethics Counseling

TARGET

- Enhancement of board of directors' evaluation
- Shareholder-friendly management and protection of shareholder rights
- Proactive response to ESG initiatives

ESG Vision

Digital Inclusion

KEYWORD

Improved quality of life

APPROACH

NHN supports all members in improving their quality of life through a pleasant working environment and diverse welfare programs, without discrimination. The inclusivity fostered within NHN translates into better work performance, ultimately contributing to enhancing the quality of life for our customers.

ACHIEVEMENT

- Continued operation of diverse welfare programs
- Establishment of a flexible work culture through "Purple Time"
- Operation of the "Better training" program and self-development support system
- Conducting safety and health risk assessments and implementing improvement measures

TARGET

- Expansion of customized welfare programs for members
- Diversification of work systems
- Enhancement of industrial safety and health response system

KEYWORD

Human rights management

APPROACH

NHN respects basic human rights of all our stakeholders. We establish the basis of its human rights management by addressing human rights violations in accordance with rigorous and precise standards, and proactively mitigating human rights risks.

ACHIEVEMENT

- Establishment of Human Rights Management Declaration
- Operation of the human rights grievance channel "With U"
- Conducting surveys to identify human rights risks
- Expanding the scope of the member counseling service "InMind"

TARGET

- Establishing a human rights risk assessment process
- Achieving zero incidents of human rights violations
- Promoting the values of human rights management among group companies and partner organizations

KEYWORD

Promoting diversity

APPROACH

A healthy organizational culture begins with members from diverse backgrounds and experiences sharing different perspectives. we aim to maximize the value of diversity and will make multifaceted efforts in areas such as recruitment and employee welfare to achieve this.

ACHIEVEMENT

- Maintenance of Family-Friendly Company certification from the Ministry of Gender Equality and Family
- Expansion of eligibility for prenatal screening leave
- Operation of NHN GoodFriends, a workplace for people with disabilities
- Female representation of 41.8% among new hires

TARGET

- Ensuring diversity in the board of directors
- Maintenance of Family-Friendly Company certification
- Strengthening maternity and paternity protection policies.

KEYWORD

Sustainable supply chain

APPROACH

NHN expects its partners to fulfill their social responsibilities and actively participate in sustainable management. We aim to strengthen communication with our partners and establish sustainable partnerships and supply chains.

ACHIEVEMENT

- Establishment of Supply Chain ESG Management Policy
- Development of ESG Practice Guide for partners(suppliers) and enforcement of compliance commitments
- Operation of eco-friendly procurement policy
- Expansion of communication with partners through the Business Ethics Counseling Center and surveys

TARGET

- Securing a healthy pool of partner companies
- Implementing ESG capacity enhancement programs for partners
- Establishing an internal evaluation process for partner companies
- Enhancement of eco-friendly procurement policies

ESG Division Head's Message

Greetings, I am Yeon-hun Jeong, head of NHN's ESG Division.

I'm proud to say that the year 2022 was indeed successful for NHN as we consolidated the ESG capabilities of our group companies, built an effective work system, and promoted our ESG management strategy in earnest. We have established a system to track and manage environmental data generated by Play Museum and NCC, laying the foundation for sustainable management by revising and establishing policies and strategies on various ESG issues such as human rights, corporate ethics, and supply chain. In 2023, NHN declared the vision of "Weaving New Sustainability" and established three new strategic directions: "Digital Inclusive Growth," "Responsible Digital Society," and "Digital Inclusion." Now, NHN is committed to transparently sharing our footsteps of ESG activities and achievements we have accumulated so far through the publication of the first Sustainability Report, aiming to widely communicate our dedication to various stakeholders.

Digital Shared Growth

NHN plans to create various social values based on its technological and digital capabilities. We will open up our innovative technologies and robust know-how in the five major business sectors to the outside world, fostering a healthy IT ecosystem with more stakeholders. Through this, we aim to support the growth of SMEs, startups, and small businesses, realizing the value of symbiosis that allows us to go further together. Above all, we will make efforts to ensure that these values are not concentrated only in the metropolitan area but spread throughout various regions. We will provide diverse talent development and educational infrastructure to enable local talents to acquire IT skills and develop into IT professionals. The collaborative steps we took in Gwangju and Gyeongnam in 2022 will continue to reach out to more local communities.

Responsible Digital Society

We will not pursue blind profit-seeking as our goal. As our business grows and our daily lives become more convenient, we will be more mindful of the increasing weight of responsibility that the company should bear. NHN fully recognizes that our business processes have direct and indirect impacts on the macro sectors such as the environment, society, and economy. Therefore, we will maximize NHN's unique positive social impact together with our members, mitigating and offsetting negative influences, while pursuing responsible growth. We will be a company spearheading in various sectors - energy efficiency, resource conservation, and environmental protection for a sustainable environment. We will fulfill NHN's responsibilities in the digital society through the reinforcement of information security, corporate ethics, and the establishment of a culture of giving. We will also continue to ensure the soundness of our corporate governance structure.

Digital Inclusion

NHN is committed to addressing and seeking improvements in issues of marginalization and discrimination resulting from technological and industrial advancements. We prioritize the rights and safety of diverse stakeholders in all our business processes and strive to foster an organizational culture within NHN that respects diversity. Expanding this inclusiveness that originates internally to society at large, we will make efforts to ensure that NHN's business contributes to solving societal issues and brings about meaningful change. We promise to use NHN's technology and services to embrace more people and contribute to enhancing their quality of life.

Moving forward, NHN will further strengthen the foundation of sustainable growth for "Creating a New Tomorrow as We Stay Connected." We deeply appreciate the continuous interest and support from all stakeholders, who have shown great interest in NHN's past and present. We kindly ask for your continued support and encouragement as we journey together towards creating a new tomorrow with NHN.

Thank you.

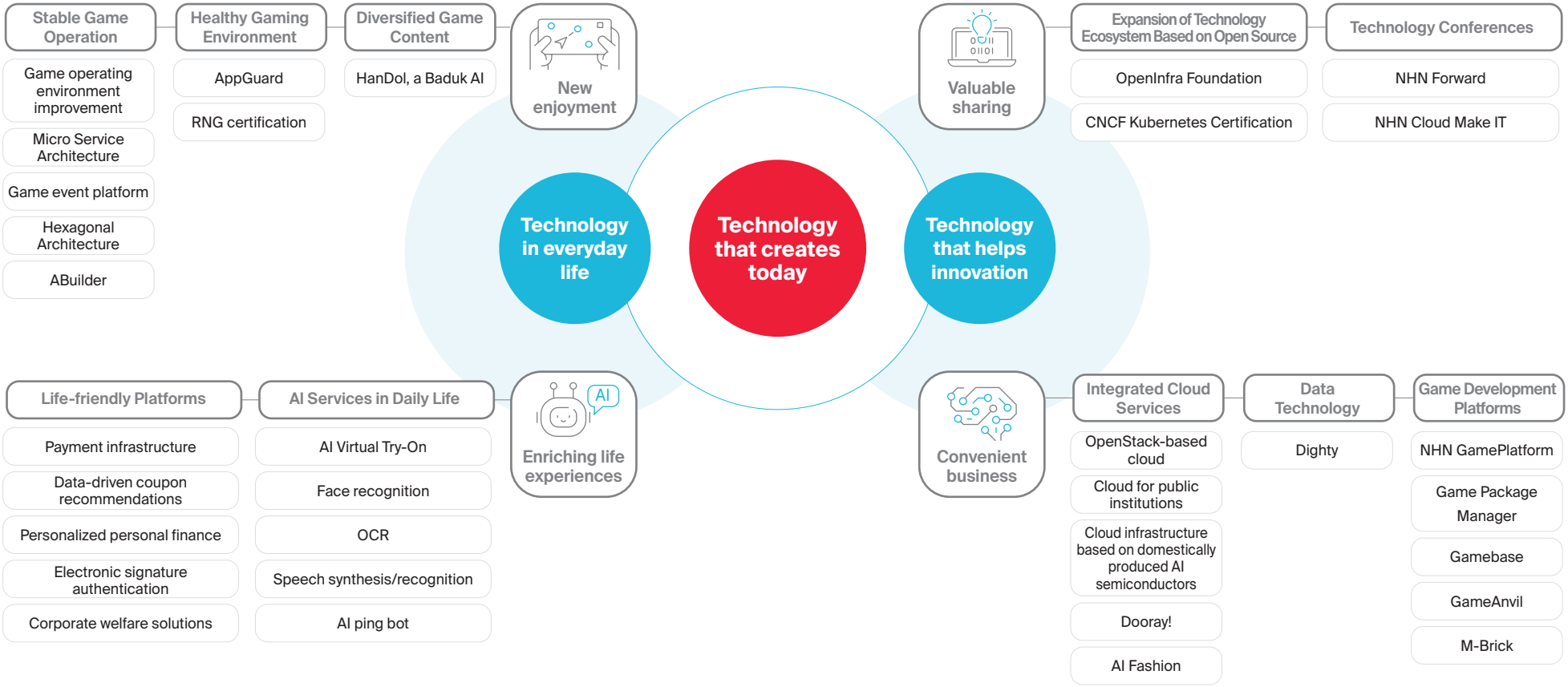
Yeon-hun Jeong
Head of ESG Division,
NHN Corporation

TECHNOLOGY

Technology Ecosystem 022
Technology in Everyday Life 023
Technology that Helps Innovation 030

Technology Ecosystem

Every technology within NHN Group is aimed towards people, everyday life, and the world. Under this shared value, our diverse range of services is interconnected, bringing a better everyday life to numerous stakeholders. Within the NHN ecosystem, technology becomes a companion that makes someone's daily life more enjoyable and prosperous, and a reliable partner that aids someone's innovation. We hope that everyone can easily and conveniently enjoy the benefits of technological advancements, and that each day can be slightly better than yesterday. NHN will continue to seek new challenges, pioneer through untapped areas with our technology, and strive to create a healthier technological ecosystem.



Technology in Everyday Life

New Enjoyment

NHN's technology began with games. Started as the first online game portal in Korea, 'Hangame,' in 1999, NHN has been providing various game services and a pleasant playing environment. Furthermore, NHN continuously strives to bring new joy to users. Achieving this goal, NHN actively adopts new ideas and the latest technologies, and collects customer feedback to improve games. NHN will continue to explore new possibilities in gaming through constant research and development.

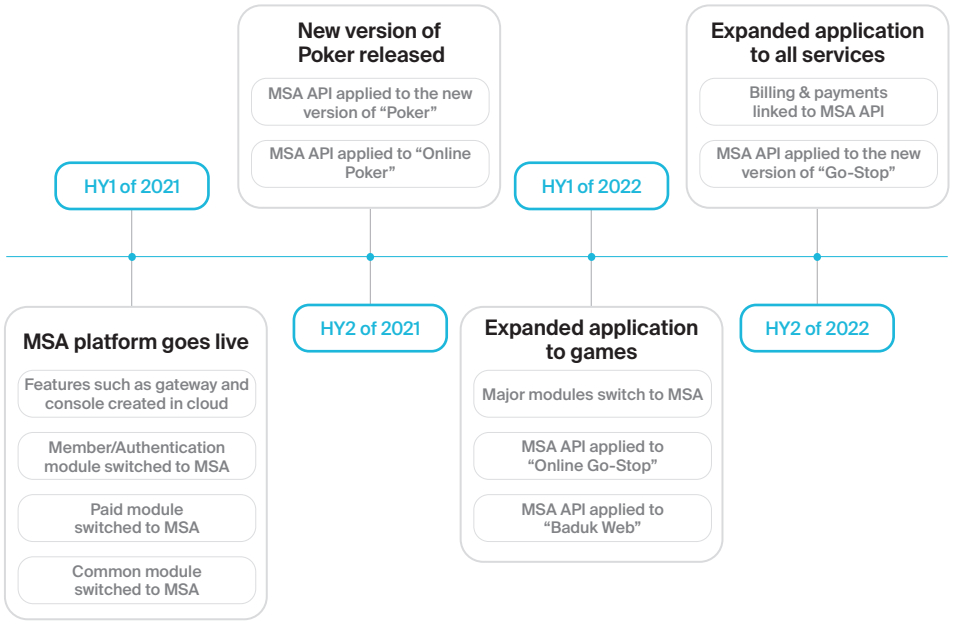
Stable Game Development and Operation

Game Operating Environment Improvement

NHN has more than twenty years of successful experience in game development and operation in the fast-changing game market, mostly in the genres of online board games, casual, and mid-core. In addition to maintaining our existing game services, we continuously strive to acquire various technologies essential for game development and operation. This commitment enables us to provide users with an enhanced and enjoyable gaming experience. To enhance the development efficiency and flexibility of "Hangame Poker," a game that was developed during the early days of online gaming, our company recently conducted a comprehensive technical overhaul of its operating environment. By applying various upgrades such as the latest OS, database, development language, and framework, we have improved the service to a lighter, faster and easier-to-maintain environment. While maintaining the game quality, we made improvements to the quality of the arena and waiting room, and also improved the game screen and added new content, resulting in increased user satisfaction and gameplay. We successfully completed the Hangame Poker Renewal Project with the launch of Party Hula in June 2023, following the initial renewal of Hi-Low in September 2021.

Micro Service Architecture(MSA)

To provide stable and scalable platforms to its clients in the Hangame web service, NHN has adopted a Micro Service Architecture (MSA) API, which separates the application into small units of core functionalities. By implementing MSA, NHN enables separate operation and parallel development of game web services such as membership, items, and coupons. This has significantly reduced development time and improved the ability to respond quickly and efficiently to failures and updates. Since the opening of the MSA platform in the first half of 2021, NHN has been progressively expanding the application of MSA to the Hangame games and services.



Technology in Everyday Life

Game Event Platform

The Event Platform is a platform that provides event functionalities within games. It standardizes and automates the parts of events that are handled through web APIs, minimizing the resources required for development. The Event Platform also serves as a centralized repository for event-related data within NHN's games. By managing the data in one place, it allows the removal of duplicate data and ensures consistency across the data. Additionally, it enables ongoing utilization for future project development and upgrades tasks.

Hexagonal Architecture

Taking note of the fact that participation and compensation methods in game events vary among games, we introduced a hexagonal architecture in May 2020 to flexibly add new types of events. This architecture increases the flexibility of business logic by effectively separating domain-specific business logic from external elements. Currently, it is being applied to approximately 13 games, including “Baduk," "Go-Stop," and "Janggi."

ABuilder | Operation Tool Automation

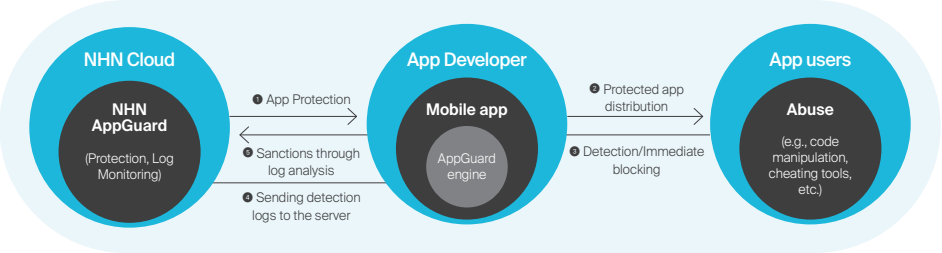
NHN has introduced the No Code platform called ABuilder to dramatically reduce the web development time for game operations. With this platform, even non-coders such as game planners can easily create game operation pages within minutes by simply using mouse actions to arrange components.

Creating a Healthy Gaming Environment

AppGuard | In-house Security Solution

NHN strives to provide users with a pleasant gaming environment. One of the ways to do so is through our in-house security solution called AppGuard. AppGuard is designed to detect and block tampered apps and emulators, ensuring the security of games, payments, and other critical areas within our business. Developed and operated by security experts specializing in mobile app security, AppGuard offers robust protection features such as app tampering prevention, source code obfuscation and encryption, game engine protection, real-time security configuration management, and blocking of hacking tools. In addition, we block overseas IP access in games and monitors abusive packets, reinforcing security measures to prevent illegal programs from compromising the gameplay experience.

AppGuard service structure



RNG Certification

To guarantee fairness within the game, NHN has analyzed game result data and validated the absence of artificial intervention in the probability. This assurance is achieved by implementing the RNG authentication method from GLI, a renowned global certification body for game probabilities. Moreover, chat messages are masked within the game to prevent the usage of offensive language, including profanity, belittlement, suggestive words, and vulgar slang. We take prompt action against abusive users to ensure a safe and respectful gaming environment.

Gaming Labs Certified RNG

이용자보호인증

Technology in Everyday Life

Diversification of Game Content

HanDol | Hangame Baduk AI

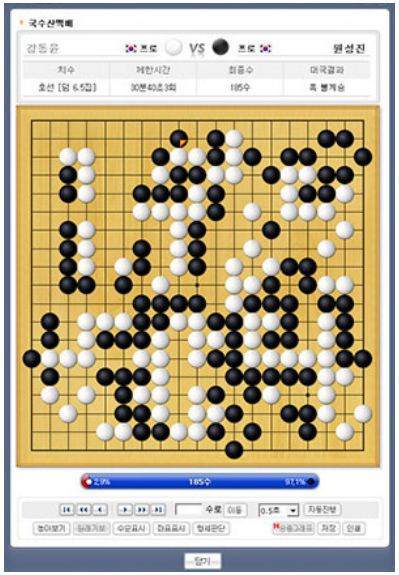
Based on the extensive collection of Baduk data accumulated since 1999, NHN has developed its own AI Baduk program called HanDol. This AI program is now being utilized in “Hangame Baduk” and “Hangame Omok” to enhance the gaming experience. HanDol is the one and only independently developed Baduk AI that offers Baduk games for the general public to play. The latest version, HanDol 4.0, achieved an impressive win rate of over 90% against the existing Hangame 9-dan player. HanDol also achieved the remarkable feat of reaching the semifinals at the 2019 China Securities Cup World AI Baduk Open. Additionally, it was chosen as the final opponent for the retirement match of Lee Se-dol, a renowned 9-dan ranked Baduk player.

HanDol has been actively integrated into various services offered by Hangame, providing users with a diverse range of content that goes beyond a simple game. Users can choose HanDol that fits for their skill levels to have a match, and enjoy a variety of advanced features including hints or suggestions for the next move, and access to match flow analysis data after matches. “The King of Masks” is a unique feature that utilizes data from HanDol’s matches and users can predict the outcome of a match, offering users a fresh and engaging experience.

HanDol AI based services in Hangame

Play against 9 dan HanDol	Users have the opportunity to play and watch matches against a 9-dan HanDol anytime in the game
Custom Match against HanDol	Users play matches that suit their skill level or choose their desired level of difficulty against "HanDol"
HanDol Chance	Feature where HanDol provides powerful hints regarding the next move during a match
HanDol Win Rate Graph	Users have the ability to review the decisive winning or losing move that had a significant impact on a past game. This feature allows them to analyze the flow of the match in detail.
The King of Masks	Match prediction game that uses data from HanDol's matches
Play Omok Against HanDol	Users play matches after selecting their preferred skill level (beginner, intermediate, advanced)

HanDol Winning rate graph by move analysis (post-match)



Technology in Everyday Life

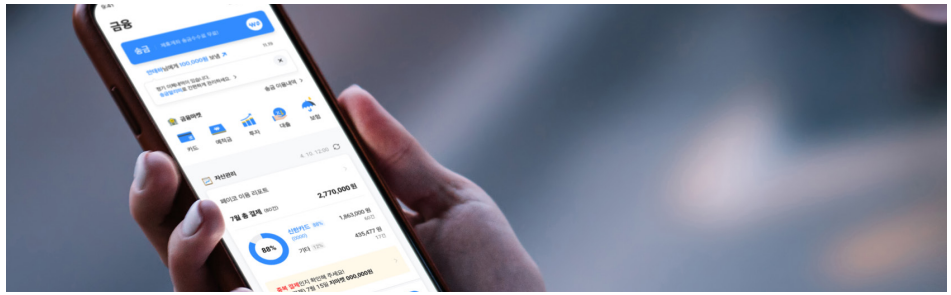
Enriching Life Experiences

NHN pursues to offer greater convenience enriching experiences in daily life through the use of technology. PAYCO is growing into a life-friendly platform engaging with its users 24 hours a day, offering payment services along with a wide range of financial and lifestyle services. NHN's AI technology is widely utilized across various practical services, adhering to the core value of "universal AI in everyday life that is accessible to anyone."

PAYCO, a Lifestyle-friendly Platform

Stable Payment Infrastructure

NHN PAYCO possesses a stable infrastructure and licenses in the payment industry, such as PCI DSS and FIDO. Through partnerships and integration with various domestic and international payment-related companies including payment gateways, value-added network providers, point-of-sale providers, and card issuers, NHN PAYCO provides users with a convenient payment experience. It is also expanding its differentiated offline payment infrastructure, focusing on university campuses and offices. NHN PAYCO introduces technological innovations in the payment environment with services like "PAYCO Order" for non-face-to-face ordering and payment and "PAYCO Point Card." Furthermore, leveraging expertise in combating fraudulent payments accumulated through its game business, NHN PAYCO operates a triple Fraud Detection System (FDS) monitoring to detect and prevent fraudulent transactions in real-time, ensuring a secure payment service.



Data-based Personalized Coupon Recommendation

PAYCO Coupon is a data-based target marketing service that effectively connects advertisers with consumers who need payment benefits. When a user searches for a specific brand keyword, the system recommends coupon benefits from other brands that closely align with the searched brand. By leveraging payment data modeling, it identifies brands that exhibit high similarity to the search keyword and determines the exposure priority accordingly. Through this service, users can enjoy more diverse coupon benefits, while brands can expose their coupons to more users. App push notifications on coupon benefits also use the targeting function to identify users to receive such notifications. By utilizing diverse data, including the user's payment history and click behavior, the system predicts the likelihood of conversion to a purchase. It identifies users who exhibit a high probability of converting to a purchase for the corresponding brand and sends out targeted app push notifications to engage and encourage them. Furthermore, NHN PAYCO is developing a feature for presenting personalized coupon categories. This is achieved by analyzing user behavior, such as frequently used or browsed coupon brands, event exposure, and click data. By calculating the category exposure priority for each user, we ensure that their preferences are reflected in the service.

Current usage of PAYCO coupon service

As of Q3 2022

Average number of coupon purchases per month

1.7 purchases

Average monthly discount

KRW 21,000

Average monthly discount rate

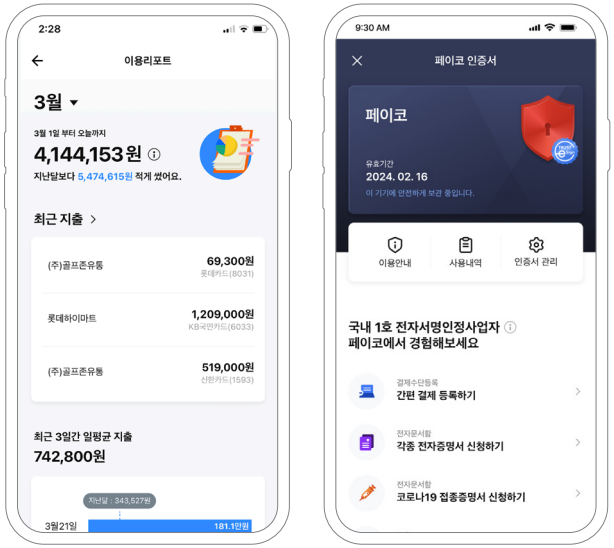
23%

Technology in Everyday Life

Personalized Platform for Finance in Everyday Life

NHN PAYCO has been providing personalized financial services utilizing financial and non-financial data since January 2022 with the launch of the "PAYCO Asset Management" service with which users can receive detailed analysis of their weekly/monthly expenses through PAYCO Usage Report. In February 2023, NHN PAYCO went on to release the "PAYCO Card Recommendation" service. This service recommends the optimal card benefits tailored to individual needs based on the PAYCO Usage Report. Users can explore over 1,000 card products by adjusting detailed conditions such as card issuers, card types, benefit types, and annual fees.

In addition, since 2019, NHN PAYCO has been supporting the "PAYCO Customized Loan" service, allowing users to easily compare loan limits and interest rates of various loan products. This service is currently integrated with 28 financial institutions, including major banks, and enables users to compare interest rates and limits of various credit loans and personal loans through simple information input and identity verification. Users can compare loan products without the hassle of visiting multiple banks and submitting documents in person.



Selected as Korea's No. 1 Electronic Signature Authentication Operator

PAYCO certificates are widely used in major public services in South Korea, including the National Pension Service. In addition, it enables payment services such as local taxes and credit card payments through an electronic document box, as well as application for issuance of various certificates. In August 2021, PAYCO was selected as the first electronic signature authentication operator as a private companies in South Korea. During the renewal evaluation conducted in 2022, NHN PAYCO achieved excellent scores in all seventy screening items, becoming the first company in the industry to pass the evaluation. PAYCO certification has been implemented in approximately 400 institutions, and within the financial sector, it serves as an integrated authentication method for My Data services in around ten financial institutions.

Corporate Employee Benefits Solution

NHN Payco utilizes its payment infrastructure and platform operation know-how to develop a welfare solution business for companies such as mobile meal vouchers, welfare points, and gift certificates. In connection with more than 500,000 online/offline PAYCO merchants and PAYCO point cards, the service has implemented the most versatile corporate employee benefits system in South Korea. PAYCO meal ticket also holds the largest number of usage locations in the mobile meal vouchers industry, with over 70,000 business members. It supports corporate clients to flexibly operate the meal voucher system in various working environments.

Achievements in PAYCO's Corporate Welfare Solutions business

As of December 2022

Transaction volume in 2022

KRW 100B

No. of franchisees

1,800

No. of corporate staff users

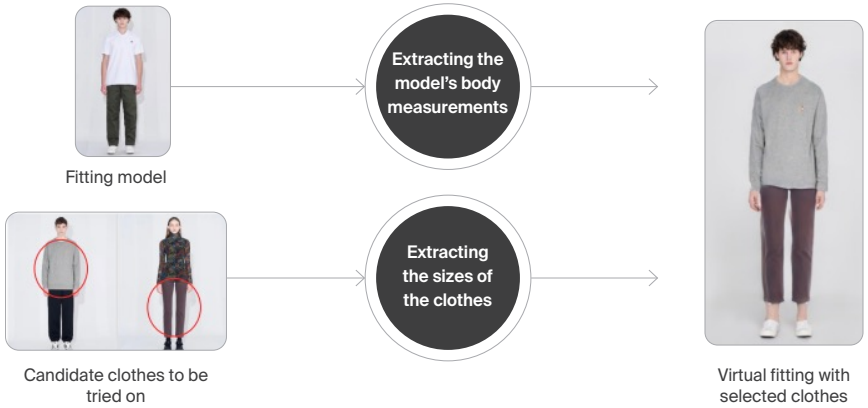
150,000

Technology in Everyday Life

AI Services in Daily Life

AI Virtual Try On | a Virtual Fitting Service

NHN's AI Virtual Try On is a virtual clothing fitting service that uses deep learning technology to visualize how fashion items look on an image of a person. The technology has been developed by training the AI with a large amount of data of various human postures and body shapes. It extracts the model's body information and clothing details to predict how the items would appear on the model. The service provides virtual fitting experience allowing users to indulge in a new experience. NHN is expanding its product categories as it strives to further advance its technology. Through the computer vision technology used in AI Virtual Try On, we won the “Multi-pose Virtual Try-on” challenge at the IEEE CVPR Conference in 2019.

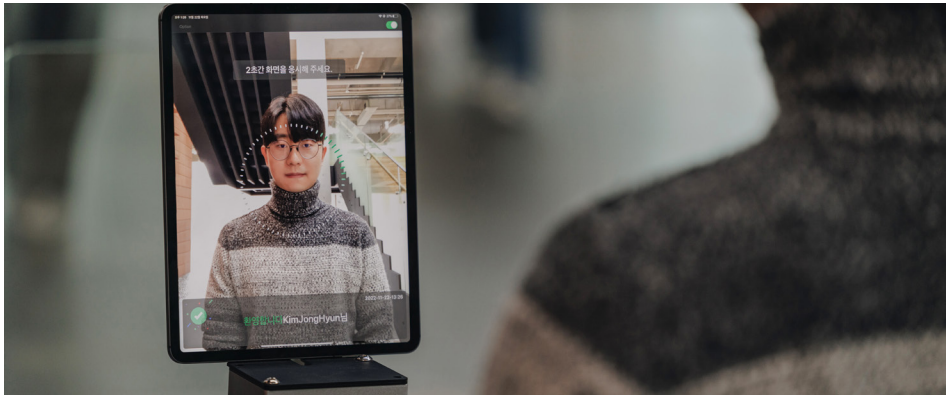


AI Ping Bot Pregnancy Test

In August 2022, NHN Edu launched the "AI Pingbot Pregnancy Test" service on the Pink Diary, a women's health app powered by AI. This service utilizes deep learning technology to analyze photos of pregnancy test kits taken by users and provides guidance on whether the test results are positive or negative. Through this service, users can quickly and accurately confirm their results even in cases where the test line is faint or unclear.

Face Recognition

NHN Cloud's facial recognition service is built on its proprietary machine learning AI technology, offering various functionalities such as face detection, analysis, comparison, and identity verification. This service has demonstrated wide applicability, being utilized in NHN Play Museum building access gates, self-verification process during NHN's new developer recruitment, and entry to international AI exhibitions like AI EXPO. Moreover, it has achieved a facial recognition error rate of 0% in the biometric system testing and certification conducted by KISA (Korea Internet & Security Agency), demonstrating its top-notch technological capabilities in the domestic market. NHN Cloud plans to continue providing customized facial recognition services in various online and offline environments, including finance, healthcare, and commerce sectors.



OCR

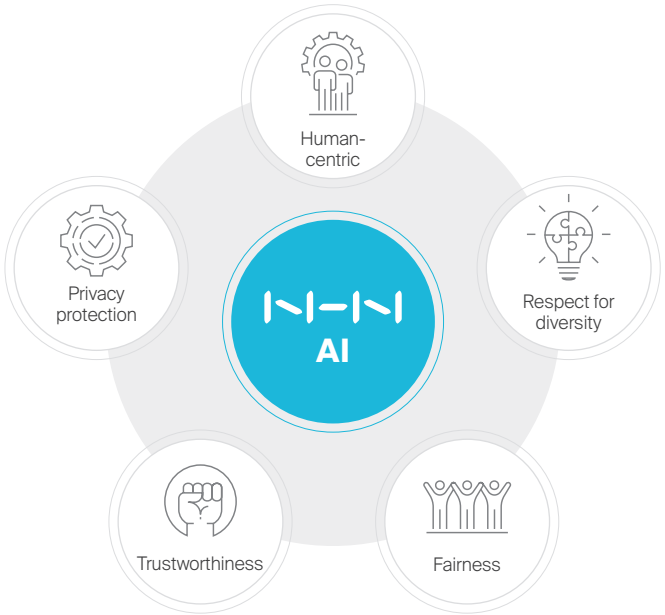
The PAYCO app offers a payment method registration feature that utilizes Optical Character Recognition (OCR) technology. OCR is a technology that detects character areas and recognizes characters, converts the recognized data into a database which can be used in business automation systems. This technology enables easy localization and recognition of characters and regions within an image. Accordingly, the PAYCO app can recognize all types of credit cards, including embossed, printed, and horizontal/vertical types.

Technology in Everyday Life

Speech Synthesis & Recognition

NHN Cloud's text-to-speech (TTS) service synthesizes natural speech by generating speech for each phoneme based on the input text. It enables the customization of various parameters such as gender, emotion, pitch, speed, and more. Speech-to-text (STT) is a service that recognizes speech and converts it into text. It is used in various fields such as customer service interaction and video content subtitle creation.
NHN Cloud, as part of its corporate social responsibility, utilizes an AI-based automatic video subtitle generation program to create subtitles and provide technical support for video lectures in the Korea OpenCourseWare (KOCW) system for higher education. In 2022, NHN Cloud provided the subtitle services for 112 courses (2,655 lectures), and in the first half of 2023, subtitles for 49 courses (1,110 lectures) were created.

NHN AI Ethics Principles



NHN is committed to respecting human rights and upholding the principles of integrity and diligence as our ethical beliefs. We adhere to AI ethics principles in order to develop and provide safe AI technologies that can be used by anyone in everyday lives.

1. Human-centric	Serving as a tool to make people's lives convenient and happy, NHN's AI respects human dignity and universal values of humanity.
2. Respect for diversity	NHN's AI embraces people with diverse social and cultural backgrounds. We consider the diversity when it comes to developing training data and algorithm for AI system and make utmost efforts to avoid bias.
3. Fairness	NHN's AI operates in a fair and non-discriminatory manner for all individuals, preventing discrimination based on race, gender, origin, economic background, and other factors.
4. Trustworthiness	NHN's AI strives to explain its operational methods and decision-making processes transparently, providing explanations allowing users to understand and trust the outcomes.
5. Privacy protection	NHN's AI handles user's personal information in a lawful and secure manner. It respects personal data protection and privacy, collecting and utilizing information only within the scope of user consent.

Technology that Helps Innovation

Convenient Business

NHN supports safe and convenient business services for users through various service experiences and technical skills. In particular, NHN supports all companies and operators to conveniently conduct business in an optimized environment regardless of size based on versatile and inclusive cloud, AI, and data technologies.

Integrated Cloud Service

Korea's leading OpenStack-based Cloud

NHN Cloud is an integrated cloud service built upon NHN's various IT service experiences and technology. By offering hybrid cloud services tailored to the specific requirements of various industries and businesses, NHN Cloud provides a comprehensive lineup of infrastructure (IaaS), platform (PaaS), and software-as-a-service (SaaS) products. Based on OpenStack* technology, NHN Cloud provides the highest level of cloud security in Korea and a system (hybrid/private/multi-cloud) optimized for domestic corporate environments. Its strengths include rapid response to service failures, one-on-one technical support, extensive service experience across diverse industries, and ownership of its own data center. Leveraging these strengths, NHN Cloud currently offers customized cloud services to over four thousand domestic and international companies across diverse industries including gaming, e-commerce, and finance.

* OpenStack: An open source-based cloud operating system that can develop and manage cloud computing platforms.

Strengths of NHN Cloud Service

Flexible infrastructure	Provides flexible cloud infrastructure based on OpenStack
Various platforms	Platforms composed of useful functions such as notification, analytics, and security
Latest cloud center	High-density urban cloud center
Professional manpower	Stable technical support based on our service operation experience
Reasonable cost	Initial cost burden minimized by paying as much as you use

Cloud for Public Institutions

NHN Cloud for public institutions guarantees security and stability required by public institutions and provides various products and services for efficient operation and management. Furthermore, NHN Cloud provides a dedicated cloud environment exclusively for public institutions, offering a public-only cloud infrastructure that ensures the protection of their information resources. In 2022, NHN Cloud was the best performer in the public cloud transition market, with a 39% share of order-placing institutions in the public sector cloud transition initiative. In 2022, NHN Cloud was awarded the "Minister of SMEs and Startups" and "Deputy Prime Minister and Minister of Education" for the following activities.

중소벤처기업부 Ministry of SMEs and Startups

SMEs and Startups Minister Award

Application system for emergency support for small businesses affected by COVID-19

Cloud-based stable provision of major public livelihood security service systems accessed by more than three million people

Small business support fund provision, new hope fund provision to small business owners, advance payment of loss compensation for small business owners, etc.

교육부 Ministry of Education

Deputy prime minister and the minister of Education Award

Cloud service for student health self-assessment system

Configuration of large-scale traffic processing environment to handle up to six million visitors

Protection for millions of privacy data with security service configuration

Technology that Helps Innovation

Establishment of Domestic AI Semiconductor-based Cloud Infrastructure

NHN Cloud is one of the leading companies driving the localization of AI semiconductors in South Korea and has successfully completed proof-of-concept projects in the infrastructure provisioning field. As part of a consortium, NHN Cloud participated in the "Domestic AI Semiconductor Proof-of-Concept Support Project" organized by SAPEON, a subsidiary of SK Telecom, and NIPA (National IT Industry Promotion Agency). They built a cloud infrastructure using the first domestic AI semiconductor, "SAPEON X220," and conducted various private and public AI services verification tests at NHN Cloud Center (NCC). In 2021, we successfully demonstrated public services such as VLAM (location-based service), SUPERNOVA (photo and video high-definition service), and Boneage.io (bone age measurement service) as the first batch of the “Domestic AI Semiconductor Demonstration Support Project.” In 2022, NHN Cloud successfully completed the secondary demonstration projects for AI services, including fashion search and motion recognition. Additionally, NHN Cloud also introduced a public service called CTR (cardiothoracic ratio) measurement service.

Dooray! | All-in-One Collaboration Solution

Dooray! is a comprehensive collaboration platform encompassing a collaboration tool that integrates e-mail, messenger, and video conferencing, and features such as ERP, electronic approval, and time and attendance management. NHN Cloud offers a hybrid electronic payment service that incorporates features such as a bulletin board, portal, and home function. This allows for the seamless integration of new functions and services, ensuring enhanced user convenience without the need for frequent service application updates. Currently, Dooray! is being utilized by approximately 4,000 companies to establish an internal/external collaboration ecosystem. It is also being adopted by national universities and public institutions.

Key Features of Dooray!

Electronic approval and work management	Electronic approval essential for company operation and work management capable of responding to flexible work
Presentation mode	Transforms business documents that have been created into presentations of various templates
Video conferencing	Automatic connection within the messenger, 50 simultaneous connections, screen and document sharing available
Global communication	Free communication in any language with real-time automatic translation
Powerful security	Acquisition of cloud security certification and implementation of security inspection in the SaaS sector hosted by KISA, and acquisition of CSA STAR “Gold” rating

AI FASHION | Fashion-specific Product Search and Recommendation Service

NHN Cloud's AI FASHION service is a technology for fashion item recommendations. It recommends similar products to what users search for, helping them find and purchase items that match their preferences. It provides various features, including camera search that supports image search without product names or brand information, recommendation of similar products based on price range, and displaying similar products when there is no stock available. This service won the award in the Fashion category at the 2021 Korea AI Awards. NHN Cloud provides the AI FASHION service to FashionGo, the top B2B marketplace in North America operated by NHN Global, as well as domestic and international shopping platforms. NHN Cloud is gearing up to enhance completeness of product search and recommendation features and focus on service improvement.

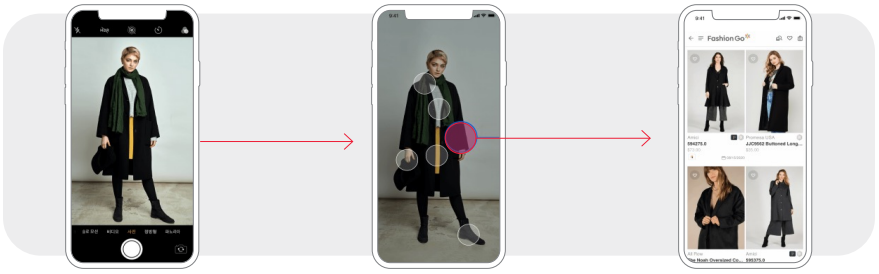
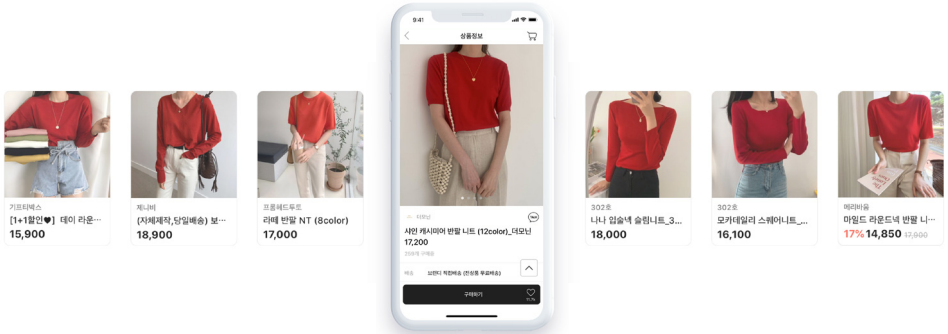


Photo shooting and uploading

Item recognition and product selection

Showing results of search for similar products



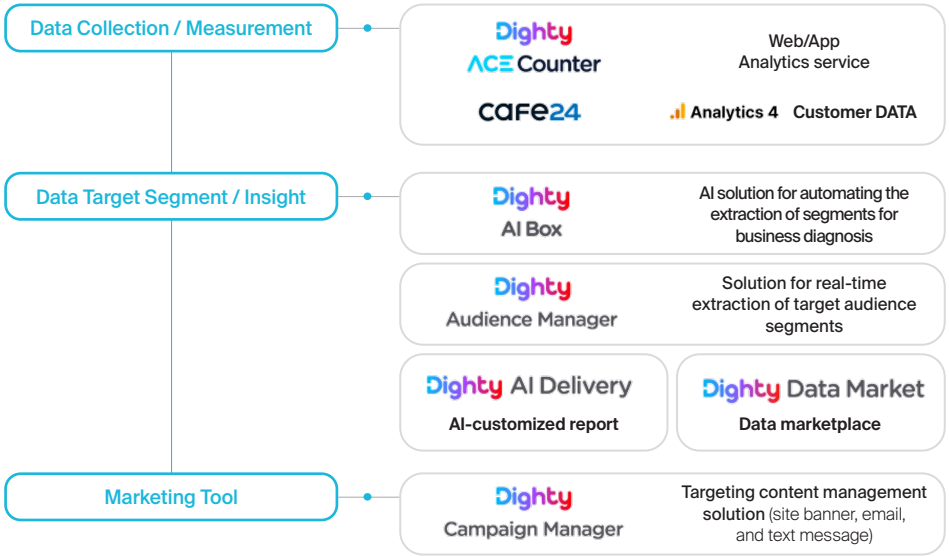
Technology that Helps Innovation

Data Tech

Dighty | Customer Data Integration Platform

Dighty, a data technology specialist company under NHN Data, has emerged as a leading CDP (Customer Data Platform) in the domestic market since its launch in 2019, completing a total of six service lineups. With Dighty's solution, businesses can collect, analyze, and execute audience-targeted marketing campaigns without the need for separate infrastructure. Currently, various industries including public institutions, finance, and gaming are adopting Dighty to experience growth based on data-driven strategies. The 'Dighty AI Box,' introduced by NHN Data in 2022, analyzes and predicts purchase data from e-commerce sites using AI, providing personalized growth strategies based on customer characteristics. The solution incorporates the DBTI (Dighty e-Business Type Indicator) technology, which classifies customers' business characteristics into 36 types. The technology was applied for patent registration* in April 2022.

* Method and system for providing customized growth strategy according to business type (10-2022-0048743, 2022.04.20.)



Game Development Platforms

NHN GamePlatform

NHN aims to create an environment where game developers can focus only on game content development. To this end, NHN operates the NHN GamePlatform, a solution that provides functions necessary for launching and operating games. The NHN GamePlatform offers game developers essential core functions required for comprehensive game services. These functions include login and authentication, purchase and item, indicator and statistics, maintenance and push notifications, game operation tool, game security, leaderboard, and download acceleration. Game developers can leverage the diverse solutions offered by the NHN GamePlatform to minimize the allocation of resources for function development and reduce costs. Currently, leading game clients both domestically and internationally are utilizing the NHN GamePlatform to continually strive for entry into the domestic and overseas game markets.

Game Package Manager | Game Production Tools Package

NHN provides Game Package Manager for free, which is a collection of five production tools commonly used by game developers. NHN aims to improve the development efficiency and productivity of small and medium-sized game developers by providing key functions necessary for game developers to prepare for game services beyond game production.

M-Brick | Puzzle Game Development Engine

M-Brick, NHN's puzzle game development engine, is a comprehensive puzzle game production solution that enables efficient production and operation of high-quality puzzle games. As a tool that allows the creation of casual games in a short amount of time, it incorporates the extensive expertise of NHN's casual game experts. The M-Brick engine incorporates all three essential elements for game development: a puzzle assembly 'gimmick', 'logic' for interacting with the gimmick, and a 'map editor' for combining the gimmick and logic. This comprehensive approach significantly reduces development time. Using M-Brick's management tool, you can also easily inject data necessary for casual games balancing. By linking pre-made out game templates with various external functions, it can further shorten the working time. With these features, the M-Brick engine enables fast and efficient casual game development.

Technology that Helps Innovation

Gamebase | Game launch and operation platform

Gamebase is NHN's proprietary game solution designed for global expansion. It is a game-specific platform launched in 2017 to provide comprehensive support for game launching and operation. Platform users can shorten the development period and save resources by using core functionalities for game development, such as login, purchase, item, and indicator by simply implementing the SDK*. In addition, Gamebase provides various game analysis indicators and a stable security system to users.

* SDK (Software Development Kit): A set of development tools that enable software engineers to create applications.

Key Features of Gamebase

Login/Authentication
Provide various external authentication options such as Google, Facebook, Apple Game Center, and Guest login for games

Game Operations Tool
Provide various game operation tools with NHN's 10 years of expertise, including user management, app version management, and sanctions for abusive users.

Purchase/Item
Offer In-App purchases from various app stores and provides secure payment functionality through integration with NHN Cloud IAP.

Game Security
Offer mobile app security solutions to protect the app securely from various abuses, providing services such as hacking tool detection and code integrity protection.

Indicator/Statistics
Provide a wide range of indicator essential for game business and operational decision-making, allowing for multifaceted analysis of user engagement, revenue, and balancing.

Leaderboard
Utilize various ranking services such as daily, weekly, and monthly leaderboards to provide diverse elements of fun to game users.

Check/PUSH
Offer client version and country-specific checking features, enabling easy verification of game functionality. It also provides Push services targeting game users.

Download Acceleration
Enable faster and more stable download of game resources required for installation and execution.

GameAnvil | Game Server Engine

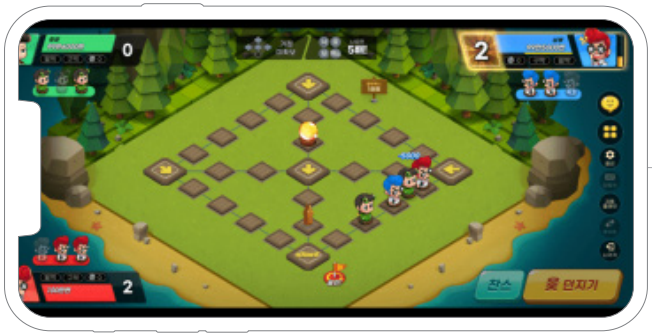
GameAnvil is a game server engine developed by NHN. It enables a quick and easy creation of servers for various types of games, including games accessed by multiple number of concurrent players, turn-based games, board games, and single-user games. Users can utilize game server templates, web operating tools, and performance test tools provided by GameAnvil. The engine facilitates the construction of real-time multiplayer game servers, their distribution, and channel management. GameAnvil is designed to be user-friendly, enabling even novice developers to use it with ease, and it significantly reduces the development time required for game servers. Moreover, GameAnvil provides professional consulting to configure an efficient server. GameAnvil provides not only real-time server monitoring through the NHN Cloud console but also auto-scaling which automatically adjust the server size based on traffic volume and match-making functions as well as a "safe pause" function that allows maintenance to be carried out without interrupting the service.

Features of GameAnvil

Easy Server Development
Through providing templates and more, anyone can easily develop servers.

Performance Testing Tool Support
Support tools for server functionality and server performance testing.

Robust Operation Support
Provide support for deployment, operation, and monitoring through the web console.



Technology that Helps Innovation

Sharing Technology

NHN is promoting the value of sharing by leveraging its technology and infrastructure. NHN ensures technological sustainability through open source development and organizes technology conferences to share its extensive experience with the world. Our company fosters a culture where individuals openly share their experiences of failure with colleagues and encourages members to seek solutions to problems by following the breadcrumbs left by their peers. NHN has embraced technology-sharing internally, accumulating diverse development experiences and know-how. Now, we aim to actively share our accomplishments with the external world, fostering a broader technology ecosystem.

Expansion of Open Source-based Technology Ecosystem

Participation in the Open Infrastructure Foundation

As of May 2023, NHN Cloud provides over 120 services to more than 4,000 customers, sharing NHN Group's technologies with the world. In November 2021, NHN Cloud became the first domestic cloud company to join the "OpenInfra Foundation*," a global collaboration of companies. As a member of the OpenInfra Foundation, NHN Cloud shares its experience in operating and developing OpenStack with global companies, showcasing its technological capabilities.

* OpenInfra Foundation: An organization that operates open source projects and communities that develop technologies such as OpenStack, data center cloud, edge computing, and network function virtualization.

CNCF Kubernetes Certification

In February 2022, NHN Cloud became the first CSP in South Korea to become Kubernetes-certified with the Cloud Native Computing Foundation (CNCF*). In February 2023, the company was qualified as a Kubernetes service provider. NHN Cloud is accelerating technology acquisition and business expansion by utilizing the open source ecosystem through active collaboration with the CNCF.

* CNCF: Non-profit technology foundation established by the Linux Foundation to promote cloud-native technologies.
* Kubernetes: A system for automatically deploying and managing containerized applications.

Technology Conference

NHN FORWARD

NHN FORWARD is a technology conference within the NHN Group aimed at sharing and communicating the key technologies and experiences across various business sectors with developers worldwide. With the slogan "Small Steps Big Difference," NHN FORWARD focuses on the idea that small actions can make a significant impact. In 2022, NHN FORWARD featured a diverse range of topics with a total of 42 sessions, including artificial intelligence, cloud computing, backend and frontend development, infrastructure and security, performance improvement, data utilization, user experience (UI), and collaboration tools.

NHN Cloud make IT

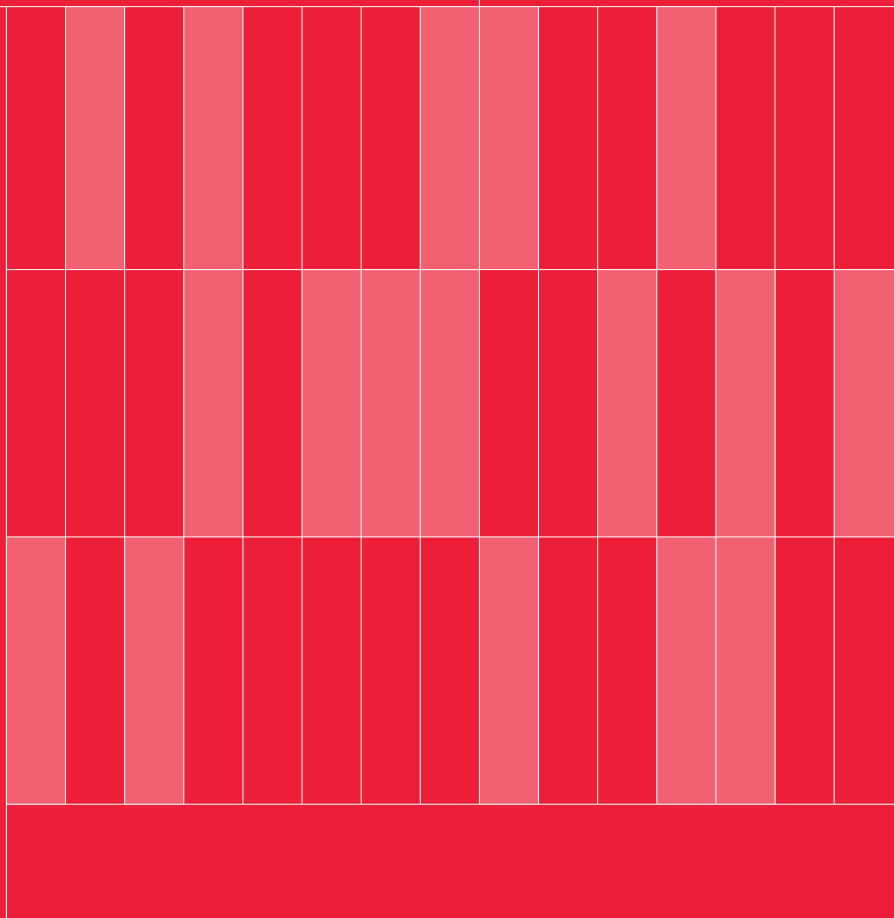
NHN Cloud held a cloud conference called "NHN Cloud make IT" in Seoul and Gwangju in 2022, actively sharing their technology strategies. The concept of the Seoul event was "Invitation to the World where NHN Cloud Draws Cloud and Realizes Business Value." NHN Cloud shared their technology strategies with various stakeholders through 14 sessions covering cloud technology, Kubernetes, AI, high-performance computing, game platforms, collaboration tools, messaging, security, and more.

NHN FORWARD

NHN Cloud make IT

SUSTAINABILITY

Environmental	036
Social	051
Governance	088



2022
Sustainability Report

SUSTAINABILITY

Environmental

Environmental Management Governance 037
Eco-friendly Data Center 039
Eco-friendly Office Building 042
Environmentally Responsible Services 045
Eco-friendly Activities and Campaigns 047

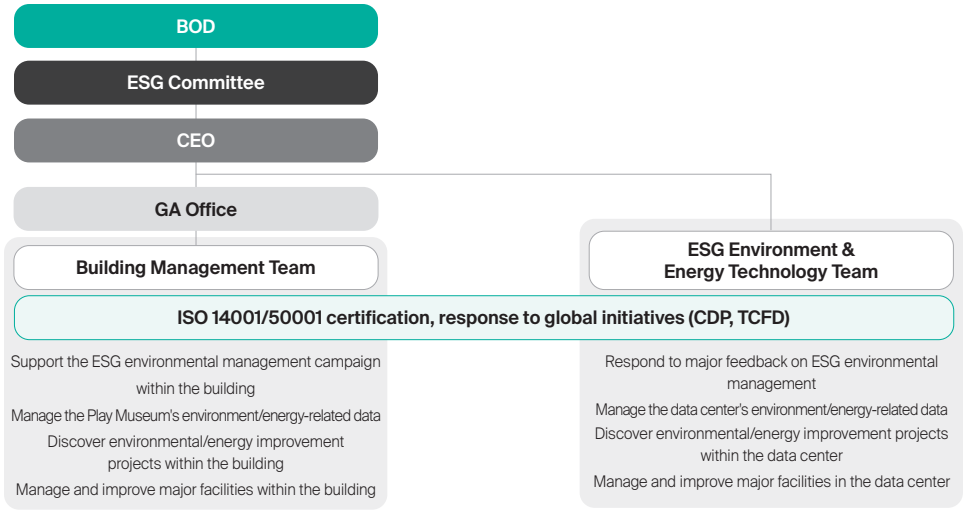
Environmental

Environmental Management Governance

Climate change is a global issue that needs to be addressed at a global level. According to the Paris Agreement, companies must strive to keep the global average temperature rise below 2°C and limit it to 1.5°C or less for sustainable management when compared to pre-industrial levels. NHN has established governance to efficiently manage climate change issues in response to these global movements. Through our own environmental management governance, NHN is committed to promptly responding to climate change issues and making the right decisions. By 2023, we further plan to disclose our environmental information according to the TCFD (Taskforce on Climate-related Financial Disclosures) framework while we have mapped out an extensive plan to respond to the CDP (Carbon Disclosure Project). Going forward, NHN will actively take the lead in environmental initiatives and further strengthen its environmental management governance.

Environmental Management Staff

NHN has established its own environmental management system that encompasses all levels of staff, from working-level employees to the Board of Directors. The working-level organization is divided into the Building Management Team and the ESG Environment & Energy Technology Team to respond to NHN's environment-related issues. The Building Management Team carries out various environmental management activities at the Play Museum, while the ESG Environment & Energy Technology Team focuses on the data center and carries out the following activities. The performance of key environment-related activities performed by working-level organization reports to the Board of Directors (BOD) through the CEO and the ESG Committee.



Environmental and Energy Policy

In June 2022, NHN established the Environmental and Energy Policy to enhance the level of environmental/energy management of the headquarters and subsidiaries. This policy covers issues that directly affect the environment, such as energy efficiency, reduction of greenhouse gas and waste emissions, resource circulation, and biodiversity. In addition, the company actively pursues sincere environmental management through addressing indirect impact issues such as compliance with environmental laws and initiatives, monitoring environmental performance, and engaging in stakeholder communication. Based on the Environmental and Energy Policy, NHN plans to continue implementing various activities to strengthen the environmental management capabilities of both the headquarters and its subsidiaries. Through these initiatives, we aim to enhance our ability to address environmental issues and pursue a more sustainable business model.

NHN establishes and implements the following Environmental and Energy Policy to minimize negative environmental impacts that may occur by providing various IT-based services, and actively respond to global climate change issue by improving energy efficiency and minimizing GHG(greenhouse gas) emissions.

1. All NHN executives and employees must participate and practice energy and environmental management activities to implement the policy in an active manner.
2. NHN follows relevant laws and guidelines regarding energy and environmental regulations.
3. Reduce GHG emissions by applying energy-efficient technology and increasing the use of renewable energy.
4. Reduce waste, conserve resources and consistently strive to solve the environmental problems.
5. Purchase eco-friendly and highly energy-efficient product by priority.
6. Inspect energy and environmental impact regularly and disclose the results to the stakeholders.
7. Encourage activities for preserving biodiversity and protecting of ecosystems.

Environmental

Internal Audit of the Environment and Energy Management System

NHN evaluates the suitability and effectiveness of the environmental and energy management system requirements every year for the NHN headquarters (Play Museum) and the data center (NCC). Internal professional auditors review system manuals, procedures, and guidelines, and whether short-term or mid-to long-term tasks are well defined and handled properly by the ESG Environment and Energy Technology Team. No major issues were identified as a result of the 2022 review, and we immediately took corrective action for 3 minor area that are not in compliance with the regulations. Through this process, NHN maintains the efficiency of the environmental and energy management system while striving for continuous improvement.

Improvement elements	Action plan
Mid-to-long-term energy goals not established	• Calculate indirect greenhouse gas emissions (Scope 3) within 2023 • Afterwards, review mid- to long-term goals based on SBTi, including Scope 1, 2, and 3
Not evaluate effectiveness of training results	• The effectiveness evaluation conducted for departmental training in May 2023
ESG-related internal/external communication types need to be revised	• Internal: Establish an ESG bulletin board within NHN's internal bulletin board, "What's up," to gather opinions from employees. • External: ESG-related external communication through news reports and INSIDE NHN

Environmental and Energy Management System Certification

NHN obtained international standard certifications (ISO 14001, ISO 50001) for the environmental and energy management systems of its headquarters building, Play Museum, and its data center, NCC, in August 2022 from the Korean Foundation for Quality(KFQ). These certifications demonstrate NHN's commitment to environmental protection and energy efficiency improvement, affirming the company's dedication to sustainable management practices. This certification enables NHN to take pride in fulfilling its responsibilities towards customers and society, as well as gaining recognition for its environmental management and energy-saving efforts. Going forward, NHN will make more efforts for sustainable management and grow into a company that can provide greater value to customers and society.

ISO14001 Certificate

ISO50001 Certificate

Environmental

Eco-friendly Data Center

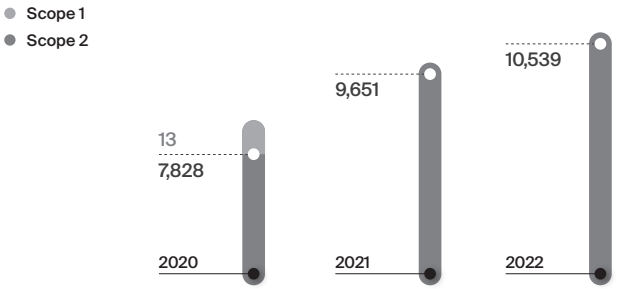
There are two major pillars for NHN's approach to its climate change response : "establishment of an eco-friendly data center" and "management of environmental impact of the headquarters building". Given the nature of the IT/software industry, environmental management through data centers play a crucial role. Recent ESG initiatives emphasize Power Usage Effectiveness (PUE), which is a metric for measuring data center power efficiency. PUE is the total amount of power used by the data center divided by the amount of power used by the IT equipment. The closer to 1, the higher the energy efficiency. NHN will strive to become a truly eco-friendly company by monitoring not only PUE management but also various environmental indicators such as greenhouse gas, waste, and water.

NCC

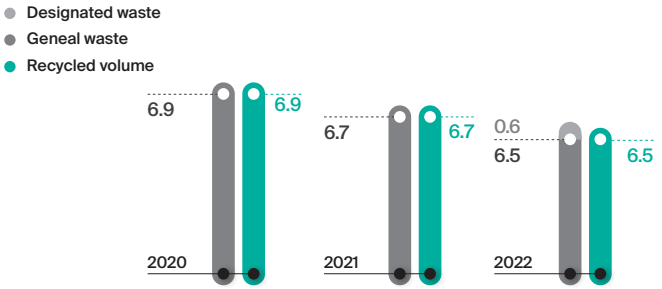
NHN Cloud Center (NCC) is a downtown data center designed and built by NHN's own technological capabilities in Pangyo. NCC utilizes an indirect evaporative cooling system to minimize power consumption for IT equipment cooling and save energy. Furthermore, based on its high reliability of Tier III or above and extensive experience in operating large-scale infrastructures over an extended period, NCC has secured optimal operational efficiency. The Pangyo NCC is an energy-efficient and eco-friendly data center that has received awards such as the "2020 Korea Energy Grand Award - Presidential Commendation," "2019 Energy Winner Award (CO_2 Reduction)," and "2019 Energy Champion." We continue to expand its cloud infrastructure through models of public-private cooperation, including plans for regional data center construction, to further enhance its services.

Go to NHN Comprehensive Environmental Data

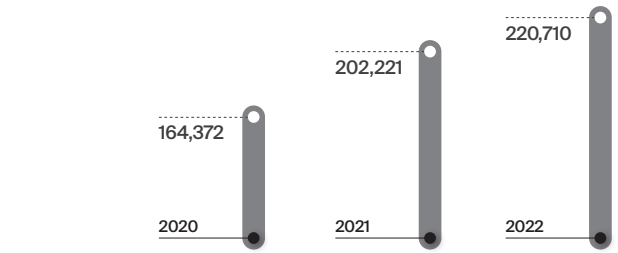
GHG emissions (Unit: tCO_2eq)



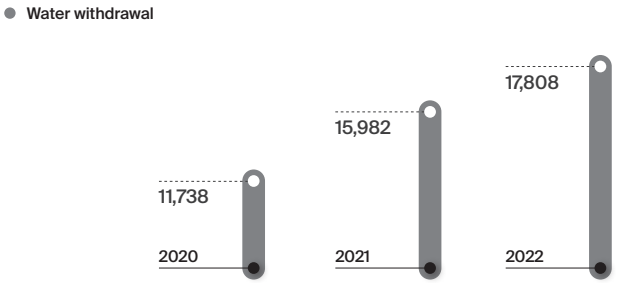
Waste discharge (Unit: ton)



Energy consumption (Unit: GJ)



Water consumption (Unit: ton)



Environmental

Eco-friendly Design

Improved Energy Efficiency

NHN has maximized cooling efficiency by applying indirect evaporative cooling system and upper air conditioning for enhanced energy efficiency when it first designed the data center. We implement an indirect evaporative cooling system, which is the first of its kind patented in Korea, that does not directly use water for cooling. Instead, we use the indirect evaporation process to drop temperature indirectly. This can increase cooling efficiency while reducing electricity usage. In addition, the installation of containment facilities separates the cold and hot aisles to minimize power loss. The mist spraying device applied lowers the temperature of outside air flown into the air conditioning unit. This implementation aligns with NHN's core values of environmental protection and energy conservation.

High-density Operating Environment

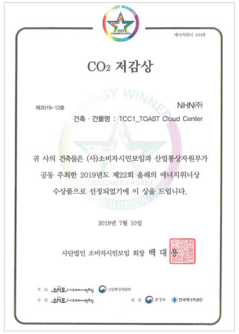
To accommodate the high-density operating environment of its data centers, we have constructed modular server rooms considering the IT life cycle. Additionally, the company has developed and implemented its own adjustable-width rack solution. This approach provides a flexible structure that can effectively accommodate IT equipment upgrades or replacements, thereby maximizing operational efficiency. Furthermore, NHN maintains power stability by utilizing UPS (Uninterruptible Power Supply) for high-density capacity and stable power supply for cloud computing. Through this, we ensure an operating environment that can promptly address customer needs by minimizing server and network equipment downtime in the data centers.

View of the data center (NCC)

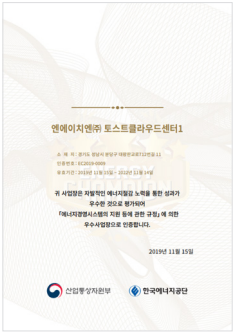
Inside the server room of the data center (NCC)

Awards for Environmentally Friendly and High-Efficiency Data Centers

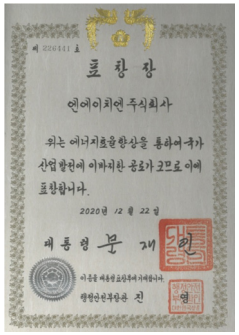
NHN's environmentally friendly data center design has gained recognition from numerous stakeholders. In 2019, NHN was awarded with the 22nd Energy Winner of the Year Award, co-hosted by Consumers Korea and the Ministry of Trade, Industry, and Energy. In 2020, the company received the Presidential Commendation, acknowledging its significant contribution to national industrial development through energy efficiency improvement. Until the end of 2022, we maintained its excellent workplace certification for the voluntary energy efficiency target system, selected by the Korea Energy Agency. The company takes great pride in these honors and remains committed to further enhancing the eco-friendly aspects of its data centers.



Energy Winner Award (2019)



Energy Champion (2019)



President's Commendation for Korea Energy Award (2020)

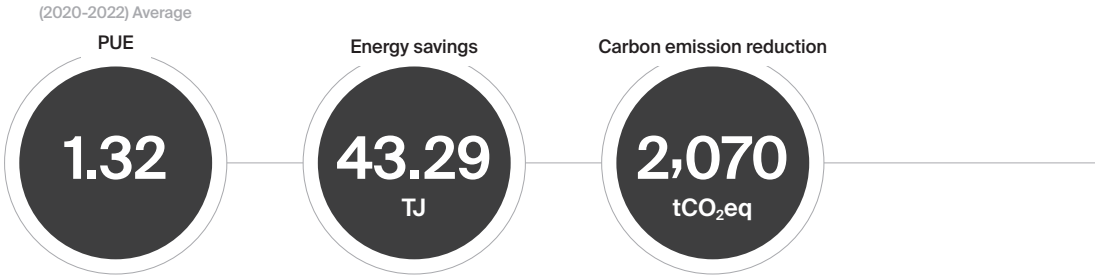
Superior Workplace for Voluntary Energy Efficiency Target Achievement (2021)

Environmental

Eco-friendly Project of NCC

NHN Cloud Center (NCC) is an environmentally friendly data center that maintains a high energy efficiency with a PUE (Power Usage Effectiveness) of 1.2 to 1.3 by implementing various energy-saving technologies. NCC does not settle for its current level of energy efficiency but continuously engages in energy-saving projects to develop and adopt even better environmentally friendly technologies. Through energy-saving projects conducted from 2017 to 2022, NCC has achieved cumulative energy savings of approximately 43.29 TJ and reduced energy costs by around 520 million KRW.

Go to NHN Comprehensive Environmental Data



Year	Project	Application	Energy Source	Reduction kWh	Reduction Gcal	Reduction GJ	Savings (KRW million)	Remarks
2017	Indirect evaporative cooling system (E3, E4, W3, W4)	Applying indirect evaporative cooling, which adopts evaporative cooling that lowers the ambient temperature as water evaporates	Electricity	3,958,290	-	38,000	454	Equipment installation and testing in August-December 2017
	Containment (E3, E4, W3, W4)	Maximizing cooling efficiency by separating cold aisles and hot aisles to prevent recirculation of hot air	Electricity	414,841	-	3,982	46	
2020	Installation of cooling fog for air supply in the generator room	Installing an extra high-pressure nozzle with high spray volume at the bottom of the air supply grill in the generator room	Electricity	7,875	-	76	1.5	Completed in June 2020
	Reinforcement of air-conditioning unit insulation	Reinforcing the heat loss area of the air conditioning module with an insulator	Electricity	6,073	-	58	0.7	Completed in March 2020
	Changes to server room operating conditions	Changing relative humidity and dew point temperature conditions	Electricity	36,035	-	346	4.3	Completed in January 2020
2021	Improvement of the method of replacing the pre-filter of the air-conditioning unit	Improving the method of replacing the pre-filter for pre-treatment of outside air in the air-conditioning module	Electricity	25,281	-	243	2.8	Completed in February 2021
2022	Cleaning the heat exchanger of the server room air-conditioning unit	Removal of scale and foreign substances in the indirect evaporative cooling module's heat exchanger	Electricity	46,778	-	449	5.6	Implemented in April and May 2022
	Cleaning district heating heat exchanger	Removal of scale and foreign substances inside a plate heat exchanger	Steam	-	32	133	1.3	Implemented in November 2022
Cumulative Total				4,495,173	32	43,287	516	

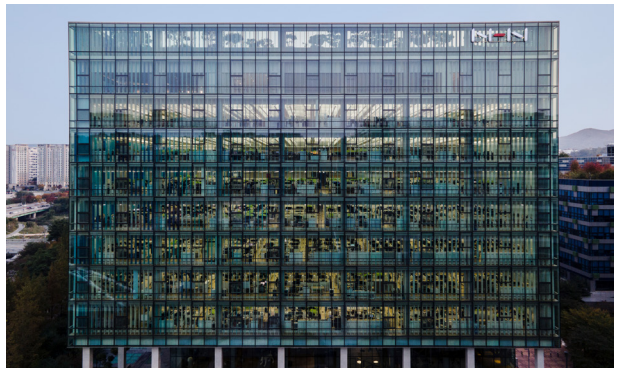
Environmental

Eco-friendly Office Building

To respond to climate change, it is important not only to build an eco-friendly data center, but also to expand eco-friendly elements of the office building. NHN is making efforts to manage various environmental impacts from its office building, the Play Museum. NHN tracks and manages quantitative data on greenhouse gases, energy, water, and waste, which are environmental factors utilized and emitted by the Play Museum. NHN implement various reduction strategies for each factor to minimize the impact on the environment. Moving forward, NHN will strive to ensure that Play Museum has a positive impact on the environment while minimizing any negative impacts.

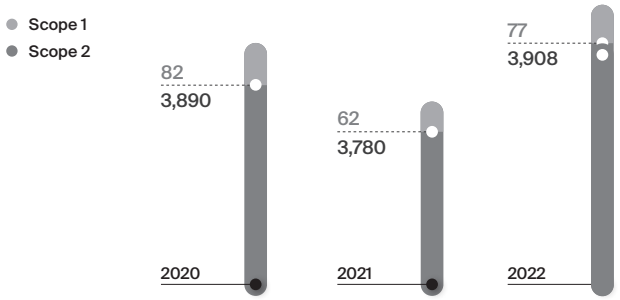
Play Museum

Play Museum, NHN's office building, is an eco-friendly office space designed with a focus on sustainable space planning and investments in environmentally friendly facilities and materials. Taking into consideration the building's interior and the surrounding environment, NHN made concerted efforts in site selection to create an eco-friendly space and invested in sustainable facilities and materials. In the 2013 LEED (Leadership in Energy and Environmental Design) green building certification program, our building received “Platinum,” which is the highest level in the certification.

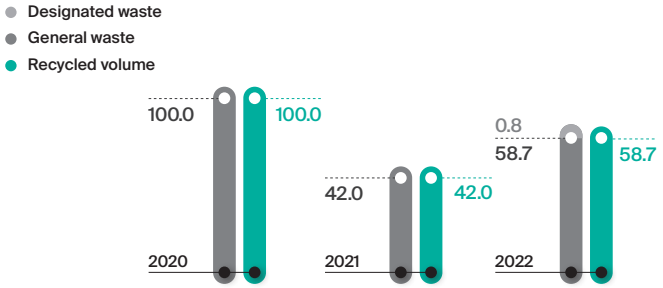


Go to NHN Comprehensive Environmental Data

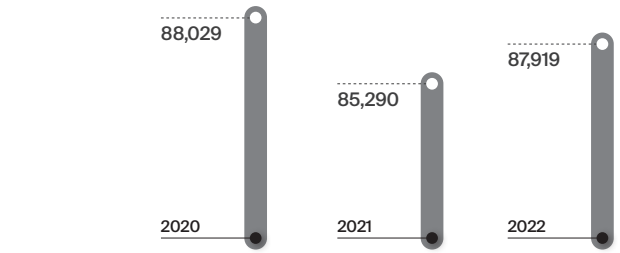
GHG emissions (Unit: tCO_2eq)



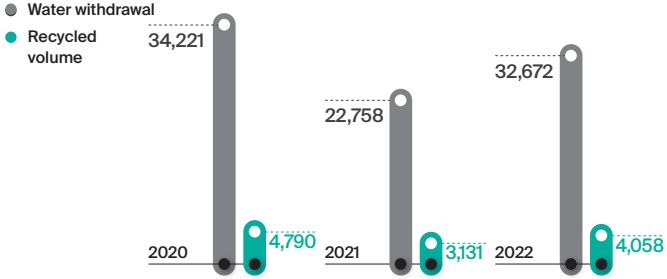
Waste generation (Unit: ton)



Energy consumption (Unit: GJ)



Water consumption (Unit: ton)



Environmental

Energy Saving Strategies

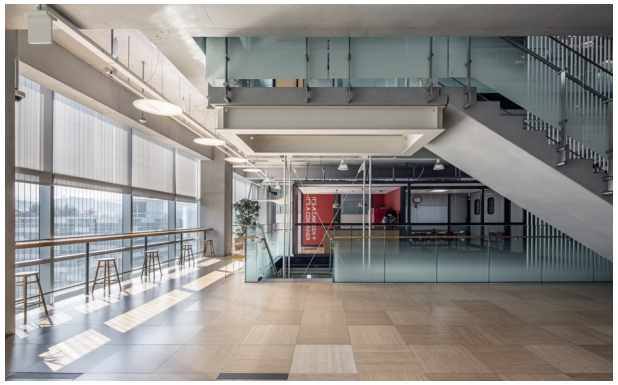
NHN is implementing a range of energy-saving strategies at Play Museum. To reduce electricity consumption, the building has been equipped with energy-efficient LED lighting, which consumes 25% less power compared to regular fluorescent lighting. Additionally, systems such as a standby power blocking system and automatic lighting control have been implemented to further reduce electricity usage. In addition, the implementation of vertical louvers and ventilation windows on the hive and rooftops allows the utilization of natural light and promotes natural ventilation, thereby reducing unnecessary energy consumption. The multi-purpose space on the basement floor enhances space efficiency, while the installing the staircase at the very center of the building to lower power consumption associated with mobility. The use of stairs instead of elevators saves approximately 41.7 Wh per floor.

Strategy for Using Materials

NHN actively considered eco-friendly aspects when selecting and utilizing the materials used in designing its building. In particular, the materials used in the design of the Play Museum are intended to minimize the emission of volatile organic compounds in consideration of the natural recovery rate and do not contain formaldehydes or resins. For the construction of the office floor, the company used bamboo access floor boards made from waste paper and used packaging boxes as finishing materials. To reduce material consumption and minimize waste, we designed the building space without columns for easy separation and arrangement. We also installed a conference table with an appropriate size that optimizes material usage.

View of Play Museum

Core stairwell



Bamboo access floor boards

Environmental

Strategies for Reducing Environmental Impact

NHN is committed to minimizing the negative environmental impact of its building. To minimize environmental pollution during the construction of Play Museum, the company devised and implemented a comprehensive environmental pollution management plan. By constructing a structure that does not require the use of adhesives and employing eco-friendly adhesives when necessary, NHN has successfully minimized indoor air pollution. On the first floor of the Play Museum, there is a parking lot that can accommodate about 130 bicycles. We strongly encourage our employees to use bicycles to commute. This is expected* to reduce greenhouse gas emissions by approximately 534 kg per day.

* Calculated assuming that employees who use vehicles switch to commuting with bicycles

Eco-friendly Vehicles

NHN will gradually replace internal combustion vehicles with eco-friendly vehicles in order to reduce environmental impact. Over the past three years, the percentage of in-house eco-friendly vehicles has been at a low level, but as of April 2023, the percentage of eco-friendly vehicles has increased to 13.3%.

Classification	Unit	2020	2021	2022	2023.04
Total number of vehicles	Vehicle	15	15	16	15
Number of eco-friendly vehicles	Vehicle	0	0	1	2
Ratio of eco-friendly vehicles	%	0	0	6.3	13.3

Eco-friendly Investments

NHN is actively expanding its eco-friendly investment activities. NHN is gradually transitioning from conventional products to eco-friendly alternatives for toilet paper and detergents, which are essential for operation. NHN is also diligently monitoring and managing the quantitative performance associated with these eco-friendly materials. In addition, we are also increasing the proportion of eco-friendly product purchases by replacing various products such as lunch boxes at the in-house cafeteria, funeral supplies, and packaging materials with eco-friendly products.

(Unit: KRW 1,000)

Classification	2020	2021	2022	Remarks
Cleaning materials	26,981	15,127	25,160	Toilet paper rolls, kitchen detergents, cleaning detergents, air freshener
General supplies	0	105	5,730	Eco-friendly wrapping paper, eco-friendly twine, copy paper, eco-friendly PCB cleaner, shipping box, PLA paper cups and spoons
Marketing items	10,330	29,127	30,178	Sticker, PLA spoons and straws for franchise stores
Total	37,311	44,359	61,067	

(Cumulative as of Dec. 31, 2022)

Classification	Specifics
Eco-friendly lunch box	• Lunchboxes in the company cafeteria changed to pulp containers (from October 2021) • 4,993 eco-friendly containers instead of plastic
Multi-use market items for rental	• Multi-use spoons and shopping carts for rental (from Jan. 2022) • 5,200 sets of multi-use cutlery instead of disposable cutlery • Tantamount to reduction of about 22.5kg of disposable waste
Eco-friendly funeral supplies	• Changed to eco-friendly funeral supplies made of PLA and pulp (from October 2021) • 192 eco-friendly funeral supplies used instead of plastic items
Eco-friendly packaging materials	• Paper buffers and paper tapes made available in the company common space (Self-service Zone) (from September 2021) • Instead of using plastic air caps, 521.4 square meter of paper cushioning material is used
Provision of recycled paper	• Recycled paper is provided in the common space (OA booth) on each floor (from October 2021) • 680,000 sheets of recycled paper instead of plain paper • Tantamount to saving about 38 trees

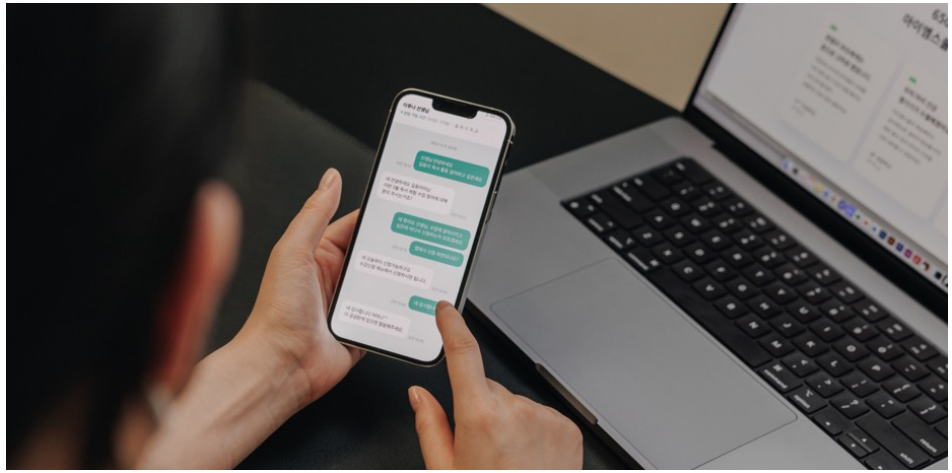
Environmental

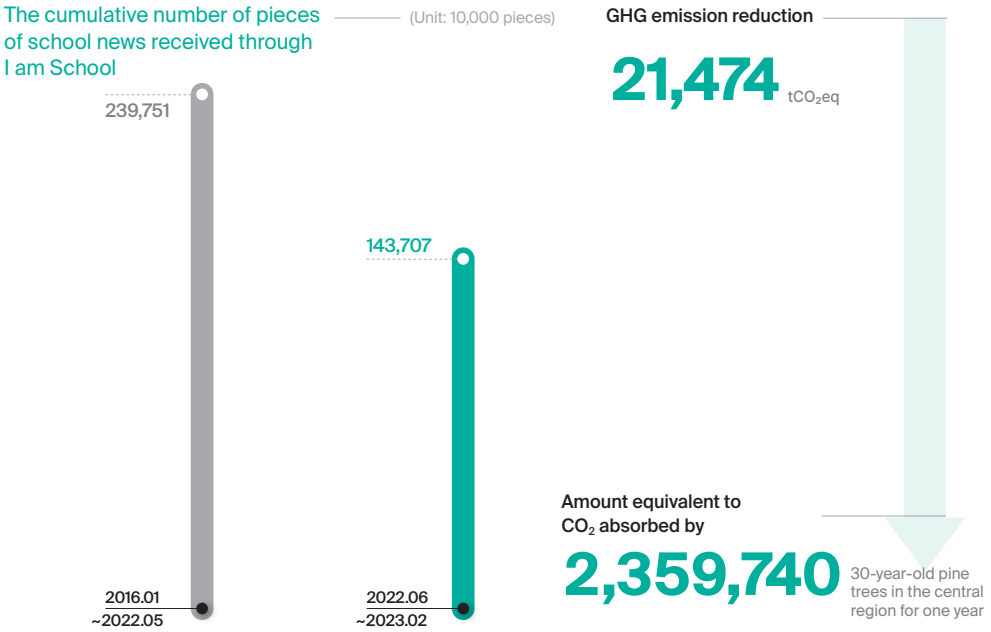
Environmentally Responsible Services

NHN is committed to making a positive environmental impact not only through its office buildings and data centers but also through the IT services it offers. As a global IT company, NHN is reducing waste of resources and providing more convenient services to our customers by replacing paper documents with electronic ones. These environmental values are measured and converted into quantitative indicators, which we demonstrate transparency in disclosing to our stakeholders. Looking ahead, NHN plans to measure and convert the environmental value created through its services in more diverse fields and expand related services.

Mobile Notification

NHN EDU contributes to forest protection and greenhouse gas emission reduction by providing I am School, a mobile notification service that connects schools and parents. The service allows parents to access school news through mobile devices easily instead reading them on the paper notice from schools, reducing the cost of paper. The number of pieces of school news received through I am School from January 2016 to February 2023 is approximately 3.8 billion, which contributes to reducing approximately 19,173 tons of A4 paper and reducing 21,474 tCO_2eq of greenhouse gas emissions. This corresponds to the amount of CO2 absorbed by 2,359,740 30-year-old pine trees in the central region for one year.





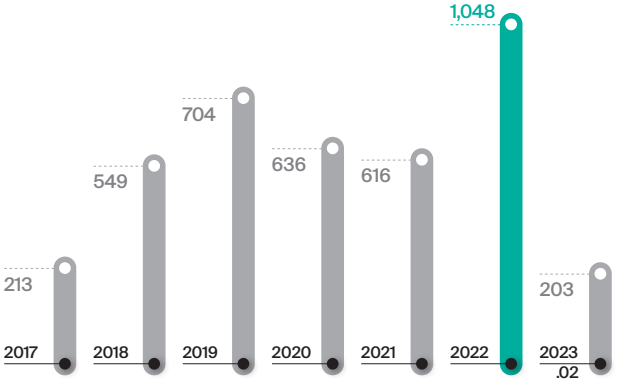
* The amount of paper saved by using the I am School service is 5g/sheet (A4 paper) (by applying the printing paper emission factor of 1.12kgCO_2eq/kg (carbon labeling emission factor)).
* 9.1kgCO_2eq (National Institute of Forest Science) is applied as the annual CO_2 absorption per pine tree in the central region for 30 years.
* Data prior to 2023 cannot be calculated by year. Looking forward, annual data will be collected and disclosed.

Environmental

Paperless Services

NHN PAYCO operates an electronic document box service, serving as an intermediary for certified electronic documents. It offers electronic functionalities for receiving and paying bills on mobile, local taxes, and credit card statements, thereby reducing the need for paper-based transactions. In addition, NHN PAYCO's mobile meal coupons and transport tickets help reduce the production and usage of paper. These initiatives are effective in protecting the environment by preserving forests and reducing greenhouse gas emissions. NHN PAYCO's PAYCO Meal Coupon started in 2017 and replaced about 39.68 million paper meal coupons by February 2023, reducing greenhouse gas emissions by 22,220kgCO_2eq. In addition, the electronic document box service replaced about 2.09 million paper documents from 2019 to February 2023, contributing to reducing greenhouse gas emissions by 11,732 kgCO_2eq. Through these efforts, NHN PAYCO is striving to realize sustainable environmental protection and energy saving, and plans to contribute to environmental protection in various ways in the future.

Total number of PAYCO Meal Coupons used (Unit: 10,000 coupons)



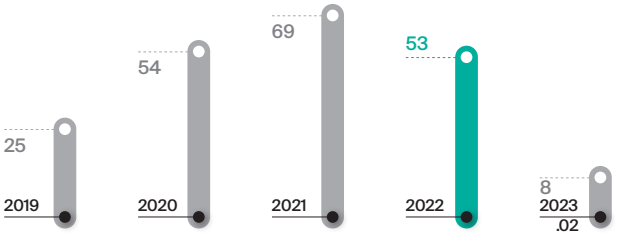
Total GHG emission reduction

22,220 kgCO_2eq

Amount equivalent to CO_2 absorbed by

2,442 30-year-old pine trees in the central region for one year

Total number of deliveries made through PAYCO Electronic Document Box (Unit: 10,000 deliveries)



GHG emission reduction

11,732 kgCO_2eq

Amount equivalent to CO_2 absorbed by

1,289 30-year-old pine trees in the central region for one year

* Paper savings by using food stamps and electronic document box services are 0.5g/sheet and 5g/sheet (A4 paper), respectively. 1.12kgCO_2eq/kg (carbon labeling emission factor) is applied as the printing paper emission factor.

* 9.1kgCO_2eq (National Institute of Forest Science) is applied as the annual CO_2 absorption per pine tree in the central region for 30 years.

Environmental

Eco-friendly Activities and Campaigns

To respond to climate change, a macroscopic approach such as constructing an eco-friendly building and data centers or providing environmentally-concious services is important, but a microscopic approach that raises employee awareness of environmental management and induces action is also crucial. NHN is actively promoting the importance of environmental management to its employees through diversified eco-friendly campaigns, training, and idea contests. This approach aims to ensure that all employees share and embrace responsibility for the company's environmental management, thereby enabling the achievement of sustainable growth. Going forward, NHN will continue leading environmental management through more diverse campaigns and activities.

Little Action Campaign

NHN runs a campaign called “Little Action” in pursuit of the goal of “creating big changes through small actions.” This campaign is designed to raise awareness in eco-friendliness among employees and motivate them to take practical actions. From 2022 to March 2023, the company focused on four campaigns, and employees who participated were given “little action” points that can be used to purchase items at the year-end flea market. NHN is committed to create an urban forest upon reaching a total of 2 million points with participation from all employees. By setting up an ESG bulletin board on the company website to collect related campaign information, we are actively encouraging employee participation.

Refill Station (2022.08)

NHN collaborated with Aromatica, an eco-friendly company, to establish a refill station that promotes zero waste and value-based consumption. In this experiential space, visitors can prepare empty bottles in advance and refill them with products such as shampoo and body wash. During this event, 1,040 people participated and successfully reduced plastic waste that amounts to 9,640 of 500 ml water bottles. Through the "Little Action" initiative, NHN encouraged voluntary eco-friendly activities by rewarding employees with 1,000 points for utilizing the refill station.

Plastic Upcycling (2022.10)

In October 2022, NHN conducted an upcycling campaign for using plastic bottle caps collected by employees to reduce plastic use and promote recycling. Within 10 days, a total of 4,076 plastic bottle caps were collected, and an exhibition stand was set up within the company to showcase the process of creating upcycled products from these caps to the employees. The collected plastic bottle caps were upcycled into chairs or sculptures and placed throughout the Play Museum. Through this campaign, NHN was able to reduce plastic use and increase eco-friendly awareness.

Environmental

Little Action Campaign

Wise Use (2022.11)

The "Wise Use" campaign, as part of a "Little Action" initiatives, encourages employees to reduce their wasteful consumption and adopt responsible habits by utilizing only what is necessary. Employees are encouraged to bring unused consumables and place them in the Wise Use Box. The collected items undergo a cleaning and disinfection process and are transformed into reusable supplies for internal and employee use, promoting a circular economy within the company. The “Wise Use” campaign is held the end of the year, and as of the end of 2022, a cumulative total of 242 members have participated, collecting and reusing 480 unused consumables.

Carbon Bucket Challenge (2023.03)

NHN conducted the “Carbon Bucket Challenge” campaign in March 2023. This campaign comprised three key components. Firstly, we shared actionable steps to mitigate climate change risks in our daily lives with our employees. Secondly, training sessions were conducted to enhance their understanding of carbon neutrality. Lastly, in collaboration with WINCL, a company specializing in carbon climate action, the campaign facilitated employees' direct engagement in addressing climate change by encouraging them to participate in carbon credit trading. NHN purchased carbon credits equal to the amount the employees contributed to the transaction, offsetting a total of 200 tons of carbon.

GoodFriends Cafe

GoodFriends Cafe is a cafe that acts in consideration of the earth and the environment. Since January 2022, the cafe has been utilizing paper cups and biodegradable plastic straws made from grass and bamboo as sustainable alternatives to tree-based materials, aiming to minimize the consumption of disposable products. To reduce the use of disposable cups, the cafe offers a KRW 200 discount to customers with tumblers and often holds free drinks events. As a result of these efforts, a total of 113,994 eco-friendly cups and straws were used, and a total of 9,876 employees used tumblers by the end of December 2022, effectively reducing greenhouse gas emissions equivalent to that of an air conditioner operating for 11 years (approximately 3,534 kg).

GoodFriends Cafe has also been regularly providing coffee grounds to companies specializing in resource circulation from October 2022. By the end of February 2023, a total of 2,253 kg of coffee grounds was recycled into various products such as flower pots, pencils, and bricks, which equates to a reduction of approximately 762 kg of greenhouse gases.

Sugarcane cups from Good Friend Cafe

Environmental

Water Usage Reduction

In celebration of World Water Day in March 2023, NHN replaced all restroom faucet nozzles at Play Museum and NCC1 with eco-friendly ones. The newly introduced nozzle is a product certified with the Eco Label from the Ministry of Environment, and can reduce water consumption by about 50% on average compared to existing faucets. Water bill savings of approximately KRW 1.33 million per year can be expected from this replacement. NHN has applied water saving facilities during the construction of the Play Museum and is reusing the wastewater generated at the museum for water recycling purposes.

Installation of water savers

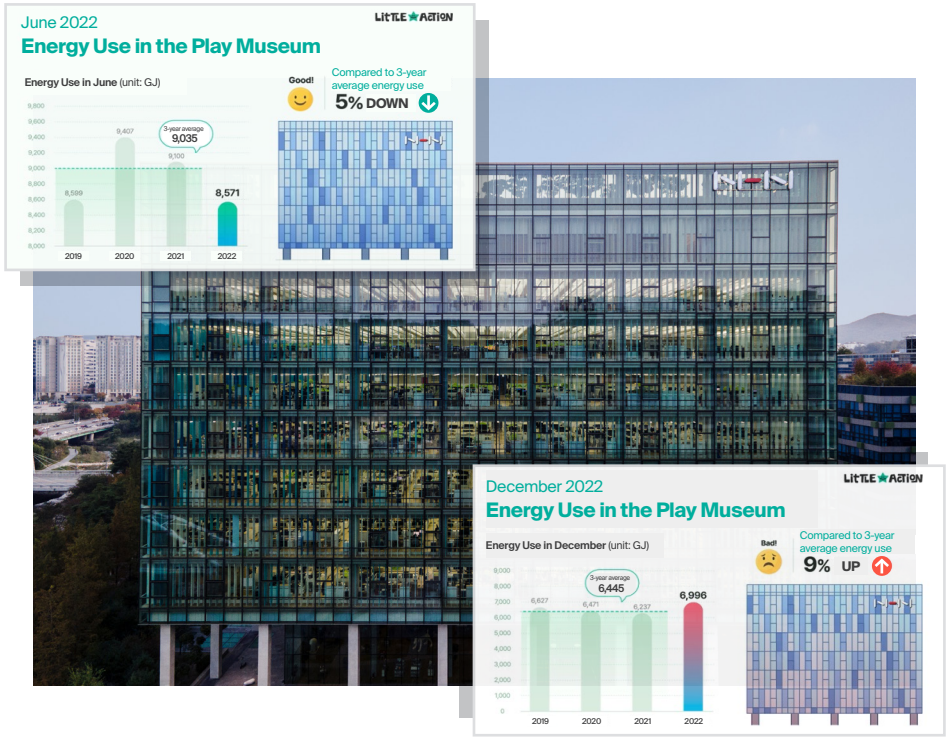
Lights Out Campaign

In celebration of Earth Day on April 22, 2022, NHN turned off the lights on all floors of Play Museum for about 10 minutes from 8:00 p.m. to 8:10 p.m. in a enterprise-wide climate action. Through this, we saved about 116 kg of carbon, which is equivalent to the amount absorbed by 13 30-year-old pine trees in the central region for one year.

Earth Day Lights Out Campaign

Sharing In-house Energy Consumption Status

NHN encourages employees to participate in eco-friendly activities by sharing information on monthly energy consumption at the Play Museum with all employees. Employees can view a screen that allows them to compare the current month's energy consumption with the average data from the past three years, enabling them to gauge the extent of changes in energy consumption compared to previous periods.



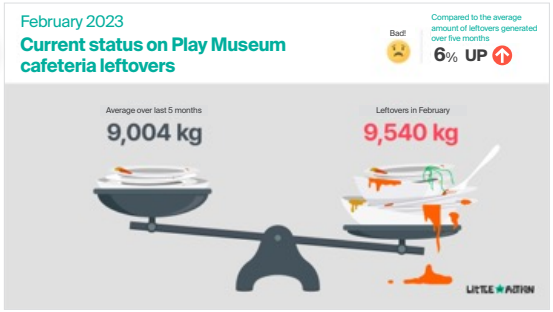
Environmental

Eco-friendly Campaign Ideas Contest

NHN uses the ESG Bulletin Board on the company intranet to actively collect employees' opinions on the eco-friendly campaign. The ESG Bulletin Board shares important announcements related to eco-friendly campaigns with employees and calls for ideas for new eco-friendly campaigns. In fact, two eco-friendly campaigns were conducted in 2022 based on ideas from employees. Going forward, NHN will demonstrate transparency in communicating with employees through the ESG Bulletin Board, and will continue to increase employee participation by conducting various eco-friendly campaigns.

Campaign	Details
Sharing Cafeteria Food Leftover Status	• Share the status of food leftover generated at the Play Museum cafeteria through the cafeteria screen • Present the range of change by comparing the current month's food leftover with the average value of the last five months
Paper Towel Saving Campaign	• Post a notice on saving paper towels in the bathroom

Post on saving paper towels



Sharing the current status of cafeteria leftovers (February 2023)

Environmental Training

NHN conducts various environmental training sessions to raise its employees' environmental awareness. Through this, not only the department responsible for environmental management, but also employees across the organization are encouraged to develop an interest in and actively engage in environmental management activities. In 2022, we conducted various educational programs such as an offline training on how to make "Page Light," a solar-charging light, and a book learning session on "Earth in Crisis, Humans with Nowhere Left to Go."

Classification	Date	Details of Training
Making "Page Light," a Solar-charging Light	Aug. 25, 2022	• Making eco-friendly lights through solar energy • Understanding a sustainable lifestyle
Book-learning Session on "Earth in Crisis, Humans with Nowhere Left to Go."	Sep. 1, 2022 - Dec. 30, 2022	• Understanding the concept of natural disasters and the characteristics of natural disasters in Korea • Raising awareness on climate change • Understand how to overcome the crisis, live sustainably, and coexist with climate change-related data

"Page Light" a solar-charging light

Environmental training

SUSTAINABILITY

Social

Human Rights	052
Diversity	055
Human Resource Development	057
Safety & Health	063
Information Security	066
Business Partner(Supplier) ESG	071
Local IT Ecosystem	074
Supporting SMEs	077
Customer Rights Protection	081
Social Contribution	084

Social

Human Rights

NHN is committed to protecting and respecting the human rights of all stakeholders throughout its business processes. Human rights should not be violated for any reason, including race, gender, religion, nationality, disability, etc., and should be equally respected under any circumstances. NHN makes multifaceted efforts to prevent human rights violations in all its management activities and strives to promote a human rights management culture across the entire group.

Human Rights Management Charter

Full Human Rights Management Charter

NHN has established and operates a Human Rights Management Charter to practice human rights protection and promote the value of human rights throughout all business processes. This charter is based on international principles and domestic laws related to human rights and serves as a guideline to respect and protect the human rights of NHN stakeholders, including employees, customers, business partners, and shareholders/investors. We also provide communication channels for reporting any human rights-related grievances, ensuring that no human rights violations occur in its management activities. We are committed to rigorously managing and mitigating potential human rights risks based on this Human Rights Management Charter.

Key Details of the NHN Human Rights Management Charter

Employees

- Fair performance evaluation and non-discrimination in working conditions
- Prohibition of forced labor and child labor
- Respect for members' privacy and protection of personal information
- Continuous improvement of work environment for safety and health

Suppliers

- Prohibition of wrongful exploitation of buyer-seller relationship and unfair trade
- Pursuit of shared growth through fair trade that demonstrate transparency
- Reinforcing suppliers' human rights management capabilities

Customers

- Improving customer satisfaction through prompt response to customer needs
- Customer information protection

Shareholders/Investors

- Building a relationship of trust by putting transparency into business management
- Rational decision-making to enhance shareholder value

Medium to Long-term Goals of Human Rights Management

Goal	Detailed Plans and Tasks	
~ '23 Establishment and Internalization of Human Rights Management System	• **Establishment of human rights management system** - Development of human rights management regulations - Implementation of human rights reporting system	• **Internalization of human rights management culture** - Operation of campaigns for human rights management - Conduct training on the prevention of human rights risks - Conduct surveys on human rights risks
~ '24 Enhancement of Expertise in Human Rights Management	• **Evaluation and Improvement of Human Rights Management System** - Disclosure of human rights risk survey results and identification of improvement areas - Development and Implementation of Action Plans for Each Improvement Area	• **Implementation of human rights management training** -Conduct specialized training for departments and personnel responsible for human rights management
~ '25 Advancement of Human Rights Management	• **Expansion of the scope of human rights risk management** - Expansion of the scope of human rights compliance monitoring - Activate stakeholder engagement	• **Enhanced proactive risk management**

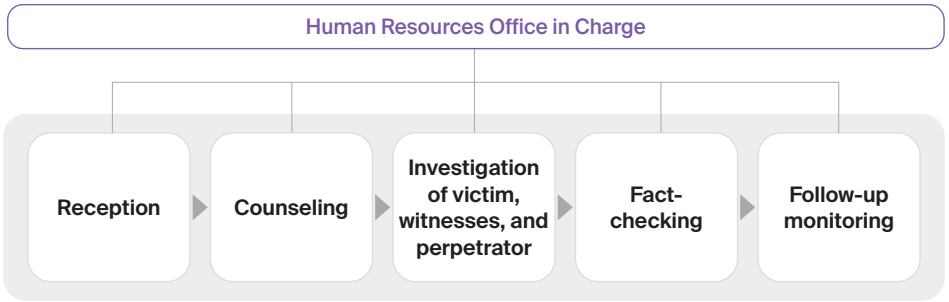
Respect for the rights of all stakeholders

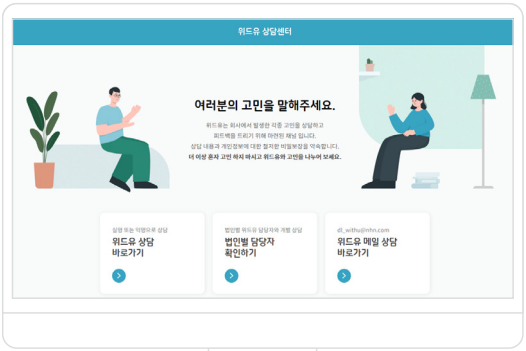
Social

Grievance Handling Process

NHN has established and operates the grievance handling process for addressing human rights-related issues. This process consists of five steps, with the Human Resources Office responsible for ensuring clear and timely handling. Victims are fully protected from any potential disadvantages, starting from the moment a report is received and throughout the follow-up monitoring process. The investigation process ensures the complete protection of the victim's identity through the signing of a confidentiality oath by the person in charge, witnesses, and the perpetrator. Even after fact-checking and implementing necessary measures, follow-up monitoring is conducted to prevent any potential secondary harm from occurring. By implementing and operating this grievance handling process, NHN ensures the protection of human rights for its employees and fosters a healthy and inclusive workplace culture.

Human rights grievance handling process





Grievance Handling Channel

- **With U** : "With U" is an anonymous channel for NHN employees to seek advice and provide feedback. It specializes in reporting workplace harassment and sexual harassment issues, but also offers counseling for various other concerns within the company.
- **Business Ethics Counseling Center** : External stakeholders of NHN can submit complaints related to human rights through the "Business Ethics Counseling Center." The center can be accessed freely through the NHN website, and partners can also access it through the purchasing system. The Business Ethics Counseling Center provides guidance and accepts reports on violations of NHN's corporate ethics, including acts that infringe upon human rights.

Number of human rights-related reports and investigations

Classification	2020	2021	2022
Number of reports related to human rights (harassment/sexual harassment) among reports received through With U	3	2	2
Number of human rights-related reports that required investigation	0	1	2

Social

Identifying Human Rights Risks

NHN is actively aware of and strives to manage key human rights risks that require attention. Considering the nature of the IT/software industry, we have identified "bullying and harassment" and "workplace sexual harassment" as the most prominent risks to which our employees may face. In December 2022, a survey on workplace bullying and sexual harassment was conducted among all employees for a period of seven days to assess these risks.

Furthermore, NHN conducts regular surveys targeting our partner companies beyond the headquarters in order to identify human rights risks on a broader scale. We have also established communication channels with our partner companies to facilitate ongoing dialogue. The survey results for 2022 revealed that there were no significant human rights risks identified among our partner companies. Going forward, we will continue to strengthen efforts to identify and address potential human rights risks effectively.

Human Rights Issues	Our Responses in 2022
Harassment and workplace bullying Workplace sexual harassment	• Conducted workplace harassment prevention training for heads of organizations • Conducted sexual harassment prevention training in the workplace for all employees • Expanded the scope of support for In Mind, a mental counseling service for employees • Operated WithU, a grievance handling channel in the workplace • Gathered opinions through surveys and raise awareness on reporting

Alleviation of Human Rights Risks

Workplace Bullying Prevention Training

Since 2021, NHN has been conducting workplace harassment prevention training for the heads of all organizations within the company. This training consists of offline lectures delivered by professional instructors, with a focus on making the content relatable to the participants by incorporating case studies specific to the IT industry and the working environment at NHN.

Classification	Unit	2020	2021	2022
Number of participants*	Person	-	252	299
Number of people who completed training	Person	-	242	271
Completion ratio	%	-	96	91

* Heads of organizations

Sexual Harassment Prevention and Disability Awareness Training

NHN conducts annual online training for all employees to prevent sexual harassment in the workplace and enhance awareness regarding disabilities. The training is designed to create a healthy workplace culture by using real-life examples to help employees better understand issues related to disability discrimination and sexual harassment in the workplace. It incorporates content that aims to raise awareness and foster a respectful and inclusive environment for all employees.

Classification	Unit	2020	2021	2022
Number of participants	Person	1,273	1,386	1,706
Number of people who completed training	Person	1,273	1,386	1,706
Completion ratio	%	100	100	100

Improvement of accessibility to the grievance handling channel

NHN strives to actively involve its employees in mitigating human rights risks by promoting the human rights survey conducted annually among all employees and raising awareness of the With U platform, which serves as a channel for addressing human rights grievances. In December 2022, the accessibility of the With U platform was enhanced by allowing employees to access it not only through PCs but also via mobile devices, ensuring greater accessibility for employees.

Bullying/Sexual Harassment Prevention Campaign

NHN conducted a campaign in the first quarter of 2023 to prevent workplace harassment and sexual harassment. Going forward, through quarterly campaign activities, we will share instances of harassment and sexual harassment with our employees and introduce the reporting procedures to raise awareness and eradicate such issues in the workplace.

Expanding the Coverage of In Mind

In Mind is a counseling service for NHN's employees. In January 2022, NHN significantly expanded the eligibility of In Mind, offering online and offline psychological counseling services, as well as online psychological tests, to all employees.

Social

Diversity

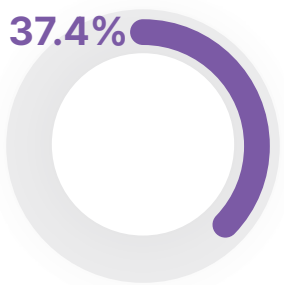
NHN strives to sharpen its competitive edge through enhancing talent competitiveness based on diversity and a flexible organizational culture. To achieve this, we consider diversity as one of the top values when developing recruitment and work systems, as well as creating a work environment. We believe that when employees with different backgrounds and experiences work and grow harmoniously, the organization's capabilities and competitiveness are enhanced. We will continue to provide an inclusive work environment where all employees can work without discrimination and make efforts to foster a culture that embraces and respects various differences.

Excellent Family-friendly Company

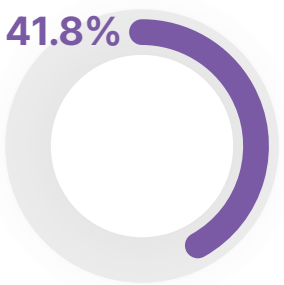
NHN respects the diverse individuality of its employees and supports work-life balance. This support has a significant impact on employees' job satisfaction and productivity, and it is one of the ways we fulfil its social responsibility. We are dedicated to creating a family-friendly corporate culture by implementing comprehensive maternity protection programs and various welfare systems. As a result of these efforts, we were recognized as an excellent family-friendly company by the Ministry of Gender Equality and Family in 2016 and has maintained this certification to date. We will continue to strive to build a corporate culture where both employees and their families can be happy and satisfied.

Women in the workforce

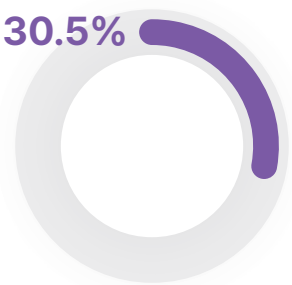
*From team/part leads to pre-executives.
(As of Dec. 31, 2022)



Female employee ratio



Ratio of females in new hires



Female manager* ratio

Standard Workplace for the Disabled: Good Friends

NHN supports the stable economic activities and social independence of individuals with disabilities through Good Friends, a subsidiary established in Pangyo Techno Valley in 2016. As of the end of 2022, eighteen young people with developmental disabilities are working at cafes and marts in NHN's building. Good Friends provides paid training prior to hiring, regular grievance consultations, and leisure activity programs for its members. It also strives to create a non-discriminatory working environment by promoting inclusion and collaboration between individuals with disabilities and non-disabled individuals.

Good Friends Cafe (Standard Workplace for the Disabled)

Social

Work-life balance

NHN has established various maternity protection and family-friendly policies to provide generous support for its members to maintain a balance between work, family, and life. Through these initiatives, we aim to create a corporate culture where all members are respected in terms of pregnancy, childbirth, and childcare, and can fully utilize their capabilities in their individual work conditions. By promoting the integration of work and family, we enhance organizational diversity and ultimately strive to foster a culture where these policies and practices facilitate members' work engagement and contribute to the growth of the business.

Prenatal Check-up Leave

- 15 days (8 hours per day) in paid leave for pregnant employees to go to prenatal checkup
- In April 2023, the scope of support was expanded to cover male employees (if the spouse is pregnant)

Maternity Protection Facilities

- Space and supplies are provided so that employees who are breastfeeding after childbirth can comfortably extract breastmilk
- A joint workplace daycare center operating in connection with an organization specializing in workplace childcare facilities

Recreational camping

Pregnant employee kit and school admission gifts for children

Reduced Working Hours during Pregnancy

- Up to 2 hours of paid reduced work per day is provided not only for the standard 12-week period but throughout the entire pregnancy period (1-40 weeks), including the period after 36 weeks of pregnancy.

Special Leave for Miscarriage/Stillbirth

- In addition to legal leave for miscarriage/stillbirth, an additional 5 days of health leave per year are granted.

Parental Leave

Classification		Unit	2020	2021	2022
Employees that used parental leave	Male	Person	2	1	7
	Female		14	20	27
Employees that expected to returned to work after parental leave ended	Male		1	2	4
	Female		15	11	27
Employees that returned to work after parental leave ended	Male		1	2	4
	Female		15	11	27
Returning rate*	Male	%	100	100	100
	Female		100	100	100
Employees that were still employed 12 months after their return to work**	Male	Person	7	0	1
	Female		19	12	11

* (Number of employees who returned to work after parental leave during the reporting period)/(Number of employees whose parental leave ended during the reporting period)×100.
** The number of employees who returned during the previous reporting period and worked for one year or more.

Social

Human Resource Development

NHN strives to recruit talented individuals in a transparent and fair manner and supports them to unleash their potential within a healthy and flexible organizational culture. Recognizing that the growth of its members directly contributes to the competitiveness of the organization, we provide various training and self-development programs to enhance their capabilities. Moving forward, we will continue our efforts to secure global competitiveness through differentiated talent acquisition and growth support strategies.

Way of Working : PLAY STYLE

NHN defines five factors of Play Style that are unique to NHN: Passion, Collaboration, Initiative, Perseverance, and Confidence. Based on these five ways of working, NHN is dedicated to identifying talented individuals who align with the company's culture and fostering their growth and development together. In addition, we are focusing on identifying and developing talented people who can think creatively and share insights to solve problems.

Transparency and Fairness in Recruitment

Go to NHN Recruit Site

NHN employs all applicants through a fair and inclusive process, without imposing any restrictions based on age, major, gender, race, or origin during the job application process. In addition to providing basic job descriptions, our job postings offer comprehensive information to applicants, including details about departments and working methods, in order to provide a more thorough understanding of the positions. In addition, We actively participate in events such as NHN FORWARD, a technology conference, as well as various recruitment fairs organized by external recruitment companies. Through these external activities, We aim to promote recruitment and deliver information to potential candidates by providing face-to-face interactions. Starting in 2023, NHN plans to revamp its recruitment portal to enhance the convenience of applicants. Furthermore, NHN will proactively promote recruitment through various initiatives, such as internships, industry-university collaborations, and targeted recruitment of master's and doctoral candidates.

Recruitment Process

Job application review → Pre-Test → Tech interview → Career interview → Health checkup

* Depending on the job, the pre-test may not be conducted or the selection process may change
* Portfolio and pre-assignment presentations are conducted during tech interviews for some career positions

Securing Expertise in Recruitment

NHN operates a seperate talent acquisition organization that directly identifies and recruits professionals. Through this approach, we have established our own strategy for identifying and hiring potential candidates. Since 2022, we have been committed to recruiting highly capable individuals who align with NHN's organizational culture.

Social

Diversification of Recruitment Channels

Employment-linked Program

NHN selects talented individuals with growth potential, as well as individuals who perform tasks for a certain period of time, and consistently conducts recruitment-linked internships that serve as a pathway to actual employment. Every year, we conduct practical training and work-related projects for a certain period of time based on the demand of relevant departments, utilizing them as a means to recruit and develop junior personnel. In addition, the company offers individuals who have successfully completed NHN Academy, an educational institution specializing in software development technology, the opportunity to pursue employment at NHN and its subsidiaries. NHN will continue to discover and operate various employment-linked programs to recruit and develop excellent talent.

Internal referral/International job posting

The “Internal referral” process allows internal employees who have a good understanding of NHN to recommend external candidates, thereby actively leveraging their personal networks. The rate of job application reviews leading to recruitment is found to be high for such network, and NHN incentivizes in-house recommendations by providing bonuses to both the recommenders and the employees. In addition, NHN operates an “internal job posting” system as a way to prevent talent leakage to external sources and provide opportunities for internal employees who seek further growth through job changes within the organization. This system allows for the efficient replenishment of positions by facilitating the movement of qualified individuals whose competencies and fit within the organization have been validated.

Targeted recruitment by Occupational Group

NHN creates and promotes content items, such as job interviews and organization introductions, to attract talented individuals for various positions. In addition, we run campaigns offering special benefits to applicants as part of its recruitment efforts. From August 2022 to April 2023, we have completed intensive recruitment for 4 business areas (Comico, WA Service, FashionGo, Dooray!)

Employee Training Programs

In 2023, NHN will offer a diverse range of training programs under the new slogan, “Better,” aimed at supporting personal growth, organizational improvement, and leadership development. To achieve this goal, we incorporate various forms of "Better" training at key moments, including new employee onboarding, role transitions, skill enhancement, and leadership development.

Better Start: When joining the company	
[Day 1] Better OT	NHN’s unique onboarding program
[DAY30] Better Start	Onboarding program a month after
Onboarding training	Networking support such as welcome lunch and Better Mate

When capacity building is needed	
Better Me, Better We	Common competency program for me and the organization
Better PLUS	Online training platform with over 270 courses
Better Up	Training for promotees
D SCHOOL	Lectures on PLAY STYLE’ as the way of working at NHN

When leadership and team building are needed	
Better New Leader	New team leader and executive onboarding program
Better New Director	New executive onboarding program
Better Leader	Advanced leadership training
Better US	Team building program

When technical capabilities need to be strengthened	
Better Start_Tech	Onboarding program for tech jobs
Better Learn_Tech	Capacity building for tech jobs
Better Seminar_Tech	Technology seminar sharing IT trends and cases

Social

Training Satisfaction Survey

After the completion of the training, NHN conducts a survey among participants to gather their feedback and opinions regarding the training program. It calculates overall satisfaction by measuring participants' responses in various categories, such as content of training, satisfaction with instructors, training methods, and degree of application to the field. The results of the survey are reflected in establishing a growth support program optimized for NHN.

2022 Training Satisfaction Survey Results

Classification	Training Satisfaction (out of 4 points)
Better OT: onboarding	3.9
Better Start: onboarding	4.0
Better Us: Team building	3.9
Better New Leader	3.8

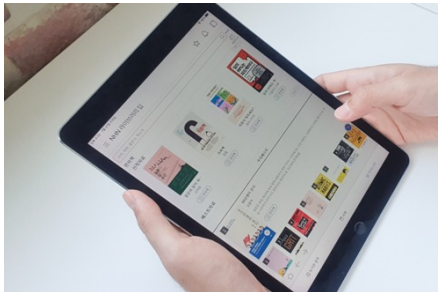
Training Costs and Outcomes

Classification	Unit	2020	2021	2022
Total number of participants	Person	1,414	1,384	1,721
Total training hours*	Hour	10,147	22,829	27,214
Total training cost**	KRW 1mn	79	389	406
Training hours per person	Hour	7	16	16
Training cost per person	KRW	55,799	281,069	235,870

* Statutory compulsory training + external training/study + technical training + competency training
** The sum of training-related expenses in the financial statement, including training costs, printing costs for books, etc.

Self-development Support System

NHN directly provides training programs and operates various programs to support the development of each employee. It includes external training support covering the full cost for job-related training courses, overseas technical training support that enables employees to stay updated on the latest global trends, coverage of certification acquisition costs for job-related certifications, provision of necessary books for work-related study, and support for up to two books for self-study. In July 2021, Library Deep, an in-house electronic library, was launched to provide employees with the opportunity to borrow and read books through mobile devices and PCs. The library has been well-received by employees, aligning with its slogan of "finding ways to immerse in work and enjoy rejuvenating breaks with books."



"Library Deep" in Play Museum (office building) and e-library.

Operational Achievements of Self-Development Support Program

Classification	Unit	2020	2021	2022
Number of employees using self-development support system*	Person	339	393	1,238
Number of 'Library Deep' users		267	472	773
Check-out count for books from Library Deep	Time	1,062	1,453	2,907

* External training, overseas technical training, certification costs, and study support programs

Social

Flexible Work Culture

NHN has implemented and operates a flexible work system, considering the efficiency of employees' work and work-life balance. Employees have the autonomy to set their own flexible commuting hours and off-days. We promote the improvement of employees' work performance and quality of life through various work systems based on consideration and trust among employees.

Flexible Working Hours

In August 2022, NHN introduced a new working system that maximizes individual autonomy of each individual employee. The restructuring of the working system focuses on achieving work and life balance based on each individual's working conditions and lifestyle. The previous core time system, which required mandatory work from 11 AM to 4 PM, was abolished, and the "Purple Time" system, which allows flexible adjustment of working hours, was reformed to be more flexible. Under the "Purple Time" system, all employees can freely set their working hours between 6 AM and 10 PM without a minimum limit on the required working hours. Additionally, we implemented the "Off Day" system, which allows employees to autonomously set their days off based on their work schedules, regardless of specific weekdays or frequency. This enables employees to balance their work and personal life and is expected to foster more creative and productive work activities.

Other Working Systems

NHN operates various systems for facilitating the working conditions, including the short-time work system and My Office, in addition to Purple Time. NHN believes that a flexible working culture leads to improvement in productivity. Going forward, we plan to adopt various systems that prioritize the autonomy of our employees

System	Description
Reduced work hours during pregnancy	• Implementation of a shortened working hour system without wage deduction for the entire period of pregnancy (1–40 weeks; allowing up to 2 hours per day) • For all pregnant employees
My Office	• Once a week, on Fridays, there are no restrictions on work location.
Evening break time	• A system that allows employees to voluntarily register break times only in the evening, as for dinner and fitness center use

Performance Review System that Drives Employee Growth

NHN conducts regular reviews twice a year. In the first half of the year, it reviews individual, team, and organizational work culture, while in the second half, it focuses on reviewing individual performance. All review responses are anonymous, allowing for meaningful and honest assessments and feedback. During the first half review, we assesses the overall work engagement of the organization beyond individual aspects based on its five PLAY STYLES: Passion, Collaboration, Leadership, Perseverance, and Self-Confidence. Starting from 2023, we plan to share the results of the first half review with its members and utilize them to cultivate a better organizational culture. During the second half review, individuals self-assess their year-long work performance and receive 360-degree feedback from colleagues and superiors. Additionally, during the two annual review periods, we organize a "Feedback Week" where one-on-one face-to-face feedback sessions take place. Through these efforts, we aim to drive the growth of its members and foster a culture of meaningful feedback that promotes work engagement.

Employee Compensation System

NHN upholds fairness and transparency by implementing a performance-based employee compensation system. We operate an incentive system that takes into account the specific nature of each business project or service, ensuring that employees receive high compensation for their outstanding performance. By implementing a non-inclusive wage system as the foundation, NHN is committed to providing fair compensation to its employees. In addition, we strive to engage employees more with stability by implementing long-term compensation plans, such as stock options, specifically designed for key talented professionals. The compensation system for registered executives is implemented through a fair and reasonable process, which involves the resolution and approval of both the Compensation Committee and the Global Personnel Committee.

Social

Various Employee Benefits

NHN promotes employee engagement and improves quality of life through a variety of welfare programs. We operate various support systems at work and at home to help employees lead healthy and stable lives and find a balance between work and personal life. Additionally, we always listen to employees' opinions regarding welfare benefits and continuously strives to improve the programs, taking into consideration different needs and changing work environments.

Right to Rest

Veteran	• A system that provides PAYCO points and a special vacation for long-term employees every 5 years from 5 to 30 years
Refresh	• A system that covers a certain amount of vacation expenses to give those who have been promoted a chance to rest and recharge
Title change leave	• A system that offers a special leave to employees undergoing monthly title changes
Health checkup leave	• A system that supports one day of paid vacation on the day of (general/comprehensive) health checkups every year so that employees can take enough rest before/after health checkups
Recreational facilities	• A system that allows you to use our own special resort facilities at an affordable price, from luxury condominiums to campsites located all over the country
Other types of leave	• Various leave systems such as family care leave, personal leave, annual leave, sick leave, maternity/paternity leave, miscarriage/stillbirth leave, condolence leave, and special leave

Health Support

Health clinic	• An on-site health clinic where a resident nurse takes care of employee health so that employees can always work in good condition
Fitness center	• An in-house fitness center where you can exercise while enjoying panoramic views on tracks with professional trainers
Health checkup	• A general/comprehensive checkup is available every year, and the biennial comprehensive checkups cover not only the employee but also two of his or her family members. It also covers paid leave (1 day) on the day of health checkup
Accident insurance	• The company operates an accident insurance system that covers various types of medical expenses, extending the coverage to employees, as well as their spouses and children, for their benefit
In Mind	• A system is in place to provide anonymous counseling with experts to prioritize mental health, which is equally important as physical health
40+	• A system is in place to support health counseling, exercise, and specialized health checkups for employees aged 40 and above who are going through significant life transitions

Social

Family Supports

WE! Family	• A system to invite parents, children, and other family members to the company building where the employees work to participate in fun programs, experience the company culture, and make good memories
School Admission Gifts for Children	• A system in which the company supports the growth of families by providing admission gifts to employees' children entering elementary, middle, high school, or university
Occasions Deserving Congratulations or Condolences	• A system in which the company expresses respect and supports mutual assistance so that occasicons deserving congratulations or condolences that affect employees and their families can be handled smoothly

Commuting Supports

Late-night Taxi	• Taxi fee support when getting off work late at night (past 11 p.m.) to ensure safety and comfortability
In-city Transportation Expenses	• A system that covers transportation expenses incurred when employees need to go to work early in the morning for emergency response and regular inspections, as well as expenses incurred when traveling to external sites for business purposes
Bicycle Parking	• A dedicated bicycle parking area is provided, offering services from professional mechanics for inspection, repair, and cleaning of bicycles

Bicycle Parking

Fitness Center

Meals Supports

Breakfast	• Light breakfast provided to ensure that employees do not skip meals due to a busy schedule
Lunch/Dinner	• Balanced diet prepared by a professional nutritionist and cook free of charge, and lunch is provided even when working from home
Cafe	• Coffee and drinks made with care by special baristas at reasonable prices
Convenience Store	• 24-hour unmanned convenience store with discounts

General Supports

Support for Loan Interests	• A system that covers a certain level of loan interest to relieve the burden of employees who need large sums of money for house sales, new home purchases from a builder, and/or leases
Holiday Gift	• System that distributes a certain amount to ease the burden and stress employees might have when the holiday season approaches

Workplace Supports

Business Support Center	• A centralized support center is available to assist employees with work-related matters, including office appliances, parcel delivery, and in-house hotlines. This ensures that employees can fully focus on their work without distractions
Working Environment	• Indirect lighting is implemented to reduce eye fatigue, and ergonomic chairs are provided to guarantee a comfortable working environment for employees

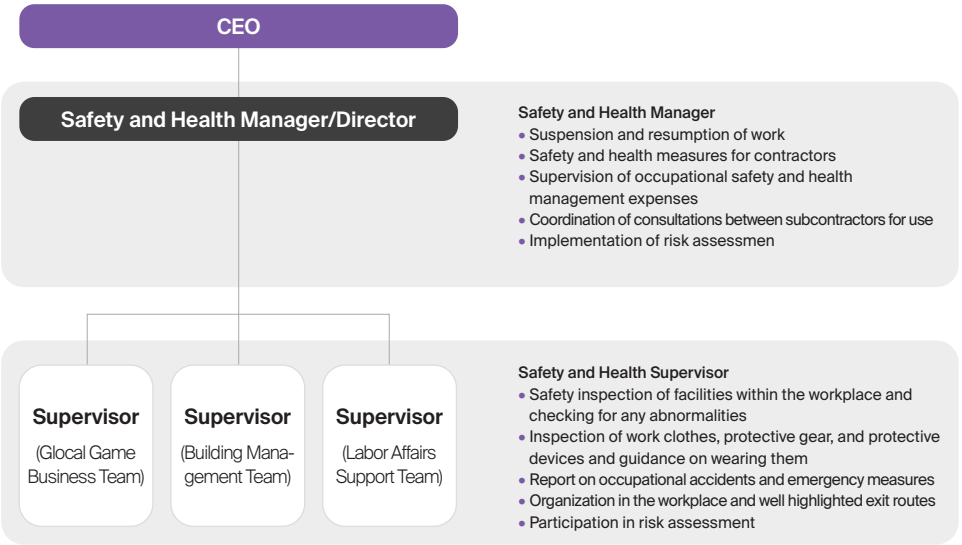
Social

Safety & Health

NHN prepares for potential occupational safety and health risks and makes various efforts to create a safe working environment for employees. The company has established the Safety and Health Management Policy to establish an organizational culture that puts safety and health first. Through compulsory education and training, the company is aware of occupational safety and health risks and fosters safety and health capabilities. Furthermore, we conduct regular assessments of workplace risks, address identified vulnerabilities, and prioritize the health and safety of our employees.

Safety & Health Governance

NHN has thoroughly established the Safety & Health Governance to prevent occupational accidents that may occur in the workplace and ensure the health of employees. All decisions aimed at creating a safe workplace are reported directly to the CEO, and dedicated professional supervisors are assigned to key business departments related to safety and health to ensure through accident prevention. NHN will continue its efforts to promote safety and health management and cultivate a safety culture under the leadership of top management and supervisors within the safety and health management system.



Safety & Health Management Policy

NHN has established safety & health management policy and implemented five detailed strategies to ensure their effectiveness. We are committed to striving for zero occupational accidents annually.

Social

Safety & health medium- long-term goal achievement roadmap

NHN has established medium-long-term safety and health goals to create a safe workplace without major accidents and has set detailed roadmaps to achieve these goals.

Goal	Detailed plans and tasks
~ '23 Establishment of Safety and Health Management System	• **Inspection and improvement of safety and health management system** - Establishment and revision of safety and health management policies and regulations - Appointment of safety and health management officers/ supervisors - Budgeting and execution of safety and health activities • **Major accident prevention activities** - Development of major accident manuals - Identification and improvement of hazardous and risky factors - Operation of a system to listen to the opinions of employees and contractors
~ '24 Strengthening of Safety and Health Management Expertise	• **Enhancement of Safety and Health Management System** - Certification of Safety and Health Management System (ISO 45001 certification) • **Internalization of Safety Management Culture** - Operation of experiential safety training (disaster response training, etc.) - Conducting safety and health prevention campaigns
~ '25 Internalization of Autonomous Safety Management	• **Implementation of Autonomous Safety Activities** -Ensuring compliance with safety management practices by employees and stakeholders • **Enhancement of Safety and Health/Disaster Preparedness Compliance Audits**

Maintaining Zero Major Accidents

Creating a Safe Working Environment

Facility Risk Improvement

NHN implemented various activities to mitigate risks associated with the facilities in the company building. Firstly, we addressed the issue of blurred parking lines in the underground parking lot that could lead to accidents and slips by repainting the parking lines and implementing anti-slip measures. Additionally, safety cushions were installed at the corners of the stairs on the 1st and 10th floors to prevent accidents. Moreover, to reduce the risk of tripping over protruding parts of the wooden floors in the HIVE and office spaces, thorough floor inspections were conducted, and any damaged flooring was replaced with new flooring. Furthermore, safety nets were installed both inside and outside the company building to prevent falls.

Harmful and Hazardous Materials Storage and Use Guide

NHN regularly informs all employees about the prohibited storage of hazardous and dangerous substances in office spaces. We explicitly communicate that flammable substances like acetone and lighter oil, as well as skin irritants such as instant adhesive, are not allowed to be stored in office areas. To ensure compliance, we provide clear instructions that these substances should be stored in the Business Support Center located on the 2nd floor of the company building, if necessary. Employees are given access to this storage area after familiarizing themselves with the provided guidelines, and the Business Support Center offers a separate safety guide for reference.

Facility Maintenance

NHN has put a lot of effort into maintenance and repair as well as risk reduction for the company building facilities. In order to reduce eye fatigue that employees may feel while working and help them work under a more comfortable and uniform illumination, we replaced all fluorescent lights in the workspaces. In addition, we have replaced air conditioner filters so that employees can breathe pleasant indoor air 365 days a year.

In-company Fire Drill

NHN actively enhances its fire prevention and response capabilities through internal fire drills that are conducted once or twice every quarter. We conduct timely inspections of various components, including firefighting, building structure, electricity, and machinery, and take necessary measures to create a safe working environment.

Contractor Safety and Health Council

NHN operates the Contractor Safety and Health Council and holds monthly meetings. Once a quarter, the contractor and related subcontractors jointly inspect the safety and health of the worksites. Inspections focus on preventing damage to facilities and safety-threatening accidents caused by weather such as winter, thawing season, and typhoons.

Classification	Unit	2020	2021	2022
Occupational safety and health-covered workers	Person	1,014	1,018	963
Number of people affected by occupational accidents	Person	0	0	0
Occupational accident ratio	%	0	0	0

* Applies to NHN Co., Ltd. and includes dispatched/contracted workers under the company's control (executives, regular employees, contract workers, dispatched workers, interns, employees of in-house subcontractors).

Social

Safety & Health Risk Assessment

NHN conducts self-assessment of potential hazardous or risky factors that may occur in the office spaces and facilities of the NHN Play Museum and NHN Cloud Center (NCC), Pyeongchon IDC, and Nonhyeon IDC, on an annual basis. The assessment evaluates the likelihood (frequency) and severity (intensity) of harmful or risky factors that could lead to injuries or illnesses, and classifies the risks into three levels: high, moderate, and low. For items assessed as moderate or higher risks, we actively take measures to improve the risks and checks the progress of improvement measures twice a year. Furthermore, we actively inform our members of the improvement measures and share the progress of safety measures to ensure that all members can maintain a safe working environment.

2022 Risk Assessment Results and Risk Reduction Measures

Discovered Risk	Degree			Improvement Measures	Degree	
Description	Materiality	Likelihood	Hazard	Description	Likelihood	Hazard
Concerns about spread in case of fire due to the presence of many combustible materials in the work space	1	2	● ○ ○	Placement of additional fire extinguishers	1▼	○ ○ ○
Missing indication of pressure switch setting value	1	2	● ○ ○	Start/stop pressure indication and inspection	1▼	○ ○ ○
Risk of collision during inspection and movement due to exposure of the chain valve's chain	1	2	● ○ ○	Repair of chain valve's chain	1▼	○ ○ ○
Poor electrical room panel lock	2	2	● ● ○	Electrical room panel lock replacement	1▼	● ○ ○
Risk of electric shock due to opening cooling water pump reactor and inverter panel	1	2	● ○ ○	Reactor and inverter panel lock replacement	1▼	○ ○ ○
Neglected chemical storage containers	3	2	● ● ●	Disposal of chemical storage containers	1▼	● ● ○
Risk of falling objects and vehicle damage due to sound-absorbing materials falling off the ceiling of the parking lot	2	3	● ● ●	Investigation of areas at risk of sound-absorbing materials falling and removal of materials	1▼	● ○ ○
Risk of collision due to malfunction of parking lot entry/exit alarm system	2	2	● ● ○	Alarm device maintenance and inspection	1▼	● ○ ○
Risk of falling from the rooftop stairs	2	2	● ● ○	Attachment of fall hazard warning signs	1▼	● ○ ○
Risk of collision when moving under the duct in the generator room	2	2	● ● ○	Attachment of collision warning notice	1▼	● ○ ○
Danger of vehicle rollover due to level difference when moving on the ramp at the entrance to the parking lot	2	2	● ● ○	Attachment of level difference marker lines	1▼	● ○ ○
Remaining people exposed to risk when fire extinguishing gas is released in utility room and computer room	3	2	● ● ●	Provision of emergency respirator	1▼	● ● ○

Social

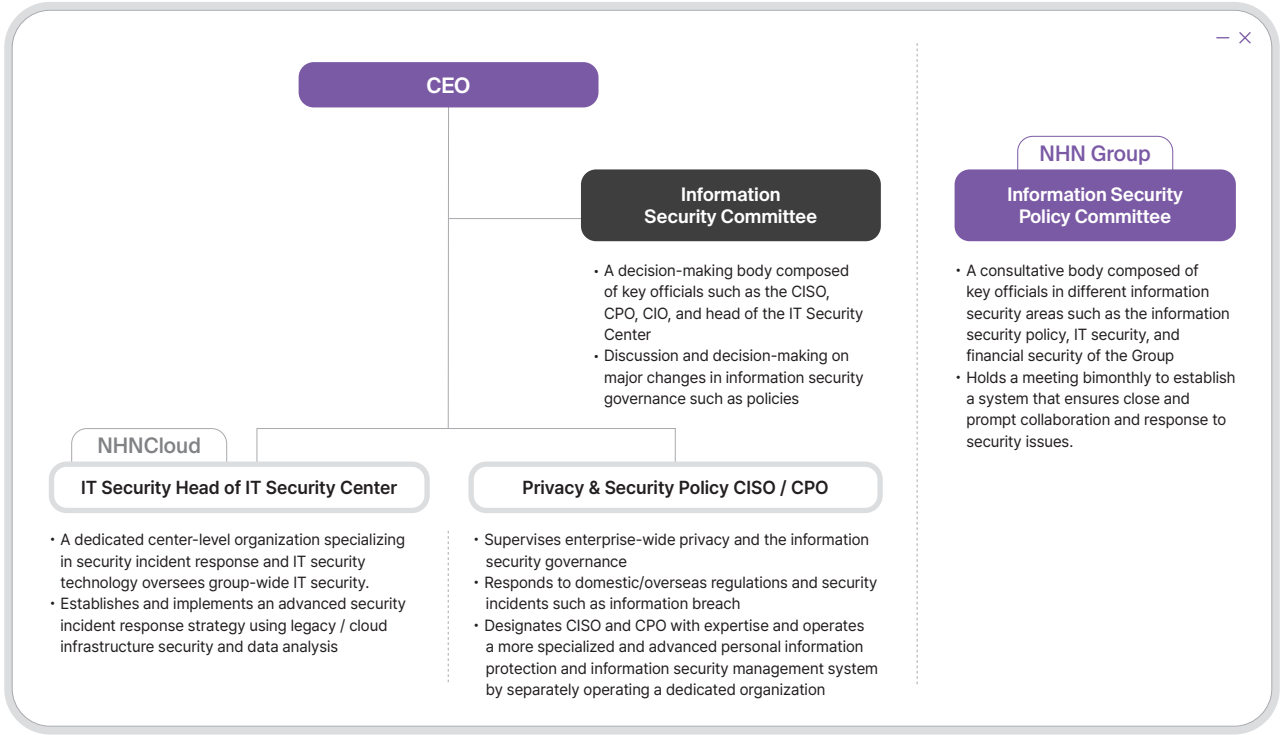
Information Security

In the process of creating a better world through technology, NHN prioritizes the protection of user personal information and privacy. To achieve this, we strictly adhere to information security regulations and legal requirements, such as the Personal Information Protection Act, and implement systematic information security governance and state-of-the-art security technologies. Under this enterprise-wide information security management system, we strive to safeguard users' personal information from threats such as unauthorized access, leakage, and tampering. As more people and our technology become interconnected, we will continue to promote the core value of privacy protection and spread it widely.

Information Security Governance

NHN operates a specialized and advanced enterprise-wide information security management system by separating the organization overseeing IT security from the one overseeing information security policies, including personal information protection. For significant matters such as policy changes, an Information Security Committee composed of CISO, CPO, and CIO is convened at least twice a year to discuss and make timely decisions. Additionally, an Information Security Policy Committee consisting of key personnel responsible for information security policies, IT security, financial security, and other specific areas is conducted on a monthly basis to closely and promptly address security issues that arise. This system allows for close collaboration and swift responses to security incidents within the group companies.

Detailed Information Security Governance System



Social

Information Security Policy

NHN has established and is operating an information security policy framework specific to duties of individual employees. To this end, we check compliance at least once a year, review the adequacy of the policy, and improve it. The policy framework consists of a top-level policy document, upper-level guidelines by job role, and procedures that present detailed implementation methods for each upper-level guideline, and it presents strict security principles to prevent information breach.

Information Security Policy Framework

Information Security Policy Document

Guidelines for Daily Security Practice
Provides criteria for judgment so that employees can properly understand and practice basic security compliance matters while performing their duties

Service Developer Security Guidelines
Defines the information security standards to be followed in the stages of planning, design, development, testing, release, and transfer for safe service development

Information Security Officer Security Guidelines
Provides information on establishing, reviewing, and implementing policies and guidelines related to information security, and defines criteria to check whether they are properly followed

Infrastructure Operator Security Guidelines
Defines the management standards and the roles of the responsible department and person in charge so that infrastructure assets such as servers, networks, and databases can be safely managed

Service Operator Security Guidelines
Defines the security management standards and the roles of the responsible department and person in charge when operating open services, in-house systems, and service management systems

Defines specific implementation plans for (personal) information security requirements for each upper-level guideline, and 21 detailed guidelines and 47 procedures that present detailed standards to be followed during each stage of work are currently being used

Personal Information Processing Principles

NHN does its best to protect personal information and has established the Personal Information Processing Principles in accordance with Korea's relevant laws and regulations that information and communication service providers must comply with. The principles are reflected in the NHN Personal Information Processing Policy, and the company website demonstrates transparency in disclosing it. Furthermore, we intend to separately report key issues through this year's sustainability report so that stakeholders can easily understand the Personal Information Processing Principles. In addition, NHN plans to sequentially create easy-to-understand personal information processing policies for major services such as PAYCO and I am School, starting with the Hangame portal in the first half of 2023, so that users can easily understand the personal information processing procedures and policy.

NHN Personal Information Processing Principles

1 Collection of personal information
We collect the necessary minimum personal information through legal procedures such as obtaining consent from the information subject

2 Use of personal information
We use personal information only within the legal scope through the consent of the information subject, etc.

3 Provision of personal information
When providing personal information to a third-party organization, we provide it only with the consent of the information subject or when permitted by law.

4 Entrustment of personal information processing
When entrusting the processing of personal information, we demonstrate transparency in disclosing its current status in the Personal Information Processing Policy. We provide management/supervision, such as regular inspections, to the trustee for safe personal information processing.

5 Personal information processing and retention period
The information is retained for the duration of the data subject's consent or as required by law. Once the processing purpose, such as membership withdrawal, is concluded, the information is promptly and securely deleted.

6 Personal information destruction procedure and method
Personal information, once the purpose of its use has been fulfilled, is securely and irreversibly destroyed using physically and technically safe methods that prevent reproduction.

7 Rights and obligations of users and how to exercise them
We operate a channel through which information subjects can request withdrawal of consent for, viewing, correction, or suspension of the deletion of their personal information, to ensure that they can exercise their rights.

8 Technical/administrative measures for protecting personal information
- Important personal information, including personal information required by law to be encrypted, is encrypted with a secure algorithm.
- We have established and are operating a security system and monitoring system against hacking.
- We are implementing protective measures such as controlling access to the personal information processing system and monitoring access records.

9 Duty of disclosure
In compliance with the law, we inform the information subjects of important matters they should be aware of, including any changes to the personal information processing policy and the specifics of personal information usage.

Social

Responding to Information Breach Risk

NHN has established a risk management methodology optimized for its business environment to minimize the risk of information breach across the Group. Furthermore, we conduct systematic risk management activities on a regular/constant basis to identify our risks without leaving anything unattended. These activities are continuing not only in NHN headquarters, but also with NHN's subsidiaries, such as NHN Cloud and NHN PAYCO.

NHN Cloud

In April 2022, when NHN Cloud was separated from NHN, it established its own information security policy and guidelines, reflecting the specific requirements and conditions of the cloud corporation. When developing or modifying cloud services, the security of the system is thoroughly reviewed, and compliance with certification requirements, such as contractual status, access control, domain separation, encryption, and personal security, is ensured through reviews and guidance. To prevent the occurrence of personal information breaches, we regularly monitor the management of personal information by the company entrusted with customers' personal information, taking necessary precautions. Furthermore, we have established a dedicated organization consisting of ethical hackers and conduct regular and frequent simulated hacking and vulnerability assessment activities through collaborations with external professional ethical hacking companies. This ensures the safety of our service operations by proactively addressing external threats.

NHN PAYCO

NHN PAYCO responds to information breach risks through continuous information security monitoring and vulnerability improvement activities. We monitor the personal information processing system, computer ledger, and external access (VPN, etc.) at least once a week to prevent breach of its important information. In order to find potential security threats in electronic financial infrastructure and address them, we conduct vulnerability inspections at least twice a year to continuously elevate the level of service security. In addition, we conduct disaster recovery training at least once a year for electronic financial service, My Data service, and electronic signature service, and continuously improve safety based on the training results.

Business Continuity Plan (BCP)

NHN Cloud implements a business continuity plan to ensure the continuity of NHN Group's business environment. This business continuity plan is developed in accordance with the requirements of the international ISO 22301 standard, and regular disaster recovery training evaluations are conducted to validate its effectiveness. NHN Cloud aims to enhance its response capabilities to minimize damage and provide customers with a stable cloud environment and services in various incidents and risks, including natural disasters and terrorism.

Financial CSP Safety Assessment

NHN Cloud and NHN Dooray! each passed the safety assessment for Cloud Service Providers(CSP) in the field of finance for certain areas. The Financial CSP Safety Assessment is a system to evaluate whether cloud services meet the requirements of the standards for safety measures reflecting the specificity of the financial sector (as supervised by the Financial Security Institute), and it must be passed in order to provide cloud services to financial companies. NHN Cloud passed the evaluation for the overall IaaS area in 2019, and NHN Dooray! for the finance-specific SaaS area in 2023.

Social

Information Security Training for Employees

NHN strives to raise employees' awareness of security through security training. Privacy training is conducted for all employees once a year. Training, which covers information on security regulations and internal security policy, is provided to new employees and those who have left the company. NHN PAYCO and NHN Cloud provide not only essential training required by various laws, but also training sessions that are tailored to job duties (service planning, development, etc.) or services (My Data, etc.).

In addition, we conduct intrusion simulation training hosted by KISA at least once a year and carry out APT simulation training on our own once a half year. In order to boost its capacity to respond to personal information breach incidents, a mock drill for responding to personal information breach is also conducted once a year. Through this, we are working hard to respond quickly and effectively in the event of a breach incident.

Employees' Information Security Training Results

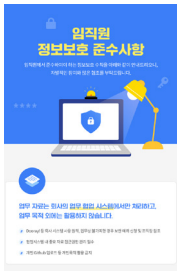
Category		Unit	2020	2021	2022	Coverage
General training						
Personal information protection training	Number of participants	Person	1,373	1,386	1,693	NHN Group
	Number of people who completed training	Person	1,373	1,386	1,693	
	Completion ratio	%	100	100	100	
Differentiated job training						
Cloud information security training	Number of people who completed training	Person	-	-	406	NHN Cloud
Personal credit information protection training			245	286	35	NHN PAYCO
Information security training for PAYCO development positions			101	85	96	
Personal information protection training for certified electronic document intermediaries			-	14	11	
Personal information protection training for entry-level planners in PAYCO services			-	-	17	

Information Security Pledge

To safeguard trade secrets and information, we require employees and partners to sign a "trade secret protection and information security pledge." This pledge encompasses trade secrets, information security, personal information, and intellectual property rights, outlining specific requirements for each area. Violations of the pledge by employees may result in disciplinary actions according to company regulations and punishment in accordance with relevant information security laws, such as the Personal Information Protection Act and the Act on Promotion of Information and Communications Network Utilization and Information Protection.

Information Security Campaigns

NHN conducts various information security campaigns to raise awareness among its members. These campaigns include monthly security compliance guidelines and quiz events, campaigns to declutter unnecessary personal information, and office security checks called "Clean Desk." Additionally, NHN organizes annual enterprise-wide information security campaigns, tailored to current trends (such as "Detective Kim Bo-an" and "Fruit of Security"), to further enhance the information security awareness of its members. Moreover, we run a "Security Bug Bounty" campaign, conducted twice a year, where members can report internal information security vulnerabilities they discover, leading to improvements. These activities aim to identify and address vulnerabilities in blind spots and enhance the environment for member participation in information security.



Social

Information Security Certification

ISMS-P

The highest authority for information security and personal data protection certification system in Korea

Coverage

ISMS-P	**NHN**	Operation of external online services (game, content, IoT, commerce)
	NHN Cloud	NHN Cloud services
	NHN Dooray!	Integrated online collaborative services (Dooray!, ERP, eTax)
	NHN PAYCO	Financial and other various services of PAYCO
ISMS	**NHN Cloud**	NHN Cloud Center (IDC)
	NHN PAYCO	Franchised, partnered, and entrusted services

Validity

NHN	Nov. 27, 2022 – Nov. 26, 2025
NHN Cloud	Nov. 16, 2022 – Nov. 15, 2025
NHN Dooray!	Nov. 16, 2022 – Nov. 15, 2025
NHN PAYCO	Dec. 15, 2021 – Dec. 14, 2024 (ISMS-P) Dec. 2, 2020 - Dec. 1, 2023 (ISMS)

ISO/IEC 27001, 27701, 29100

Verification of information security and personal data management systems, and compliance with international standards for personal data frameworks

Coverage

NHN	Entertainment, commerce, content service, IoT service
NHN Cloud	Cloud service (private, public, financial, medical)
NHN Dooray!	Collaboration service, groupware, ERP, electronic tax invoice service

Validity

Jun. 17, 2021 – Jun. 16, 2024

ISO/IEC 27017, 27018, 27799

International standard verification for information security and personal data protection management systems in cloud services, and healthcare information protection

Coverage

NHN Cloud	Cloud service (private, public, financial, medical)
NHN Dooray!	Collaboration service, groupware, ERP, electronic tax invoice service

Validity

Jun. 17, 2021 – Jun. 16, 2024

ISO/IEC 22301

International standard verification for business continuity management system

Coverage

NHN Cloud	Cloud service (private, public, financial, medical)

Validity

Jul. 14, 2022 – Jul. 13, 2025

CSAP Certification (IaaS, SaaS)

Information security level assessment and certification for providing secure cloud services to public institutions

Coverage

IaaS	NHN Cloud (for public institutions)
SaaS	Dooray!

Validity

IaaS	Dec.13, 2022 – Dec. 12, 2027
SaaS	Dec. 18, 2019 – Dec. 17, 2024

CSA STAR

International Cloud Service Information Security Certification conducted by CSA (Cloud Security Alliance)

Coverage

NHN Cloud	Cloud service (private, public, financial, medical)
NHN Dooray!	Collaboration service, groupware, ERP

Validity

Jul. 12, 2022 – Jul. 11, 2025

PCI-DSS

Global Payment Card Industry Information Security Standards

Coverage

NHN PAYCO	PAYCO point card (VISA)

Validity

Nov. 19, 2022 – Nov. 18, 2023

Social

Business Partner(Supplier) ESG

NHN extends its ESG management approach to its business partners(suppliers), aiming to achieve genuine sustainability. The Supply Chain ESG Management Policy outlining NHN's commitment for a sustainable supply chain, and Code of Ethics as well as ESG Practice Guide, aimed at encouraging ESG management by suppliers are binding commitments that both NHN and its partners must adhere to. These standards serve as guidelines for all parties involved. In pursuit of creating an improved business environment, we place great importance on actively listening to the feedback and voices of our partners throughout all business processes.

Supply Chain Management Policy

In 2022, NHN sets it as the first year of supply chain management and reviewed the long-term direction to pursue in supply chain management. To strengthen the commitment to responsible supply chain, NHN has established a supply chain ESG management policy and aims to systematically implement supply chain ESG management throughout all processes of collaboration with partners and business operations.

NHN Supply Chain Management Policy

NHN strives to create a business ecosystem based on mutual cooperation with its partners and ensure the sustainability of the entire supply chain. In line with this, we have established and operates the following Supply Chain Management Policy in all processes related to its partnerships and business operations.

Transparent and fair selection and execution of business with suppliers

We apply fair and reasonable criteria and procedures when selecting suppliers, and during the course of business execution, we strictly adhere to domestic and international regulations regarding fair trade and anti-corruption. We strive to establish a system that can prevent corruption situations involving our partners in advance, to foster a healthy collaborative

Support the growth of suppliers

Recognizing that the competitiveness of our partners contributes to the competitiveness of our ecosystem, we operate various collaborative programs such as technology sharing, development support, and training to actively support the growth of our partners.

Sustainability management of the supply chain

We encourage our partners to comply with global ESG regulations and standards and actively participate in ESG management by sharing guidelines and promoting their compliance. Additionally, we establish long-term goals and strategies for supply chain management and continuously enhance the supply chain management system.

Enhance supplier feedback and communication

We operate diverse channels for receiving and collecting feedback and reports from our suppliers to actively engage in communication with them. We continuously seek improvement measures based on the feedback and opinions provided by our suppliers.

Social

Green Purchasing Policy

NHN incorporates environmental criteria into the standards and procedures for purchasing contracts to promote eco-friendly procurement. We have established a policy that prioritizes eco-friendly products when filling out a request for proposal. Additional points are awarded to suppliers that manufacture high-efficiency and eco-friendly products during the supplier selection process. In cases where scores are tied, eco-friendly products are given priority. The criteria for eco-friendly products include energy-efficient grade products, products certified as high-efficiency energy equipment, and products with low standby power consumption. We have developed and internally manage detailed guidelines for these standards. Moving forward, we aim to establish a supply chain management system incorporating environmental factors and overall ESG considerations when selecting and managing suppliers in a phased approach.

Relations with Business Partners in the Code of Business Conduct

NHN specifies the norms to be observed in relationships with business partners(suppliers) through the Code of Business Conduct, a policy for practicing enterprise-wide business ethics. Employees of NHN create a business ecosystem for win-win cooperation based on the Code of Business Conduct when conducting business with partners, and thoroughly protect the information of partners.

Relations with Business Partners as Pursued by NHN's Business Ethics

Win-win Cooperation Ecosystem

- Select a partner suitable for business purposes by applying fair and reasonable standards.
- Evaluate the implementation process and quality by the one the same standard and deliver its results to the relevant partner.
- All transactions must be conducted fairly on an equal footing, and unfair acts using a superior position are prohibited.
- Recognize suppliers as strategic partners on the basis of mutual respect and pursue common interests and common development.

Supplier Information Protection

- Protect business partner information and trade secrets.
- Use of information other than the purpose for which it was provided is prohibited (unless there is consent from the partner or permitted by law).
- Acquisition and use of non-public information or trade secrets of partners in an unfair way is prohibited.

Social

Partners' Business Ethics Agreement

NHN ensures that a Business Ethics Agreement, committing to compliance with the Business Conduct, to be always signed when entering into contracts with business partners. Through this agreement, NHN and its partners are both encouraged to promote ethical collaboration, adhere to sound business practices, and form sustainable and trustworthy business relationships.

Business Conduct That NHN and Its Partners Must Observe

- We faithfully comply with the Fair Transactions In Subcontracting Act to promote orderly subcontracting and win-win cooperation.
- Under no circumstances do we solicit or accept anything of value, gifts, regalement, convenience or excessive entertainment.
- We must be honest in dealing with money and goods, and we always adhere to business ethics with an integrity, upright attitude and respectful courtesy in relation to corporate regulations, discipline, and business attitude.
- If NHN's employees engage in immoral behavior, its suppliers shall report it to NHN's Business Ethics counseling Center.

Supplier ESG Guidelines

Full NHN Supplier ESG Practice Guide

Following the existing Supplier Ethics Practice Agreement, NHN established the Supplier ESG Practice Guide in February 2023 to foster growth and create sustainable value with its suppliers. The guidelines present the main principles in the categories of human rights, safety, environment, personal information protection, and ethics to be practiced together by NHN's suppliers. Through the guidelines, we expect suppliers to thoroughly comply with NHN's ESG management policy as well as laws and regulations applicable to corporate management activities to prevent potential risks in the supply chain in advance and create a collaborative environment where mutual growth can be achieved. In the first half of 2023, we established a system for receiving pledges of compliance for major suppliers*. Starting in the second half of the year, we plan to distribute the ESG self-checklist to our suppliers to monitor compliance with the guidelines and ESG capabilities.

* Suppliers whose transaction volume exceeds a certain standard or who have a long-term and continuous contractual relationship with us

Key Areas of NHN Supplier ESG Practice Guide

Human Rights & Labor	Safety & Health	Environment	Personal Information Protection	Ethical Management

Communication with Partners and Collection of Their Opinions

NHN provides a link to the Business Ethics counseling Center on its partner system, aiming to enhance the level of business ethics for both the company and its business partners. Through this link, partners can report violations of business ethics such as unfair business practices, corruptions and irregularities involving NHN's employees any time, and can also freely share related opinions or suggestions. In 2022, there were no cases of violation of business ethics reported through business partners, and we will continue to maintain honest cooperative relationships. Since 2021, we have been conducting a survey of business partners every year to self-assess the level of business ethics. We are collecting opinions on topics such as suitability and transparency of transactions, and we are also working to address the difficulties found based on the survey results.

Social

Local IT Ecosystem

NHN strives to contribute to meaningful societal change by leveraging its technological prowess and know-how, while also seeking ways to grow together with local communities. We operate R&D centers and software education institutions in Gwangju and Gimhae, actively contributing to the revitalization of the local economy and the cultivation of IT talent. Furthermore, we have plans to establish regional data centers to organically expand the local IT ecosystem. We aim to share our technological capabilities with local communities, leading the global IT innovation trend, and fulfilling our social responsibility for balanced regional development and job creation. We will continue to make ongoing efforts in these areas.

Regional Data Centers and R&D Centers

NHN aims to expand the local IT ecosystem and foster the development of quality jobs by focusing on regional data centers and R&D centers. To achieve this, we are committed to strengthening collaborations with local governments and spreading IT expertise from metropolitan areas to local regions, contributing to the growth of the local IT industry and job creation. Our strategies and plans for activating the local IT ecosystem will be visualized, starting from Gwangju and other regions, from 2023 onwards. Moving forward, we will continue our dedicated efforts to contribute to balanced regional development by leveraging the characteristics of the IT technology industry.

Category	Details	Plans
National AI Data Center, Gwangju	The National AI Data Center in Gwangju is scheduled to open in the second half of 2023 as part of the “Artificial Intelligence Industry Convergence Cluster Creation Project” promoted by Gwangju City. NHN plans to establish cloud infrastructure within the data center and provide free support of NHN's AI technologies to companies, research institutions, and universities utilizing the data center.	By investing KRW 210 billion over the next ten years, we plan to contribute to fostering Gwangju's AI ecosystem and revitalizing the local economy.
R&D Center, Gwangju	An R&D center established in May 2023 as part of NHN Cloud's strategy to create a regional cloud ecosystem. The R&D center works in conjunction with the Gwangju National AI Data Center to drive research and development activities and talent cultivation for the growth of an AI-specialized ecosystem.	In connection with the NHN Academy Gwangju Campus, we plan to hire about 30 people each year, totaling about 180 people, by 2028.

Opening ceremony of NHN Academy Gwangju Campus

Aerial View of Gwangju National AI Data Center

Opening ceremony for R&D Center, Gwangju

Social

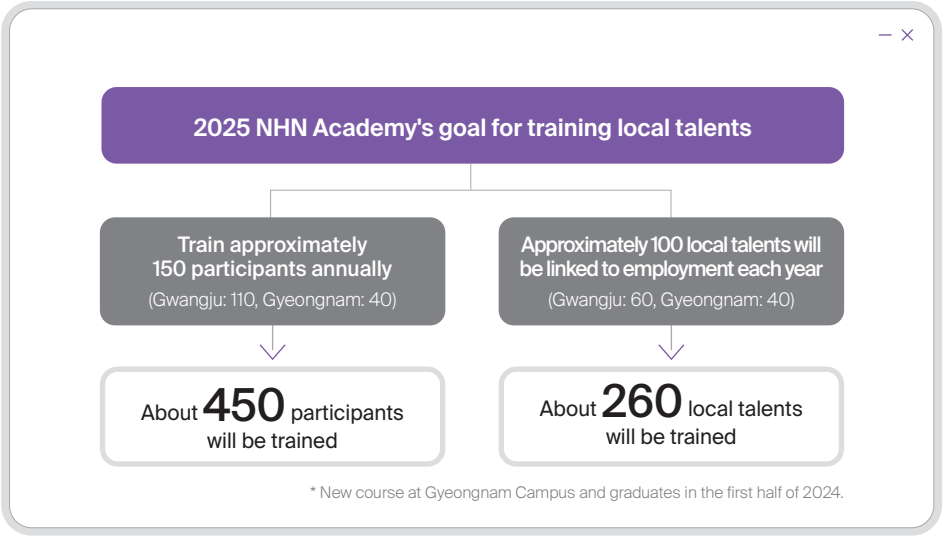
NHN Academy Regional Campus

NHN Academy is a specialized educational institution for software development skills, aiming to cultivate talents with a balanced combination of theory and practical knowledge. In March 2022, the first campus was established in Gimhae, Gyeongnam, and trainees from Ulsan and Gyeongnam regions were selected. Graduates with outstanding performance until 2022 were provided with opportunities for employment in NHN Cloud subsidiary, and starting from 2023, various NHN subsidiaries, including NHN Dooray!, will offer employment opportunities. The curriculum, designed collaboratively by NHN's industry professionals and education experts of NHN Academy, is structured to help trainees develop both theoretical knowledge and practical skills based on NHN's real-world development knowledge and experiences. In project-based courses directly linked with companies, the emphasis is placed on cultivating practical professionals who can immediately contribute to the industry, thus enhancing the effectiveness of education.

Operational Achievements of NHN Academy Campuses

Classification	Establishment Date	Specifics
Gyeongnam Campus	March 2022	• NHN Academy collaborates with Ulsan-Gyeongnam Regional Innovation Platform, Smart Manufacturing ICT Business Unit, and Gyeongnam USG Shared University to provide software talent development training in the Gyeongnam region. - 33 trainees selected for the Java Backend Development 1st cohort, all graduates 100% employed. - A new Java Classic course will be introduced, and the training will commence in July 2023. • Selected as a final recipient of the K-Digital Training "Leading Company Academy" project, organized by the Ministry of Employment and Labor in 2023. - A new course on IoT/AI-based Java Backend development will be introduced, and the training will commence in September 2023.
Gwangju Campus	July 2022	• Chosun University has been selected as a final participant in the SW Professional Talent Development Program, organized by the Ministry of Science, ICT, and Future Planning in 2022. • NHN Academy Gwangju Campus is operated at Chosun University's IT Convergence College. - Selected 57 trainees for the 2nd batch of Java Backend Development, and 80% of the graduates have successfully secured employment.

Medium to Long-term Goal of Training IT Talents in the Region



NHN Academy

Social

Expansion of Collaboration with Public Institutions and Local Governments

NHN actively collaborates with various public institutions and local governments to expand the local IT ecosystem and cultivate IT talents. In June 2022, we have participated in the "Public-Private Cooperation Digital Talent Development Project" initiated by the Ministry of Science and ICT. This project is a company-led software talent development project aimed at supporting the growth of young digital talents. It consists of six projects (as of 2022) in which companies, local universities, and local governments work together to nurture digital talents. In addition, we continue to collaborate with various public institutions and local governments to promote the activation of the local IT ecosystem.

Category	Date	Details
Business Agreements for Promoting University Collaboration-based Regional Innovation Initiatives	June 2020	• NHN cooperates with Gyeongsangnam-do, Gyeongsang National University, and companies and research institutes participating in the project to support the development of talent and technology development in Gyeongsangnam-do. • Establishment of a discussion system to resolve the imbalance between supply and demand of local talent, establishment of foundation for joint research and technology development through industry-academia-government cooperation, creation of field-oriented training environment, developing and participating in talent development programs, etc.
Business Agreement for Citizen Participation in Social Issue Exploration in Jeonnam Province	May 2020	• NHN Enterprise and Jeonnam Information & Culture Industry Promotion Agency (JCIA) establish a cooperative system to discover local agendas through the participation of South Jeolla Province residents and solve social problems using IT and software infrastructure. • Software solution development support, participation in idea camps as an organizer to provide technical support and mentoring, etc.

Local IT Conferences

In July 2022, we hosted the 'NHN Cloud Make IT Gwangju' Cloud Conference in Gwangju. The conference shared valuable insights with the local community, focusing on the latest cloud technologies, their applications, and future prospects tailored to various business fields, aiming to foster future business value. Additionally, in December 2019, we organized the 'NHN FORWARD Gyeongnam/Changwon,' the largest IT conference in the Gyeongnam region, where we unveiled its expertise in gaming, cloud, search, artificial intelligence, frontend development, and other diverse topics. 'NHN FORWARD Gyeongnam/Changwon' and 'NHN Cloud Make IT Gwangju' are regarded as exceptional large-scale IT conferences held outside the metropolitan area. We plan to continue collaborating with various local communities to create platforms where more local talents can overcome geographical limitations and actively exchange information with professionals in the field.

Social

Supporting SMEs

NHN supports the dreams and passions of SMEs, who are future growth drivers and win-win partners, and roots for their challenges. We operate a variety of support programs so that SMEs, start-ups, and small business owners can bear fruit in a better business environment. We expect that NHN's technology and resources will fuel the success of SMEs which will further lay a firm foothold for the creation of greater social value and sustainable growth.

Supporting Small and Medium-sized and Start-up Game Companies

NHN works with various gaming organizations every year to provide technical support and training for start-ups, small and medium-sized enterprises, and young entrepreneurs. We provide overall services necessary for game development and operation, including the game platform Gamebase, particularly for small and medium-sized game companies, and actively share game launch experience and success know-how with them. In order to create an environment where small and medium-sized game companies can take on the challenge of releasing games without burden, we always support companies with monthly cumulative DAUs (Daily Active Users) of 30,000 or less by allowing them to use Gamebase free of charge.

Partner Agency	Date	Project Description	Supported Companies and Games
Gyeonggi Content Agency	2020~ 2023	• Provide Gamebase credits worth KRW 300 million and game platform training to the top 10 companies in the new game audition once a year • Provide Gamebase free of charge for one year as well as training for one project during the tenancy period to tenant companies of the KISA • Participate in social contribution activities to nurture talented hopefuls in the game industry through GGC Green Friends • Proceed with game talent training activities through Ask Anything, a free game consulting for game developers	• 40-60 companies supported • “Undestroyed: Roguelike Action” by Keymaker Games, “Mine Hunter” by Cindyz Studio, “Wanna Go Home” by Super Nad, “Kitty Cat Resort” by Fathermade, 'Cube of Life' by HornSpirit Games
Gwangju Information & Content Agency	2021	• Provide Gamebase free for 1 year or an amount of up to KRW 50 million to game companies that move into Gwangju Global Game Center • Provide a credit worth KRW 2 million to use the NHN cloud infrastructure	• 20 companies supported • “Bald Escape” by TeamMium, “Girl Meets Destiny” by goraegagem
Busan IT Industry Promotion Agency	2021	• Provide Gamebase free of charge for one year to tenant companies and incubation beneficiaries of the Busan Global Game Center • Provide credits worth KRW 2 million to use NHN Cloud infrastructure and AppGuard • Operate an educational program to introduce a game platform • Support the game creation teamwork challenge project • Provide technical mentoring to discover talented game development professionals and nurture prospective start-up teams in Busan and Gyeonsangnam-do	• 20 companies supported • “ProjectM” by Provis Games, “Project Jelly Snow” by Jelly Snow • Provide technology mentoring to discover talented game development professionals and nurture preliminary start-up teams in Busan and Gyeongsangnam-do
Korea Mobile Game Association	2021	• Offer Gamebase, NHN Cloud infrastructure, and AppGuard at special discount prices to association member companies	

Social

AI Tech Support

NHN provides an independently developed AI technology to start-ups and small and medium-sized enterprises and seeks to grow and create social values with partners in various fields. By actively sharing face recognition technology and voice recognition technology that use its own machine learning AI, we are striving to commercialize AI technology in various industries. Through these efforts, we are moving toward the ultimate goal of “realizing AI in everyday life.”

Technical Support for Facial Recognition Access System

In 2022, NHN Cloud applied AI-based face recognition technology to facial recognition access kiosks through collaboration with Govent, an event management software start-up. The kiosk was used at the AI Expo 2022, and it supported pre-registrants who had registered their facial photos in advance to quickly and conveniently enter and exit the fairgrounds with only facial authentication. Looking ahead, we plan to contribute to reducing the use of disposable name tags and improving visitor convenience by expanding the application of the technology at various event sites supported by Government.

In October 2022, we entered into a business agreement with the venture company 'RoadSystem' for identity verification through facial recognition. NHN Cloud provides facial recognition services to RoadSystem's mobile passport solution, and the service has also been applied to the smart pass platform based on mobile membership for the foreign-only casino 'Grand Korea Leisure'. As a result, casino visitors can access the casino using facial recognition for identity verification, without the hassle of submitting their passports or face-to-face inspections.

Industry-University Cooperation for Smart Farm

In June 2022, NHN Cloud signed a “Business Agreement for Smart Farm Business Cooperation” with Nongboomind, a venture company specializing in smart farms, and the Graduate School of Techno Design at Kookmin University. Under this agreement, the Graduate School of Techno Design at Kookmin University and Nongbusimbo Corporation will provide research content and data related to modular crop cultivation systems and urban agriculture services. NHN Cloud will utilize Vision AI to establish a data-driven smart farm platform and provide effective AI services to farmers and agricultural communities.

Support for Subtitling Video Lectures for the Hearing Impaired

In December 2022, NHN Cloud supported a project to convert the speech of over 2,000 video lectures in the Higher Education Professors' Learning Material Joint Utilization System (KOCW), operated by the Korea Education and Research Information Service (KERIS), into text subtitles using AI-based speech-to-text (STT*) technology. This initiative aims to assist individuals with hearing impairments in effectively utilizing online lectures and contribute to providing equal educational opportunities for everyone. NHN Cloud's contribution to ensuring the learning rights of individuals with hearing impairments was recognized, and they were awarded the "Exemplary Partner Award" by KERIS.

* STT(Speech-to-Text): technology that recognizes input voice and converts it into text through voice recognition and text synthesis technology

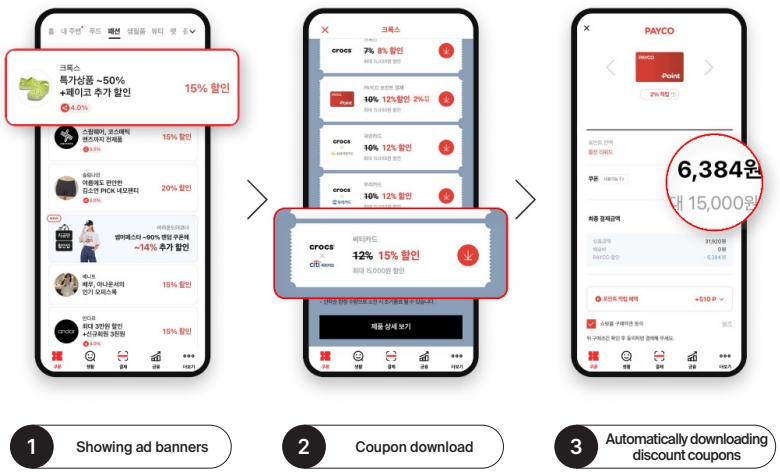
Social

Support for the Growth of Small Businesses and Artists

Performance-guaranteed Advertisement PAYCO Customized Coupon

NHN PAYCO supports the sales growth of small businesses and SMEs through "PAYCO Custom Coupons." PAYCO Custom Coupons are personalized coupons that utilize accumulated big data from multiple years and advanced targeting capabilities based on gender, age, region, and payment history. They enable businesses to set exposure targets and directly connect with customers, thereby continuously expanding sales and brand awareness for small businesses and SMEs. Furthermore, PAYCO Custom Coupons are performance-based advertising products where the advertising cost is determined after an order is placed. NHN PAYCO guarantees the advertiser's desired ROAS (Return on Advertising Spend), allowing small businesses to reduce advertising costs while executing stable and efficient advertising campaigns. NHN PAYCO utilizes special benefits such as discounts and rewards to encourage customer purchases, covering the cost of benefits in full.

* ROAS: Return on Advertisement Spending



Support for Shopping Mall Founders

NHN KCP exempts online shopping mall entrepreneurs from PG (Payment Gateway) enrollment fees to enable stable business operations. They provide various support services such as advertising marketing, OMS (Order Management System), fulfillment, and web design through partnerships with diverse companies for small franchise stores. In 2021, through a business agreement with the IT platform company 'InLife', NHN KCP offers free shopping mall services worth 2 million won for three months to small franchise stores. These services include AI personalized recommendations, CRM & tracking, AI chatbots, and shopping mall dedicated apps.

Data Capacity Building Training for Small Businesses

NHN Data is committed to data competency training so that e-commerce businesses can grow effectively through accurate data. In February 2023, the company conducted “Dighty CRM Essence,” a practical CRM marketing training for e-commerce operators and marketers and provided one-on-one free consulting for a total of forty companies. We supported the entire process from actual data collection to processing and action, and helped exhibitors establish more sophisticated data marketing strategies.
In March 2023, we published the “GA4 Handbook,” a guidebook that summarized how to use GA in an easy-to-understand manner, and distributed it for free, in order to help small business owners struggling with the changing Google Analytics (GA). In addition, we conducted the Dighty GA Diagnosis Service for free, by which NHN Data's data experts directly check whether the application company has installed GA and even suggest improvement plans, leading to high response and satisfaction from small business e-commerce.

Social

Support for the Growth of Small Businesses and Artists

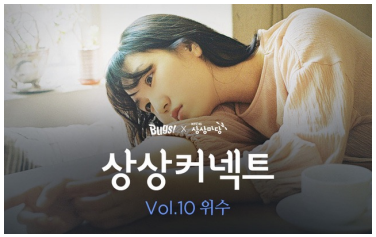
Supporting Expansion of Sales Channels

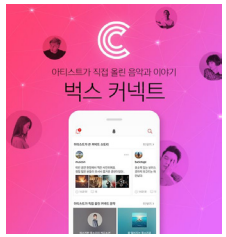
NHN COMMERCE has been recognized as a company that supports the online market entry of small and medium-sized enterprises (SMEs) and small businesses through its shopping mall solution called "Shopby." It has been selected as part of the "Considerate Companies 2.0" program organized by the Ministry of SMEs and Startups. As recommended by the ministry, NHN Commerce provides all necessary services for building and managing self-owned malls free of charge to targeted SMEs and small businesses. They also offer comprehensive capacity-building training programs related to online market entry to help enhance the competitiveness of small businesses. Additionally, NHN Commerce operates the design shopping mall "1300k," where various exclusive promotions for small businesses are organized, providing support for sales channels and promotional activities through discount coupons and other promotions. In 2021, NHN Commerce collaborated with the Seoul Metropolitan Government and Gwangmyeong City to carry out a joint project with local small businesses, aiming to support those who faced difficulties in securing offline sales channels due to the spread of COVID-19.

Project	Year	Description
Supporting the online sales channels for small business owners in Gwangmyeong	2021	Provided free shopping, consulting, follow-up management, and marketing benefits for ten small business owners in Gwangmyeong
Supporting the online sales channels for traditional markets in Seoul	2020	Supported the creation of separate online malls with consulting and marketing for 100 or so stores in 12 traditional markets in Seoul
Supporting sellers participating in flea markets	2020	Supported ontact commerce for 12 sellers participating in Hey Market November Fest, a flea market

Connect, an Artist Support Project

NHN Bugs is operating an artist support project called ‘Connect’ to protect the rights and interests of artists and support their creative activities. Connect is a service that allows both creators and agencies to directly communicate with fans by uploading songs and videos. Music uploaded directly by creators is exposed in the same way as mainstream music on platforms such as Bugs Home and Charts. Up to accumulated royalties of 10 million won, all revenue excluding fees is paid to the creators. Additionally, the platform provides areas to promote music releases and concert news, along with statistical data containing the response information of the content. As of the end of 2022, there are 2,200 registered artists on Connect, with over 11,500 registered songs.





Social

Customer Rights Protection

NHN strives to establish user protection programs and diversify customer consultation and communication channels to protect customer rights in all service environments. Furthermore, we aim to enhance customer satisfaction by focusing on enjoyable and convenient customer experiences. Customer satisfaction starts with listening to and understanding the voices of customers. We value the voices of our customers as our assets and endeavor to actively incorporate them into our business activities.

User Protection Program

NHN operates a User Protect Program to ensure the protection of users who utilize web board game services provided by Hangame. The program offers key services to protect users, which are publicly available on the Hangame website. We encourage responsible game usage through this program and strive to protect users from excessive game immersion to the best of its ability.

UPP Service	Specifics
Game time notification	• Game addiction warning via pop-up screen when players log out or exit the game
Notification of gameplay history for the previous month	• Prevention of game addiction by updating the user on previous month's gameplay history
Game adaptability test	• Continuous monitoring of behaviors and habits formed by users while playing the game
Restrictions on use of games	• On application for self-limitation of game use, the use of online board games is restricted for a minimum of 30 days and a maximum of 1 year for all accounts registered with the same identification information • Users, their spouses, lineal relatives, and legal representatives can apply for this service

Youth Protection Policy

NHN establishes and enforces youth protection policies based on the Juvenile Protection Act and the Act on Promotion of Information and Communication Network Utilization and Information Protection. These policies comply with the regulations of the Korea Communications Standards Commission regarding information and communication, as well as the standards for the review of harmful media content for minors. The policies include measures to prevent access by individuals under the age of 19 to harmful information.

1 Restriction and management of youth access to harmful information

NHN takes measures to prevent youth from being exposed to harmful information by implementing separate authentication mechanisms for harmful media materials while seeking preventive measures to ensure that harmful contents are not exposed to youth without any restrictions.

2 Implementation of job manager training for youth protection from harmful information

NHN trains workers in the information and communication business on youth protection-related laws and sanctions standards, countermeasures when harmful information is discovered, and reporting procedures for handling violations.

3 Counseling and handling of complaints related to harm caused by harmful information

The company has professional personnel that provides counseling and handles grievances on damage caused by harmful information to youth with the aim of preventing such damage from spreading.

Social

Customer Consultation Channel

NHN actively handles customer opinions received through various channels. To this end, the customer service and operation departments are operating an online customer center through the website and mobile app. In addition, we operate a customer service number to support quick response and processing. In particular, Hangame operates a separate submit request form for suggestions/reports and bug reports to communicate with users. The information received through the bulletin board is checked by the operation department and transferred to the related service planning department before it is reflected in service improvement. Moreover, we support a pleasant and healthy play environment by preparing an in-game reporting system that can immediately report bad members when chatting within Hangame. By operating official communities for each major game, we endeavor to attentively listen to customers' voices and provide various information for customer convenience through communication.

View Customer Center and Telephone Consultation Channel

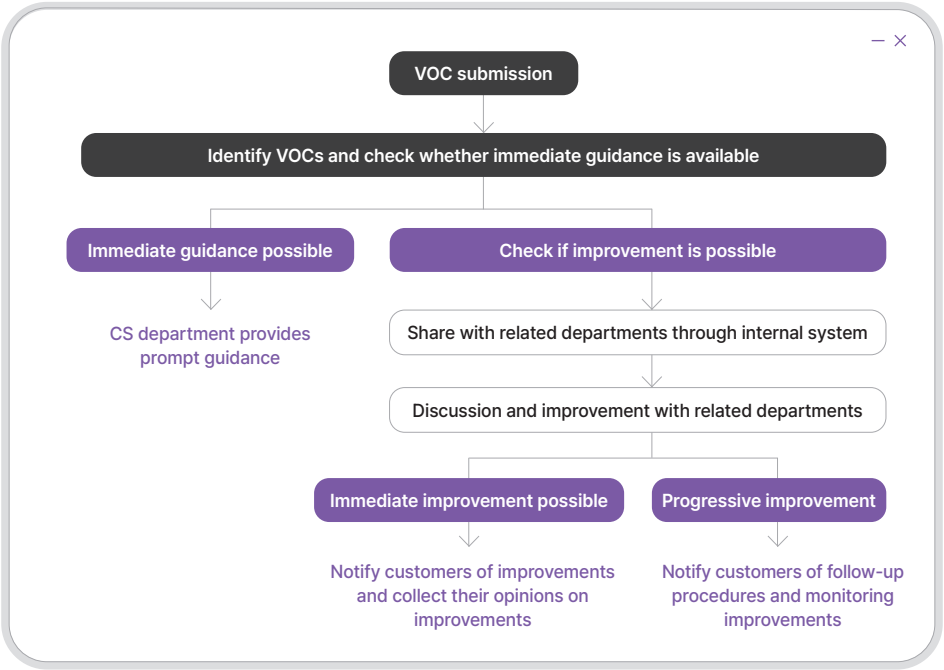
Hangame	PAYCO	NHN Cloud	Comico	Bugs	Ticketlink
1588-3810	1544-6891	1588-7967	1600-0314	1566-4882	1588-7890

Other Communication Channels	Specifics
Hangame Bulletin Board	• Webpage for suggestions and bug reporting provided (for Poker, Go-stop, Janggi, Yutnori, Sacheonseong)
In-game reporting	• Providing a reporting page for reporting problematic users in Hangame's in-game chat
FAX	• If proof documents are required, they can be submitted by fax
Community	• Game-specific communities available

Consultation Satisfaction Survey

NHN conducts customer satisfaction surveys using email and FAQ for services such as cloud and mobile gaming to continuously improve the quality of customer consultations. The feedback collected from customers is reflected in improving the quality of consultations. In addition, we manage customer consultation quality by implementing measures such as reviewing consultation templates and FAQ content, as well as improving consultation channels and processes.

VOC Handling Procedure



Social

Increasing Communication with Customers

We value the communication with customers to ensure that they can easily provide feedback through various channels. We truly believe that the communication with users is crucial in the gaming business, where user feedback is abundant.

Hangame Suggestion Board

Since 2014, we have been collecting user suggestions and opinions through the "Proposal and Feedback Board" on Hangame for a decade. Recently, from June to December 2022, a total of 48 user feedback were received, and among them, improvements were made in areas such as user information exposure methods and personalized game voice settings, which were actually reflected in the games.

VOC Collection through PC Room Visits

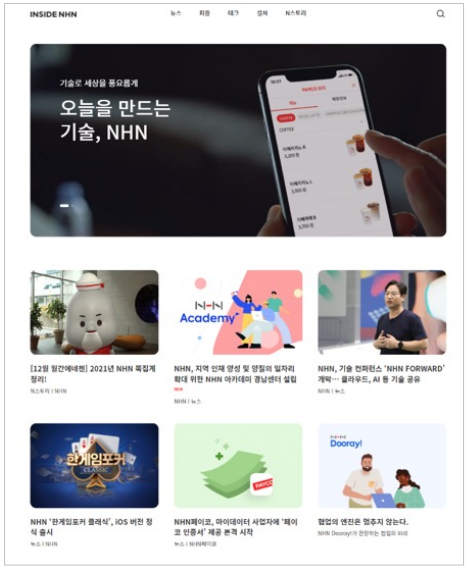
To gather more vivid user feedback and enhance the authenticity of communication, we have been consistently visiting PC rooms (Internet cafes) nationwide since 2022 to engage in real-time Q&A sessions with users on-site and carefully review collected feedback and improvement suggestions to drive service enhancements. As of April 2023, we have visited approximately 370 PC rooms, we also plan to continue expanding opportunities for direct communication with users in the future.

FGT

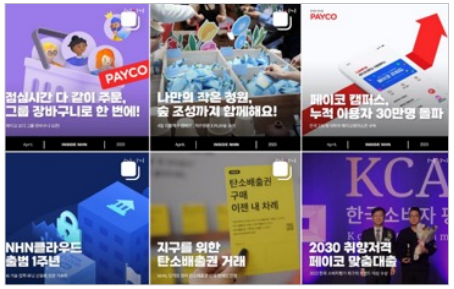
Focus Group Test (FGT) is a concept similar to user beta test, and NHN actively collected user opinions through FGT during the updated version of "Hangame Poker.“ In 2022, NHN released a test build to existing poker users before the new service opened and reflected major improvements submitted in the game as part of the PC Poker update project. For the past three years, a total of four FGTs were held for each of the three games: “7 Poker,” “ Low Baduki,” and “Las Vegas Poker.”

Social Media Channels

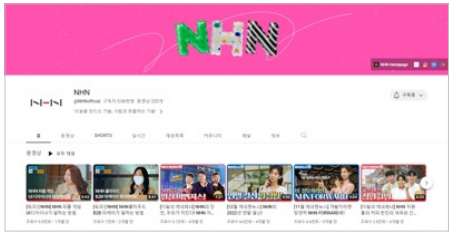
We utilize social media channels to communicate transparently with various stakeholders. By operating official newsroom 'INSIDE NHN' as well as SNS channels such as YouTube and Instagram, we endeavor to deliver in-depth news about each group company. In particular, 'INSIDE NHN' provides differentiated content through categories such as people, technology, and culture, and has been recognized as a key communication channel for NHN, winning the Grand Prize in the Corporate Promotion category at the 'WebAward Korea 2020'.



INSIDE NHN



NHN Instagram (@inside_nhn)



NHN YouTube channel

Social

Social Contribution

NHN is committed to fulfilling its corporate social responsibility and contributing to the development of local communities through various social contribution activities. Our social contribution activities are strategically planned and implemented. We aim to create not only economic value, but also social value based on our core business areas. Our social contribution strategy and direction focus on establishing a culture of voluntary participation in donation activities. We extend a caring hand to neighbors who need attention from society and strive together with the local community for a sustainable future.

Support for the Underprivileged

Sharing PCs of Love

NHN is carrying out the "Sharing Love through PCs" campaign, which involves donating high-performance PCs to support youth education and foster young IT talents. In the first half of 2022, we donated PC sets to the Seongnam City Youth Foundation and Dong-eui University in Busan. In the second half of the year, PC sets were donated to four elderly welfare facilities in Seongnam City. These donations aimed to improve IT education environments and promote our strong interactions with local communities. The donated PCs were refurbished and selected from our assets previously used for work purposes, contributing not only to social contributions but also to resource circulation through the campaign.

In 2023, we plan to continue sharing PCs of Love once a quarter. In April 2023, we delivered PCs to three group homes in the city (Anna House, Little Love, and Bomine) and the Jungwon Youth Regional Center, a space for youth, through the Seongnam City Youth Foundation. A group home is a facility that provides home-like protection services to children and adolescents who need social protection due to poverty, family breakdown, abuse, or neglect. We intend to provide balanced information opportunities to children and youth of the information-vulnerable class through PC donation.

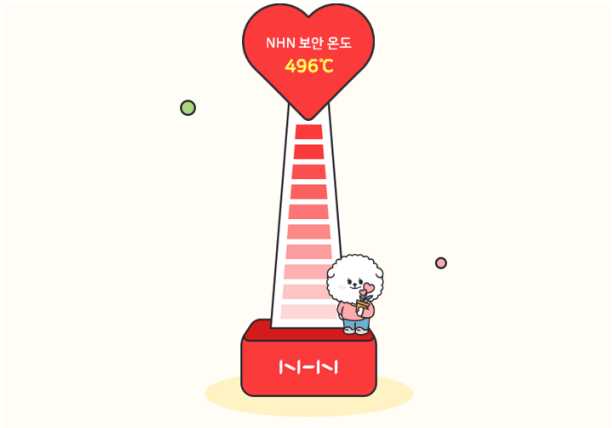
Sharing PCs of Love

Donating Smart Tags

NHN collected KRW 10 million through a month-long information security campaign in December 2022 to purchase smart tags and donated them to the Seongnam City Volunteer Center. Smart tags are devices that help prevent the disappearance of children with developmental disabilities and will be delivered to and used by a total of one hundred children with developmental disabilities. We make efforts to continuously contribute to the development of the local community through social contribution activities by tapping into the characteristics of an IT company.

Support Program for Local Vulnerable People

NHN has been operating programs to support various vulnerable groups in cooperation with Seongnam City. In 2018, we opened the third “Kot-shin Village Kitchen” and carried out a social contribution project to help the elderly build social relationships and stabilize their diet. Furthermore, in 2019, we supported the "Youth Hobbies and Lifestyle" program in collaboration with local youth centers in Seongnam City, promoting a positive leisure culture among teenagers.



Donation of Smart Tags Linked to Information Security Campaign

Social

Support for the Underprivileged

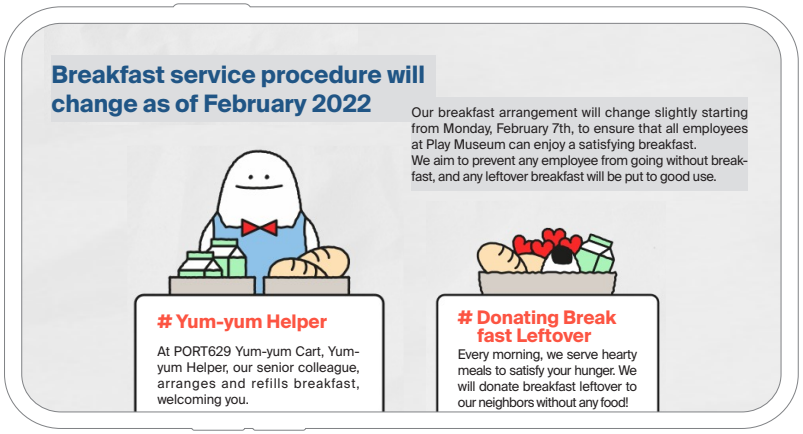
Hiring Senior Recruits

NHN intends to hire workers aged 60 or older from October 2022 to provide jobs and opportunities for social participation to the elderly in the region with a help from Seongnam Silver Human Resources Center (Senior Welfare Society). As of the end of 2022, one senior employee is supporting the breakfast service operation.

Donating Breakfast Leftover

NHN continues to donate food that is unconsumed from breakfast servings provided to employees to the Seongnam Open Food Market as part of its commitment to community sharing and realizing social values. As of the end of 2022, approximately 8,730 leftover breakfasts, equivalent to about 13.38 million won, were donated to support marginalized neighbors and contribute to addressing food scarcity issues.

Donation of approximately **8,730** leftover breakfasts, equivalent to about KRW **13.38** million won



Donations through Employee Participation

Little Action | Good buy Market

"Little Action" is NHN's social contribution campaign that started in 2019 under the motto "Creating Joy through Small Actions." Through employee participation, Little Action has been practicing sharing in various fields, including supporting marginalized groups, donating clothes, and blood donation. In 2022, Little Action continued to carry out diverse campaigns with a focus on the environment and the community, generating meaningful changes and effects. In the four campaigns conducted in 2022, over 2,600 members (including duplicates) actively participated, practicing the values of responsible consumption, upcycling, resource circulation, and helping neighbors.

In particular, in 2022, we introduced the Little Action Point System to actively encourage employee participation. Points received through participation in Little Action campaigns could be used to purchase goods at the in-house flea market called Good Buy Market. Good Buy Market consisted of an Eco Market that sold eco-friendly daily necessities and surplus inventory items at affordable prices, and a Flea Auction that auctioned off furniture and glamping equipment used in the Play Museum. Over 800 members visited the market, and the total amount of 10.95 million won collected was donated in full to "Hope Bridge," a specialized organization for disaster relief and support for crisis-stricken households.

800 employees, approximately KRW **11** million won was donated

Social

Donations through Employee Participation

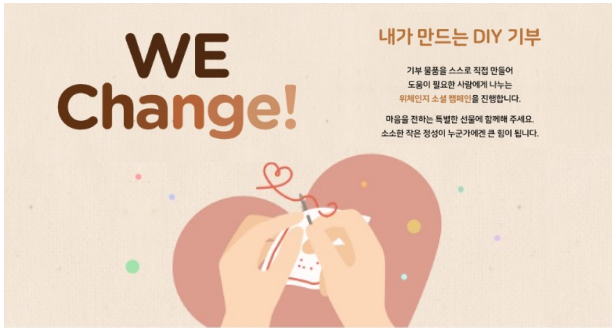
My Auction

NHN regularly conducts the asset auction system called "My Auction," where PCs, monitors, stands, and other items that have reached the end of their usage cycle can be purchased at reasonable prices. The proceeds from the auctions are donated to the local community. In 2022, a total of 709 NHN employees participated in the My Auction, and the funds raised from the auctions were used to donate 2,117 books to 73 elementary schools in the Seongnam area. As of the end of 2022, a total of 1,281 employees participated in the My Auction, donating approximately 170.06 million won worth of items and realizing social value.

1,281 employees, approximately KRW **170.06** million won worth of goods were donated.

DIY Donation

In April 2022, NHN conducted the We Change Social Campaign to donate items made by employees to activate donation through employee participation and sharing. For the campaign, either eco-friendly solar lanterns or braille tactile word cards were chosen, made, and donated. With the active participation of NHN employees, 165 lanterns or cards worth a total of KRW 4 million were donated to overseas energy-poor families and organizations related to visually impaired children. We made the campaign more meaningful by presenting eco-friendly cleaning products from Donggubat, a social enterprise that works with people with developmental disabilities, to employees who participated in the donation of DIY giveaways.



A total of **165** lanterns or cards worth of **4** million won worth were donated.

Donation of Relief Goods to the Earthquake in Turkiye

In March 2023, NHN, together with its employees, donated relief supplies to the areas affected by the earthquake in Turkiye. Through three days of active donations, a total of approximately 952 relief items were collected, including additional items prepared by the company such as new sleeping bags and women's hygiene products, totaling over 4,400 relief items.

A total of over **4,400** relief items were donated.

Social

Donations through Employee Participation

Matching Grant Donation

NHN is spreading a culture of donation through a matching grant system where the company provides additional funds to match the voluntary donations made by its employees. In 2022, we conducted a matching grant donation campaign to help the victims of wildfires in Gangwon and Gyeongbuk provinces and the neighbors affected by concentrated heavy rainfall. Over 600 employees participated in the two campaigns, and with the company's additional contribution, a total of 100 million won was donated to the National Disaster Relief Association's Hope Bridge.

600 employees participated, and a total of **100** million won was donated.

Ongoing Donations

In addition to campaign-based donation activities, NHN conducts donation activities from time to time. The details on major donations since 2019 are as follows, and NHN is committed to make its best efforts to fulfill our corporate social responsibility by continuing donations in the future.

Date	Beneficiary	Details of Donation
Aug. 2019	**Jeonnam Regional Children's Center**	120 pieces of idle assets were donated to improve the educational improvement for the underprivileged in the local community
Jun. 2020	**Beautiful Store**	149 items past retention period including bikes and other items lost and found in the company were donated
Jul. 2022	**Seongnam City Volunteer Center**	Three thousand towels worth KRW 11.70 million were donated to volunteer workers in Seongnam City

Long-term social contribution goals

NHN is establishing and pursuing long-term goals related to key social contribution activities in order to achieve sustainable and systematic community engagement. By faithfully implementing social contribution goals and plans, we will continue to create meaningful social value within the local community.

Activity	Mid-Long-Term Goal
Sharing PCs of Love	Donation of 50 PCs annually to local community facilities and organizations for IT infrastructure expansion and improvement, totaling 150 PCs by 2025.
My Auction	Conducting at least one fundraising activity through internal auctions ("My Auction") annually until 2025 and donating the proceeds.
Donation of Breakfast Leftover	Conducting monthly or more frequent leftover breakfast donation activities through a Food Bank under the jurisdiction of Seongnam City until 2025.

SUSTAINABILITY

Governance

Board of Directors	089
Executives	093
Protecting Shareholder Rights	094
Risk Management	096
Ethical Management	098

Governance

Board of Directors

NHN endeavors to create an environment where the Board of Directors can function independently from the top management and controlling shareholders to establish sustainable governance. To this end, we have established various committees within the Board of Directors, with all the committees being composed of outside directors to ensure objectivity and independence. In addition, the composition of the Board of Directors with competent members equipped with expertise in various fields is aimed at enhancing the Board's expertise and diversity. As of May 2023, experts in the fields of IT, gaming, management, finance, and accounting constitute the Board of Directors, and the Board and the executives maintain checks and balances with each other to enhance governance stability.

Independence

NHN considers not only the statutory qualifications for outside directors required by the Commercial Act but also additional qualifications such as expertise, fairness in job performance, ethical responsibility, and faithfulness to appoint outside directors in a fair and transparent manner. Prior to their appointment, we prepare a certificate confirming the qualifications of outside directors and a certificate verifying their eligibility, which includes a statement indicating no outstanding payments, no executive positions in troubled companies, and no recent transaction history with the company. We also comply with relevant laws to restrict dual positions as directors, executive officers, or auditors in two or more entities and disclose the existence of transactions with the company, as well as attendance records at board of directors and committee meetings through regular disclosures.

The current serving outside directors of NHN satisfy all the qualifications required by relevant laws and regulations, including Article 382(3) and Article 542-8(2) of the Commercial Act, and there are no additional affiliations such as family relations, recent transactions within the past three years, or employment history. As of May 2023, an insider director who is not a CEO is serving as the chairman of the board, ensuring the independence of the board of directors, and maintains a ratio of outside directors exceeding the minimum statutory requirement of 25% to secure independence.

NHN Requirements for Independence of Outside Directors

1. The outside director has never served in NHN or its affiliates in the past
2. The outside director or a company in which the outside director is the largest shareholder has no past transaction with NHN or its affiliates for the past three years
3. There is no transaction between NHN or its affiliates and the company where the outside director is an employee

Effectiveness

NHN's Board of Directors consists of three to nine members as stipulated in the company's Articles of Incorporation. The minimum requirement of three members aligns with the minimum total number of board members mandated by the Commercial Act (Article 383, Paragraph 1), while capping the number at nine to promote efficient communication. Additionally, each director is appointed with specific individual agenda to enhance the effectiveness of board operations. To ensure that individuals who have undermined corporate value or violated shareholder rights and interests are not appointed, the Personnel Committee, delegated by the Board of Directors, manages and ensures the disqualification of such candidates.

Furthermore, the Board of Directors and each committee conduct self-evaluations of their annual activities and regularly review compliance with laws, the Articles of Incorporation, board regulations, and committee regulations to identify any violations or deficiencies. The overall activities of outside directors are evaluated annually based on internal standards such as professionalism, ethical responsibility, loyalty, and contribution. The evaluation of the 2022 board activities was conducted in May 2023. The composition of the Board of Directors and committees is reviewed for appropriateness to improve efficiency. Each director conducts self-evaluations annually to assess and endeavor to enhance their own activities and performance.

Diversity

NHN organizes the Board with people with various specialties to ensure that the Board does not harbor any bias toward specific backgrounds and occupational groups in its effort to promote the diversity of the Board of Directors. As of May 2023, our Board of Directors is evenly organized across five specialized fields of IT, gaming, management, finance, and accounting. By appointing a new female outside director through the 10th regular shareholders' meeting in 2023, we are also enhancing gender diversity in the Board of Directors.

Governance

Board Members

(As of May 2023)

Ujin Chung, Inside Director (male, general management)	Term	Mar. 2023 – Mar. 2026
	Work Experience	Present) CEO, NHN Corp. Former) Director of Business Center of NHN Corp. Former) Naver Corp. Former) Search Solution
Joonho Lee, Inside Director (male, IT)	Term	Mar. 2022 – Mar. 2025
	Work Experience	Present) Chairman of the Board of Directors, NHN Corporation / Chairman, NHN Corporation Former) COO, CAO, CTO of Naver Corporation (formerly NHN Corporation) / Associate Professor, Department of Computer Science, Soongsil University Former) Artificial Intelligence Research Center, KAIST
Hyunshik Ahn, Inside Director (male, economics/ business management)	Term	Mar. 2022 – Mar. 2025
	Work Experience	Present) CFO, NHN Corp. Former) Partner, Shinjung Accounting Corp. Former) CFO, NHN Japan Corp. Former) Manager, PwC Corp.
Sangwook Kim, Outside Director (male, IT)	Term	Mar. 2021 – Mar. 2024
	Work Experience	Present) Professor, Department of Computer Software, Hanyang University Former) Samsung Electronics, Advisory Board Member Former) Visiting Professor, Carnegie Mellon University Former) Postdoc, IBM Watson Research Center
Wanhee Yoo, Outside Director (male, accounting)	Term	Mar. 2022 – Mar. 2025
	Work Experience	Present) CPA, Hanul Accounting LLC. Former) Project Financing Department, Korea Investment & Securities Co., Ltd. Former) CPA, Deloitte Anjin LLC.
Jiweon Jung, Outside Director (female, finance)	Term	Mar. 2023 – Mar. 2026
	Work Experience	Present) Director of Investment Division, Sierra Investment Former) CRO, MC Partners Former) Samil PwC

Board Skills Matrix

(As of May 2023)

	Outside Director			Inside Director			
Classification	Sangwook Kim	Wanhee Yoo	Jiweon Jung	Hyunshik Ahn	Joonho Lee	Ujin Chung	**Remarks**
IT, Growth Business	●	○	○	○	●	●	50%
Management Strategy, Investment	○	○	●	●	●	●	67%
Legal, Policy and Risk Management	○	●	●	●	○	○	50%
Economics, Finance, Accounting	○	●	●	●	○	○	50%
Communication, Stakeholder Response	○	○		●	○	●	33%
Year of Appointment	2018	2019	2023	2013	2013	2014	Average 6.4 years
Independence	●	●	●	○	○	○	-
Gender	Male	Male	Female	Male	Male	Male	Female 17%
Year of Birth (Age)	1966 (56)	1970 (53)	1982 (41)	1971 (52)	1964 (58)	1975 (48)	Average age 51.3 years

Governance

Board Operation

In 2022, a total of fifteen BOD meetings were held, including four regular BOD meetings and eleven ad hoc BOD meetings. During the year, a total of thirty resolutions and seven reports, including approval of merger plans and granting of stock options, were discussed. NHN has established and operates ESG Committee within the Board of Directors, which also actively discusses important ESG-related issues. The key agenda related to sustainability management discussed at the BOD meetings are as follows.

Session Number	Category	Date		Key Agendas
2	Regular	Feb. 8, 2022	Report	Report on compliance control system effectiveness and compliance check results
			Approval	Approval of the 2022 Occupational Safety and Health Plan
			Approval	Establishment of a shareholder return policy
3	Temporary	Mar. 4, 2022	Report	Report on internal accounting controls operation status and evaluation results
			Approval	Establishment of ESG Committee and enactment of committee regulations
7	Temporary	May 11, 2022	Approval	Acquisition of treasury stock
8	Temporary	Jun. 20, 2022	Approval	Acquisition of treasury stock
10	Regular	Aug. 8, 2022	Approval	Revision of the Audit Committee Regulations (reflecting its right to appoint or dismiss the auditor)
15	Regular	Nov. 7, 2022	Approval	Establishment of an anti-corruption policy and designation of anti-corruption compliance officer

Board Composition

NHN operates three committees within the Board of Directors. Each committee is composed of outside directors with expertise and experience in various fields, enhancing its independence. Such composition allows an in-depth discussions to be conducted based on their deep understanding and expertise in respective fields during the decision-making process handled by the entire Board of Directors.

(As of May 2023)

Classification	Members	Key Roles
ESG Committee	Sangwook Kim* Jiweon Jung Wanhee Yoo	• Review and decide on major ESG-related issues to raise the level of ESG management in terms of environment, society, and governance and achieve sustainable growth • Matters stipulated by laws or the Articles of Incorporation and matters delegated by the Board of Directors
Remuneration Committee	Sangwook Kim* Wanhee Yoo Jiweon Jung	• Decide and manage executive selection/evaluation/remuneration; improve shareholder value and enhance management transparency • Deliberate and resolve important matters regarding the remuneration of directors • Matters stipulated by laws or the Articles of Incorporation and matters delegated by the Board of Directors
Audit Committee	Wanhee Yoo* Jiweon Jung Sangwook Kim	• Conduct audits of accounting and financial management, internal controls, legal compliance, etc. • Develop an internal audit plan; select audit targets; proceed with the audit; report and track audit results

* Chairperson

Governance

Building the Capacity of the Board and Committees

NHN operates as an organization supporting the duties of outside directors by providing necessary information and other key internal issues through the Board Office and dedicated support teams for each committee, both before and after board and committee meetings. In September 2022, an online training program was conducted for members of the ESG Committee, focusing on the theme of "Finding Wisdom for Human Coexistence in the Ocean: Marine Science and Climate Change." The committee members showed a high level of interest in ESG. Going forward, we plan to enhance the expertise of ESG Committee members by providing ESG training in various fields, including climate change, at least once a year.

Date	Key Details of Training
Mar. 20, 2022	• Internal accounting management system and the role of the Audit Committee • Matters to be reviewed/inspected by the Audit Committee and matters to be noted • Major issues of the internal accounting controls, etc.
Jun. 23, 2022	• Strategies for responding to new challenges faced by the internal accounting controls
Sep. 5, 2022	• Marine science to find the wisdom of human coexistence in the sea

ESG Committee

In March 2022, NHN established ESG Committee anew and has been operating the Committee in pursuit of sustainable management. The ESG Committee is responsible for determining a series of matters related to NHN's sustainable growth, including ESG direction and performance management, review of ESG disclosure requirements, domestic and international ESG assessments, and support for internal ESG capability development and integration. These matters are specified in the ESG Committee regulations. In 2022, a total of five agenda items were deliberated through the ESG Committee, including the establishment of ESG goals and strategies, and the establishment of the ESG operational organization. We will enhance the momentum of its ESG management activities through the ESG Committee and ensure transparent disclosure to stakeholders.

ESG Committee Agendas

Date	Key Agendas	Detail
Mar. 4, 2022	Election of ESG Committee Chair	• Kim Sangwook, outside director, elected as the chairman of the ESG Committee • Relevant department heads and working-level employees in different areas of environment, society, and governance are participated.
May 9, 2022	Establishment of NHN ESG promotion goals and strategies	• Establishment of NHN ESG promotion strategy and detailed tasks
	Establishment of NHN ESG operating organization	• ESG Task Force and NHN Group ESG Council • Establishment and management of short-term and mid- to long-term tasks for each department
Nov. 7, 2022	2022 ESG Business Status Report	• Report on major ESG activities of Group companies • Identifying the current status of ESG evaluation response
	Report on ESG major task implementation plan	• Derivation of improvement tasks based on ESG evaluation results • Establishment of Sustainability Report Publication Plan
Feb. 28, 2023	Enactment of a human rights management policy	
	Enactment of ESG Code of Conduct for Supplier	
	Report on ESG assessment results	
	Sustainability report publication plan	• Review of materiality test results and selection of key issues of NHN ESG
	Business agreement to spread climate action and respond to environmental problems	
Jun. 13, 2023	Establishment of environment and energy goals	
	Enactment of AI ethics principles	
	Enactment of supply chain ESG management policies	
	Report on greenhouse gas emissions scope 1, 2, 3	• Third-party verification of scope 1, 2, 3 emissions conducted for the fiscal year 2020-2022
	Establishment of enterprise-wide ESG communication channels	• Opening channels for gathering and encouraging employee opinions and participation in ESG management

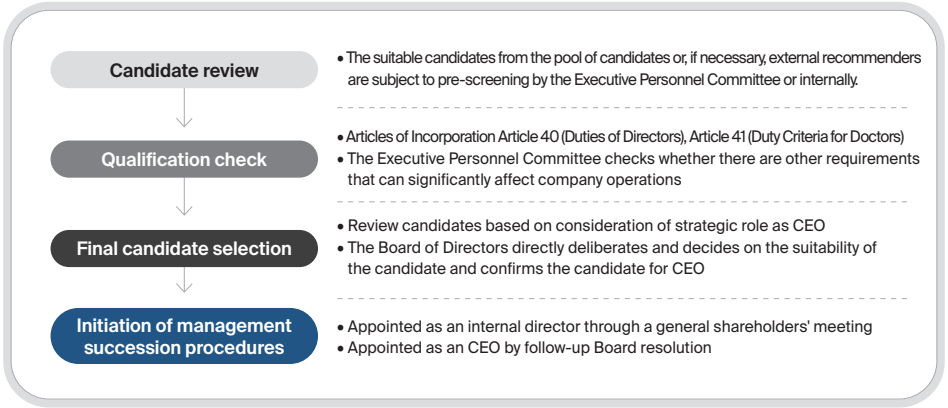
Governance

Executives

NHN is committed to protecting the interests of various stakeholders through professional and efficient senior management and thereby pursuing sustainable growth. The management constantly strives to improve corporate value and actively communicates with all stakeholders. In addition, we strive to maintain transparency in all management activities and decision-making processes, and also to ensure that stakeholders have sufficient information about the management's decision-making process and results through various IR activities.

Executive Appointment Process

NHN has established and operates its Articles of Incorporation and internal executive personnel regulations to prepare for the succession process resulting from the appointment and dismissal of top executives. In relation to the CEO succession policy, the Executive Personnel Committee, authorized by the Board of Directors, has the authority to review and deliberate on the recommendation, appointment, reappointment, and other matters related to the CEO candidates. Regular and ad hoc committee meetings are held every year to make key decisions regarding the Chairman and the executive management team. The appointment of directors is made in accordance with Article 36 (Appointment of Directors) and Article 38 (Election of Directors) of the Articles of Incorporation, based on the prior review process by the Executive Personnel Committee. It requires a majority vote of the attending shareholders at the general meeting. Furthermore, the suitability of the CEO candidate appointed as an internal director in the subsequent Board of Directors is deliberated to ensure the continuity and stability of management.



Executive Remuneration

The remuneration of directors is determined in accordance with the remuneration regulations within the approved remuneration limit by the shareholders' meeting, and it is approved and paid through the Compensation Committee. In addition, we grant stock options to its internal directors and employees. By aligning the company's growth with the interests of its employees, we encourage employee participation in the company's growth and seeks to reward their efforts and achievements.

(As of Dec. 31, 2022, Unit: thousand KRW)

Classification	Number of people	Total compensation	Average salary amount per person
Inside directors	3	1,444,933	481,644
Outside directors	3	108,000	36,000
Employees	874	54,737,007	75,682

Classification	Number of people granted stock options	Total fair value of stock options
Inside directors	2	523,440
Outside directors	-	-
Business execution directors	48	5,050,526
Total	50	5,573,966

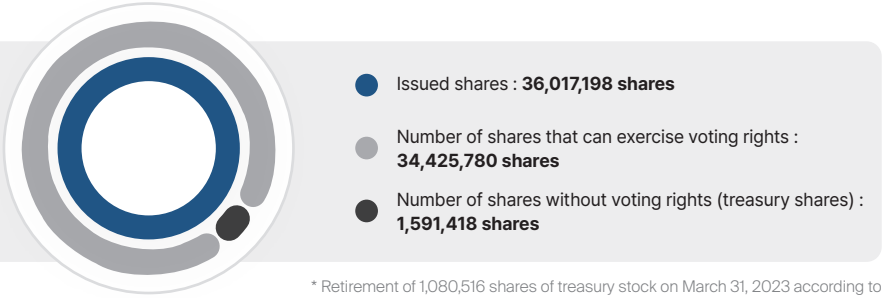
Governance

Protecting Shareholder Rights

NHN always puts the interests of shareholders first, protects the rights and interests of shareholders, and actively accepts shareholder opinions. To this end, NHN communication channels are expanded and the direction of company management is determined in consideration of shareholder interests. We will strive to become a company that continues to grow together with shareholders by increasing communication with them.

Equity and Capital Structure

(As of Dec. 31, 2022)



* Retirement of 1,080,516 shares of treasury stock on March 31, 2023 according to shareholder return policy
* The total number of shares issued after retirement is 34,936,682

Classification	Unit	Mar. 2022	Jun. 2022	Sep. 2022	Dec. 2022
Highest price	KRW	37,700	32,000	24,900	25,350
Average price		36,498	29,675	23,310	24,738
Lowest price		34,800	26,750	21,500	23,350
Highest trading volume	Share	167,895	335,995	174,846	108,511
Lowest trading volume		36,497	46,238	34,659	16,268
Monthly total trading volume		2,039,175	2,575,589	1,482,238	971,203

* The highest, average, and lowest price of stocks are based on the closing price

Shareholders

(As of Dec. 31, 2022)

Shareholder	Number of shares owned (shares)	Stake (%)
Largest shareholder and affiliated person (Largest shareholder: Joonho Lee)	18,649,148	51.78
National Pension Service	2,640,076	7.33
Treasury shares	1,591,418	4.42
Others	13,136,556	36.47
Issued shares	36,017,198	100.00

* The government and other government agencies do not hold any golden shares
* On Mar. 31, 2023, 1,080,516 shares of treasury stock were retired. The total number of shares issued after retirement is 34,936,682

Directors' Stock Holdings

(As of Dec. 31, 2022)

Director	Post	Number of shares owned (shares)		Remarks
		Beginning of term	End of term	
Joonho Lee	Inside director (Chair of the Board of Directors)	3,400,000	6,800,000	
Ujin Chung	Inside director (CEO)	5,263	10,526	
Hyunshik Ahn	Inside director (CFO)	10,000	20,000	
Sangwook Kim	Outside director	417	1,238	Market purchase

* Due to bonus issue in January 2022, new shares will be allocated at the rate of 1 share per 1 share owned

Governance

General Shareholder Meeting

NHN makes great efforts to provide sufficient information to shareholders at the appropriate time. Starting from the 8th regular general meeting of shareholders, we have been providing agenda information for the general meeting of shareholders through English disclosures to enhance accessibility for foreign shareholders. From the 10th regular general meeting of shareholders onwards, we submit a preliminary notice of the general meeting of shareholders four weeks prior to the meeting to provide agenda information in advance. We also provide the annual report and audit report one week before the general meeting of shareholders through electronic disclosure and website publication.

NHN actively encourages shareholders to exercise their voting rights through proxy voting and supports the exercise of voting rights through electronic voting and written proxies. We also schedule annual general meetings of shareholders to avoid concentration and ensure convenience and participation for shareholders. During the general meetings of shareholders, the CEO, CFO, and key executives attend to answer shareholders' questions and provide detailed explanations of the company's management performance and business status. We strives to actively engage in communication with shareholders.

Classification	8th General shareholders' Meeting	9th General shareholders' Meeting	10th General shareholders' Meeting
Resolution Day	Feb. 8, 2021	Feb. 9, 2022	Feb. 10, 2023
Announcement Date	Mar. 8, 2021	Mar. 14, 2022	Feb. 27, 2023
Date of Meeting	Mar. 23, 2021	Mar. 29, 2022	Mar. 28, 2023
Venue	Seongnam City, Gyeonggi Province CCEI Gyeonggi		
Method of Notification	Sending convocation notice, electronic disclosure system, website announcement, etc.		Notice of convocation (shareholders who own more than 1% stock), sending notification of general shareholders' meeting, electronic disclosure system, announcement on website, etc.
Highlights of Shareholder Remarks	Two speakers who made inquiries about dividend policy and business status	Eight speakers who made inquiries on dividend policy, details of agenda, business status, etc.	Nine speakers who made inquiries on shareholder value enhancement, agenda details, business status etc.

Shareholder Communication

Go to IR Schedule and Disclosure Information

NHN holds IR conference calls four times a year for quarterly and annual earnings announcements, targeting domestic and foreign investors. We conduct IR meetings with domestic and international institutional investors on an ad hoc basis and regularly conduct Non-Deal Roadshows (NDR) while also endeavoring to attend various conferences. At the general meetings of shareholders, we organize a separate session for small shareholders to freely ask questions and make statements through a shareholder meeting. We continue to hold Q&A sessions with small shareholders through the IR representative contact and email. Information regarding IR schedules, english disclosures, and fair disclosures can be found through the provided link.

Mid- to Long-term Shareholder Return Policy

In February 2022, we established a shareholder return policy based on business performance to enhance predictability. Through a resolution of the Board of Directors, it was decided to utilize a minimum of 30% of the previous fiscal year's EBITDA for share buybacks, cancellation, or dividends as a source of shareholder returns for a period of three years starting from 2022. Furthermore, it was decided to conduct a special share cancellation of 3,751,792 treasury shares, which represents 10% of the total issued shares, by 2024. As of March 31, 2023, approximately 2,581,233 shares, which represents about 7% of the total issued shares, have been successfully retired. We highly values sharing the achievements of its subsidiaries with shareholders. During the preparation process for the spin-off of NHN Cloud, we amended the Articles of Incorporations to get approval from shareholders by assuming whether the spin-off subsidiary will proceed the listing as an agenda item for a special resolution at the general shareholders' meeting. Also, the revised article of incorporations include that the demerged subsidiary can distribute its shares to the parent company's shareholders if it intends to list within 10 years.

Article 33 (Method of Resolution at the General Meeting of Shareholders, etc.)

① Except for cases where there are different provisions in the law or articles of incorporation, resolutions at general meetings of shareholders shall be adopted by a majority of the voting rights of the shareholders present, provided that it represents more than one-fourth of the total issued shares.

② Notwithstanding the provisions of paragraph 1, if a subsidiary (hereinafter referred to as the "Newly Established Separated Corporation") that has been emerged under Article 530-12 of the Commercial Act from this company seeks to list its shares on the stock market operated by the Korea Exchange within 10 years from the date of the demerger, the decision on whether to proceed with the listing of the Newly Established Separated Corporation shall be submitted as an agenda item for the general meeting of shareholders, and it shall require approval by a vote of two-thirds or more of the voting rights of the shareholders present and representing more than one-third of the total issued shares.

Article 56 (Profit Dividend)

① Profit dividends can be paid in money, stocks, and shares of a new company through a captive spin-off owned by this company.

Governance

Risk Management

To better manage the risks at the company and board level, we have established our own enterprise-wide risk management system. We conduct regular assessments of the risk landscape and carries out risk management activities. By internalizing risk management capabilities, we strive to promote a more advanced risk culture throughout the entire group.

Enterprise-wide Priority Risks

NHN has established an enterprise-wide risk management system to identify and actively manage key risks faced in its business areas. This system was approved by the Board of Directors in May 2023. Additionally, a Chief Risk Officer (CRO) has been appointed to oversee risk management encompassing all areas - finance, human resources, legal, and operations. The CRO conducts regular or ad hoc checks on compliance with risk management regulations and the operational status of risk management, and reports on the impact of risks on the company to the Board of Directors. Currently, we are focusing on the following key risks, and will continue to make efforts to minimize their impact in the future.

Classification	Definition and Impact	Our Responses
Climate Change and Carbon Neutrality	With the adoption of the Paris Agreement, there is an increasing trend towards environmentally friendly policies by major countries such as the European Union (EU) and the United States. As a result, environmental regulations are being strengthened, and the importance of climate change mitigation and information disclosure is growing. There is a possibility that this could cause disruptions in business operations or give rise to issues related to regulatory non-compliance and sanctions.	• Establishment of GHG inventory and implementation of third-party verification at all worksites • Energy-efficient data center construction and operation • Acquired ISO 14001 and 50001 environmental/energy management system certification • Environment/energy-related employee campaigns • Installation of charging infrastructure to promote the supply of electric vehicles • In-house notice of energy consumption and restaurant food leftovers
Human Rights	In case of issues related to workplace harassment, sexual harassment on the job, or other human rights violations, there is a possibility of negative impact on the external image and the potential to become subject to special labor supervision by the Ministry of Employment and Labor.	• Operation of reporting channels for workplace harassment and sexual harassment on the job • Implementation of protective measures for victims and follow-up actions after notifying the investigation results
Information Security	In the event of company's important information leakage or system breaches, there is a possibility of various risks occurring such as infringement of intellectual property rights, weakened competitiveness, economic losses, service disruptions, and more.	• Establishment and implementation of information security management system, and continuous verification and improvement of its effectiveness • Implementation of administrative and technical protective measures for critical information assets and systems, and continuous monitoring for defense against security threats • Independent system assessment and improvement by third-party organizations through internal and external information security management system certification processes
Policy and Business Regulations	In the event of problems arising from a game rating deliberations, there is a possibility of business losses due to administrative measures such as business suspension and imposition of fines, as well as the risk of partial suspension of electronic financial transactions in accordance with relevant laws.	• Deliberations for new and existing services, and respond to policies of relevant agencies • Respond to financial authorities in establishing consumer protection policies related to electronic financial transactions, consumer financial protection laws, etc. • Enhance communication and collaboration with relevant agencies and organizations due to increased importance of corporate regulations
Legal Affairs	If contracts and legal risks related to business operations are not pre-checked, there is a higher possibility of related lawsuits, disputes, and penalties for violations of relevant laws. As a result, there is a potential for incurring legal costs and penalties.	• Prior review of contracts signed in the name of the company • Prior review of the business activities conducted by the company

Governance

Enterprise-wide Priority Risks

Classification	Definition and Impact	Our Responses
Ethics	In the current era emphasizing business ethics and transparent organizational culture, there is a probability of negative impacts such as damaging the company's reputation and trustworthiness due to corrupt or unethical behavior by employees or business partners.	• Establish and Implement internal ethical regulations such as code of business conduct and anti-corruption policy • Strengthen the training of business ethics to all employees and submitted business ethics pledge by them • Request adherence to ethical principles and entering into business ethics agreements with business partners • Operate internal and external reporting channels such as business ethics counseling center • Conduct business ethics surveys among employees and business partners to enhance ethical awareness
Finance	A possibility of decreased competitiveness in the capital market and potential challenges to the business continuity of a company due to financial instability factors such as exchange rates, interest rates, capital risks, credit ratings, and taxes.	• Commitment to the ongoing management of financial risks through Internal Control over Financial Reporting (ICFR) • Proactive consulting with tax authorities on high-importance tax issues to minimize tax risks • Manage factors such as exchange rates, interest rates, and market changes, along with conducting audits of operating assets
Privacy	There is a possibility that if user privacy is violated or breached in violation of the Personal Information Protection Act, it may lead to legal sanctions, economic losses due to compensation, and a decline in the company's reputation, which could further result in a decrease in customer trust.	• Identify and implement strategies to comply with regulations related to personal information protection • Conduct privacy impact assessments and regular checks in relation to service launches or modifications • Conduct audit activities such as monitoring attempts of personal information misuse, abuse, or unauthorized disclosure
CI / BI	A possibility that the unauthorized use of CI/BI that does not comply with regulations could lead to a decline in brand image, and unclear branding representation may result in a decrease in brand value.	• Distribution of CI/BI Usage Guidelines • Irregular renewal of guidelines due to changes in prohibited regulations
Recruitment	There is a possibility that the violation of laws regarding fair recruitment processes and the failure to secure talented individuals may have a negative impact on the company's competitiveness.	• Enhance fairness in recruitment through pre-interview guidelines and other pre-interview notifications • Strengthen of recruitment processes, systems, and promotional channels to secure excellent talents • Enhancement of systems for connecting excellent talents, such as internship programs, open recruitment operations, and collaboration with external organizations
Disciplinary Actions	A possibility that the company's internal order and external image may be compromised if appropriate follow-up measures are not taken, such as failing to initiate disciplinary proceedings or posting disciplinary outcomes, in cases where members violate disciplinary reasons set forth in the rules of Employment or other company policies.	• Establishment of disciplinary process and operation of Disciplinary Committee • Notification of Disciplinary Committee results and posting of disciplinary actions
Reputation	The formation of a negative corporate image can lead to a decrease in trust towards the company and its brand, which can have adverse effects on securing new business contracts, attracting investments, and other aspects. Furthermore, it can result in economic losses such as a decline in stock prices and the erosion of shareholder value.	• Real-time monitoring of news and social media • Distribution of accurate press releases and notifications for fact-checking and correction requests • Reputation management through ongoing networking with internal and external stakeholders • Communication with investors through quarter's earnings release conference call

Governance

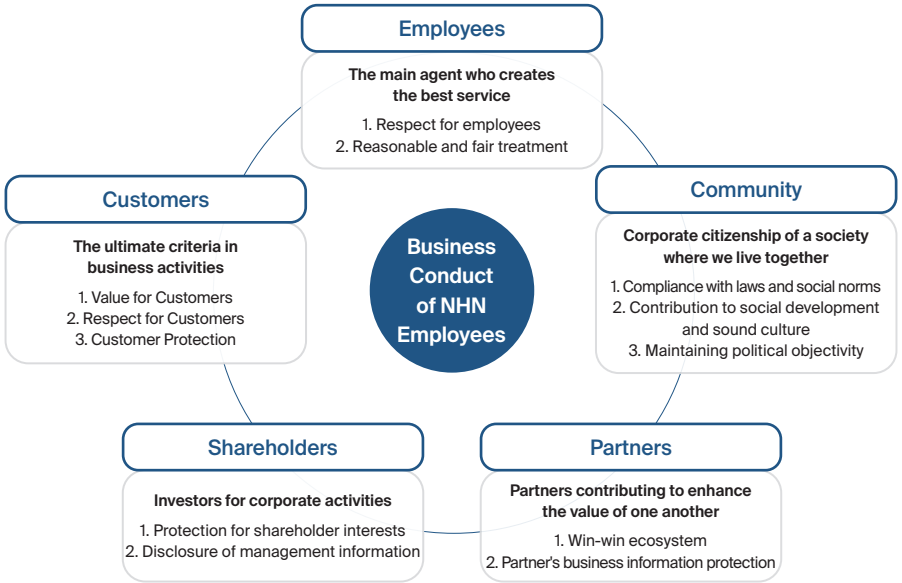
Ethical Management

NHN adheres to the principles of ethical management and transparency in conducting its business. Our members comply with ethical standards and anti-corruption policy, making efforts to eradicate unethical behaviors such as unfair trade practices, conflicts of interest, and bribery. Continuous ethics training is provided to support all members in maintaining a high ethical standard. We also pursue fairness and transparency in its relationships with stakeholders, strictly adhering to relevant laws and regulations. We prioritize ethical management as a core value for a better future and strives to be a trustworthy company through reliable collaboration with all stakeholders.

Code of Business Conduct

Full Code of Business Conduct

NHN has established business ethical guidelines as the basis for responsibility and value judgment, and actively practices ethical management based on them. All members are required to take an annual pledge to uphold ethical guidelines, and efforts are made to enhance awareness of business ethics. By sharing these values and social responsibilities, we are committed to pursuing sustainable management.



Anti-corruption Policy

In November 2022, NHN declared the Anti-corruption Policy to raise employees' ethical awareness and present a guide for correct business activities. The policy consist of six clauses, and covers the prohibition of corruption, compliance management, reporting of corruption and protection of informants, as well as punishments for corruption. We promise to demonstrate ethical integrity and transparency in all business activities and will do our best to help all employees recognize and prevent corruption-related risks.

NHN Anti-Corruption Policy

NHN has established and hereby declares the following Anti-Corruption Policy to act with a moral and ethical duty to pursue the highest standards of integrity and reliability and to fulfill our social responsibilities by practicing ethical and transparent management.

1. All executives and employees of NHN must comply with domestic and international laws and internal regulations related to anti-corruption.
2. All executives and employees of NHN are strictly prohibited from accepting or demanding bribes including money, valuables, entertainment, convenience, etc. from stakeholders and engage in any corruption such as improper solicitation.
3. NHN establishes and operates an effective management system to achieve anti-corruption and compliance management and we are committed to endeavor to continuously improve the system.
4. All executives and employees of NHN must immediately report to the Company if any corruptive activities or violation of domestic and foreign laws and regulations related to anti-corruptions are witnessed. NHN does not disclose the informant's identity without consent and protects the informant from retaliation or other disadvantages.
5. NHN ensures that the authority and independence regarding anti-corruption to the Chief Anti-corruption Officer in our fight against corruption.
6. NHN may take disciplinary action following the Company's internal regulations if any executive or employee violates the relevant laws or internal regulations, including this Policy, or fails to take reasonable measures despite knowing the violation.

Governance

Business Ethics Pledge

NHN strives to create a company that is trusted by various stakeholders and prepares Business Ethics Pledge every year to raise employees' awareness of ethical management. This pledge touches upon the following five areas, and all employees have pledged to fully understand the contents of the pledge and practice ethical management with their best efforts.

Business Ethics Pledge by NHN Employee

01

Humility and Ownership

Employees take responsibility for being the face of the company and always maintain a humble attitude, both publicly and privately.

02

Creativity and Innovation

In order to create the highest value and satisfaction for customers, employees will not stop with being satisfied with the present and always work with creative and innovative thinking.

03

Challenge and Passion

Under the corporate philosophy that “those who do not challenge themselves cannot achieve anything,” employees continuously strives to challenge and achieve in its work with unwavering passion.

04

Avoiding Conflicts of Interest with the Company

Employees carry out their duties with a clear distinction between public and private affairs, and do not engage in private activities or relationships that conflict with the interests of the company.

05

Creating a Sound Organizational Culture

Employees strive to create a workplace where respect and autonomy are valued based on smooth communication and mutual trust. In addition, employees will not engage in any verbal, physical, or visual behavior that may offend others or contain social or cultural prejudice.

Status of Business Ethics Violations

As a result of these efforts, there were no cases of fines for violating business ethics, such as money laundering and internal transactions, conflicts of interest, corruption and bribery, privacy leakage, discrimination, and harassment, during the past year of 2022. We provide appropriate training and guidelines to all employees, shares ethical values in their work performance, and continues its efforts to prevent risks related to corruption. These efforts have a positive impact on our customers, business partners, and society as a whole. We will continue to pursue a better corporate culture and ethical management, making continuous efforts to maintain sound business ethics.

NHN Partner System

NHN has established and operates an independent supplier management system, the NHN Partner System. The NHN Partner System is an electronic procurement system that efficiently manages suppliers throughout the entire transaction process to practice fair trade. In addition, the Purchasing Contract Work Standards and Procedures specifies the supplier selection criteria, purchasing process, and departmental R&R in detail.

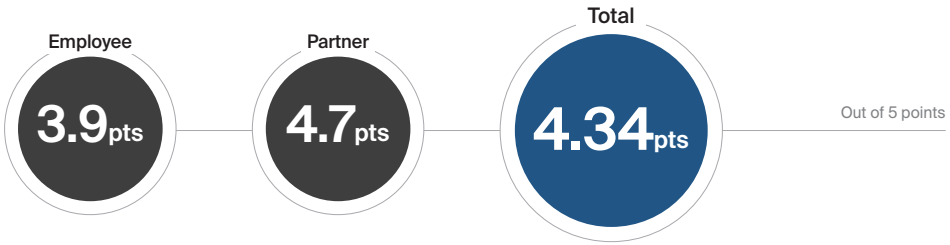
Go to NHN Partner System

Governance

Business Ethics Survey

Since 2020, NHN has been conducting a survey of employees and partners of Group companies to self-assess the level of business ethics. In the survey for employees, various opinions are gathered on the subjects of business ethics as well as in view of eradicating corruption, and the appropriateness and transparency of transactions are gathered in the survey for partners. We publicize business ethics principles through surveys, and based on the survey results, execute business ethics to maintain and develop transparency and fairness in corporate culture.

Survey Results for 2022



Opinion Gathering and Related Activities

Opinion	Related Activities
Lack of publicity for counseling centers	• Share the results of the annual business ethics survey targeting all employees • Sharing examples of business ethics practices to provide a guide for ethical judgment
Lack of guidance on informant protection programs	• Thorough protection of the informant identity and counseling/reported details • Counselor protection program operation
Enhanced understanding of business ethics	• Business ethics training for all employees

Business Ethics/Fair Trade Training

NHN recognizes the importance of ethical management within the company and conducts internal ethics training for all employees annually. Through regular ethics training programs, employees enhance their awareness of business ethics and share principles of ethical behavior.
Furthermore, in February 2023, we conducted offline fair trade training for approximately 50 members of the financial, purchasing, and legal departments of NHN, NHN Cloud, and NHN PAYCO. This training explored various real-life cases related to fair trade laws and internal transactions and focused on key aspects of subcontracting laws to emphasize the importance of fair trade compliance. Additionally, in April 2023, a training session on subcontracting law compliance was conducted for around 100 members of the NHN Cloud division and the Finance Support Department. An online fair trade training session for all NHN employees is scheduled for August 2023.

Governance

Business Ethics Counseling and Reporting System

NHN operates an Ethics Counseling Center to prevent fraudulent activities such as unfair business practices, abuse of superior positions, and leakage of company assets and confidential information. The center is accessible through our website and electronic purchasing system, allowing both employees and external stakeholders to freely request counseling or report issues. Reported cases are independently investigated and formally examined by the internal professional investigative organization to verify the facts. Disciplinary measures for violations of ethical regulations are based on employment rules and related regulations. For internal ethical violations, disciplinary actions range from warnings to termination. In 2022, a total of six cases were received through the Ethics Counseling Center, and all cases were 100% resolved. No violations of ethical regulations were confirmed based on the investigation results.

Operation of Ethics Counseling Center

Classification	Unit	2020	2021	2022
Number of consultations and reports	Case	4	14	6
Number of actions taken for violating the Business Conduct		1	5	0

Informant Protection

NHN's Ethics Counseling Center operates a Informant Protection Program to ensure that anyone can confidently and actively report any violations of business ethics. The program consists of three main components: informant identity protection, protection against retaliation, and rewards and immunity.

Informant Protection Program for the Ethics Counseling Center

Classification	Details
Protection of the informant's identity and guaranteed confidentiality of the details of the report	• Prohibition of disclosing the identity of the reporting person and cooperator and the details of the report without the consent of the person seeking counseling • Guaranteed confidentiality of the informant and the details of the report during the fact-checking and reward/punishment process (reward recipients are not recorded) • Regulations on penalties for employees who violate the duty to protect identity and confidentiality
Prohibition of disadvantage and discrimination against informant	• In case of disadvantages due to counseling, headquarters (NHN) compensates • Headquarters (NHN) protects and preserves against disadvantages that may arise from refusing unreasonable demands or forced cheating
Compensation and immunity for informant	• Extenuating circumstances are considered with respect to punishment or disciplinary actions if the reporting party has committed an act that is against business ethics, such as cheating, but has reported the fact

Fair Trade Activities

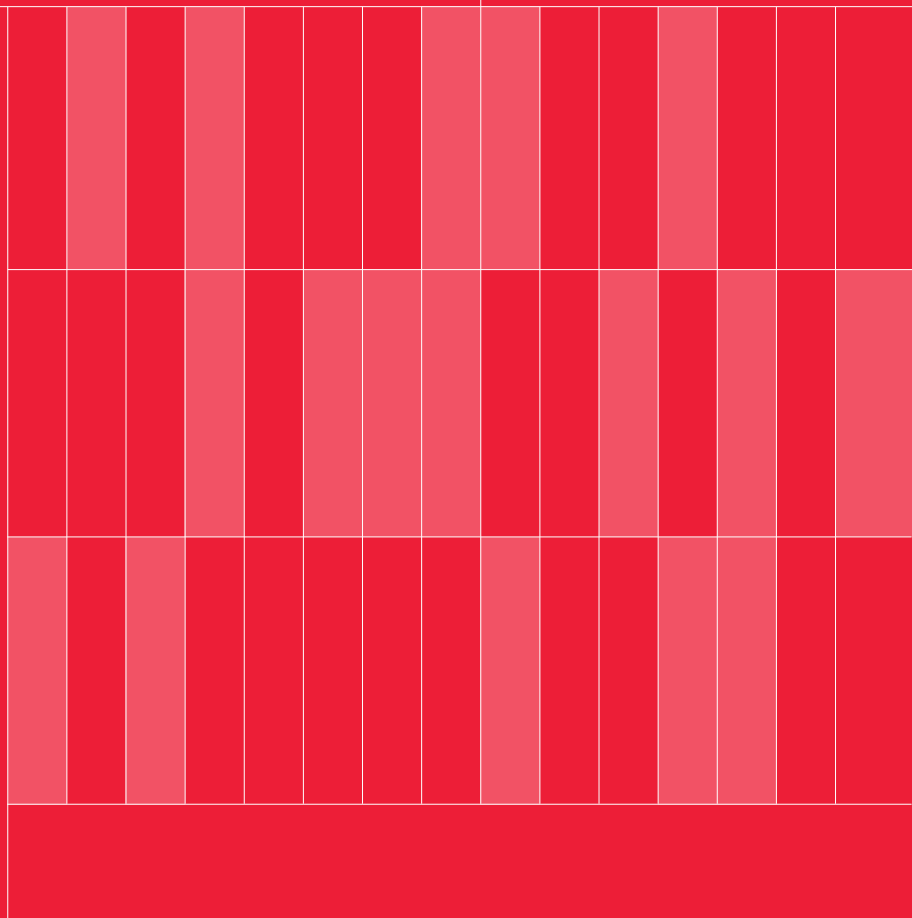
We encourage our members to practice ethical values through substantive ethical management activities. Complying with the Business Ethics Guide, we also emphasize the principle of returning gifts with economic value. If it is difficult to return a gift for personal ties or matters, NHN has implemented the "Clean Report" system, where members voluntarily and transparently report the sender, content, and handling of the gift to the Ethics Counseling Center. Additionally, through the "Lucky Auction" system, NHN auctions off received gifts with economic value and donates the entire proceeds to charity. Since 2013, a total of 551 gifts have been auctioned, raising approximately 25.5 million KRW in donations.

Lucky Auction Result

Classification	Unit	2020	2021	2022
Participation	Person	43	46	63
Amount of donation	KRW million	1.51	1.89	2.45

Appendix

Quantitative Data	103
Materiality Assessment	111
Stakeholder Communication	114
Initiative Index	115
Awards and Memberships	119
Verification Statement on GHG emissions	120
Third-party Assurance Statement	123



Quantitative Data | Economics/Governance

Subsidiaries

(As of Dec. 31, 2022)

Classification	Company Name	Establishment Date	Major Business	Asset (KRW thousand)	Ownership
Major subsidiaries	NHN PAYCO Corp.	04/03/2017	eWallet service	332,851,988	68.42%
	NHN Investment Partners Corp.	10/04/2016	Investment association investment management and investment consulting	257,409,632	100.00%
	NHN KCP Corp.	12/28/1994	Online electronic payment agency business	463,126,404	42.33% owned by NHN PAYCO
	NHN Japan Corp.	04/01/2013	Internet services	271,312,673	100.00%
	NHN Bugs Corp.	06/03/2002	Music distribution and service	93,696,392	45.26%
	NHN GLOBAL, Inc.	01/18/2005	E-commerce services	146,211,282	100.00%
	NHN Commerce Corp.	01/09/2003	Development and supply of e-commerce software	132,989,961	67.68%
	NHN PlayArt Corp.	10/01/2015	Development and supply of mobile games	80,459,818	100% owned by NHN Japan Corp
	NHN Comico Corp.	06/01/2017	Creation and development of animation	92,862,809	100% owned by NHN Japan Corp
	Accommate Holdings Ltd.	12/05/2008	E-commerce	86,967,125	100% owned by NHN Commerce
	NHN LINK Corporation	04/15/2014	Ticket sales agency service	132,155,441	100.00%
Other subsidiaries	NHN Wetoo Corp., NHN Investment Corp., NHN Techorus Inc., NHN Investment-HCJ Fund, NHN Ventures, LLC, SLi Growth Accel II Fund, NHN AD Corporation, NHN Commerce Japan Corp., NHN Edu Corp., NHN Service Technology Corp., KTB/NHN China Ventures I Ltd., NHN Investment-JAK Fund, NHN Investment-DY Fund, NHN Diquest Inc., NHN Investment-JWP Fund, NHN Investment-DH Fund, Accommate Shanghai Co., Ltd, NHN Data Corporation, NHN Service Corp., Accommate Korea Co., Ltd., SOLBIPOS, KTB/NHN China Ventures I Ltd, KCP FINANCIAL CO., LTD., Doppel Soft Co. Ltd, OUTDOOR GLOBAL, Accommate (Yancheng) Information Technology Co., Ltd., NHN Vietnam Co., Ltd., NHN Vietnam Holdings, COMICOSVC VIETNAM COMPANY LIMITED, Accommate BIC Co., Ltd., RECON INC., FUN WAYS CO., Ltd, KOREA FINTECH Co., Ltd., Accommate USA Co., Ltd., Zinu C&C Co., Ltd., Yap telecom co., Ltd., Accommate Hong Kong Ltd., NHN Greater China Ltd., NHN goodfriends, PAYCO Corp., NHN Fukuoka Corp., NHN KCP PTE., Ltd., LA Showroom.com, Inc., Wisdomhouse Inc., NOUVOLUTION, Celordion Corp., 510 BROADWAY, LLC, NHN Doctortour Corp., RYOKOHAKASE NIHON, New Deep LIMITED, AUDIENS SRL, AUDIENS LTD, Edito Co., Ltd., NHN Soft Corporation, CLOUDNEXA, Inc., NHN Enterprise Corporation, NHN Dooray Corporation, NHN Ace Corporation, WECARE Corporation, Corp. Eleven Past Eleven, LOIT, NHN Academy Corporation, PlayArt Taiwan Corp., Doctortour Plus Corp., NHN Studio Diggin Corp., NHN Cloud Corp., NHN FashionGo Korea Corporation, NHN Crossent Corp., Platformn Corp., 2250 Maple, LLC, NHN INJEINC Co., Ltd., Sound Alliance Co., Ltd., JTC, TOURNET Hawaii, Inc., NHN Comico Korea Corp., Newdeep K.K Japan, Pebble Games PTE. LTD., Pebble Stream PTE. LTD.				

Quantitative Data | Economics/Governance

Consolidated Statement of Financial Position

(Unit: KRW 100 million)

Assets	End of 2022	End of 2021
Current Assets	13,486	13,599
Cash and cash equivalents	6,306	5,964
Short-term financial instruments	933	427
Financial assets at fair value through profit or loss	699	2,694
Trade and other receivables	4,663	3,026
Income tax refund receivables	34	20
Inventories	466	485
Other current assets	385	984
Non-current Assets	16,766	16,672
Long-term financial instruments	5	150
Financial assets at fair value through profit or lossa	2,394	2,769
Financial assets at fair value through other comprehensive income	1,357	2,660
Investments in equity-accounted investees	2,139	1,849
Trade and other receivables	551	302
Deferred tax assets	769	574
Property, plant and equipment	4,832	3,882
Intangible assets	4,131	3,790
Right-of-use assets	412	444
Investment property	35	84
Other non-current assets	140	169
Total Assets	30,252	30,272

(Unit: KRW 100 million)

Liabilities	End of 2022	End of 2021
Current Liabilities	7,470	7,197
Trade and other payables	5,043	4,395
Contract liabilities	37	0
Short-term borrowings	627	714
Other current financial liabilities	69	88
Income tax payables	262	806
Provisions	45	28
Derivatives liabilities	220	240
Other current liabilities	1,166	926
Non-current liabilities	2,858	2,089
Trade and other payables	1,153	641
Long-term borrowings	717	410
Liabilities for defined benefit obligations	628	615
Provisions	59	65
Deferred tax liabilities	132	259
Other non-current liabilities	169	98
Total Liabilities	10,328	9,286
Equity		
Equity attributable to owners of the Parent Company	16,930	18,343
Share Capital	188	98
Share premium	12,287	12,377
Other capital	-1,349	-1,505
Accumulated other comprehensive loss	8	834
Retained earnings	5,797	6,538
Non-controlling interest	2,994	2,643
Total stockholders' equity	19,924	20,986
Total liabilities and stockholders' equity	30,252	30,272

Quantitative Data | Economics/Governance

Consolidated Statement of Comprehensive Income

(Unit: KRW 100 million)

Classification	Jan. 1, 2022 – Dec. 31, 2022	Jan. 1, 2021 – Dec. 31, 2021
Operating revenues	21,149	19,237
Operating expenses	20,758	18,258
Operating income	391	979
Non-operating income	195	143
Non-operating expenses	385	214
Finance income	742	1,212
Finance costs	849	614
Share of income of equity-accounted investees	60	58
Share of expenses of equity-accounted investees	139	55
Profit before income tax	15	1,509
Income tax expense	333	469
Continued operating profit	-318	1,039
Net income from discontinued business after tax		258
Profit (loss) for the year	-318	1,297
Profit (loss) for the year is attributable to:		
Owners of the Company	-321	1,169
Profit from continued business	-321	959
Loss from discontinued business		210
Non-controlling interests	4	128
Other comprehensive income	-450	1,993
Items that may be reclassified to profit or loss		
Foreign currency translation differences for foreign operations	117	67
Change in equity of equity-accounted investees	-6	6
Items that will never be reclassified to profit or loss		
Net change in fair value of financial assets at fair value through other comprehensive income	-898	864
Gain on disposal of financial assets at fair value through other comprehensive income	286	1,079
Remeasurements of defined benefit plans	51	-23
Total comprehensive income for the year	-768	3,290
Total comprehensive income attributable to:		
Owners of the Company	-819	3,103
Non-controlling interests	51	187

Quantitative Data | Economics/Governance

Distribution of Economic Value

Classification		Unit	2020	2021	2022
Employees	Salary	KRW million	280,934	303,168	335,911
	Employee benefits		38,259	41,035	54,904
	Retirement benefit		18,513	22,637	23,299
	Total		337,707	366,840	414,114
Partners	Cost of sales		154,373	219,795	220,718
	Fees		846,941	1,001,369	1,140,085
	Outsourcing service fee		1,108	1,530	4,467
	Total		1,002,422	1,222,695	1,365,270
Investors	Dividend		-	-	-
	Interest expense		5,120	6,124	8,995
	Total		5,120	6,124	8,995
Local communities	Donation		2,172	884	879
Government	Income tax		37,372	46,948	33,273

Effective Tax Rate

Classification	Unit	2020	2021	2022
Profit before tax	KRW million	51,951	150,875	1,522
Nominal tax amount		12,572	36,512	368
Tax paid		46,955	25,879	100,771
Effective tax rate	%	71.9	31.1	2186.7
Tax rate		90.4	17.2	6622.6

* The amount of tax paid is calculated based on the cash flow statement for the year.

Tax Payments by Country

Classification		Unit	2020	2021	2022
Korea	Sales	KRW million	1,179,215	1,379,718	1,558,547
	Profit before tax		2,110	94,905	(34,869)
	Corporate tax		28,293	44,241	26,095
	Net income		(12,806)	76,437	(60,964)
	Tax payment		32,777	30,146	86,915
Japan	Sales		283,429	284,213	301,833
	Profit before tax		35,303	34,711	39,333
	Corporate tax		11,690	10,311	7,832
	Net income		23,613	24,399	31,500
	Tax payment		14,169	(5,243)	13,552
Other countries	Sales		178,600	259,746	254,490
	Profit before tax		14,538	21,260	(2,942)
	Corporate tax		(2,611)	(7,605)	(655)
	Net income		17,150	28,864	(2,287)
	Tax payment		9	975	303

Quantitative Data | Economics/Governance

Number of Board Meetings and Attendance Rate

Classification		Unit	2020	2021	2022
Number of BOD meetings		Session	12	24	15
Inside directors	Joonho Lee	%	100	100	93.3
	Ujin Chung		100	100	100
	Hyunshik Ahn		100	100	100
Outside directors	Namgyu Kang		91.7	95.8	93.3
	Sangwook Kim		91.7	100	93.3
	Wanhee Yoo		100	100	100

Voting Right

Classification	Unit	2020	2021	2022
Shares owned by the CEO	Share	5,263	5,263	10,526*
Shares owned by executives other than the CEO		3,410,000	3,410,417	6,821,238
Total share of registered executives	%	17.46	17.46	18.97
Government agencies'** percentage of voting rights		8.34	6.72	7.33

* The increase in the number of shares is due to a 100% bonus issue on January 2022
** National Pension Service

Quantitative Data | Environmental

* Reporting scope: NHN Play Museum headquarters and NHN Cloud Center(NCC), 100% of worksites

Greenhouse Gas

Classification	Unit	2020	2021	2022
Direct emissions (Scope 1)	tCO_2eq	95	62	77
Indirect emission (Scope 2)		11,718	13,431	14,448
Total emissions		11,813	13,493	14,525
Sales	KRW 100 mn	16,412	19,237	21,149
Intensity	tCO_2eq/KRW 100 mn	0.7198	0.7014	0.6868
Indirect emissions (Scope 3)	tCO_2eq	71,361	67,171	26,978
① Purchased Goods and Services		64,899	61,196	22,645
② Capital goods		383	592	742
③ Fuel and energy related activities not included in Scope 1 or 2		1,323	1,459	1,508
④ Upstream transportation and distribution		2,947	1,667	561
⑤ Waste generated in operation		3	2	4
⑥ Business travel		23	51	25
⑦ Employee commuting		567	505	485
⑪ Use of sold products		1,217	1,700	1,010
⑫ End of life treatment of sold products		0.138	0.190	0.122

Energy

Classification	Unit	2020	2021	2022
Diesel	GJ	206	12	34
City gas (LNG)		964	415	804
Electricity		229,135	262,996	283,521
Gasoline		470	589	504
Other (heat, steam, etc.)		21,625	23,499	23,766
Total consumption		252,401	287,511	308,629
Intensity	GJ/KRW 100 mn	15.3790	14.9457	14.5931

Water

Classification		Unit	2020	2021	2022
Withdrawal	municipal water supplies	ton	45,959	38,740	50,480
Reused			4,790	3,131	4,058
Total consumption			50,749	41,871	54,538

Waste

Classification	Unit	2020	2021	2022
General waste generated	ton	106.8	48.8	65.2
Designated waste generated		0	0	1.5
Total waste generated		106.8	48.8	66.6
Total waste recycled		106.8	48.8	65.2

Quantitative Data | Environmental

Environmental Violation

Classification	Unit	2020	2021	2022
Number of violations of legal obligations	cases	0	0	0
Non-monetary sanctions		0	0	0
Amount of fines/penalties	KRW million	0	0	0

Eco-friendly Vehicles

Classification	Unit	2020	2021	2022	2023.04
Total number of vehicles	Vehicle	15	15	16	15
Total number of eco-friendly vehicles	Vehicle	0	0	1	2
Ratio of eco-friendly vehicles	%	0	0	6.3	13.3

Quantitative Data | Social

Workforce breakdown

Classification		Unit	2020	2021	2022
Total			1,437	1,448	1,725
Gender	Male	Person	921	913	1,080
	Female		516	535	645
Age	20's		127	237	378
	30's		762	722	839
	40's		506	450	462
	50 or older		40	39	46
Type*	Permanent		1,366	1,373	1,625
	Male		875	861	1,012
	Female		491	512	613
	Contract		25	22	30
	Male		11	7	8
	Female		14	15	22
Region	Domestic		1,424	1,436	1,716
	Overseas		13	12	9

* Based on domestic workforce, excluding executives

Quantitative Data | Social

Diversity*

Classification		Unit	2020	2021	2022
Position	Executive	Person	42	47	65
	Male		31	39	55
	Female		11	8	10
	Manager**		195	224	272
	Male		144	157	189
	Female		51	67	83
	Non-management		1,187	1,165	1,379
	Male		735	706	828
	Female		452	459	551
Patriots and veterans			10	10	11
Employees with disabilities			6	6	7

* Based on domestic workforce
** From team/part leads to pre-executives

Recruitment and Turnover

Classification		Unit	2020	2021	2022
Recruitment	Total	Person	245	358	431
	Male		163	224	251
	Female		82	134	180
	20's		53	134	171
	30's		144	167	193
	40's		44	50	59
	50 or older		4	7	8
Voluntary turnover	Total		219	248	194
	Male		149	176	124
	Female		70	72	70
	20's		48	29	37
	30's		123	156	112
	40's		44	61	43
	50 or older		4	2	2
Average continuous years of service		Year	4.8	4.4	3.9

Materiality Assessment

Materiality Assessment Process

1 Organize Issue pools

Consider the 1st issue pool based on sustainability reporting standards (GRI, SASB, K-ESG) and ESG evaluation indicators (DJSI, MSCI, KCGS)

Selecting issues required by at least two or more initiatives and form a secondary issue pool

Form a final issue pool consisting of 29 issues through partial modification of issue names based on NHN business characteristics and addition of industry-specific issues

2 Measure business impact

① Initiative check
Check whether the initiative is appropriate for a specific issue

② Benchmarking
Analysis of sustainability management reports and ESG activities for excellent companies in the same industry

③ Internal stakeholder survey
Survey period: Jan. 16, 2023 – Jan. 20, 2023
A survey on the importance of issues related to NHN's sustainability management, targeting executives, and employees of the headquarters and Group companies

3 Measure public's interest

① Media research
Analysis of Internet news articles in 2022 and identification of reporting frequency by issue

② ESG expert assessment
Evaluation of issues by external experts with more than 7 years of ESG consulting experience

③ External stakeholder survey
Survey period: Jan. 16, 2023 – Jan. 20, 2023
A survey on the importance of issues related to NHN's sustainability management targeting suppliers, shareholders, investors, and customers

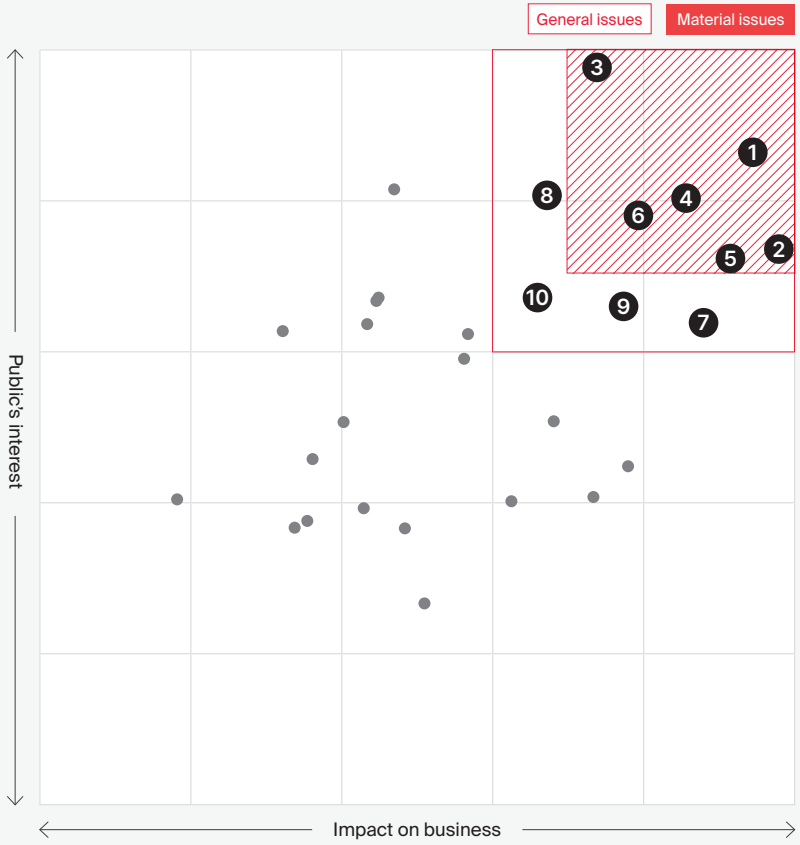
4 Implement materiality assessment

NHN's material issues derived by comprehensively considering business impact (X-axis) and public's interest (Y-axis)

Materiality Assessment

Materiality Assessment Results

Through the materiality assessment conducted on a total of 29 issues, 6 significant issues ranked in the top 20% and 4 general issues were identified. Detailed information on our performance and activities related to the selected issues in 2022 can be found in the Sustainability Management Report. We strategically consolidate corporate capabilities and establishes directions based on the priority determined by the significance of the issues in the pursuit of ESG management strategy. Going forward, we plan to transparently disclose and actively communicate these processes with stakeholders.



No.	Category	Issue	Level of Impact	Reporting page	
1	Social	Human Capital Development	●●●●●	57~62p	Material issues
2	Governance	Ethical management and compliance	●●●●○	98~101p	
3	Social	Shared growth and win-win cooperation	●●●○○	71~80p	
4	Social	Information security and data privacy	●●●●●	66~70p	
5	Governance	Ensure soundness and transparency of the Board of Directors	●●●○○	89~92p	
6	Environmental	Establish and operate environmental and energy management system	●●●●○	37~38p	
7	Environmental	Manage energy consumption and increase efficiency	●●●●○	37~50p	General issues
8	Social	Enhance customer satisfaction and service quality	●●●●●	81~83p	
9	Environmental	Bolster carbon neutrality and climate risk response	●●●●○	37~50p	
10	Governance	Vitalize stakeholder communication	●●●○○	114p	

Materiality Assessment

Materiality Assessment Results

Human Capital Development

Impact	• Revitalize the economy through increasing employment opportunities • Increase employees' job satisfaction and enhance competencies • Train IT talent
Management	• Secure recruitment fairness and diversity through NHN's unique recruitment system • Diversify employee benefits programs • Operate customized training programs by position, job, and length of service • Improve the office environment for employee engagement
GRI	• 401 : Employment • 404 : Training and Education

Ethical management and compliance

Impact	• Establish the value of fair trade for suppliers • Eliminate corruptions and conflicts of interest • Enhance the ethical awareness of employees
Management	• Conduct business ethics survey and feedback • Conduct business ethics training • Operate ethical counseling and reporting system • Raise employee awareness through fair trade activities
GRI	• 205 : Anti-corruption • 206 : Anti-competitive Behavior

Shared growth and win-win cooperation

Impact	• Win-win growth with the local community • Empower IT capabilities for SMEs • Fulfill corporate social responsibility
Management	• Establish regional base data centers and R&D centers • Host local IT conferences • Implement a public-private partnership SME support program for technology sharing • Operate NHN Academy for local talent development
GRI	• 413 : Local Communities

Information security and data privacy

Impact	• Prevent breach of customer personal information • Protect the intellectual property rights of employees and partners • Increase corporate credibility
Management	• Build Group information security governance • Acquire information security certification for each service • Organize security policy documents • Operate information security training programs and campaigns
GRI	• 418 : Customer Privacy

Ensure soundness and transparency of the Board of Director

Impact	• Secure business operation efficiency • Protect shareholder rights and interests, and enhance shareholder value
Management	• Expand shareholder return policy • Establish Board of Directors Diversity Expansion Plan • Establish Board Skills Matrix • Enhance IR
GRI	• 2-9 ~ 2-21 : Governance

Establish and operate environmental and energy management system

Impact	• Reduce greenhouse gas and waste emissions • Reduce energy and water use • Raise stakeholders' awareness in eco-friendliness
Management	• Establish ESG Committee and operate an environment-related working group • Manage data center PUE • Obtain ISO certification • Calculate and disclose office building and data center environment data • Implement various in-house campaigns related to the environment
GRI	• 302 : Energy • 303 : Water and Effluents • 305 : Emissions

Stakeholder Communication

Employees

Key Topics

- Human rights
- Talent recruitment/ growth support
- Diversity
- Safety and health
- Eco-friendly activities and campaigns

Communication Channels

- Company intranet
- Grievance handling channel “With U”
- Business Ethics Counseling Center
- Employee Corporate Ethics Survey
- Company Channel ‘Making Togaether NHN ESG’
- NHN Group News Room ‘INSIDE NHN’ SNS

Local Community

Key Topics

- Regional IT ecosystem
- Supporting SMEs
- Social contribution
- Human rights

Communication Channels

- NHN Academy Regional Campus
- Regional base data centers/ R&D centers
- NHN FORWARD
- NHN Cloud make IT
- Joint business with local public institutions
- Social contribution Campaign

Customer

Key Topics

- Protection of customer rights and interests
- Human rights
- Information security
- Environmentally responsible services

Communication Channels

- Official Website
- Service-specific Community
- Customer center and Consultation satisfaction survey
- Focus Group Test
- NHN Group News Room ‘INSIDE NHN’ SNS

Shareholder & Investor

Key Topics

- Protecting shareholder rights
- Board of Directors
- Executives
- Risk management

Communication Channels

- IR
- Disclosure Materials and Periodic Reports
- Shareholders' meeting
- Official website

Government

Key Topics

- Eco-friendly office building
- Green data center
- Information security
- Social contribution
- Ethical management

Communication Channels

- Disclosure material
- Projects related to public institutions and government
- MOU with Public Institute
- Association membership and activities

Partner(Supplier)

Key Topics

- Supplier ESG
- Human rights
- Ethical management
- Safety and Health

Communication Channels

- Business Ethics Counseling Center
- Supplier corporate ethics survey
- Education Program and Consulting
- NHN FORWARD
- NHN Cloud make IT

Initiative Index - GRI | Universal Standards

GRI 2 : General Disclosure

Classification	Code	Disclosure	Reporting page	Note
The organization and its reporting practice	2-1	Organizational details	5p	
	2-2	Entities included in the organization's sustainability reporting	2p	
	2-3	Reporting period frequency and contact point	2p	
	2-4	Restatements of information	-	First publication in 2022
	2-5	External assurance	120~124p	
Activities and workers	2-6	Activities, value chain and other business relationships	5~10p	
	2-7	Employees	109~110p	
	2-8	Workers who are not employees	-	N/A
Governance	2-9	Governance structure and composition	15, 89~92p	
	2-10	Nomination and selection of the highest governance body	15, 89~93p	
	2-11	Chair of the highest governance body	15, 89~93p	
	2-12	Role of the highest governance body in overseeing the management of impacts	15, 89~93p	
	2-13	Delegation of responsibility for managing impacts	15, 89~93p	
	2-14	Role of the highest governance body in sustainability reporting	15, 89~93p	
	2-15	Conflicts of interest	94~101p	
	2-16	Communication of critical concerns	89~92p	
	2-17	Collective knowledge of the highest governance body	89~92p	
	2-18	Evaluation of the performance of the highest governance body	89p	
	2-19	Remuneration policies	93p	
	2-20	Process to determine remuneration	91p	
	2-21	Annual total compensation ratio	93p	
Strategy, policies and practices	2-22	Statement on sustainable development strategy	11, 20p	
	2-23	Policy Commitments	16~19p	
	2-24	Embedding policy commitments	16~19p	
	2-25	Process to remediate negative impacts	16~19p	
	2-26	Mechanisms for seeking advice and raising concerns	96~101p	
	2-27	Compliance with laws and regulations	109p	
	2-28	Membership associations	119p	
Stakeholder Engagement	2-29	Approach to stakeholder engagement	114p	
	2-30	Collective bargaining agreements	-	NHN has a Labor-Management Council

GRI 3 : Material Topics

Classification	Code	Disclosure	Reporting page	Note
Disclosures on material topics	3-1	Process to determine material topics	111~113p	
	3-2	List of materials topics	111~113p	
	3-3	Management of material topics	111~113p	

Initiative Index - GRI | Topic-specific Standards

GRI 200 : Economic Performance

Classification	Code	Disclosure	Reporting page	Note
Economic Performance	201-1	Direct economic value generated and distributed	104~107p	
Market Presence	202-2	Proportion of senior management hired from the local community	-	100%
Indirect Economic Impacts	203-1	Infrastructure investments and services supported	74~80p	
	203-2	Significant indirect economic impacts	84~87p	
Anti-corruption	205-1	Operations assessed for risks related to corruption	96~97p	
	205-2	Communication and training about anti-corruption policies and procedures	98~101p	
	205-3	Confirmed incidents of corruption and actions taken	98~101p	
Anti-competitive Behavior	206-1	Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	98~101p	
Tax	207-4	Country-by-country reporting	106p	

GRI 300 : Environmental Performance

Classification	Code	Disclosure	Reporting page	Note
Energy	302-1	Energy consumption within the organization	39, 42, 108p	
	302-2	Energy consumption outside of the organization	108p	
	302-3	Energy intensity	108p	
	302-4	Reduction of energy consumption	37~44p	
	302-5	Reduction in energy requirements of products and services	45~46p	
Water and Effluents	303-1	Interactions with water as a shared resource	47~50p	
	303-2	Management of water discharge-related impacts	47~50p	
	303-3	Water withdrawal	39, 42, 108p	
	303-4	Water discharge	39, 42, 108p	
	303-5	Water consumption	39, 42, 108p	
Emissions	305-1	Direct (Scope 1) GHG emissions	39, 42, 108p	
	305-2	Energy indirect (Scope 2) GHG emissions	39, 42, 108p	
	305-3	Other indirect (Scope 3) GHG emissions	108p	
	305-4	GHG emissions intensity	108p	
	305-5	Reduction of GHG emissions	41p	
	305-6	Emissions of ozone-depleting substances (ODS)	-	N/A
	305-7	Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions	-	N/A
Waste	306-1	Waste generation and significant waste-related impacts	39, 42, 108p	
	306-2	Management of significant waste-related impacts	47~50p	
	306-3	Waste generated	39, 42, 108p	
	306-4	Waste diverted from disposal	39, 42, 108p	
	306-5	Waste directed to disposal	39, 42, 108p	
Supplier Environmental Assessment	308-1	New suppliers that were screened using environmental criteria	72p	
	308-2	Negative environmental impacts in the supply chain and actions taken	72~73p	

Initiative Index - GRI | Topic-specific Standards

GRI 400 : Social Performance

Classification	Code	Disclosure	Reporting page	Note
Employment	401-1	New employee hires and employee turnover	110p	
	401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	54~62p	
	401-3	Parental leave	55~56p	
Occupational Health and Safety	403-1	Occupational health and safety management system	63~65p	
	403-2	Hazard identification, risk assessment, and incident investigation	63~65p	
	403-3	Occupational health services	63~65p	
	403-4	Worker participation, consultation, and communication on occupational health and safety	63~65p	
	403-5	Worker training on occupational health and safety	63~65p	
	403-6	Promotion of worker health	63~65p	
	403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	63~65p	
	403-8	Workers covered by an occupational health and safety management system	63~65p	
	403-9	Work-related injuries	63~65p	
	403-10	Work-related ill health	63~65p	
Training and Education	404-1	Average hours of training per year per employee	57~59p	
	404-2	Programs for upgrading employee skills and transition assistance programs	57~59p	
	404-3	Percentage of employees receiving regular performance and career development reviews	60p	
Diversity and Equal Opportunity	405-1	Diversity of governance bodies and employees	55~56, 89, 110p	
Non-discrimination	406-1	Incidents of discrimination and corrective actions taken	52~54p	
Local Communities	413-1	Operations with local community engagement, impact assessments, and development programs	74~76p	
Public Policy	415-1	Political contributions	-	0 cases
Customer Health and Safety	416-1	Assessment of the health and safety impacts of product and service categories	63~65, 81~83p	
	416-2	Incidents of non-compliance concerning the health and safety impacts of products and services	-	0 cases

Initiative Index - SASB | Software & IT services

Classification	Code	Disclosure	Reporting page	Note
Environmental Footprint of Hardware Infrastructure	TC-SI-130a.1	(1) Total energy consumed, (2) percentage grid electricity, (3) percentage renewable	39, 42, 108p	-
	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	39, 42, 108p	-
	TC-SI-130a.3	Discussion of the integration of environmental considerations into strategic planning for data center needs	37~41p	-
Data Privacy & Freedom of Expression	TC-SI-220a.1	Description of policies and practices relating to behavioral advertising and user privacy	66~70p	-
	TC-SI-220a.2	Number of users whose information is used for secondary purposes	-	NHN uses data only for the purposes that users have consented to.
	TC-SI-220a.3	Total amount of monetary losses as a result of legal proceedings associated with user privacy	-	Zero
	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	-	(1) Zero, (2) Zero, (3) 0%
	TC-SI-220a.5	List of countries where core products or services are subject to government-required monitoring, blocking, content filtering, or censoring	-	N/A
Data Security	TC-SI-230a.1	(1) Number of data breaches, (2) percentage involving personally identifiable information (PII), (3) number of users affected	-	(1) Zero, (2) 0%, (3) Zero
	TC-SI-230a.2	Description of approach to identifying and addressing data security risks, including use of third-party cybersecurity standards	66~70p	-
Recruiting & Managing a Global, Diverse & Skilled Workforce	TC-SI-330a.1	Percentage of employees that are (1) foreign nationals and (2) located offshore	109~110p	-
	TC-SI-330a.2	Employee engagement as a percentage	-	Unmeasured
	TC-SI-330a.3	Percentage of gender and racial/ethnic group representation for (1) management, (2) technical staff, and (3) all other employees	109~110p	-
Intellectual Property Protection & Competitive Behavior	TC-SI-520a.1	Total amount of monetary losses as a result of legal proceedings associated with anti-competitive behavior regulations	-	Zero
Managing Systemic Risks From Technology Disruptions	TC-SI-550a.1	Number of (1) performance issues and (2) service disruptions; (3) total customer downtime	-	(1) Zero, (2) Zero, (3) Zero
	TC-SI-550a.2	Description of business continuity risks related to disruptions of operations	66~70p	-

Awards and Memberships

Memberships

As of February 2023

no.	Company	Organization	Location	Date of Affiliation
1	NHN	Korea Association of Game Industry (K-GAMES)	Korea	Apr. 2004
2		Game Culture Foundation	Korea	Oct. 2010
3		Korea Listed Companies Association	Korea	Aug. 2013
4		Korea Exchange	Korea	Aug. 2013
5		Consortium of CERT (CONCERT)	Korea	Nov. 2014
6		K-Internet	Korea	Dec. 2014
7		Game User Care Center (GUCC)	Korea	May. 2016
8		Fair Competition Federation (KFCF)	Korea	Nov. 2017
9		Korea Software Industry Association (KOSA)	Korea	Jan. 2020
10		Korea Startup Forum	Korea	Jan. 2022
11		Korea Venture Business Association	Korea	Feb. 2022
12	NHN Cloud	Korea Association of Cloud Industry	Korea	Apr. 2015
13		KDX	Korea	Apr. 2020
14		Korea AI Manufacturing Platform (KAMP.AI)	Korea	Nov. 2020
15		The Forum of Incident Response and Security Teams (FIRST)	Overseas	Nov. 2020
16		Cloud Native Computing Foundation (CNCF)	Overseas	Dec. 2021
17		Linux Foundation	Overseas	Dec. 2021
18		OpenInfra Foundation	Overseas	Dec. 2021
19		Korea Data Center Efficiency Association (KDCEA)	Korea	Jun. 2022
20		Korea Data Industry Association (KODIA)	Korea	Jan. 2023
21		Federation of Middle Market Enterprises of Korea (FOMEK)	Korea	Jan. 2023
22	NHN PAYCO	Korea Fintech Industry Association (KORFIN)	Korea	Jan. 2018
23		Open Banking Working Group	Korea	Mar. 2021
24		Open Fintech Alliance	Korea	Jul. 2022

Awards

Honoree	Honor	Honor-conferring Entity	Date
NHN	Main prize in Communication category at 2022 iF Design Award	International Forum, Germany	Apr. 2022
	Awarded by the Ministry of Science and ICT for contribution to the development of the information security industry	MSIT	Nov. 2022
	Awarded as an excellent social contribution company by Seongnam City	Seongnam City	Dec. 2022
	Selected as an excellent public disclosure corporation of 2022 in the stock market	Korea Exchange	Mar. 2023
NHN PAYCO	2023's Best Brand in Korean Consumers' Evaluation	Dong-A Ilbo	Feb. 2023
NHN Edu	Ministry of Health and Welfare Award at Asia LOHAS Industry Fair	Korea University Invention Association (KUVA) and Asia LOHAS Industry Fair Organizing Committee	Aug. 2022
NHN ACE	Special Prize in New Media at Maeil Business Daily Advertising Grand Prize	Maeil Business Newspaper	Nov. 2022
NHN AD	Three honors from Meta Agency First Awards 2022	Meta	Dec. 2022
NHN Cloud	Commendation from the Ministry of SMEs and Startups	Ministry of SMEs and Startups	Dec. 2022
	Commendation from the Deputy Prime Minister cum Minister of Education	Ministry of Education	Dec. 2022

Verification Statement on GHG emissions

Verification Statement on 2019~2021 Greenhouse Gas emissions & Energy consumption Report

kfq Korean Foundation for Quality

Introduction

Korean Foundation for Quality (hereinafter 'KFQ') has been engaged by 『NHN Corporation』 to independently verify its 2019~2021 Greenhouse Gas Emissions and Energy consumption Report (hereinafter 'GHG Inventory').

Verification Scope & Standard

KFQ's verification was conducted domestic business sites under operational control of 『NHN Corporation』. 'Guidelines on the Reporting and Certification of Emissions of Greenhouse Gas Emission Trading Systems (Notification No. 2021-278 of Ministry of Environment & IPCC Guidelines 2006)' were mainly applied in verification process but also the Company Guidelines for GHG Inventory was considered.

Verification Procedure

The verification was planned and carried out in accordance with the procedures stipulated in the verification guidelines for the operation of the greenhouse gas emission trading system (Notification No. 2021-112), and the verification guarantee level was carried out to meet the reasonable guarantee level.

Limitations of verification

Accuracy and completeness of emission data reported in the 'GHG Inventory' are subject to inherent limitations due to their nature and the methodology used in determining, calculating and estimating such data.

Conclusion/Opinion

Through verification procedures such as ISO 14064-1, ISO 14064-3, the following conclusions are presented on greenhouse gas emissions data.

① The Inventory Report has been stated in accordance with 'Rule for emission reporting and certification of greenhouse gas emission trading Scheme'

② The result of Material discrepancy satisfied the criteria for an organization that emits more than 500,000 tCO_2-eq shall not exceed 5% from total emissions as per "Greenhouse Gas and Energy Target Management Scheme"

③ Thus, KFQ conclude that the Greenhouse Gas Emissions of the Company in 2019~2021 is correctly calculated and stated in accordance with 'Rules for verification of operating the greenhouse gas emission trading scheme'.

2019~2021 Greenhouse Gas emissions and Enery consumption of 『NHN Corporation』

Year	Division	GHG emissions (tCO_2-eq)			Energy consumption (TJ)		
		Scope 1	Scope 2	Subtotal	Scope 1	Scope 2	Subtotal
2019	Play Museum	106.333	4,189.410	4,295	1.969	94.146	96
	NCC	-	7,026.782	7,026	-	147.385	147
	Total	106.333	11,216.192	11,321	1.969	241.531	243
2020	Play Museum	81.727	3,889.620	3,971	1.451	86.577	88
	NCC	13.111	7,828.34	7,841	0.189	164.183	164
	Total	94.838	11,717.960	11,812	1.640	250.760	252
2021	Play Museum	61.524	3,780.012	3,841	1.016	84.274	85
	NCC	-	9,650.994	9,650	-	202.221	202
	Total	61.524	13,431.006	13,491	1.016	286.495	287

* The above GHG emissions and Enery Consumption are cut in units of integer for each business site, and a difference of less than ±1 tCO2eq (or TJ) from the actual value of the system may occur.

IAF National Institute of Environmental Research

May 30th, 2022 | CEO **Ji-Young Song** Korean Foundation for Quality (KFQ) Ji Young Song

Verification Statement on GHG emissions

Verification Statement on 2022 Greenhouse Gas Emission Report

kfq Korean Foundation for Quality

Verification Target

Korean Foundation for Quality (hereinafter "KFQ") has conducted a verification of "Greenhouse Gas Emissions (hereinafter 'Inventory Report") of NHN Co., Ltd.(hereinafter the "Company") for 2022.

Verification Scope

KFQ's verification scope covered on all facilities and emission sources under the operational control and organizational boundary of company during 2022.

Verification Criteria

The verification process was based on 'Rule for emission reporting and certification of greenhouse gas emission trading Scheme (Notification No. 2021-112 of Ministry of Environment)', 'Rules for verification of operating the greenhouse gas emission trading scheme (Notification No. 2021-278 of Ministry of Environment)' and 'ISO14064-3' for every applicable part.

Level of Assurance

The Verification has been planned and conducted as the 'Rules for verification of operating the greenhouse gas emission trading scheme', and the level of assurance for verification shall be satisfied as limited level of assurance. And it was confirmed through an internal review whether the process before the verification was conducted effectively.

Verification Limitation

The verification shall contain the potential inherent limitation in the process of application of the verification criteria and methodology.

Verification Opinions

Regarding to the data of the Greenhouse Gas Emission Consumption from the report through the verification, KFQ provides our verification opinions as below;

① The Inventory Report has been stated in accordance with 'Rule for emission reporting and certification of greenhouse gas emission trading Scheme' and "ISO 14064-1.

② The data and information used in calculating the Greenhouse Gas emission were appropriate, reasonable, and no significant errors or omissions could affect verification statement were not found;

③ Thus, KFQ concludes that the Greenhouse Gas Emissions of Company in 2022 is correctly alculated and stated in accordance with 'Rule for emission reporting and certification of greenhouse gas emission trading Scheme'.

Division	GHG emissions (tCO_2-eq)			consumption (TJ)		
	Scope 1	Scope 2	Subtotal	Scope 1	Scope 2	Subtotal
Play Museum	77.028	3,908.496	3,986	1.342	86.578	87
NCC	0	10,539.014	10,539	0	220.710	220
Total	77.028	14,447.510	14,525	1.342	307.287	308

IAF National Institute of Environmental Research

May 22th, 2023 | CEO **Ji-Young Song** Korean Foundation for Quality Ji Young Song

Verification Statement on GHG emissions

Verification Statement on 2020-2022 Scope3 Greenhouse Gas Emission Report

kfq Korean Foundation for Quality

Verification Target

Korean Foundation for Quality (hereinafter 'KFQ') has conducted a verification of Scope3 Greenhouse Gas Emissions (hereinafter 'GHG Inventory') of NHN Co., Ltd. for 2020-2022.

Verification Scope

The verification Scope covered the emission categories selected by the company and the emissions between January 1st, 2020 to December 31st, 2022.

Verification Criteria

"WBCSD/WRI, Corporate Value Chain (Scope 3) Accounting and Reporting Standard", "Guidelines for Preparation of Environmental Performance Statements (MOE Notification 2021-65)", and "ISO14064-3". In addition, the following criteria and coefficients used by the company were applied.

- Criteria
  - ISO14067:2018, PAS 2050:2011
  - ISO14064-1:2018, GHG Protocol Corporate Standard
- Coefficient
  - WRI GHG Protocol Quantis Scope 3 Evaluator
  - KEITI Environmental Product Declaration Evaluation Factor(2021)
  - Ministry of Environment Guideline for Low-carbon Events(2008)
  - Rules for verification of operating the greenhouse gas emission trading scheme (Notification No. 2022-279 of Ministry of Environment)

Level of Assurance

The verification was performed in accordance with the procedures specified in ISO 14064-3 and the assurance level of the verification was performed to satisfy the limited assurance level.

Verification Limitation

This verification is not intended to verify the validity of the calculation criteria set by the company itself. Assurance results contain inherent limits of uncertainty inherent in the company's own calculation standards. Depending on our own calculation standards, significant differences may occur in the emission calculation results, which may affect comparability.

Verification Opinions

Through the verification process according to the 'ISO 14064-3:2006' KFQ could obtain reasonable basis to express following conclusion on the Greenhouse Gas Emission Report.

① Scope 3 emissions for 2020-2022 of company were properly calculated according to the verification standards.

② For Scope 3 emissions, no material errors or omissions were found, except for emissions information not considered within the selected category range.

③ The criteria and process established or estimated/assumed by the company to calculate emissions were transparently reflected in the internal calculation process.

Company Scope3 Emissions verification Results

Category		Scope3 Emissions		
		2020	2021	2022
1	Purchased goods & services	64,899	61,196	22,645
2	Capital goods	383	592	742
3	Fuel- and Energy-Related Activities Not Included in Scope1 or Scope2	1,323	1,459	1,508
4	Upstream Transportation and Distribution	2,947	1,667	561
5	Waste Generated in Operations	3	2	4
6	Business Travel	23	51	25
7	Employee Commuting	567	505	485
11	Use of Sold Products	1,217	1,700	1,010
12	End-of-Life Treatment of Sold Products	0.138	0.190	0.122
	Total	71,361	67,171	26,978

IAF National Institute of Environmental Research

May 22th , 2023 | CEO **Ji-Young Song** Korean Foundation for Quality Ji Young Song

Third-party Assurance Statement

To readers of NHN 2022 Sustainability Report

Introduction

Korea Management Registrar (KMR) was commissioned by NHN to conduct an independent assurance of its 2022 Sustainability Report(the "Report"). The data and its presentation in the Report is the sole responsibility of the management of NHN. KMR's responsibility is to perform an assurance engagement as agreed upon in our agreement with NHN and issue an assurance statement.

Scope and Standards

NHN 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 GRI standards 2021 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

- GRI Sustainability Reporting Standards
- Universal standards
- Topic specific standards
  - GRI 205: Anti-Corruption
  - GRI 302: Energy
  - GRI 303: Water
  - GRI 305: Emissions
  - GRI 401: Employment
  - GRI 404: Training and Education
  - GRI 413: Local Communities
  - GRI 418: Customer Privacy

As for the reporting boundary, the engagement excludes the data and information of NHN' 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 NHN 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 NHN 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 GRI Standards 2021. Nothing comes to our attention to suggest that the Report was not prepared in accordance with the AA1000AP (2018) principles.

Third-party Assurance Statement

Inclusivity

NHN 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

NHN 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

NHN 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 NHN actions.

Impact

NHN identifies and monitors the direct and indirect impacts of material topics found through the materiality assessment, and quantifies such impacts as much as possible.

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 NHN and did not provide any services to NHN that could compromise the independence of our work.

June 2023 Seoul, Korea

KMR SRV1000 Sustainability Committee Assurance AA1000 Licensed Report 000-129/V3-TGHJI

CEO E. J Hwang

2022 Sustainability Report

NHN Sustainability Report

NHN Play Museum, 16 Daewangpangyo-ro 645beon-gil, Bundang-gu,
Seongnam-si, Gyeonggi-do, 13487, Korea

Tel. 1544-6859(ARS) www.nhn.com

This product is made of material from well-managed
FSC®-certified forests, recycled materials,
and other controlled sources.

MIX
Paper from responsible sources
FSC® C110010

PRINTED WITH SOY INK