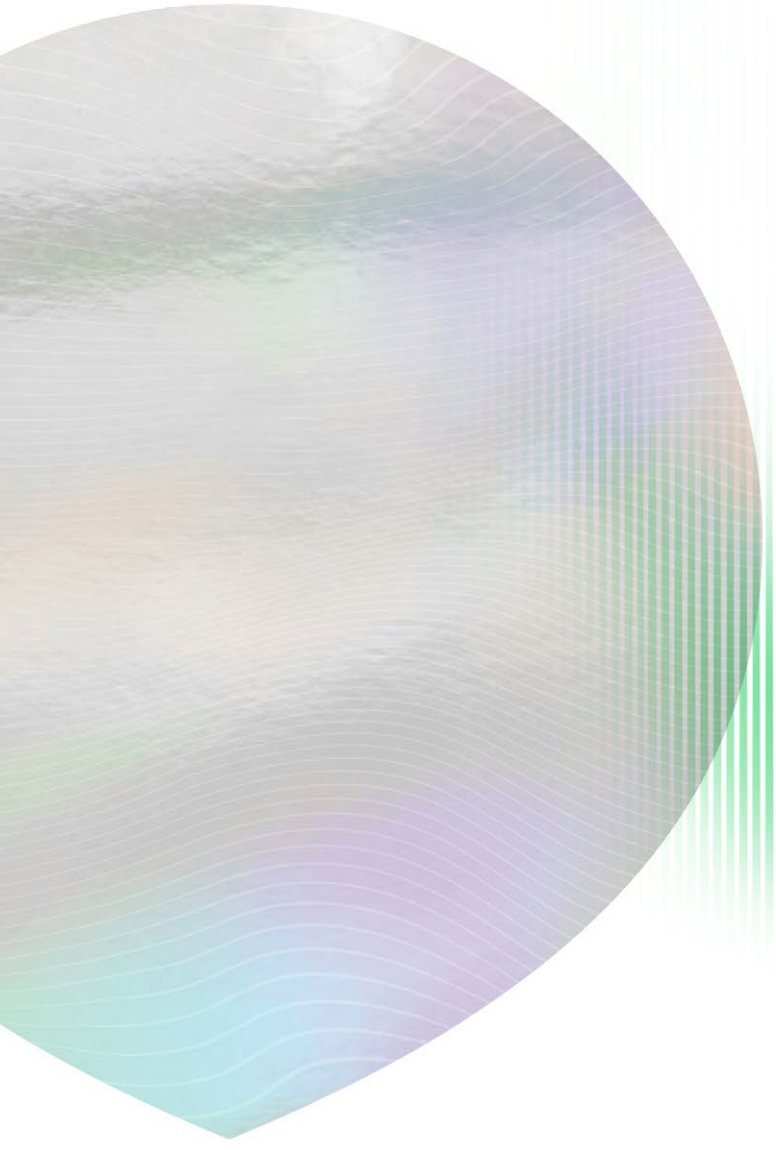
NAVER

NAVER SASB Report 2021

Sustainability Accounting Standards Board



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In 2020, NAVER began to publish three types of reports – ESG, SASB and TCFD reports – in order to better communicate with its stakeholders regarding its ESG management. As a way to further strengthen its stakeholder communication, NAVER published an Integrated Report that covers both business performance and ESG implementation status in a more comprehensive manner.

Sustainability Disclosure Topics & Accounting Metrics

Topic	Accounting Metric	Code	Reporting	Page
Environmental footprint of hardware infrastructure	(1) Total energy consumed, (2) percentage grid electricity, (3) percentage renewable	TC-IM-130a.1	●	4
	(1) Total water withdrawn, (2) total water consumed, percentage of each in regions with high or extremely high baseline water stress	TC-IM-130a.2	●	5
	Discussion of the integration of environmental considerations into strategic planning for data center needs	TC-IM-130a.3	●	6
Data privacy, advertising standards & freedom of expression	Description of policies and practices relating to behavioral advertising and user privacy	TC-IM-220a.1	●	8
	Number of users whose information is used for secondary purposes	TC-IM-220a.2	●	10
	Total amount of monetary losses as a result of legal proceedings associated with user privacy	TC-IM-220a.3	●	11
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Data security	(1) Number of data breaches, (2) percentage involving personally identifiable information (PII), (3) number of users affected	TC-IM-230a.1	●	13
	Description of approach to identifying and addressing data security risks, including use of third-party cybersecurity standards	TC-IM-230a.2	●	13
Employee recruitment, inclusion & performance	Percentage of employees that are foreign nationals	TC-IM-330a.1	●	16
	Employee engagement as a percentage	TC-IM-330a.2	●	17
	Percentage of gender and racial/ethnic group representation for (1) management, (2) technical staff, and (3) all other employees	TC-IM-330a.3	●	17
Intellectual property protection & competitive behavior	Total amount of monetary losses as a result of legal proceedings associated with anticompetitive behavior regulations	TC-IM-520a.1	●	18

Activity Metric	Code	Reporting	Page
Entity-defined measure of user activity	TC-IM-000.A	●	19
(1) Data processing capacity, (2) percentage outsourced	TC-IM-000.B	-	-
(1) Amount of data storage, (2) percentage outsourced	TC-IM-000.C	-	-

Accounting Metrics

ENVIRONMENTAL FOOTPRINT OF HARDWARE INFRASTRUCTURE

(1) Total energy consumed, (2) percentage grid electricity, (3) percentage renewable [TC-IM-130a.1]

		Unit	2018	2019	2020	2021
Total energy consumption	**Total**	TJ	**1,495**	**1,624**	**1,649**	**1,646**
	Green Factory	TJ	159	152	143	124
	1784	TJ	-	-	-	34
	Connect One	TJ	-	-	-	18
	NAVER Square	TJ	-	-	-	14
	Leased business sites	TJ	-	-	-	8
	Data Center GAK Chuncheon	TJ	1,336	1,472	1,506	1,448
Energy intensity	**Total**	TJ/ Revenue (KRW billion)	**0.27**	**0.37**	**0.31**	**0.24**
	Green Factory	TJ/ Revenue (KRW billion)	0.03	0.03	0.03	0.02
	1784	TJ/ Revenue (KRW billion)	-	-	-	0.00
	Connect One	TJ/ Revenue (KRW billion)	-	-	-	0.00
	NAVER Square	TJ/ Revenue (KRW billion)	-	-	-	0.00
	Leased business sites	TJ/ Revenue (KRW billion)	-	-	-	0.00
	Data Center GAK Chuncheon	TJ/ Revenue (KRW billion)	0.24	0.34	0.28	0.21
Direct Energy Consumption	**Total**	TJ	**6.7**	**5.7**	**4.5**	**9.7**
LNG	Green Factory	TJ	5.8	4.8	3.9	1.9
	1784	TJ	-	-	-	-
	Connect One	TJ	-	-	-	5.2
	NAVER Square	TJ	-	-	-	0.1
	Leased business sites	TJ	-	-	-	0.1
	Data Center GAK Chuncheon	TJ	0.3	0.4	0.4	0.5
Mobile combustion	Green Factory	TJ	-	-	-	1.6
	Data Center GAK Chuncheon	TJ	0.1	0.1	0.1	0.0
Diesel	Green Factory	TJ	0.04	0.01	0.01	-
	1784	TJ	-	-	-	-
	Connect One	TJ	-	-	-	0.0
	NAVER Square	TJ	-	-	-	0.0
	Data Center GAK Chuncheon	TJ	0.4	0.4	0.1	0.3
Indirect Energy Consumption	**Total**	TJ	**1,488**	**1,618**	**1,645**	**1,640**
Electricity	Green Factory	TJ	143	138	130	113
	1784	TJ	-	-	-	32
	Connect One	TJ	-	-	-	14
	NAVER Square	TJ	-	-	-	14
	Leased business sites	TJ	-	-	-	8
	Data Center GAK Chuncheon	TJ	1,335	1,471	1,506	1,448
Steam	Green Factory	TJ	10.0	8.8	8.5	8.2
	1784	TJ	-	-	-	2.9

		Unit	2018	2019	2020	2021
Total Energy Saving	**Total**	MWh	37,303	41,689	41,199	37,402
Saving through office management	Green Factory	MWh	138	517	837	1,819
	Data Center	MWh	511	511	514	512
Saving of electricity for air-conditioning and heating by adopting geothermal energy	Green Factory	MWh	101	101	101	101
	1784	MWh	-	-	-	684
Saving through natural cooling system	Data Center	MWh	36,371	40,343	39,534	33,989
Saving by producing renewable energy	1784	MWh	-	-	-	22
	Data Center	MWh	182	217	213	213
	Connect One	MWh	-	-	-	62
Renewable energy consumption	Total	MWh	283	318	314	1,082
Geothermal power	Green Factory	MWh	101	101	101	101
	1784	MWh	-	-	-	684
Solar power	1784	MWh	-	-	-	22
	Connect One	MWh	-	-	-	62
	Data Center GAK Chuncheon	MWh	182	217	213	213

* Began to manage data of 1784, Connect One, NAVER Square, and leased offices

(1) Total water withdrawn, (2) total water consumed, percentage of each in regions with high or extremely high baseline water stress [TC-IM-130a.2]

		Unit	2018	2019	2020	2021
Water consumption	**Total**	m^3	**177,335**	**176,517**	**167,213**	**173,139**
Municipal water supplies	Green Factory	m^3	92,058	101,929	76,438	54,625
	1784	m^3	-	-	-	5,284
	Connect One	m^3	-	-	-	14,463
	Data Center GAK Chuncheon	m^3	85,277	74,588	90,774	98,767
Water reuse	Green Factory	m^3	9,812	5,428	7,060	5,739
	1784	m^3	-	-	-	1,142
	Connect One	m^3	-	-	-	3,000
Water reuse rate	Green Factory	%	11	5	9	11
	1784	%	-	-	-	22
	Connect One	%	-	-	-	21

Sensitivity of Local Community Water Resource (as of the end of March 2022)

NAVER is well aware of the importance of the water resources that it uses in various ways for its business operations, including data center cooling. We therefore review and use the analyses results of WRI[1] and WWF2) to manage the impact of water usage on sensitivity of local community water resources. Our business sites are located in Seongnam-si, Gyeonggi-do (Green Factory and 1784); Sejong Special Self-Governing City (Data Center Gak Sejong); and Chuncheon, Gangwon-do (Data Center Gak Chuncheon and Connect One). Sensitivity of Water Resource at all business sites has been identified as low. However, instead of being complacent, we are striving to conserve water resources by introducing various water recycling systems, such as water-saving sanitary devices and heavy water treatment systems, at all its workplaces.

Analysis organization	Water resource sensitivity level				
[WRI] Water Risk Atlas	Low	Low-Medium	Medium- High	High	Extremely High
	0-1	1-2	2-3	3-4	4-5
NAVER business sites		√			
[WWF] Water Risk Filter	Very Low Risk	Low Risk	Medium Risk	High Risk	Very High Risk
	1.0-1.8	1.8-2.6	2.6-3.4	3.4-4.2	4.2-5.0
NAVER business sites			√		

[1] Results of the global water resource sensitivity analysis presented by the World Resources Institution
[2] Results of the global water resource sensitivity analysis presented by the World Wide Fund for Nature

Discussion of the integration of environmental considerations into strategic planning for data center needs [TC-IM-130a.3]

Data Center GAK Chuncheon

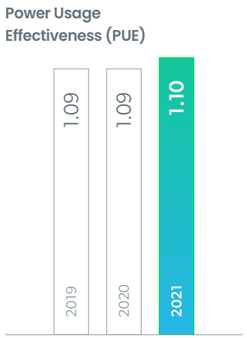
Data Center “Gak Chuncheon”

Opened in June 2013, Data Center “GAK Chuncheon” was built by making many efforts and applying many technologies to reduce server heat in an eco-friendly way. As a result, it became the world’s first data center to receive “Platinum” certification, which is the highest grade, at LEED[1] New Construction (NC) 2009, an international environmentally-friendly building certification system. It uses Snow Melting[2], photovoltaic and solar thermal power generation[3], and a natural cooling system using outside air. In particular, the Data Center GAK Chuncheon South Wing was opened in 2017, after the opening of the North Wing in 2012 and West Wing in 2014, and it adopted a wide array of nature-friendly technologies to significantly improve energy efficiency, aiming to become the world’s top data center. Receiving recognition for these efforts, Data Center GAK Chuncheon received the Minister’s Citation at the Climate Week 2016, won the Energy Champion Prize in 2017, and received the ‘Grand Leader’s Award’ from the Climate Change Center in 2018. It also won a prize for creating social value from the Korea Energy Agency in recognition of its use of innovative energy saving technology.

Data Center GAK Chuncheon has developed the Air Misting Unit (AMU) and the NAVER Air Membrane Unit (NAMU) – eco-friendly technologies that can reduce server room temperatures using cold air and underground water – and expanded the scope of their application to maximize energy savings. Thanks to these, it maintains a power usage effectiveness (PUE)[4] level that is closest to 1, the best performance among data centers in South Korea. This is the top level even in comparison to the PUE of global data centers.

Data Center GAK Chuncheon uses photovoltaic energy and also invests in relevant businesses. It reduced 213 MWh of power consumption through photovoltaic power generation, leading to the reduction of some 95 tons of GHG emissions. In addition, by using such technology as natural cooling systems that uses external air, 33,989 MWh of power was saved. It manages energy as efficiently as possible, including through LED lighting and EVs, and uses the air heated in the process of cooling computer servers to operate greenhouses. All plumbing fixtures are water-saving, and uncontaminated water is purified and reused in bathroom fixtures where possible. Rainwater is collected to be used as cooling water or for firefighting.

[1] LEED: Leadership in Energy and Environmental Design, Environmentally-friendly building certification developed by the US Green Building
[2] A road heating system which uses waste heat in the wintertime
[3] Used for outdoor lighting and greenhouse heating



Data Center “Gak Sejong”

“GAK Sejong” is NAVER’s Internet data center (IDC), representing our promise to deliver technological stability and efficiency as well as nature conservation. We think thoroughly how to create our new space as a new standard of healthy living and future industry for generations to come. Spanning a gross area of 293,697 m2 that can accommodate more than 100 thousand servers, Data Center GAK Sejong is slated for completion of construction in 2023. GAK Sejong is a large-scale IDC that is at least six times more extensive than GAK Chuncheon, with an efficient management system using uses brainless robots in place.

Ever since the location selection, development of GAK Sejong was implemented in the direction of raising energy efficiency while coexisting with Nature. When choosing a location, we excluded sites with a history of land damage, such as reclaimed land and landfill sites, and also avoided changing the land characteristic during the selection period to develop a new industrial complex. We also purchased raw land and set the limit of the development to only essential range, in our earnest efforts toward minimizing forest damage and restoring vegetation.

GAK Sejong is being built with the goal of achieving a higher PUE than that of GAK Chuncheon by applying a hybrid cooling system. The hybrid cooling system that will be applied to GAK Sejong was developed to use natural outdoor air as much as possible and therefore can improve cooling energy efficiency by as much as 20% in comparison to GAK Chuncheon. In addition, we plan to save data center cooling energy by improving mechanical infrastructure facilities, including late-night electric power, freezer, and cooling tower, and by applying new technologies. By optimizing cooling system arrangement, we will enhance electric power efficiency and also strengthen stability of heating, ventilating, and air conditioning equipment.

GAK Sejong currently produces an annual 300 MWh renewable energy through a rooftop photovoltaic generation system, and uses a geothermal system for its cooling and heating. Waste heat retrieved from the server room is used to supply warm water in the building and for floor heating of the wide indoor space of the operation building. Also, we applied the Snow Melting system to an internal beltway, and used other such accumulated know-how from GAK Chuncheon to design GAK Sejong in a way that leads to higher energy efficiency.

GAK Sejong also preserves ecological diversity of business sites whose importance has recently been on the rise, and the ecological preservation archive at GAK Sejong is showcasing NAVER’s efforts to preserve ecological diversity. Going forward, we will seek for ways to set construction ecological environment preservation measures as a corporate-wide policy.

CASE STORY

Ecological diversity preservation activities of “GAK Sejong”

When choosing a site for “GAK Sejong” and designing it, NAVER placed one of its top priorities on ecological diversity. We accordingly strive to minimize the developed site and purchased raw land for an area that inevitably needed to be additionally developed, thereby mitigating ecological destruction as much as possible. At the GAK Sejong construction site, in particular, we investigated the ecosystem prior to the construction and strived to preserve the raw land ecosystem. To this end, we conducted a detailed ecology survey and recorded the ecological characteristics of the surrounding area prior to architectural design, and in the construction stage, we are transplanting trees growing in places where require inevitable logging, in our efforts to minimize our environmental impact.

DATA PRIVACY, ADVERTISING STANDARDS & FREEDOM OF EXPRESSION

NAVER's Principles on Personal Information Protection

1. NAVER complies with all laws and international standards related to personal information protection.
2. NAVER transparently discloses processing of user's personal information at all times.
3. NAVER respects user's exercise of the right of self-determination regarding personal information.
4. NAVER collects minimum data in accordance with the purpose and responsibly manages personal information.
5. NAVER considers user privacy protection with top priority.

NAVER Privacy Center

Transparency Report

Privacy Report

Privacy Whitepaper

NAVER Personal Information Protection Blog

NAVER Privacy TV

Description of policies and practices relating to behavioral advertising and user privacy [TC-IM-220a.1]

Privacy Protection System

NAVER's Chief Privacy Officer (CPO) concurrently serves as the Chief Information Security Officer (CISO), managing data privacy protection risks throughout the company. To comply with all data and privacy protection laws at home and abroad, we have established global privacy compliance regulations that meet global standards and are expanding its application scope. Having focused on protecting users' privacy with respect to our personalization services and NAVER Pay services, which may be considered sensitive in terms of privacy, we have acquired the SOC (Service Organization Controls) certification, an international accreditation of businesses' service reliability and internal controls. Since acquiring SOC 2 and SOC 3 (Sys Trust) for the first time in South Korea in 2013, NAVER has undergone rigorous audits every year and renewed the SOC certification in five areas – security, availability, process integrity, confidentiality, and privacy – in an effort to verify the safety of our services and the reliability of service organizations.

NAVER is committed to the concept of "Privacy as a Service (PaaS)", providing the protection of data and privacy as a service, and always seeking for better ways to communicate with users with respect to NAVER's privacy protection. We became the first in South Korea to open the "Privacy Center", in 2013 whereby we transparently disclose our "personal information protection principles" that are applied to overall NAVER services as well as each of our service operation policies. In addition, we publish the Transparency Report twice a year to regularly and transparently disclose the statistics of personal information provided to investigative agencies in accordance with relevant laws. We also publish the annual Personal Data Protection Report of our personal information protection activities, and the "NAVER Privacy White Paper" detailing the results of the in-depth research we conduct on the protection of user privacy, thereby providing various basic research materials on subjects that require social discussions and agreements. In addition, we provide all the global personal information and privacy-related laws and guidelines including those of the U.S. and Japan in the Global Support menu of the Privacy Center. We also run an official blog and other social media platforms as well as the NAVER Privacy TV where we hold discussions with users in the event of a personal information and privacy issue, thus expanding communications with users.

Privacy Protection System

NAVER strictly applies the "privacy by design" principle for user's personal information protection as a way of protecting the privacy and data of users throughout the entire lifecycle of our services, ranging from service planning to service closing. As advance control procedures, we operate Privacy Impact Assessment (PIA), to check whether we are complying with relevant laws and internal regulations, identify the user privacy sensitivity, and manage risks as well as nPIMS for constant advice. PIA refers to the process of identifying compliance with relevant laws and internal regulation as well as privacy sensitivity in advance, and managing related risks as a way to make privacy protection the core of all services offered by NAVER.

As a follow-up control process, we conduct an annual assessment of the integrity of service privacy protection, location-based services, mobile app privacy, and personal information partners (trusted companies processing personal information on behalf of NAVER) as part of our effort to minimize data protection risks. In particular, we inspect the handlers of outsourced personal data using 40 criteria we have set up in accordance with the Personal Information Protection Act, each of which classified into high/medium/low levels depending on the severity of risks; each low level is considered a violation and assigned a penalty point in accordance with a preset penalty table. Inspection results are reviewed and confirmed by NAVER's CPO, and improvement measures are advised in accordance with the performance level of the handlers. Those whose personal data protection level is evaluated to be low or who have continuously failed to implement improvement measures are urged to maintain or improve the level of their personal data protection with the treat of a contract termination or other appropriate sanctions.

In addition, we conduct a separate "inspection of the status of compliance with measures to ensure the safety of uniquely identifiable information" including the regular "inspection of personal information protection status of HR department and finance department" and other departments that process unique identification information such as resident registration numbers.

The status inspection includes inspection and improvement activities regarding the violation of the privacy of the data subject which can be human rights risk. We have established the "Guidelines on Data Breach Response" to improve our response procedures and existing personal data management system and respond to potential personal data leakages more effectively.

Employee Education on Privacy Protection

NAVER runs education courses on various subjects so that its employees can choose and take necessary training, ranging from basic to in-depth courses, and enhance their awareness about personal information protection. In 2021, we conducted mandatory employee education on data protection for all employees of NAVER's 25 major subsidiaries, including full-time staff, contract workers, and expatriates. We divided the privacy protection education by level (basic, introductory, practical) to allow our employees to choose from a wide range of courses according to their job characteristics and personal interests. We had our privacy officers engage in the filming and production processes to ensure that the training materials would be of practical help to our employees' job performance. In particular, we launched courses on global privacy protection in the first half of 2021 to further strengthen our global privacy compliance capabilities. Good example includes the new course designed to help employees better understand the Japan Act on the Protection of Personal Information in preparation for the entry of the "MySmartStore" service into the Japanese e-commerce market.

Privacy protection training for employees		1H 2021		2H 2021	
		No. of participants	Completion rate	No. of participants	Completion rate
By employment type	Full-time	3,866	98.3%	2,065	99.7%
	Executives	117	100%	122	100%
	Part-time	21	100%	19	100%
	Expatriates	23	100%	1	100%
	Interns	69	94.2%	1	100%
Total		**4,096**	**98.3%**	**2,208**	**99.7%**

Information on NAVER's Customized Ads

Privacy Enhancement Reward for Users

As a way to strengthen the protection of user personal information and privacy, NAVER established "Privacy Enhancement Reward (PER)" system in 2016 for the first time in South Korea. PER is a concept that is very similar to "Bug Bounty" which receives reports on technological security-related vulnerabilities and provides rewards. PER is however different as it consists of reporting legal/institutional violations in relation to service operation; suggesting service operation and functionality improvements; and recommending required services. Any user can directly present opinions on NAVER services, and a prescribed reward is provided according to the respective opinion's suitability, practicality, and level of contribution. In 2021, we held the "PER Gold Medal Challenge" event in July, a month of data protection, encouraging more users to participate in PER. We received a total of 41 opinions during the year, of which 23 opinions were rewarded with NAVER Pay points worth a total of KRW 1,695,000.

Maximizing the User's Right to Self-Control Personal Information

As one of its data protection principles, NAVER respects users' exercise of their right to personal information self-determination as specified in the Constitution, making diverse efforts to guarantee this right. Since 2013, for the first time in South Korea, we have started providing the history of "collection and use of personal information" and of "information provision to a third party", both of which occur when using NAVER services, with the consent of the person through the "Status of Personal Information Usage" page tailored to users' particular behavior. In July 2020, we began to additionally disclose the date of the consent the user granted to collection and provision of personal information to a third party, and also reorganized the personal information usage status page so that users can easily withdraw their consent to the collection and provision of personal information to a third party within all services of NAVER, providing users with a one-stop process to exercise their right to control their personal information.

Regarding customized advertising that uses behavior information, we disclose operational principles on collecting, retaining, and destroying information as well as users' exercise of the right to control and damage relief methods through the "Information on NAVER's Customized Ads page". With top priority being placed at the user privacy protection, we strive to offer useful adverting to users and effective advertising platform to advertisers. Across the globe, demand for user privacy-related rights is growing as a result of the enactment of privacy protection laws by countries, including the EU GDPR and US CCPA. Against this backdrop, we will continue our preemptive efforts to protect users' right to control their own information to the global level.

Children's Online Privacy Protection

Children are on of NAVER's valued customers. They are familiar with the online environment and demonstrate a high level of adaptability as service users. Nevertheless, their awareness of the importance of privacy or personal information is relatively low compared to adults, as is their cognitive ability to figure out the risks associated with new technologies and services. Special attention is therefore required for service design and usage guidance for children. Since 2009, NAVER has provided education through the "Children's Privacy Protection Class" for Junior NAVER members. In 2015, we published the "10 Rules Students Should Know to Protect Their Social Media Privacy". In addition, we are striving to strengthen children's right to protect their personal data by offering a children's version of the "Consent to Collection and Use of Personal Information" when they sign up for NAVER membership. Also, the "personal information usage details notification mail" for users aged less than 14 is written in a way that they can easily understand its content. In 2020, NAVER published a privacy white paper with the theme of "protecting children's online privacy" in an effort to figure out a differentiated approach to privacy and personal data protection for children.

To bolster children's rights to personal information protection, we have launched the "NAVER Privacy TV for Children" channel within the Junior NAVER service and produced educational videos on personal information protection for children. In July 2021, "Information Protection Month," we organized campaigns and events under the theme of "SNS rules to be followed to protect children's personal information" for both children and adults. In addition, our band app "Band for Kids" and Band Web have acquired PRIVO's COPPA (Children Online Privacy Protection Act) Safe Harbor certification, verifying the global level of our children's personal information protection system.

Number of users whose information is used for secondary purposes [TC-IM-220a.2]

There are no cases where NAVER used or provided personal information outside the scope of the purpose for which it initially received consent.

Classification		2018	2019	2020	2021
Number of users whose information is used for secondary purposes	Cases	0	0	0	0

Total amount of monetary losses as a result of legal proceedings associated with user privacy [TC-IM-220a.3]

NAVER has only one personal information leakage incident, which was the erroneous sending of AdPost receipt mail in 2019. In the process of providing receipts needed for year-end tax adjustment to users via email, data that was more than necessary was included in the receipt file. On June 5, 2020, the Korea Communications Commission imposed upon us an administrative fine of KRW 13 million and a penalty surcharge of KRW 28.2 million for having violated the Act on the Promotion of Information and Communications Networks and Information Protection, along with a corrective action order.

To prevent such and other similar accidents from happening again, we have since inspected the entire outbound data transfer systems of ours, stopping all personal data outbound transfers, and have installed a new work process in which users are required to log in to access their personal information, which has prevented infringements during data transmissions or the transmission of excess data due to a transmission error. We are strengthening the education of developers and personal data handlers on the causes of accidents while enhancing our employees' security awareness to ensure that the same mistake will not be repeated.

On May 26, 2021, NAVER was requested by the Personal Information Protection Commission to take corrective action about the non-compliance with its obligations under the Personal Information Protection Act. Although there was no leakage of users' personal information, the Commission requested the corrective action as a result of its investigation into our personal information handling and managing status as well as our compliance with the Act. Judging that the merchants of NAVER Smart Store Center were "personal information handlers" of NAVER" the Commission ruled that we had violated Article 29 of the Personal Information Protection Act as the personal information handlers could access the merchant system from the outside just with their IDs and passwords without having to go through any additional authentication process, and it imposed upon us an administrative fine of KRW 8.4 million.

In response, we have strengthened our privacy protection guidance and education tailored to business operators in a bid to raise their awareness of personal information protection. In 2021, we sent a privacy protection guidance email to all businesses in our platforms with the themes of "Basic Rules for the Protection of Our Customers' Personal Information" and "Case Studies about How to Prevent Personal Information Leakage/Exposure Accidents". In addition, our Chief Privacy Officer (CPO) gave an online data protection lecture under the theme of "privacy issues A to Z that small businesses need to know" to small business owners using Smart Store.

Classification		2018	2019	2020	2021
Total amount of monetary losses as a result of legal proceedings associated with user privacy	KRW 10,000	-	-	4,020	840

(1) Number of law enforcement requests for user information, (2) number of users whose information was requested, (3) percentage resulting in disclosure [TC-IM-220a.4]

NAVER is reporting the means and frequency through which user information is provided by disclosing statistics related to user information requested by the government and judicial authorities over a specific period through the Transparency Report. NAVER became the first company in South Korea to disclose statistics on user information provision requests made by investigative agencies through the NAVER Personal Data Protection Report in January 2015, and has been disclosing its Transparency Report biannually to protect and guarantee user rights.

The terms "requested" and "processing" used in the statistics of the Transparency Report refer to the number of documents that we have received requests from investigative agencies and processed accordingly. In addition, "provided" information refers to the number of units of user data actually provided. A request to provide information on several users can be made through one document.

NAVER ceased providing communications materials in compliance with a court ruling rendered in October 2012 in relation to confirmation of whether a business operator has a substantial examination obligation regarding the provision of communications materials and concerns over non-compliance with the warrant-requirement principle. We have therefore not complied with any requests for communications materials since October 2012.

Transparency Report Statistics

Classification		Unit	2018	2019	2020	2021
Seizure warrant	Requested	Cases	8,145	7,712	7,248	7,307
	Processing		6,710	6,109	5,269	5,269
	Provided		6,966,563	318,380	1,304,804	4,036,190
	Handling rate	%	82	79	73	72
Communications restriction measure	Requested	Cases	17	18	6	5
	Processing		17	18	6	5
	Provided		71	82	76	94
	Handling rate	%	100	100	100	100
Communications fact confirmation material	Requested	Cases	4,255	4,266	2,506	2,094
	Processing		3,629	3,701	2,083	1,821
	Provided		12,798	8,139	4,793	3,997
	Handling rate	%	85	87	83	87
Communications material	Requested	Cases	311	119	49	33
	Processing		0	0	0	0
	Provided		0	0	0	0
	Handling rate	%	0	0	0	0

* In terms of seizure warrants, in case of the provision of a log record, not user identification information, each log was tallied as one case.
* In case of the request for the provision of registered user's personal information, and if there is no other information than membership withdrawal date, the case was tallied as zero.

List of countries where core products or services are subject to government-required monitoring, blocking, content filtering, or censoring [TC-IM-220a.5]

NAVER operates its business in 13 countries across the globe and is providing services in these countries. We observe each country's policy management criteria for posting content.

DATA SECURITY

(1) Number of data breaches, (2) percentage involving personally identifiable information (PII), (3) number of users affected [TC-IM-230a.1]

NAVER has only one personal information leakage incident, which was the erroneous sending of AdPost receipt mail on April 29 and 30, 2019. In the process of providing users with the receipts needed for year-end tax adjustment via email, data that was more than necessary was included in the receipt file.

2,331 users were affected by the incident, while the number of receipts sent amounted to 1,940,768. On June 5, 2020, NAVER was requested by the Korea Communications Commission to take corrective action as a business that had not complied with the Act on the Promotion of Information and Communications Network Utilization and Information Protection, Etc.

To prevent such and other similar accidents from happening again, we have since inspected the entire outbound data transfer systems of ours, stopping all personal data outbound transfers, and have installed a new work process in which users are required to log in to access their personal information, which has prevented infringements during data transmissions or the transmission of excess data due to a transmission error. We are strengthening the education of developers and personal data handlers on the causes of accidents while enhancing our employees' security awareness to ensure that the same mistake will not be repeated. In addition, we have improved the "Guidelines on Data Breach Response" based on our experience in responding to the wrong delivery of AdPost receipt emails, while overhauling the internal system to ensure regulatory reporting and user notification as part of follow-up measures to be taken upon detecting any personal information leakages.

Classification	Unit	2018	2019	2020	2021
Number of data breaches	Cases	0	1	0	0
Percentage involving personally identifiable information (PII)	%	0	100	0	0

* PII is calculated by tallying the percentage of users whose PII was exposed against users who was affected by the personal information leakage incident

Description of approach to identifying and addressing data security risks, including use of third-party cybersecurity standards [TC-IM-230a.2]

Data Protection System

NAVER has in place data protection regulation systems that fit our unique environment and culture, while also having unified the data protection management systems of NAVER and its subsidiaries by categorizing the system into the four areas of general, service by stage, global advancement, and security/infrastructure. We acquire information protection certifications with credibility at home and abroad to verify the stability of our services and the reliability of our operating systems. Our guiding principle is 24/7 security reinforced by internal vulnerability diagnosis, error management, mock hacking and so forth.

NAVER manages information security risks at the BOD level to ensure that information security risks are monitored and controls at the highest governance level. On matters that have a company-wide impact, the Risk Management Committee under the BOD receives a detail report from, and subsequently advises, the CPO/CISO who then carries out the advice and reports to the BOD the results of steps taken.

Furthermore, NAVER manages company-wide data information risks through the Privacy Protection Committee chaired by the CEO and staffed by key executives; and has since 2007 been conducting privacy research through the NAVER Personal Information Protection Committee, composed of leaders from academic and legal circles in the field of personal information protection, in a bid to effectively respond to users' increasing demand for privacy resulting from business expansions.

Data Protection Certification

ISO/IEC 27001, 27017, 27018, 27701	International certification for data protection management system	NAVER maintains international standard certifications granted by the ISO (International Organization for Standardization) and the IEC (International Electro-technical Commission) for the information protection management system governing its personalized services such as mail and cloud, as well as company-wide services such as cafes, blogs and NAVER Pay.
ISMS-P	Certification for data protection and personal information protection management system	The ISMS-P certification is granted by KISA (Korea Internet & Security Agency) to certify that an organization's measures and activities meet its certification standards for (personal) information protection. NAVER has been certified as appropriate in recognition of the measures and activities it has implemented to secure the stability of information and communications networks and protect personal information.
ISMS	Certification for data protection management system	NAVER has been certified by the Ministry of Science, ICT and Future Planning for its continuous implementation of appropriate information protection activities in the operation of NAVER Data Center "Gak" according to the Act on the Promotion of Information and Communications Network Utilization and information Protection.
SOC	Certification for reliability in providing and operating services	The SOC certification verifies the stability of services and internal controls in accordance with the international standards established by the International Auditing and Assurance Standards Board (IAASB). In 2013, NAVER became the first company in Korea to acquire the SOC 2 and SOC 3

Efficient, Transparent Management Of Security Threat Factors

In managing service security, NAVER strives to apply the "Security by Design" and and "Usable Security" principles to all our service areas. We have a security review process for service planning and designing, and a security check process that is implemented upon completion of development, and a DevSecOps support system that we have developed based on open-source software (OSS), a source repository for smooth collaboration, which minimizes developer interventions in outputs that are being developed while enabling an automatic code security review.

Even the most effective planning, design, and development cannot ensure 100% prevention of security bugs. We have therefore developed and operated our own security bug bounty (https://bugbounty.NAVER.com/ko/) program that can identify and deal with security bugs that we are not aware of before an accident occurs, with the help of an external analyst. The program is evaluated as the most outstanding case among companies in South Korea. In 2021, 162 people participated in NAVER Bug Bounty, and 291 cases were reported, leading to a total of KRW 110 million in rewards.

In 2018, NAVER was registered as a CVE Numbering Authority (CNA) with the authority to issue vulnerabilities of its software under the international standard management number – Common Vulnerabilities and Exposures (CVE). NAVER has since established itself as a transparent company that can systematically manage and quickly respond to security vulnerabilities. We have issued a total of 13 CVE numbers since participating in CNA, including three issued in 2021.

Security Improvements

Classification	Unit	2018	2019	2020	2021
No. of areas of improvement for security that were discovered	Cases	1,128	1,344	1,158	1,062
Number of completed mitigation measures	Cases	1,126	1,282	1,022	973
Percentage of mitigation	%	99.82	95.38	88.25	91.62
Mitigation within the given deadline	Cases	728	744	694	650
Mitigation after the given deadline	Cases	370	513	293	270
Mitigation with no specific deadline	Cases	28	25	35	53

Bug Bounty Statistics

Classification	Unit	2018	2019	2020	2021
No. of reported bugs	Cases	208	533	314	291
No. of persons who made a report	Persons	31	129	154	166
Reward	KRW 10,000	4,425	11,900	8,089	11,553

Named Common Vulnerabilities and Exposures (CVE)

Classification	Unit	2018	2019	2020	2021
No. of cases of named CVE	Cases	4	2	3	3

EMPLOYEE RECRUITMENT, INCLUSION & PERFORMANCE

Percentage of employees that are foreign nationals [TC-IM-330a.1]

NAVER strives to create a flexible organizational culture unique to NAVER, where people from diverse backgrounds, including gender and nationality, come together. NAVER is taking the lead in creating an environment where people can work according to their capabilities and contribute to society based on mutual respect.

NAVER is running various programs for employees with foreign nationality to network and adapt to the organization. Good examples include "Global Lunch", during which foreign employees meet to have lunch and networking opportunities, and we also encourage them to share information, know-how, and experiences at work and in South Korea through the NAVER Works chat room.

Number of Employees by Nationality

Country	Unit	2018	2019	2020	2021
New Zealand	Persons	1	2	2	2
Taiwan	Persons	0	0	1	1
Germany	Persons	1	1	1	0
U.S.	Persons	6	6	8	10
Sweden	Persons	1	1	1	2
Switzerland	Persons	1	1	1	1
Argentina	Persons	1	1	1	1
Azerbaijan	Persons	1	1	0	0
U.K.	Persons	2	1	1	1
Austria	Persons	1	1	1	1
India	Persons	3	0	0	0
Japan	Persons	1	2	3	2
China	Persons	4	4	4	6
Kazakhstan	Persons	1	1	1	1
Canada	Persons	6	3	2	4
Kyrgyzstan	Persons	2	0	0	0
Republic of Tajikistan	Persons	0	1	1	1
Thailand	Persons	2	0	0	0
Turkmenistan	Persons	1	0	0	0
France	Persons	0	1	2	2
Australia	Persons	1	0	1	0

Employee engagement as a percentage [TC-IM-330a.2]

Items	Positive response rate[1]
Organizational culture	68%
"Voluntary engagement"	68%
"Execution environment"	67%

In 2021, NAVER conducted an internal organizational culture diagnosis in cooperation with an external professional organization to create a healthier organizational culture. 72% (2,938 people) of all employees participated in the diagnosis, with 68% of them showing a positive perception of the overall organizational culture. Notably, more than half of the total responses was positive in the areas of "voluntary engagement" and "establishment of an execution environment" – two key factors of organizational culture.

The analysis result of NAVER's organizational culture profile based on these results shows that about half (47%) of the respondents belong to an effective group. It is a comparable level to that of global IT companies as well as more positive than that of domestic companies[2]. Going forward, we will make continuous efforts to create a workplace where our employees can work happily while being proud of NAVER's services and user experience.

Percentage of gender and racial/ethnic group representation for (1) management, (2) technical staff, and (3) all other employees [TC-IM-330a.3]

As of the end of 2021, NAVER's male-to-female ratio is 63:37[3] with female leaders accounting for approximately 27% of overall leader positions as the result of a gradual increase over the years. Also, women account for 16% of the C-level senior management, including the director for CIC (Company-in-Company), an independent in-house organization. NAVER does not impose glass ceiling limitations and any other gender disadvantages. We also encourage employees to use maternity and parental leave to ensure that the opportunities for female talents are not restrained due to pregnancy and childbirth. In addition, other than wage differential by job group, there is no wage differential by gender in NAVER.

Employment

Classification			Unit	2018	2019	2020	2021
Total number of employees			Persons	3,611	3,523	4,103	4,696
By gender	Male		Persons	2,309	2,262	2,639	2,967
	Female			1,302	1,261	1,464	1,729
By job	Office	Total	Persons	1,573	1,540	1,717	1,949
		Male	Persons	629	628	697	750
		Female		944	912	1,020	1,199
	Technical	Total	Persons	2,038	1,983	2,386	2,747
		Male	Persons	1,680	1,634	1,942	2,217
		Female		358	349	444	530
Female talent	Percentage of female employees		%	36.1	35.8	35.7	36.8
	Percentage of female managers (leader position)			23.3	24.6	24.6	26.9
	Percentage of female executive (C-level)			-	-	30.0	16.0

[1] Positive response rate: Percentage of employees who answered 5 (strongly agree) or 4 (agree) on a 5-point scale

[2] Based on the diagnosis results of some 26,000 people working for 10 global software and platform companies and 20,000 people working for 60 domestic companies

[3] Based on full-time employees

INTELLECTUAL PROPERTY PROTECTION & COMPETITIVE BEHAVIOR

Total amount of monetary losses as a result of legal proceedings associated with anti-competitive behavior regulations [TC-IM-520a.1]

In January 2021, NAVER paid an administrative fine for abusing its market-dominant position according to Article 3-2 of the Monopoly Regulation and Fair Trade Act and for non-compliance with the prohibition of unfair trade practices according to Article 23 of the Act. The Korea Fair Trade Commission requested corrective action of NAVER's alleged manipulation of the search algorithm to expose its shopping and video services first. However, this was a part of our efforts to improve our shopping search algorithm based on the principles of diversity so that we could maintain diversity in search results by preventing the overconcentration toward specific companies, aimed at providing more opportunities for small business owners to expose their products. The main reason why users visit the NAVER Shopping site is the convenience of comparing and purchasing products sold at multiple malls at once. In 2013, NAVER introduced a logic banning the consecutive exposure of more than three products from the same shopping mall in order to secure the diversity of search results, as a way to put an end to the dominance of search results for a limited number of open market products and to give more opportunities to distinctive SOHO mall products of SMEs. In September 2013, we limited the number of exposures on Smart Store to eight, but as it was considered too unfavorable to the merchants of Smart Store, the number was later increased to ten.

The Korea Fair Trade Commission imposed a fine of KRW 27.9 billion (KRW 26.6 billion for shopping, KRW 1 billion for real estate, KRW 300 million for video) on us. However, as the execution for the video segment has been suspended, we have excluded the amount from the table below.

Classification		2018	2019	2020	2021
Monetary losses as a result of legal proceedings associated with anti-competitive behavior regulations	KRW million	0	0	0	27,667

Activity Metrics

ENTITY-DEFINED MEASURE OF USER ACTIVITY

Entity-defined measure of user activity [TC-IM-100.A0]

NAVER is a leading Internet search portal in South Korea. We support the creation of content, introduce AI technology, and thus continue to improve our search quality. We have been strengthening our business capabilities by expanding our commerce platform and upgrading fintech services, while spreading the joy and pleasure of connection made possible through these efforts to numerous NAVER users. Going forward, we will evolve into a technology platform where time that our partners spend in NAVER platforms will lead to the remarkable growth of all NAVER partners.

Classification		User Activity
NAVER App	Persons	Daily Active User: 34 million
NAVER Webtoon	Persons	Monthly Active Users: 170 million
Zepeto	Persons	Monthly Active Users: 20 million

*As of December 2021

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