

NAVER

NAVER Sustainability
Accounting Standards Board
(SASB) Report 2020



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NAVER published its first ESG Report in 2020, based on which the company will actively communicate with its shareholders, users, partners, employees, and other stakeholders by disclosing its environmental, social, and governance (ESG) implementation strategy and execution status. We are also publishing a Sustainability Accounting Standards Board (SASB) Report to disclose sustainability information in accordance with the Internet Media segment standards of SASB.

Sustainability Disclosure Topics & Accounting Metrics

| Topic | Accounting Metric | Code | Report | Page |
|---|--|--------------|--------|-------|
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| Activity Metric | Code | Report | Page |
|---|-------------|--------|------|
| Entity-defined measure of user activity | TC-IM-000.A | ● | 16 |
| (1) Data processing capacity, (2) percentage outsourced | TC-IM-000.B | - | - |
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* Indices that are not reported were omitted because they include sensitive business information

Accounting Metrics

Environmental Footprint of Hardware Infrastructure

TC-IM-130a.1.

(1) Total energy consumed, (2) percentage grid electricity, (3) percentage renewable

Environmental footprint of hardware infrastructure is based on the data of the Green Factory, which is our headquarters, and the Data Center GAK. They have been built in consideration of the environment starting from the design phase and are also operated in an environmentally-friendly way, embodying our unique philosophy toward energy reduction and eco-friendliness. We are achieving continued energy reduction effects by reducing electric power consumption in the summer, improving facility operations, and using renewable energy, such as geothermal heat/photovoltaic.

| | | 2017 | 2018 | 2019 | 1H 2020 | | |
|--------------------------------------|---------------------------------------|-----------------|--------|--------|---------|--------|--------|
| Total Energy Consumption | Total | 1,178 | 1,495 | 1,624 | 799 | | |
| | Green Factory | TJ | 159 | 159 | 152 | 67 | |
| | Data Center GAK | | 1,019 | 1,336 | 1,472 | 732 | |
| Direct Energy Consumption | Total | 7.4 | 6.7 | 5.7 | 1.4 | | |
| | LNG | | 5.3 | 5.8 | 4.8 | 1.2 | |
| | Diesel | Green Factory | TJ | 0.01 | 0.04 | 0.01 | 0.01 |
| | | Data Center GAK | | 1.6 | 0.4 | 0.4 | 0.0 |
| | Mobile combustion | | 0.1 | 0.1 | 0.1 | 0.0 | |
| | LNG | | 0.5 | 0.3 | 0.4 | 0.1 | |
| Indirect Energy Consumption | Total | 1,171 | 1,488 | 1,618 | 798 | | |
| | Electricity | Green Factory | TJ | 144.3 | 143.0 | 138.0 | 60.5 |
| | | Data Center GAK | | 1,017 | 1,335 | 1,471 | 732 |
| | Steam | | 9.6 | 10.0 | 8.8 | 5.0 | |
| Total Energy Saving | Total | 28,896 | 37,202 | 41,588 | 21,723 | | |
| | Saving through office management | Green Factory | | - | 138 | 517 | - |
| | | MWh | | 426 | 511 | 511 | 255 |
| | Saving through natural cooling system | Data Center GAK | | 28,435 | 36,371 | 40,343 | 21,333 |
| Saving by producing renewable energy | | | 35 | 182 | 217 | 135 | |
| Renewable Energy Production | Total | 136 | 283 | 318 | 152 | | |
| | Geothermal power | Green Factory | MWh | 101 | 101 | 101 | 17 |
| | Solar power | Data Center GAK | | 35 | 182 | 217 | 135 |

TC-IM-130a.2.

(1) Total water withdrawn, (2) total water consumed, percentage of each in regions with high or extremely high baseline water stress

Volume of water consumed by NAVER is based on the data of the Green Factory, which is our headquarters, and the Data Center GAK. Although both business sites are not located in a water stress area, we are making continuous efforts to reduce our water consumption while increasing water reuse. We also strive to save water in daily life, and constantly monitor our operation policies, such as using water-saving sanitary fixtures and using rainwater, and establish improvement measures.

| Classification | | 2017 | 2018 | 2019 | 1H 2020 | |
|-------------------|-----------------|----------------|---------|---------|---------|--------|
| Water Consumption | Total | 164,106 | 177,335 | 176,517 | 50,958 | |
| | Water supply | m ³ | 88,251 | 92,058 | 101,929 | 38,553 |
| | Data Center GAK | | 75,855 | 85,277 | 74,588 | 12,405 |
| Water reuse | Green Factory | m ³ | 6,865 | 9,812 | 5,428 | 5,867 |
| Water reuse rate | Green Factory | % | 8 | 11 | 5 | 15 |

TC-IM-130a.3.

Discussion of the integration of environmental considerations into strategic planning for data center needs

Sustainable Data Center

Opened in June 2013, our Data Center "GAK" lowers the impact of heat from computer servers in an environmentally-friendly way. The Center won "platinum" certification from LEED¹⁾ New Construction (NC) 2009, for the first time among data centers in the world. The Center uses a range of methods, including Snow Melting²⁾, photovoltaic and solar thermal power generation³⁾, and a natural cooling system using outside air. In particular, the south wing of the Data Center GAK opened in 2017, following the opening of the north wing in 2012 and the west wing in 2014, and it adopted an array of the latest energy-efficient technologies to create a "world-class integrated data center".



Interior of Data Center GAK

First of all, the cross-sectional area of air filters was increased in order to optimize air flow, and bypass dampers⁴⁾ were used in the heating, ventilating, and air conditioning (HVAC) equipment. In addition, energy-saving DC fans supply greater volumes of moving air where needed, and the structure of the exhaust fans was improved to reduce energy usage. In addition, the Center makes more use of a water thermal storage system which stores electricity at night, when rates are lower, to then use during the day.

The Data Center GAK has around 30 thousand sensors installed inside the building based on which all temperature detection and adjustment steps automatically take place to result in maximized energy efficiency. Moreover, in line with the characteristics of the data center, which preserves important information, such as users' personal information, the building was designed to withstand an earthquake that registers 6.5 or higher on the Richter scale, flood, typhoon, fire, and other natural disasters so that it can endure any environment.

Receiving recognition for these efforts, the Data Center GAK 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.

Achieving the World's Top-level PUE

The Data Center GAK has developed Air Misting Unit (AMU) and NAVER Air Membrane Unit (NAMU), which are eco-friendly technologies that reduce server room temperatures using cold air and underground water, and is now increasing the scope of their application to maximize energy savings. We meticulously adopt and use environmentally-friendly technology wherever possible to reduce energy consumption, and as a result, maintain our power usage effectiveness (PUE)⁵⁾ level at close to 1. This is top-level PUE when compared to even the PUEs of global data centers.

¹⁾ LEED: Leadership in Energy and Environmental Design, Environmentally-friendly building certification developed by the U.S. Green Building Council
²⁾ A road heating system which uses waste heat in the wintertime
³⁾ Used for outdoor lighting and greenhouse heating
⁴⁾ Used in exhaust systems to change the mixing percentage of hot air and cool air to control temperature
⁵⁾ PUE: Power Usage Effectiveness. The ratio of total amount of energy consumption of a data center facility to the energy consumed by IT equipment, it is generally used as a measure of the efficiency of data centers. An ideal PUE is 1.0.

**Data Privacy,
Advertising
Standards &
Freedom of
Expression**

Using Recycled and Eco-friendly Energy

The Data Center GAK uses photovoltaic energy, and also invests in relevant businesses. We radically improved the photovoltaic power generation facility at the building in 2018, and as a result, 217 MWh of power were saved in 2019, along with about 97 tons of CO₂ emissions. The Center uses energy as efficiently as possible, including through LED lighting and electric vehicles. It 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.

In particular, we have been making continued efforts to reduce the amount of water used in air-conditioning, with the volume in 2019 decreasing by 12.53% year-on-year, despite the increase in the number of IT devices. As a result of these efforts, CO₂ emissions at the Center have been reduced by about 20,000 tons per year.

TC-IM-220a.1.

Description of policies and practices relating to behavioral advertising and user privacy

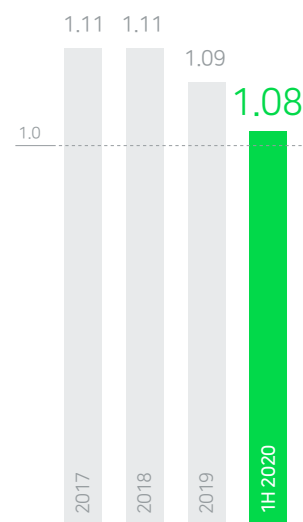
Personal Information Protection System

As the nation's largest search engine and a provider of various content services and platforms, NAVER strictly applies the "privacy by design" principle for user's personal information protection. By doing so, we are safely 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 established and operate Private Impact Assessment (PIA) and the Privacy Information Management System (nPIMS) for constant advice. PIA is a process for checking, in advance, whether we comply with relevant laws and internal regulations as well as user privacy sensitivity, and for managing relevant risks, so that personal information protection can be fully established as a standard for all services that we provide.

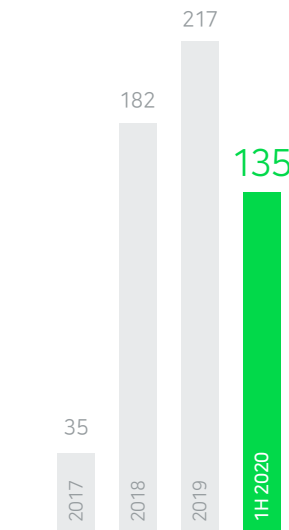


Greenhouse that uses waste heat

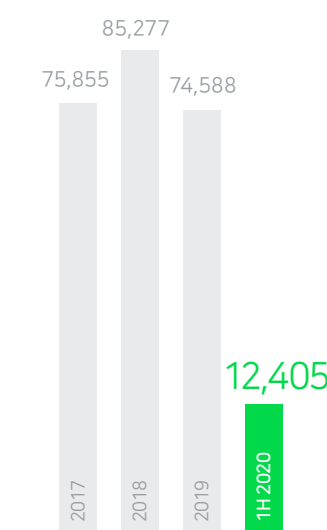
Power Usage Effectiveness (PUE)



Solar Power Generation
(Unit: MWh)



Clean Water Consumption
(Unit: Tons)



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 personal information in accordance with the purpose and responsibly manages personal information.
5. NAVER considers user privacy protection with top priority.



As a follow-up control process, we conduct an annual assessment on the status of personal information protection in using our services, location-based services, personal information protection in using our mobile app, and outsourcing of personal information as part of our efforts to minimize personal information protection risks. In particular, our CPO reviews the results of outsourced personal information-handling inspection activities, and makes a request based on the level of outsourcing companies. If there is no possibility of improvement, we do not sign a contract with the company afterwards and take other such measures to maintain a certain protection level. In addition, we conduct a regular inspection of the personal information protection status of the HR Department and Finance Department and an inspection on the status of complying with measures to secure the safety of unique identification information for departments that process unique identification information, such as resident registration numbers.

Employee Training for Personal Information Protection

NAVER creates and operates lectures on various subjects every year so that employees can choose and take necessary training, ranging from basic to in-depth courses, to enhance their awareness of personal information protection. In 2019, we provided personal (location) data protection training to all employees, and had employees who are in charge of handling personal information complete additional training that is needed for their work by regularly offering offline training in accordance with their job, interest, and level of understanding. In particular, in line with the US California Consumer Privacy Act (CCPA) that was enforced in January 2020, we expanded the training target to include even global service department employees, and provided information on the law and enhanced their understanding of the law. We provided online, live training using the Intranet in 2020, and this year's training mainly focused on the background and main content of amendments to the three data-related laws as well as main content of the amendment to the Personal Information Protection Act and its impact.

Maximizing User's Right to Self-control Personal Information

As one of its personal information protection principles, NAVER respects user's exercise of the "right of self-determination regarding personal information" specified in the Constitution, and has been making diverse efforts to guarantee this right. Since 2013, we have been providing details of collection and use of personal information in using our services as well as history of provision to a third party that received user consent in an individually-tailored way in accordance with user behavior, for the first time in South Korea. In July 2020, we began to additionally disclose the date of consent from the user on personal information collection and provision to a third party, and also reorganized the personal information usage status page so that a user can easily withdraw consent for personal information collection and provision to a third party, for which the user previously provided consent, within all services of NAVER. By doing so, we can now provide a one-step process for realizing the "right to self-control of personal information".

Moreover, regarding customized advertising that uses behavior information, we post operational principles on collecting, retaining, and destroying information as well as users' exercise of the right to control and damage relief methods. Placing top priority on user information protection, we are making efforts to show useful advertisements to users and offer advertisers with effective ad platforms. All around the world, 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 enhance users' right to control of one's own information to the global level.

NAVER is committed to the concept of "Privacy as a Service (PaaS)" which provides personal information and privacy protection as if it were a service, and has been continually thinking of ways to communicate with users in relation to NAVER's privacy protection. We became the first in South Korea to open the Privacy Center in 2013, and are transparently disclosing personal information protection principles that are applied to overall NAVER services as well as each service operation policy. In addition, we release a Transparency Report twice a year to regularly and transparently disclose statistics of personal information that was provided to investigative agencies based on relevant laws. We also publish the annual Personal Data Protection Report which contains information about our personal information protection activities, and the NAVER Privacy White Paper which shares information about expert research on the protection of user privacy, thereby providing various basic research materials on subjects that require social agreement and discussion. We also run an official blog and other social media platforms as well as the NAVER Privacy TV where we can hold discussions with users in the event of a personal information and privacy issue, thus expanding user communication.

Information on NAVER's Customized Ads

1. Information on NAVER's customized ads

A customized ad offered by NAVER refers to an ad that is provided to a user in a customized way after processing behavior information, and analyzing and estimating the user's concern, interest, taste, inclination, etc.

The following is the definition of terms used in the "Guidelines on personal information protection for online customized ads" of the Korea Communications Commission and this information:

- Online behavior information: Online user activity information that can be used to identify and analyze a user's concern, interest, taste, inclination, etc., including website visit history, app usage history, and purchase and search history.
- Online customized ad: Online ad that is provided to a user in a customized way after processing behavior information, and analyzing/estimating the user's concern, interest, taste, inclination, etc. NAVER strives to show useful ads to users, and provide effective ad platforms to advertisers.

2. Types of collected behavior information and collection method

We collect information on the types of content that a user views or uses, a service category that a user visits, etc. in the process of using services and use the information for online customized ads. Behavior information is automatically collected and stored in the process of service use.

3. Purpose of using behavior information in ads

We use behavior information to avoid exposure of meaningless, unnecessary ads by gaining a better understanding of users and to increase exposure of informational ads that reflect a user's concerns and interests, etc. We do not use behavior information that is classified into the sensitive category, such as race, religion, sexual orientation, and medical history, for customized ads. We do not use information on a child aged less than 14 (or information that is presumed to belong to a child aged less than 14) for customized ads, and do not expose customized ads to them.

4. Period of retaining/using behavior information, and destroying the information

Behavior information that is used for online customized ads is stored for a year, and is afterwards completely destroyed using a technical method that makes it impossible to regenerate the information or is separately stored.

5. Method of users' exercise of control rights

NAVER's customized ads use a browser cookie or an advertiser id in a mobile app to provide appropriate ads to users. The user has the right to choose cookie and advertiser id use, and can allow or block customized ads at any time by using the following setting. In case a user blocks customized ads, ads are continually displayed, but the user may see ads that have a low level of relevance with what he/she is interested in.

Set whether to allow NAVER's customized ads

Allow Block

For your reference, even when the above setting is in "Block" status, if cookies are deleted in the user browser option or the advertiser id is reset in the mobile app, the setting for "method of users' exercise of control rights" can change to "Allow" for customized ads, and the user may be exposed to customized ads again.

If a user wants to directly block customized ads in his/her browser or app, separately from the above setting, the user can refuse the use of cookies or an advertiser id using the following method. If behavior information is collected during the service usage process after such a measure is taken, the user can be exposed to ads once again.

6. User damage relief method

When providing customized ads, we do not combine browser cookies and advertiser id with personal information, and we place the highest priority on user information protection.

Children's Online Privacy Protection

With an amendment to the Information and Communications Network Act in June 2019, when a notice is made in relation to personal information-processing that is for children aged less than 14, the notice should be easy for children to understand, and it is mandatory to confirm actual consent from a legal representative. Accordingly, we provide a children's version of the "consent for collection and use of personal information" when a child user registers to become a member. Also, the personal information usage details notification mail that is sent to users aged less than 14 is created using content that can be understood by children, as part of our efforts to strengthen rights related to children's online privacy protection.

TC-IM-220a.2.

Number of users whose information is used for secondary purposes

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

| Classification | 2017 | 2018 | 2019 | 1H 2020 | |
|--|-------|------|------|---------|---|
| Number of users whose information is used for secondary purposes | Cases | 0 | 0 | 0 | 0 |

TC-IM-220a.3.

Total amount of monetary losses as a result of legal proceedings associated with user privacy

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 receipts needed for year-end tax adjustment to users via email, data that was more than necessary was included in the receipt file.

As a result, NAVER was subject to a corrective measure imposed on a personal information protection law-violating business entity by the Korea Communications Commission on June 5, 2020 for violating an obligation stipulated in the Act on Promotion of Information and Communications Network Utilization and Information Protection, Etc.

To make improvements, we carried out a complete inspection of our system that sends data outbound, and discontinued all outbound personal information transmission cases and changed it so that users directly log in and check personal information. By doing so, we established a system that prevents infringement during the data transmission process or delivery of excessive data due to erroneous transmission. In addition, we strengthened training for company-wide developers and personnel who handle personal information to share information on the cause of the incident, and are engaging in activities that strengthen awareness so that the same mistake does not reoccur.

| Classification | 2017 | 2018 | 2019 | 1H 2020 | |
|---|------------|------|------|---------|-------|
| Total amount of monetary losses as a result of legal proceedings associated with user privacy | KRW 10,000 | - | - | - | 4,020 |

* Fine of KRW 13 million, penalty of KRW 27.2 million

TC-IM-220a.4.

(1) Number of law enforcement requests for user information, (2) number of users whose information was requested, (3) percentage resulting in disclosure

NAVER transparently discloses statistics of user information, provided to investigative agencies pursuant to relevant laws, through the Transparency Report in the NAVER Privacy Center.

Being informed of the fact that to whom and for what reason someone’s personal information is provided has extremely great significance in securing the “right of self-determination regarding personal information” – a right recognized by the Constitution. 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 requested and processing cases in the Transparency Report statistics refer to the “number of cases of documents” that NAVER received from investigative agencies and were processed. In addition, “provided information” refers to the number of units of user data that was actually provided. A request to provide information on several users can be made through one document.

NAVER stopped providing communications materials in respect for a court ruling rendered in October 2012 in relation to confirmation of whether a business operator has a substantial examination obligation regarding provision of communications material and concern over violation of the warrant requirement principle. As such, we have not been providing materials since October 2012 for communications material requests.

About Transparency Report

A Transparency Report is a form of a corporate statement that regularly discloses statistics regarding the government’s user information provision requests and content deletion requests. By disclosing statistics on user-related information that was requested by the government in a specific period through a Transparency Report, a company informs readers of how much user information was provided and how.

A Transparency Report is a report that is autonomously disclosed by each company according to diverse user demand, and does not have a standard format. It can be freely disclosed in accordance with the characteristics of the services that a company provides.

While “personal information usage status” which allows people to check matters related to collection and use of personal information, provision to a third party, and outsourcing of personal information processing, is a service that is aimed at guaranteeing transparency in relation to individual users’ personal information processing, a Transparency Report pursues to secure transparency in relation to processing of personal information that is provided to investigative agencies pursuant to relevant laws.

More detailed information on NAVER’s Transparency Report statistics is available on the NAVER Privacy Center website.

Transparency Report Statistics

| Classification | Unit | Seizure warrant | Communications restriction measure | Communications fact confirmation material | Communications material | |
|----------------|------------|-----------------|------------------------------------|---|-------------------------|---|
| 1H 2020 | Requested | 3,145 | 5 | 1,306 | 17 | |
| | Processing | Cases | 2,283 | 5 | 1,052 | - |
| | Provided | 294,683 | 48 | 2,567 | - | |
| 2H 2019 | Requested | 3,664 | 7 | 1,929 | 15 | |
| | Processing | Cases | 2,825 | 7 | 1,644 | - |
| | Provided | 117,346 | 30 | 3,505 | - | |
| 1H 2019 | Requested | 4,048 | 11 | 2,337 | 104 | |
| | Processing | Cases | 3,284 | 11 | 2,057 | - |
| | Provided | 201,034 | 52 | 4,634 | - | |
| 2H 2018 | Requested | 3,951 | 8 | 1,939 | 166 | |
| | Processing | Cases | 3,217 | 8 | 1,679 | - |
| | Provided | 1,451,148 | 26 | 3,757 | - | |
| 1H 2018 | Requested | 4,194 | 9 | 2,316 | 145 | |
| | Processing | Cases | 3,493 | 9 | 1,950 | - |
| | Provided | 5,515,415 | 45 | 9,041 | - | |
| 2H 2017 | Requested | 3,758 | 6 | 2,282 | 99 | |
| | Processing | Cases | 3,122 | 6 | 1,886 | - |
| | Provided | 2,966,831 | 18 | 7,553 | - | |
| 1H 2017 | Requested | 4,028 | 10 | 2,999 | 111 | |
| | Processing | Cases | 3,419 | 10 | 2,561 | - |
| | Provided | 7,112,423 | 35 | 8,279 | - | |

* In terms of seizure warrants, in case of provision of a log record and 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.

TC-IM-220a.5.

List of countries where core products or services are subject to government-required monitoring, blocking, content filtering, or censoring

NAVER operates its business in 12 countries across the globe and is providing services in these countries. We observe each country’s policy management criteria for posting content.

TC-IM-230a.1.

(1) Number of data breaches, (2) percentage involving personally identifiable information (PII), (3) number of users affected

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 receipts needed for year-end tax adjustment to users via email, data that was more than necessary was included in the receipt file.

Data Security

The number of users who were affected by the leaked personal information is 2,331 persons, and the number of sent receipts is 1,940,768. As a result, NAVER was subject to a corrective measure imposed on a personal information protection law-violating business entity by the Korea Communications Commission on June 5, 2020 for violating an obligation stipulated in the Act on Promotion of Information and Communications Network Utilization and Information Protection, Etc.

In our efforts to improve related matters, we carried out a complete inspection of our system that sends data outbound, and discontinued all outbound personal information transmission cases and changed it so that users directly log in and check personal information. By doing so, we established a system that prevents infringement during the data transmission process or delivery of excessive data due to erroneous transmission. In addition, we strengthened training for company-wide developers and personnel who handle personal information to share information on the cause of the incident, and are engaging in activities that strengthen awareness so that the same mistake does not reoccur.

| | | 2017 | 2018 | 2019 | 1H 2020 |
|--|-------|------|------|--------------------|---------|
| Number of data breaches | Cases | 0 | 0 | 1 | 0 |
| Percentage involving personally identifiable information (PII) | % | - | - | 100% ⁶⁾ | - |

TC-IM-230a.2.

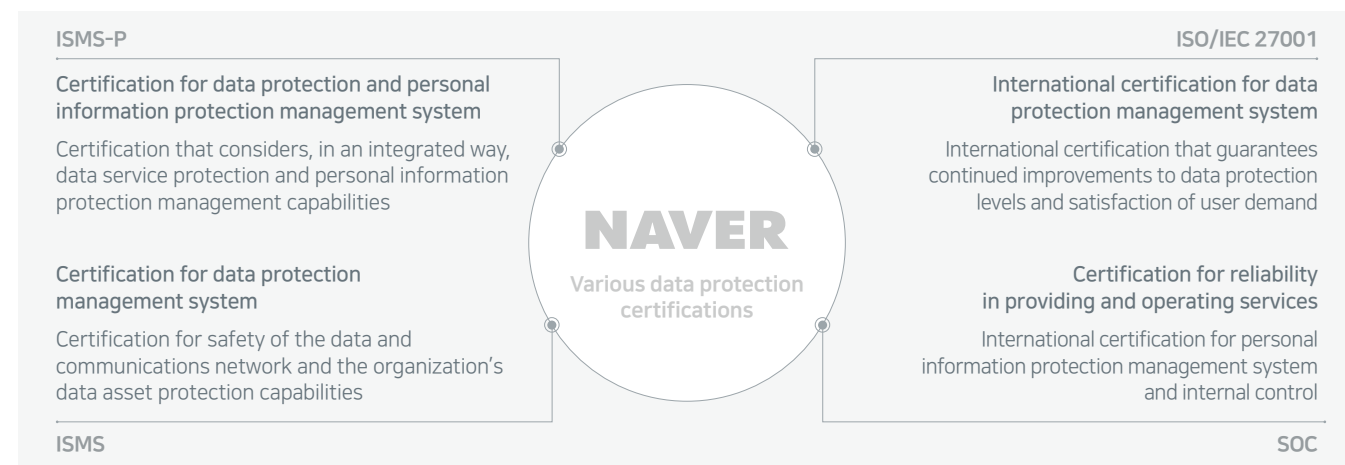
Description of approach to identifying and addressing data security risks, including use of third-party cybersecurity standards

NAVER has a system for data protection rules that is suitable for our environment and culture, and are striving to achieve unity in the data protection management system of NAVER and affiliated companies by making a categorization into common company-wide, per service step, global advancement, security/infrastructure, and other areas. Through reputable information protection certifications at home and abroad, we are regularly receiving verification for the credibility of our services' stability and operation system. Our principle is 24/7 security, including internal vulnerability diagnosis, error management, and mock hacking.

⁶⁾ The percentage of data breaches in which PII was subject to the data breach based on the number of users affected

Data Protection Certification

International certifications for NAVER's management system and internal control for personal information protection



In accordance with an amendment to South Korea's Information and Communications Network Act⁷⁾, we divided our information protection organization into the Chief Information Security Officer (CISO) and Chief Privacy Officer (CPO) organizations, and thus further strengthened expertise and responsibility. To comply with domestic and overseas personal information protection and privacy protection laws, we established Global Privacy Compliance regulations that are at a global level and are expanding the scope.

Efficient, Transparent Management of Security Threat Factors

In service security as well, we are striving to apply the Security by Design and Usable Security principles to all service areas. We have a security review process for service planning and design, and a security check process that is implemented at the time of completion of development, in addition to operating DevSecOps, which minimizes developer intervention in outputs that are being developed and enables automatic code security review.

The most effective planning, design, and development cannot ensure 100% prevention of security bugs. We are internally operating the security Bug Bounty (Reward: <https://bugbounty.naver.com/ko/>) program, which enables us to receive help from outside analysts and take measures against unknown security bugs before an incident occurs. Bug Bounty is regarded as the most exemplary case from among companies in South Korea.

Since 2018, NAVER has been registered as CVE Numbering Authority (CNA) – authority that can issue a “Common Vulnerabilities and Exposures Number” which is an international standard management number of the company's software security vulnerability. The company is accordingly establishing itself as a transparent company that can systematically manage and quickly respond to security vulnerabilities.

Security Improvements

| Classification | | 2017 | 2018 | 2019 | 1H 2020 |
|---|-------|-------|-------|-------|---------|
| No. of security improvement points that were discovered | Cases | 1,006 | 1,128 | 1,344 | 417 |
| Number of completed mitigation measures | Cases | 1,006 | 1,126 | 1,282 | 380 |
| Percentage of mitigation | % | 100 | 99.82 | 95.39 | 91.13 |
| Mitigation within the given deadline | Cases | 773 | 756 | 769 | 208 |
| Mitigation after the given deadline | Cases | 223 | 370 | 513 | 172 |

Bug Bounty Statistics

| Classification | | 2017 | 2018 | 2019 | 1H 2020 |
|----------------------------------|------------|-------|-------|--------|---------|
| No. of reported bugs | Bugs | 166 | 208 | 223 | 210 |
| No. of persons who made a report | Persons | 18 | 31 | 61 | 70 |
| Reward | KRW 10,000 | 4,220 | 4,425 | 11,900 | 7,020 |

Named Common Vulnerabilities and Exposures

| | | 2017 | 2018 | 2019 | 1H 2020 |
|---------------------------|-------|------|------|------|---------|
| No. of cases of named CVE | Cases | 1 | 4 | 2 | 3 |

⁷⁾ Article 45-3 of the Act on Promotion of Information and Communications Network Utilization and Information Protection, Etc. (Designation of Chief Information Security Officers)

Employee Recruitment, Inclusion & Performance

TC-IM-330a.1.

Percentage of employees that are foreign nationals

NAVER consists of employees from diverse backgrounds, including nationality, and values with the Millennials accounting for more than half of the entire workforce. All employees of NAVER are working together to create a flexible organization culture unique to NAVER. We are taking the lead in creating an environment where our employees can work freely with one's own capabilities and make social contributions based on mutual respect.

In particular, we hold a program called Global Lunch once a month for foreign employees at our headquarters in South Korea to collect opinions of foreign employees. Meaningful content from their opinions is reviewed as individual matters and reflected in organizational culture and policy improvements.

Number of Employees by Nationality

| Country | | 2017 | 2018 | 2019 | 1H 2020 |
|------------------------|----------------|-----------|-----------|-----------|-----------|
| New Zealand | Persons | 1 | 1 | 2 | 2 |
| Taiwan | Persons | - | - | - | 1 |
| Germany | Persons | 1 | 1 | 1 | 1 |
| U.S. | Persons | 4 | 6 | 6 | 7 |
| Sweden | Persons | 1 | 1 | 1 | 1 |
| Argentina | Persons | 1 | 1 | 1 | 1 |
| Azerbaijan | Persons | - | 1 | 1 | 1 |
| U.K. | Persons | 1 | 2 | 1 | 1 |
| Austria | Persons | - | 1 | 1 | 1 |
| India | Persons | - | 3 | - | - |
| Japan | Persons | 1 | 1 | 2 | 2 |
| China | Persons | 3 | 4 | 4 | 4 |
| Canada | Persons | 1 | 6 | 3 | 3 |
| Kyrgyzstan | Persons | - | 2 | - | - |
| Republic of Tajikistan | Persons | - | - | 1 | 1 |
| Thailand | Persons | 2 | 2 | - | - |
| Turkmenistan | Persons | - | 1 | - | - |
| France | Persons | - | - | 1 | 1 |
| Australia | Persons | - | 1 | - | 1 |
| Total | Persons | 16 | 34 | 25 | 28 |

TC-IM-330a.2.

Employee engagement as a percentage

As of now, NAVER does not measure employee engagement at the company level, but is reviewing the adoption in the future.

TC-IM-330a.3.

Percentage of gender and racial/ethnic group representation for (1) management, (2) technical staff, and (3) all other employees

NAVER's male-to-female ratio is 64:36 as of first half of 2020 with female leaders accounting for approximately 26% of overall leader positions which is showing a gradual increase each year. Furthermore, female C-level executives including the director for CIC (Company In Company) account for 1/3 of overall C-level positions. We do not impose any glass ceiling limitations and are making utmost efforts to support them during their pregnancy and childbirth period. In addition, there is no salary discrepancy based on criteria other than job grade such as gender.

| | | 2017 | 2018 | 2019 | 1H 2020 | | |
|------------------------------|--------------------------------|--------|---------|-------|---------|-------|-------|
| Employment | | | | | | | |
| Total number of employees | | Total | Persons | 2,814 | 3,611 | 3,523 | 3,777 |
| | | Total | | 1,259 | 1,573 | 1,540 | 1,655 |
| By job | Office | Male | Persons | 531 | 629 | 628 | 672 |
| | | Female | | 728 | 944 | 912 | 983 |
| | Total | | 1,555 | 2,038 | 1,983 | 2,122 | |
| By gender | Technical | Male | Persons | 1,286 | 1,680 | 1,634 | 1,743 |
| | | Female | | 269 | 358 | 349 | 388 |
| | Total | | 1,817 | 2,309 | 2,262 | 2,406 | |
| | | Female | | 997 | 1,302 | 1,261 | 1,371 |
| Respect for Diversity | | | | | | | |
| Female | Percentage of female employees | | % | 35.3 | 35.9 | 35.7 | 36.2 |
| | Percentage of female managers | | % | 20.0 | 23.3 | 24.6 | 25.8 |

Intellectual Property Protection & Competitive Behavior

TC-IM-520a.1.

Total amount of monetary losses as a result of legal proceedings associated with anti-competitive behavior regulations

NAVER was not subject to any legal proceedings associated with anti-competitive behavior regulations during the corresponding period.

Total Amount of Monetary Losses Due to the Violation of User's Information Protection Regulations

| | | 2017 | 2018 | 2019 | 1H 2020 | |
|--|--|------------|------|------|---------|---|
| Monetary losses as a result of legal proceedings associated with anti-competitive behavior regulations | | KRW 10,000 | 0 | 0 | 0 | 0 |

* In relation to some businesses of NAVER, the Fair Trade Commission decided to impose a fine on grounds of market-dominant business entity's abuse of position and unfair trade practices, etc. (real estate: KRW 1 billion, shopping: KRW 26.5 billion, video: KRW 200 million). However, NAVER was not subject to an official disposition from the Fair Trade Commission as of the end of November 2020 when this report was published.

Activity Metrics

TC-IM-100.A

Entity-defined measure of user activity

NAVER is a leading internet search portal in South Korea. By introducing AI-based technologies and increasing content, NAVER is strengthening the capabilities of its existing businesses, such as commerce platform expansion and video reinforcement, and is striving to provide a new voice- and image-based user experience. By pushing forward these efforts, we plan to evolve into a technology platform that offers the convenience of connection and the pleasure of discovery for users, and opportunities for success and growth for partners.

⁸⁾ Unique user: A non-redundant user who uses the service at least once during the measurement period

As of June 2020, the number of monthly unique users⁸⁾ of NAVER is a 37.95 million.

NAVER