# Beyond Diagnostics

noul

**Sustainability is our primary focus area and is at the core of our business philosophy.**

At Noul, sustainability is defined by adhering to ethics and laws as a corporate citizen and prioritizing a balance of economic (profit), social (people), and environmental (planet) values based on responsible stakeholder relations.

With the lofty purpose of saving lives and improving health for all, we at Noul build our systems and culture around the cornerstone of our respect for sustainability, evident in our operations and the availability of our innovative diagnostic testing solutions that impact the lives of one billion people all over the world.

# Contents

# Message from Management

Dear Esteemed Stakeholders,
We are delighted to present our 4th sustainability report to share our initiatives and achievements
to become more sustainable for our stakeholders whom we count on for their trust and support
as we journey ahead towards dramatically improving access to healthcare for all.

Noul's leadership team considers sustainability reporting a top priority. It provides us with the opportunity to objectively reflect on our financial and operational initiatives and achievements of the past year and to transparently communicate the results with our stakeholders and our Board of Directors, which lies at the core of our efforts to realize our corporate mission and philosophy.

Certainly, this readily explains our mix of trepidation and anticipation as we prepare our sustainability report each year. It derives from our desire to sincerely communicate often not-so-obvious ESG achievements in a way that is fully descriptive and understandable, yet free from superfluous frills or exaggeration. The reporting process itself also piques a certain undeniable excitement as it allows us to once again dip our toes into the proud and fulfilling memory of recounting a breadth of initiatives and accomplishments led by each of our team members in their own authentic ways.
For whatever our report lacks in terms of sophistication or glossy visual finishes, we hope to make up for in sincerity- for despite our nervous excitement, our reports are our own: we write them without outside help, but with the genuine aim of sharing the most forthright and balanced content with our stakeholders.

🔶 **In 2023, Noul embarked upon the next phase of our journey as a thriving startup.**

For the first five years, we focused on building decentralized* technology and products to enable malaria confirmation testing at any worldwide location with a goal of eradicating malaria, one of the top three most infectious diseases in the world. Homing in on such technology and products allowed us to debut the world's first diagnostic platform fully automating end-to-end malaria diagnostics and producing resoundingly accurate results with the help of on-device AI. For the following two years, we committed to improving the quality and performance of our malaria diagnostic products

and to developing new products for peripheral blood smears and cervical cancer screening to find broader applications of our technology.

Our malaria diagnostic product is now available across Africa and Europe, and is being validated by our customers at scale at their point-of-care sites as an unprecedented, totally new product. In 2023, we began moving beyond development-led organizational operations which had been our predominant modus operandi since our founding. The next phase of our growth cycle to fully expand our global business operations calls for customer-centric management.

🔶 **Our 2023-2024 sustainability report discloses the sum of our efforts and aspirations to transition and break through as a company.**

Our hope with this year's report is that it emphatically demonstrates just how committed our top leadership is to transition and break through to deliver customer-centric management. It features interviews from our leadership team with the expectation that they will facilitate a clearer understanding of our present status and vantage point with respect to our progress so far in our startup growth journey, our recent achievements and outcomes, the pending difficulties

* **Decentralized diagnostics** is a breakthrough technology bridging the divide between accessibility and accuracy. It empowers readily accessible local clinics to perform highly accurate tests on par with those of hospital standards. Decentralized diagnostics is made possible through the convergence of highly accurate on-device AI, lab-on-a-chip integrating the functions of entire labs, real-time communication, and hardware fully automating the core process of specific tests.

facing Noul, and our mission that will guide our future course ahead. This report is most dominantly composed of status summaries on our five sustainability focus areas*, which present our initiatives and results of the past year in economic, social and environmental terms. We wished to move beyond a mere chronicle account of our activities to substantially illustrate how such initiatives and outcomes, both on the department and company-wide level, meaningfully align with and actually contribute to Noul's sustainable growth. The report also provides an outline of our current challenges and future plans for each of the sustainability issues from the perspective of transition and breakthrough.

From day one, our goal at Noul has always been to develop into a company that balances economic, social, and environmental values upon the virtue of responsible stakeholder relations. Such efforts advanced us past our current growth phase in terms of our team members' sustainability awareness and our social and environmental implementation. Now that we have already entered into the next phase, it will be tangible business results that will truly drive the integrated sustainability performance of our organization. This insight leads us to unite all our capabilities to generate business outcomes that prove to be readily apparent to our team and our stakeholders for the next three years.

We at Noul will stay true to our mission to blaze a new trail and pursue growth as a global company that brings impact to the lives of a billion people. We look forward to your plentiful encouragement and support every step of the way as we journey forward. Thank you.
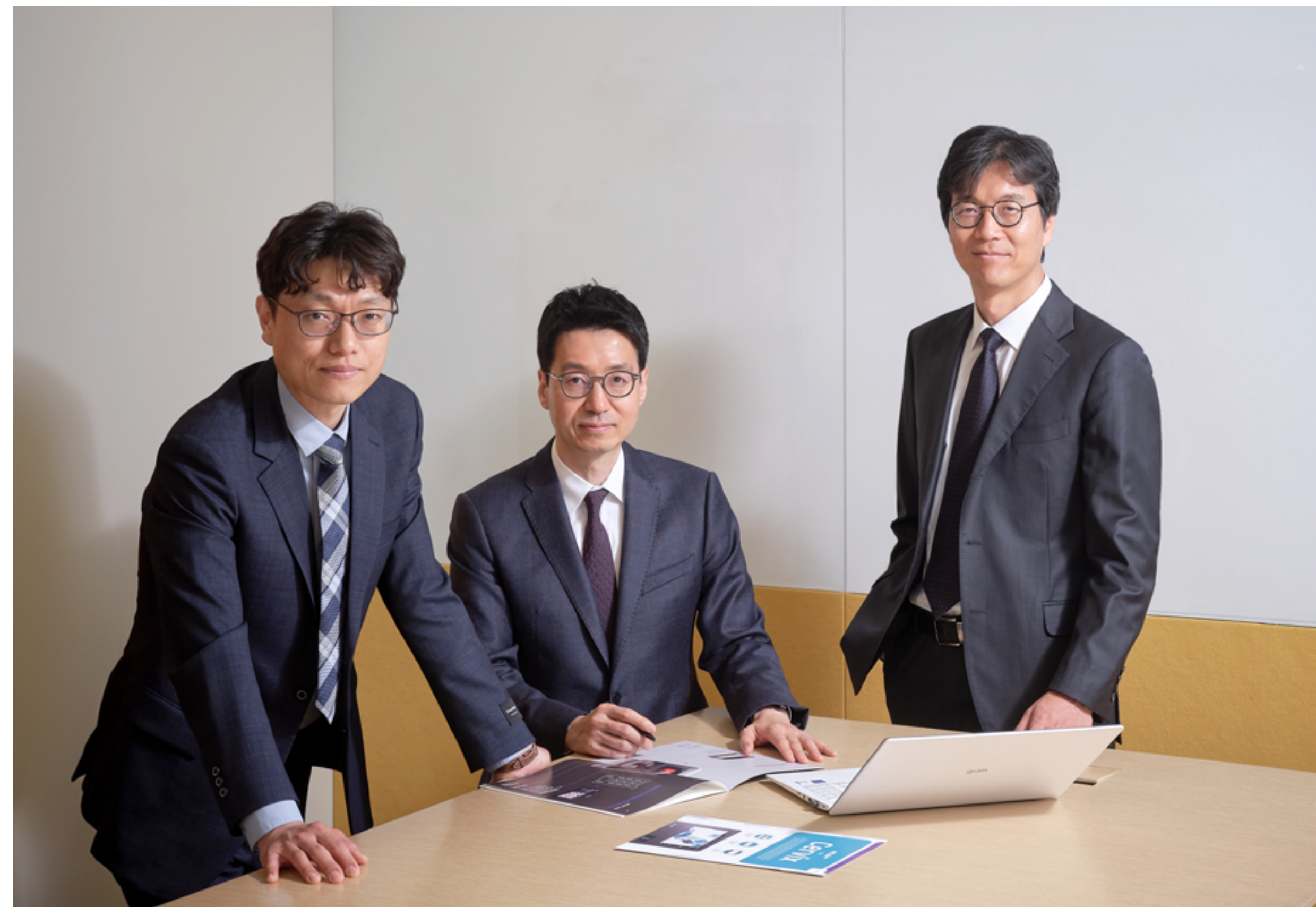
**5 Sustainability Focus Areas**

1. Improvement in Access to Healthcare
2. Compliance, Ethics, and Risk Management
3. Health and Safety
4. Responsible and Inclusive Workplace
5. Protecting the Planet

CLO **Peter Kim**

CEO **David Lim**

CSO **Justin Ahn**

# Part.1

# Purpose-Driven Company

# Our 2023–2024 Growth Milestones

Building upon our efforts to develop flagship products and perfect their quality, we have focused on verifying product performance and establishing our customer base around the world since 2023. The following outlines the key growth milestones we reached in our initial commercialization phase this past year.

## Snapshot

**KRW 2.73 billion**
2023 total sales

**KRW 103.8 billion**
Cumulative investment

**22 countries**
Countries using miLab™
(as of June 2024)

**159,110**
Total diagnostic cartridges which were distributed across the world
(as of June 2024)

**64 cases, 20 cases**
Patent registrations and applications

**KRW 22 billion +**
Cumulative orders for National R&D project

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### 2023

**Jan.**
Signed a sole distributorship agreement worth KRW 2.4 billion with a distributor in Saudi Arabia

**Feb.**
Obtained the CE marking under the European In Vitro Diagnostic Regulation (IVDR) for miLab™

**Mar.**
Initiated an international malaria control project worth KRW 4 billion with the RIGHT Foundation

**Apr.**
Held the 1st Noul Research Conference as a research seminar

**Jul.**
Signed a sole distributorship agreement valued at KRW 1.9 billion with a distributor in Cote d'Ivoire

**Aug.**
Signed a sole distributorship agreement worth KRW 6.6 billion with a distributor in Nigeria

Inked an MoU with EONE Laboratories to develop AI-powered diagnostic platforms

**Oct.**
Signed a sole distributorship agreement worth KRW 2 billion with a distributor in Angola

Launched miLab™ Cartridge CER as a new product for cervical cancer cell analysis

Published clinical performance research findings for our blood analysis solution miLab™ BCM, which indicated

Secured KRW 48.6 billion through rights/bonus issues to lay the ground for our mid/long-term business

**Nov.**
Published a paper to present our research findings on 'H&E staining using solid-based staining technology for cancer diagnostics'

### 2024

**Jan.**
Joined 'Cancer X', a partnership launched to fight cancer in the US, as the first official member in the on-device AI healthcare sector

**Feb.**
Joined the Swiss Malaria Group as Korea's sole official member in recognition of our innovative miLab™ MAL

**Apr.**
Announced the results of clinical performance research for miLab™ MAL conducted in three key African countries, indicating 'miLab™ MAL's malaria diagnosis performance to be on par or superior to WHO-certified level 1 microscopists'

# Management Interview

Our 2023 performance in organizational operation and future aspirations

Q1. Since its founding eight years ago, Noul has remained committed to developing breakthrough diagnostic technology and products that dramatically improve access to healthcare. As challenging as its goals have been, the Company has continued to make tremendous achievements and come out ahead year after year. We would like to know from the leadership team: what have been the most significant milestones and accomplishments of 2023?

**A. CEO :** Two events of 2023 immediately come to mind. First, we successfully raised the necessary funds through our rights/bonus issues, and second, we announced our 'Noul 2.0' initiative after the capital increase and shifted the focus of our company-wide management mode from product development to customers and markets. In fact, these two events are related through the lens of 'transition and breakthrough', the overarching keyword for the year 2023.

As the quality and performance of our malaria diagnostic products had nearly reached market expectations in the first half of 2023, we internally committed to transition from product development into the next phase of building and expanding our customer base. To pursue this customer-centered growth, we homed in on the four key pillars of 1) ensuring financial stability, 2) focusing all our capabilities on implementing our business roadmap, 3) sharpening the competitive edge of our products on par with global standards, and 4) elevating our differentiated organizational competitiveness.

We successfully delivered on the first pillar of financial stability by raising capital through the rights/bonus issues in October 2023. This indeed was one of our most significant achievements which paved the way for us  to focus on other aspects of our product and operations. During the following three months,  our leadership team from all functions of the company came together to identify Noul 2.0 as our company-wide strategic initiative to seek customer-driven growth. One of the key growth pathways set in this process was to transform our organizational structure from one that was function-focused to one that specialized in each product category - including malaria, blood cell analysis and cervical cancer. Now, our product-centered organizational operations prove to be much more efficient than before.

**David Lim**
Chief Executive Officer

**Peter Kim**
Chief Legal Officer

**Justin Ahn**
Chief Sustainability Officer

**A. CLO :** When it comes to product competitiveness, I would like to highlight the fact that we had no cases of non-conformity in the ISO 13485 audit we received in 2023 for this international quality management system standard specific to the medical devices industry. To render our quality management system even more consistent at all levels, we have been pursuing organizational integration across our quality, production, and purchasing functions since April 2023. This  greatly improved our collaborative efficiency along the way in aligning cross-functional communications and efforts towards our shared goals. More to the point, this generated positive synergy, along with other company-wide efforts to create a product-centered organization, producing visible improvements in terms of operational efficiency of our quality management system and reliable product quality. The sum of these positive efforts and contributions eventually led us to achieve zero nonconformities on the ISO 13485 certification audit.

**A. CSO :** I was deeply impressed in 2023 by the wealth of talented professionals we have come to acquire at Noul, who each put forth their expertise and ambition to become a force for good in the Company. While considerable challenges still exist in enhancing our product performance and reaching the break-even point, competent professionals with advanced local and overseas expertise chose to work at Noul because they resonated with our mission and set of corporate values. I believe this allowed us to proactively build the necessary organizational capabilities required to successfully move forward with our Noul 2.0 initiative.

From the sustainability aspect, I should mention that 2023 marks the beginning of our efforts to establish and implement our company-wide mid/long-term sustainability improvement plans. Previously, our sustainability department was weighted too heavily responsible for our sustainability implementation at all levels. As we have started to deliver on the mid/long-term sustainability improvement plans we developed, working-level departments have come to lead the charge to embed sustainability into our day-to-day operations in a way that better suits the specifics of each department.

Q2. Noul released its decentralized, on-device AI diagnostic platform which is the very first in the global blood analysis and tissue diagnostics market. Developing an unprecedented, completely novel product surely presented numerous realistic obstacles. Were there any difficulties or business challenges that you specifically remember?

A. CEO : The most difficult challenge was to translate our customers' interest in products into visible business outcomes. We have stepped up our efforts to advance into the global market since the second half of 2023 to better articulate market characteristics and customer needs. First of all, global companies and institutions are fairly receptive to miLab™ offerings themselves. Meanwhile, we are beginning to realize that introducing unprecedented, breakthrough products such as miLab™ could entail more time and more complicated processes on the part of our customers. Internally, we believe we are in the process of crossing the chasm along the advanced technology adoption lifecycle, to move from the early reference market phase into the mainstream market phase.

The current overarching focus of Noul is on eliminating constraints seen from the viewpoint of markets and customers to quickly bridge this chasm. For example, we prioritize our malaria products to be competitively priced through cost-saving projects to address the high price sensitivity of our target markets, and we are reinforcing our strategic responses, including organizational capabilities, to handle country-specific approval regulations. Personally, I believe that as we systematically clear the obstacles of our established priorities to eventually cross the chasm, each one of our product categories will quickly advance into the global market.

A. CLO : As a listed company, we need to balance varied stakeholder expectations, which is a challenge to a venture company like Noul, whose growth is primarily fueled by investments. The medical devices industry we are associated with is highly regulated and presents a great many regulatory requirements for us to meet across our overall operations, spanning quality, promotion/marketing, business, and external relations. Being a listed company further adds to compliance issues, including disclosures that require our adherence. Recognizing that compliance provides the foundation for sustainability as we define it at Noul, we do our utmost to always remain vigilant when it comes to compliance and proactively prevent any case of serious non-compliance, even by mistake.
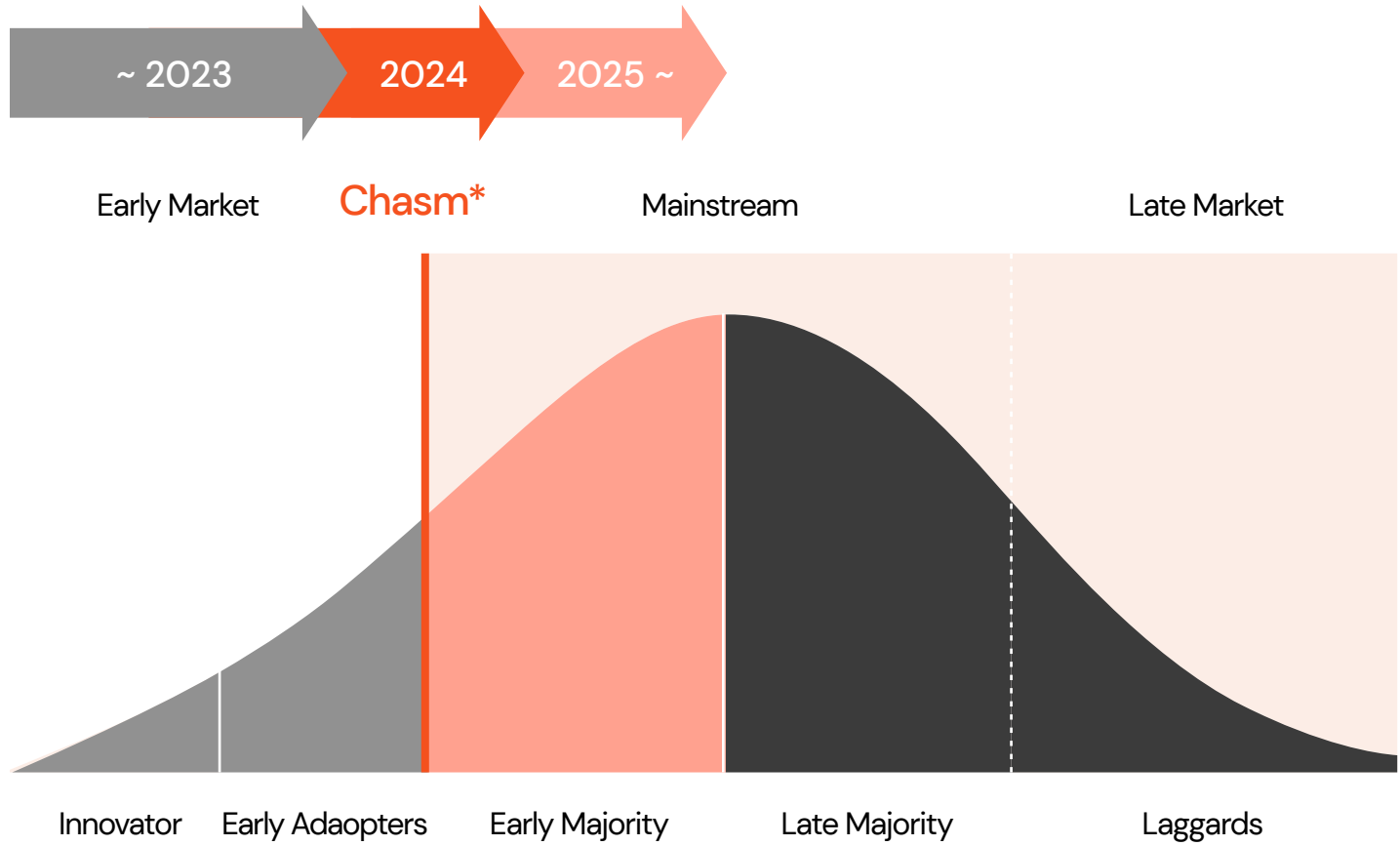


* Chasm is that point early in a company's life where user adoption and market penetration have stalled and the company is desperately searching for a second phase.

A. CSO : As a company, we have yet to reach the breakeven point; thus, we are limited in the availability of operational resources, which is often a case for dilemmas in pursuing sustainability. For instance, miLab™ test cartridges are primarily made of plastic due to their specific use conditions. Since early on, we have gone to great lengths to explore greener options for cartridge manufacturing, but opting for greener alternatives increases the overall cost burden. Meanwhile, our malaria diagnostics business, which forms a key part of our corporate mission, targets low-and-middle-income countries facing the greatest limitations in accessing healthcare, which highlights the importance of affordability as the absolute key requirement. This lies at the crux of the conflict between sustainable environmental value (eco-friendly raw materials) and our mission-derived social value of rendering our products accessible (affordable prices). Of course, we are exploring ways to make improvements that we can readily pursue at this stage, such as raising the proportion of recycled resins or simplifying the composition of product packaging. It should be noted, however, that a wide range of realistic challenges that are present in sustainability or across overall ESG areas demand that we make strategic decisions in many cases.

Q3. Considering the numerous business and operational challenges just mentioned, Noul still announced its Noul 2.0 initiative, embodying its commitment to generate global business outcomes as a sustainable company. Can you elaborate on the background and details of this initiative?

A. CEO : The term 2.0 literally conveys our intention that we will pursue qualitative transformation at all levels of the company. Ever since Noul's founding eight years ago, we have been successfully reaching critical initial-phase milestones to secure original technology, build organizational capabilities and systems for development optimization, and develop our miLab™ diagnostic platform. We do feel, however, that it is now time to move beyond the development phase to dramatically innovate our organizational structure and operational system into one optimized for customer and market needs and further accelerate our efforts to build real-world product use cases in the market. In this regard, Noul 2.0 represents the commitment of our leadership and our entire company to seek qualitative transition and breakthrough that is focused on customers and markets to eventually generate tangible outcomes in our global business operations.

A. CSO : In terms of substantive details, Noul 2.0 is anchored to five key strategic approaches. The first three relate to customers, investors, and the global healthcare community respectively, and outline how we intend to approach the key external stakeholder groups that we will interact with to a much larger extent. The following two embody our approach to pursuing a qualitative leap forward for the management systems and individual capabilities that lay the organizational foundation required for the successful implementation of the first three approaches. The key strategic approaches of Noul 2.0 are also evident in our mid-term roadmap defining Noul's key business milestones and our company-wide OKRs we set in the first half of 2024 which we are currently progressing towards.

Key Strategic Approaches of Noul 2.0

1) Establish a customer/market-driven organization and decision-making system

2) Ensure investor communications are earnest and transparent and gain increased credibility in the capital market

3) Strengthen mission-driven global branding and marketing communication

4) Establish a data/process-driven goal and performance management system

5) Enhance individual job expertise and professionalism

**Q4 .** It appears that Noul has set a clear path forward across all levels of the organization. Meanwhile, it all boils down to creating specific plans each year and progressing towards them. What are Noul's specific goals and plans for 2024?

**A. CEO :** In 2024, we aim to quickly cross the chasm that may impede our business growth so that we can fully position ourselves in the mainstream market. To this end, we identified constraints customers face in introducing miLab™ early this year through researching on existing and prospective customers. We are currently engaged in taskforce or internal project undertakings based on the analysis results to pursue solutions for building a stable global distribution network and clinical outcomes, in addition to the aforementioned ones to reduce product cost and respond to country-specific approval processes.

Another priority will be to develop a more systemic mechanism to translate customer interest and demand into actual revenue. Since miLab™ is the first product of its kind on the market, not only should we engage in general sales and business development, but also play additional roles in laying the necessary groundwork for new markets and business operations. Taking this into account, we will segment the entire process, from the initial phase of verifying the needs of target markets and customers, to the

final phase of customers deciding to introduce our products. This also calls for more proactive investments to build our organizational capabilities and systems to support optimized activities in each phase of this process.

**A. CLO :** From the manufacturing perspective, we are most actively seeking ways to lower manufacturing costs in alignment with our company-wide approach to strengthening cost competitiveness. This goes beyond merely pursuing direct/indirect cost savings to consider ways to ensure productivity gains and increased product competitiveness over the mid-to-long-term future. A case in point is our plan to fully automate the entire manufacturing line in 2024, and work is underway to internalize the outsourced core processes that hold the potential to improve manufacturing costs, quality, and production speeds simultaneously.

In anticipation of expansion in product sales from the second half of 2024, we are pursuing a more robust quality management process. We are identifying potential quality improvements and making necessary improvements throughout the entire manufacturing process from import to processing, shipping, and market, and are establishing a data-driven quality management process to assess and improve our quality operations more efficiently.

**Q5.** Seeing that sustainability has been a priority at Noul since day one, the Company's mission and sustainability perspective are sure to be reflected in its mid/long-term growth roadmap and specific implementation plans. How do Noul's growth goals and directions align with its mission and sustainability philosophy and what do you aspire to achieve from the angle of sustainability?

**A. CSO :** As a social venture, we at Noul prioritize three points in our sustainability management: 1) we build responsible relationships with stakeholders, and 2) pursue the balance of economic, social, and environmental values to 3) progressively generate outcomes in sync with our growth cycle. This approach set us to focus on laying the institutional and cultural groundwork to become a responsible company for stakeholders and our team of employees in the initial phase. It also led our efforts to minimize our environmental impact in the product development process while ensuring environmentally friendly organizational operations.

As we are pursuing global business at scale, the key to driving balanced sustainability performance lies in customer-centric management and its resulting business growth. As we generate clearly noticeable business performance for our team and stakeholders over the next three years as we set out to do, this will tremendously increase the available resources and opportunities for us to build that much more stable governance, fulfill social responsibility, and protect the earth ecosystem.

**A. CEO :** As a member of Noul's leadership, I have had my own aspirations since founding this company. I would like to create a significant impact on the global community with our sincere mission and outlook on sustainability, all while profiting solidly on the global market through our innovative business model. It is never easy to pursue both profitability and impact simultaneously. However, my conviction that it is possible has only grown stronger over the past eight years. In this context, Noul's announcement to pursue transition and breakthrough from 2024 onwards embodies our steadfast commitment to management accountability to sincerely deliver on our mission and sustainability while generating even more excellent business performance.

To make good on our commitment to deliver business outcomes our stakeholders can easily appreciate and apply to their specific needs, we will keep up with our responsible communications and continue progressing towards our challenging, yet impactful goals.

# 2023-2024 ESG Highlight











### Improvement in Access to Healthcare

· 19 countries where miLab™ MAL established market presence
· 24,000 malaria diagnostic cartridges distributed to LMICs in 2023
· miLab™ MAL clinical performance study results
  – In diagnosing P.f infections, 94.4%, in sensitivity and 98.1% in specificity*
  – In diagnosing P.v infections, 97.0% in sensitivity and 97.6% in specificity**
· Launched miLab™ CER as digital cervical cancer screening solution
· Published a paper on applying solid-based staining technology for H&E staining for cancer diagnosis

### Compliance, Ethics and Risk Management

· 100% employees signed the ethics pledge
· 100% in completing training on compliance, improvement in perceptions on disability, and raising awareness on gender sensitivity
· 105 risk controls implemented for identified quality-related risks
· 305 potential hazards/risks identified in the workplace.
· 0 cases Lost Time Injury (LTI)
· 0% occupational accident rate

### Sound and Sustainable Governance

· 40% in the proportion of outside directors
· 20% in the proportion of female directors
· 100% in Board attendance rate
· 94 occasions of IR events and investor meetings
· 7 occasions of publishing stakeholder newsletters
· 600 hours of internal sustainability training completed by 25 members
· 7 cases of member-led sustainability projects

### Responsible and Inclusive Workplace

· 25% in the proportion of female executives
· 8.95 out of 10 points Average score of positive responses to mutual respect among team members
· 26.9 average training hours per person
· 4 times per year in providing regular/frequent feedback for members' growth
· Certified as family-friendly business
· 100% in employees who returned to work after parental leave and continued to work

### Protecting the Planet

· 445.18tCO2eq, 9.12 TJ in 2023 GHG emissions
  – 8.2% year-on-year increase in GHG emissions
  – 14.3% reduction in GHG emissions from office operations
· 90% and over in the adoption of the paperless QMS
· Green checklist developed for products and packaging
· 28,575 single-use cups avoided through the use of tumblers at the in-house café
· Internal carbon emissions reduction campaign launched since March 2024

*Wellington O, Chinonye A, Oladipo O, Michael K, Rita U, et al. (2024) Analytical Performance Experimentation assessment of the miLab™ MAL Malaria system for the detection of Plasmodium falciparum in clinical samples in Lagos, Nigeria. Multilateral Initiative on Malaria Pan-African Malaria Conference.

**Ewnetu Y, Badu K, Carlier L, Vera-Arias CA, Troth EV, Mutala A-H, et al. (2024) A digital microscope for the diagnosis of Plasmodium falciparum and Plasmodium vivax, including P. falciparum with hrp2/hrp3 deletion. PLOS Glob Public Health 4(5)

# About Noul

## Mission

We explore global challenges that threaten human health and life, discover novel potential solution and realize those possibilities.

## Ambition 2030

We will evolve into a global healthcare company through world-class products and services that impact the lives of a billion people around the world.

## noul
### Beyond Diagnostics

### Business for SDGs

Our core business area directly aligns with the UN Sustainable Development Goal 3 'Good Health and Wellbeing'. Our goal for healthcare access contributes to attaining the SDGs Target 3.3, our goal for cancer diagnostics to the SDGs Target 3.4, and our goal for basic healthcare coverage to the SDGs Target 3.8.

* The UN Sustainable Development Goals (SDGs) set out 17 goals for the international community to achieve by 2030 to advance sustainability development by ending global poverty, advancing health and creating a higher quality of life, promoting inclusive growth, and responding to climate change.

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**01.** Noul is the first company in the global healthcare sector to commercialize a diagnostic platform powered by on-device AI

Since our founding in 2015, we have prioritized our development of innovative products with accurate, hospital-grade diagnostic testing regardless of location or existing infrastructure. The sum of our efforts resulted in miLab™, the world's first on-device AI diagnostics platform that automates the entire process from blood sample preparation to embedded AI analysis. Noul has undoubtedly been the forerunner in decentralized diagnostic testing, with our products finding their application to a host of diagnostic tests, including but not limited to malaria diagnostics, blood analysis, and cancer screening.

**02.** Noul leverages future-driven convergence technology to pioneer telehealth and accelerate the digitalization of diagnostic testing.

We have been developing over 40 component technologies in the fields of biomaterials, optics, software, robotics, and AI that will enable telehealth and digitalized diagnostic testing. Our miLab™ platform integrates medical AI technology for blood and tissue diagnostics, along with innovative bio & robotics hardware technology for sample staining. This profoundly expedites the digital innovation of the manual diagnostic testing of the past century and has supported the real-time remote application of test results.

**03.** Noul improves access to healthcare by providing such essential diagnostic tests as blood testing and cancer screening, creating business value in the process.

Our business model and growth roadmap align with our goal to radically improve healthcare access in many global regions suffering from inadequate healthcare infrastructure. Our miLab™ platform focuses on blood and tissue analysis, an area of immense market growth potential as well as with an opportunity to improve access to healthcare. Our mid-to-long term goal is to evolve into a global company that creates a positive impact both on business and on society.

# Hybrid Business Model

## How we create business and social value

Noul's hybrid business model pursues the integrated delivery of both business value and social value. Our miLab™ solutions enable swift and high-quality hospital-grade diagnoses even at locations lacking access to healthcare, empowering medical institutions with diagnostic capabilities and enabling patients to access high-quality diagnostic test services to create business value as a result. Increased diagnostic capabilities made available for medical institutions and the healthcare system at large serve to improve access to healthcare and affordability, bringing diagnostic tests to more patients to create social value in the process. In our strategic pursuit of this hybrid business model, Noul aims to emerge as a company bringing positive impact to the lives of one billion people worldwide.

## Mission

We explore global challenges that threaten human health and life, discover novel potential solutions, and realize those possibilities

## Business Strategy

**Medical Access** — Develop next-generation diagnostic testing solutions for infectious disease, blood analysis, and cancer diagnostics

Secure best-in-class references and partners → Expand our diagnostic areas and product portfolio → Build an AI-enabled global diagnostic data platform

## Ambition 2030

Evolve into a global healthcare company by delivering products and services that impact the lives of 1 billion people around the world

## Problem

Global population excluded from basic healthcare services and disease diagnostics

**2.5** billion people

**700 million** High/upper-middle income countries

**1.8 billion** Lower-middle/low income countries

### Factors of our focus

Lack of diagnostic testing infrastructure and professionals

Inefficient diagnostic testing workflow and high healthcare costs

### Impacts from these issues

**Patient** — Lacks access to early diagnosis and treatment/prevention opportunities

**Medical institution** — Faces the burden of investing in diagnostic testing infrastructure as well as difficulties in securing personnel

**Healthcare system** — Bears the burden of increasing disease treatment costs

## Solution

**miLab™**
AI-enabled Decentralized Diagnostic Platform

### Key Utility

**Accessibility**
Enable highly accurate, AI-enabled diagnostic testing on compact devices

**Workflow**
Fully automated testing at greater than 2X speed and with less environmental footprint

**Scalability**
Support scalability to encompass a broader range of testing from a single device through a simple replacement of cartridges

**Digitalization**
Store and transmit digital images to enable remote readouts

### Main Value

· Highly accurate blood and tissue (cell) diagnostic testing made available even when lacking healthcare infrastructure

· Minimize the resources required for testing and improve the overall workflow efficiency
· Reduce human error to improve the reliability of diagnostic results
· Savings on water and staining reagent use and zero wastewater

· Enable a range of diagnostic testing on a single device
· Increase the actual benefit cost ratio

· Reduce sample transport times and costs through digital image/data storage and transmission
· Elevate the expertise of testing personnel by using digital data for education/training

## Outcome

**Medical Institution**
Robust internal diagnostics made possible for small/mid/large-sized hospitals, public healthcare centers, and diagnostic labs

**Healthcare System**
Apply miLab™ to the QA/QC programs for the existing microscopic diagnostic system to bolster the overall capacity of the national malaria diagnostic system and fully utilize the allocated budget

**Environment**
Reduction in staining reagent use to 1/100 of conventional microscopic testing, and zero wastewater generated in the staining process

## Impact

Improved health and quality of life
**SDG 3**

Identify and treat diseases early on

Reduction in diagnostic times and costs

**Patient**
Provided with greater access to diagnostics to promptly receive high-quality, point-of-care diagnostic testing

Our Products

# The world's first AI-powered diagnostic lab, available to a billion people all over the world

**miLab™ Platform**, Noul's on-device AI diagnostic solution, enables point-of-care blood analysis and cancer screening.

Its AI technology optimized for small-sized devices enables universal access to blood analysis and cancer screening across the world.

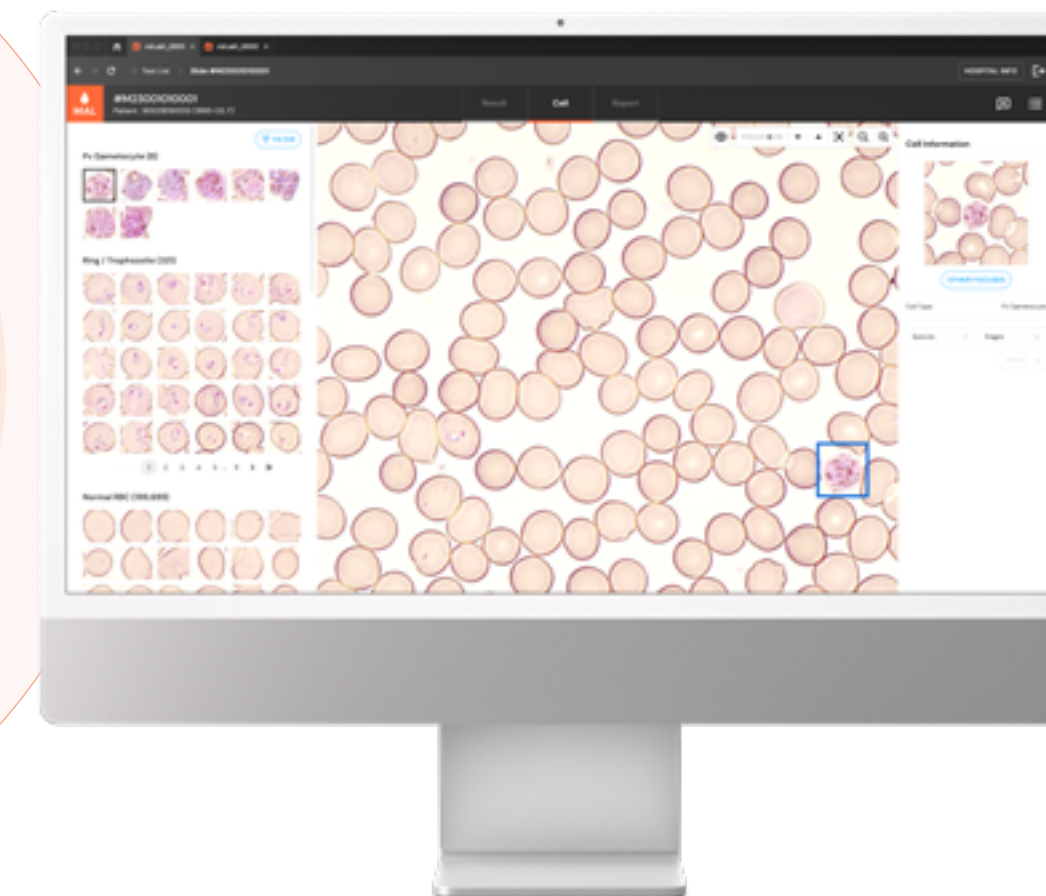World's only platform device to automate the entire microscopic process from sample preparation to AI analysis

**Platform device**

**miLab**

Smart cartridge scalable to wide-ranging blood and tissue diagnostic testing areas

**Smart cartridge**

Moving beyond the physical boundary of the lab to enable remote, non-location-bound readouts

**Digital analyzer**

## How miLab™ works

**Fully automated sample preparation**
The world's first cartridge adopting NGSI solid-based staining to allow for simultaneous smearing and staining

**High-definition digital imaging**
High-performance digital microscopy with a capture capacity of 500 cell images per second.

**AI algorithm analysis**
Embedded AI producing faster and more consistent result analyses than human operators

**Remote readout**
On-the-spot remote readouts available anytime and anywhere through network connections.

Our Products

# Product Portfolio

## miLab™ MAL

### Malaria Testing Solution

miLab™ MAL is Noul's malaria diagnostic testing solution equipped with both microscopic diagnostic infrastructure and technical capabilities of WHO-certified level 1 microscopists. Automating the entire process of malaria diagnosis, miLab™ MAL performs speedy yet high-quality hospital-grade malaria infection tests within 15 minutes, even in locations lacking access to healthcare.
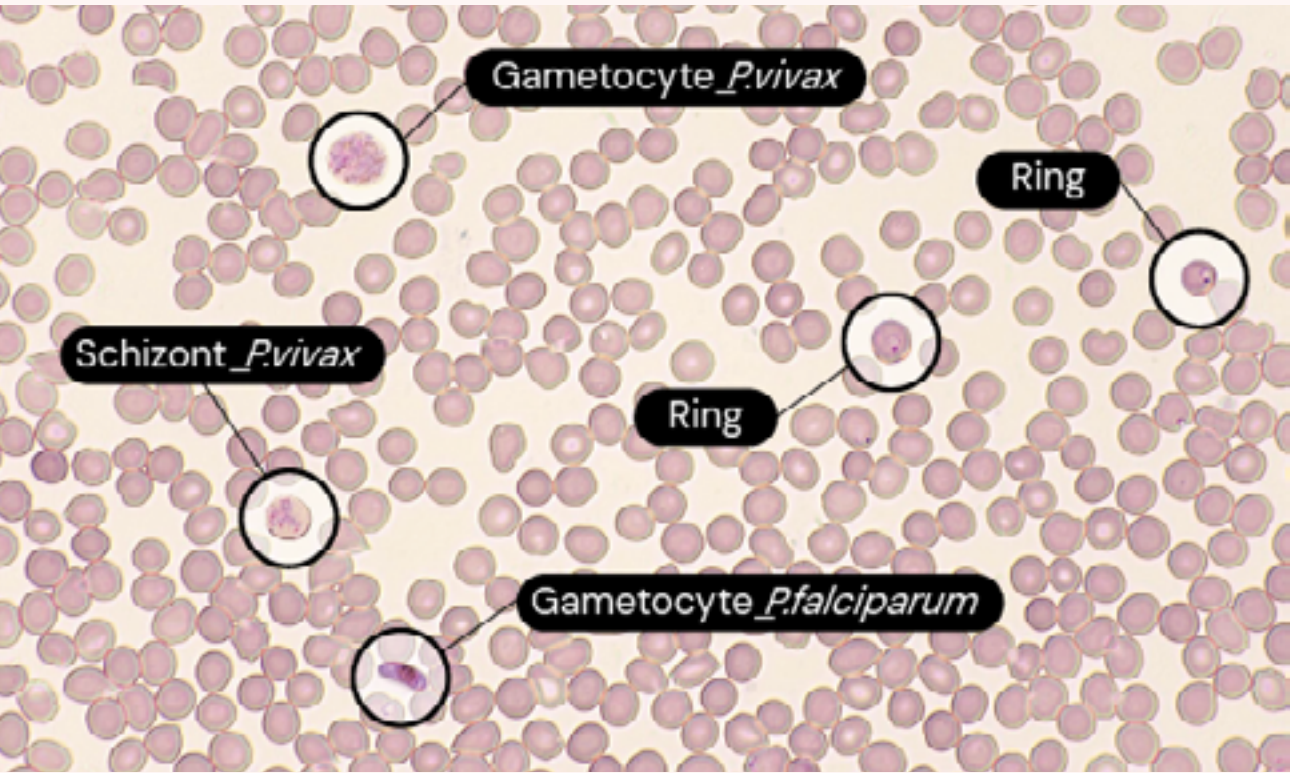


· Digital microscopy in line with the WHO gold standard (Giemsa stain)
· Positive/negative with species suggestion (P.falciparum, P.vivax, and others)
· Lifecycle stage-based analysis (blood-stage malaria parasites)
· Remote readouts using high-definition digital images

## miLab™ BCM

### Blood Analysis Solution

miLab ™ BCM fully automates blood staining and microscopic analysis. This solution employs AI technology for the automated analysis of red blood cells, white blood cells, and platelets to assist diagnostic labs in improving the workflow efficiency of their peripheral blood smear tests. Henceforward, Noul intends to contribute to improving accesscibility to basic blood tests by expading the results of general blood tests.
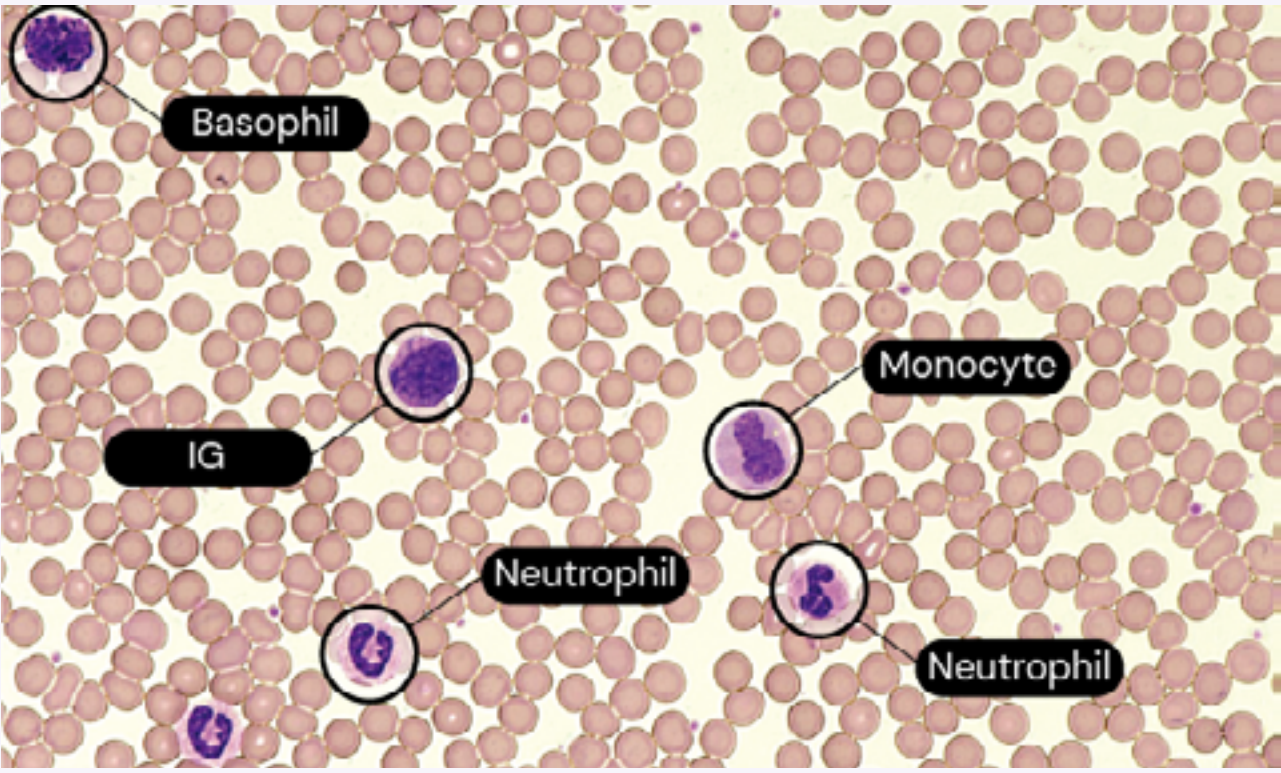


· 5-diff WBC classification and detection of abnornal cells in WBC
· Classification by type of red blood cells and platelets
· Remote readouts using high-definition digital images (using Wright-Giemsa stain)
· Probiding general blood test results such as WBC, RBC, PLT, Hb, and Hct (planned)

## miLab™ CER

### Cervical Cancer Screening Solution

miLab™ CER is a fully automated, AI-embedded digital cytopathology solution that stains, images, and analyzes cervical cells to identify the stages of cervical pre-cancer and cancer in women, alleviating the workload of healthcare professionals. Its primary focus is on improving access to healthcare for women who find it difficult to receive early cervical cancer screening.
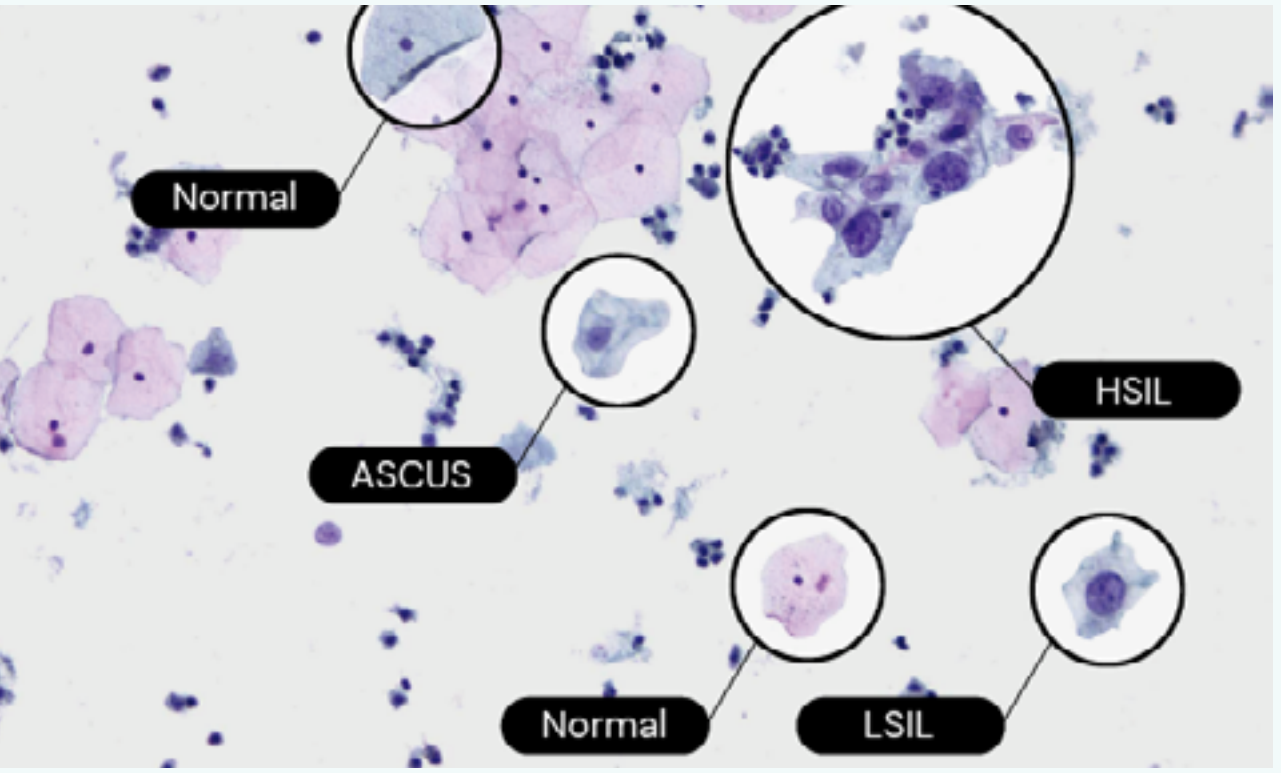


· Automated PAP staining, imaging and AI analysis
· Sample collection support for LBC and manual slides
· Minimized screening times for users
· Remote readouts using high-definition digital images

# Part 2

# Approach to Sustainability

# Noul's Sustainability Policy and Implementation System

**Our Sustainability Policy**

Noul's Articles of Incorporation clearly stipulate our corporate mission anchored on our sustainability philosophy and principles of sustainability management. These principles are at the heart of our policies when it comes to departmental and company-wide sustainability initiatives, and set the course for our continued progress towards sustainability. At the start of each year, we conduct Noulian Work Ethic Training to gather together top executives and our entire team to reaffirm our corporate mission and principles of sustainability management as articulated in the Articles of Incorporation, and ensure they are effectively integrated throughout our operations. Our perspective on sustainability outlined in our Articles of Incorporation include the following components

> · Contribute to the sustainable development of the planet
> · Create social value in our business conduct
> · Balance the pursuit of economic value with the fulfillment of social and environmental responsibility
> · Think long-term when it comes to corporate value
> · Ensure shared growth and development with our diverse pool of stakeholders
> · Embed our sustainability philosophy throughout our operations
> · Measure and manage social performance regularly

**Sustainability Implementation System**

As specified in our Articles of Incorporation, 'our sustainability philosophy forms the foundation of our organizational management', and we continue to integrate our sustainability perspective and components into our management system across our business and organizational operations. The Noul Sustainability Circle was established in December 2020 to serve as our sustainability implementation

system, and it allows for a more strategic and systemic approach to our company-wide sustainability implementation.

There are three implementation domains and three approaches to Noul's Sustainability Circle. The three domains are Compliance, Responsible Business Conduct (RBC) and Social Value Creation (SVC) defined from the perspective of regulatory binding force, management risk, and stakeholder expectation, and present our priorities and strategic directions for sustainability implementation at all levels. The three approaches highlight the values and principles we prioritize across the board when it comes to advancing sustainability management, and they include Corporate Citizenship, Stakeholder Engagement, and Collaboration.

### 3 Domains of Sustainability Implementation

**Compliance**
We abide by laws and regulations.

**Responsible Business Conduct**
We consider responsible business practices throughout our entire operations.

**Social Value Creation**
We create social value throughout our business operations.

### Our 3 Approaches to Sustainability Implementation

**Corporate Citizenship**
Our identity is tied to our corporate citizenship.

**Stakeholder Engagement**
We promote stakeholder communication and engagement.

**Collaboration**
We pursue collaboration and collective impact.

**Noul Sustainability Circle**



Stakeholder Engagement

Compliance

Responsible Business Conduct (RBC)

Social Value Creation (SVC)

Corporate Citizenship

Collaboration

# Our Sustainability Strategy

**5 Sustainability Focus Areas**

In March 2023, we defined the five Sustainability Focus Areas and corresponding Commitments to embed the sustainability principles stipulated in our Articles of Incorporation into our day-to-day business operations and to effectively communicate the process and results of our sustainability implementation to our stakeholders. These 5 Focus Areas and area-specific Commitments have provided us with milestones for our sustainability journey and fueled our efforts to improve sustainability since 2023.
We regularly review our progress and disclose the results with sustainability reporting.

**Sustainability Implementation Strategy**

Our sustainability implementation strategy was established to effectively deliver on our Commitments in the five Sustainability Focus Areas, and is composed of Sustainability Stages that evolve in line with our business growth cycle from 2023 to 2027, as well as Key Actions in each of these Stages. Sustainability Stages set the course for sustainability capacity-building in consideration of our impact on stakeholders across various growth phases, and Key Actions describe key capacity-building activities that should be prioritized in each Stage.

| Sustainability Focus Area | Our Commitment | Stage & Key Actions | | |
|---|---|---|---|---|
| | | **Set-up**<br>Lay the policy/system/cultural foundation | **Speed-up**<br>Bolster execution and facilitate communication | **Level-up**<br>Advance the system and build a sound reputation |
| Compliance, Ethics, and Risk Management | · We abide by laws and standards, and go even further to act ethically.<br>· We systematically prevent and address tangible/non-tangible management risks. | Establish policies and regulations in compliance, ethics, and risk management, and lay the systemic foundation for continued implementation | Build organizational capacity and expertise to strengthen systems in compliance, ethics, and risk management, and implement internal awareness-building programs | Advance our management system in compliance, health & safety, and information security on par with international standards, and internalize such system at the departmental level |
| Sound and Sustainable Governance | · We strengthen the transparency and soundness of our board-driven decision-making system.<br>· We integrate sustainable management practices across the entire decision-making system and organizational operations. | Set goals to foster greater independence, expertise, and diversity of our BoD, amend the Board's operational regulations in reflection of our commitment to attaining these goals, and establish standards and procedures to assess directors' management activities | Improve the process of reporting and discussing sustainability agendas at the Board, and establish a stakeholder engagement process | Advance the Board operational system on par with global sustainability standards, and systematize the stakeholder reporting and engagement process |
| Responsible and Inclusive Workplace | · We internalize a system and culture that respects all employees, and collectively practice the values of diversity, equity, and inclusion.<br>· We consider our social responsibility as a corporate citizen and communicate with stakeholders. | Establish our DEI (Diversity, Equity, Inclusion) policy, and develop content for employee capacity-building | Implement institutional/cultural improvement programs to promote DEI, and establish supply chain assessment criteria and processes from the sustainability perspective | Establish a company-wide DEI performance management process and conduct regular supply chain due diligence |
| Protecting the Planet | · We are keenly aware of our impact on the earth ecosystem and systematically transition to greener alternatives. | Systematize the management of GHG and pollutant emissions data, and progressively increase the ratio of recycled materials in our packaging | Establish an environmental management policy, and progressively improve our GHG emissions and recyclable raw material percentages | Pursue international environmental management system certifications, and shift to renewable energy in our business operations |
| Improvement in Access to Healthcare | · We develop innovative diagnostic testing solutions and work with global public/private partners to broaden our market presence.<br>· We establish an effective strategy to create impact insofar as healthcare access and systematically manage that impact. | Establish an impact framework and develop an impact measurement and management system | Develop and implement projects aiming to disseminate impact business cases | |

* For details on our Key Actions, please see Noul's Mid/long-term Sustainability Improvement Plans in the Appendix of this report.
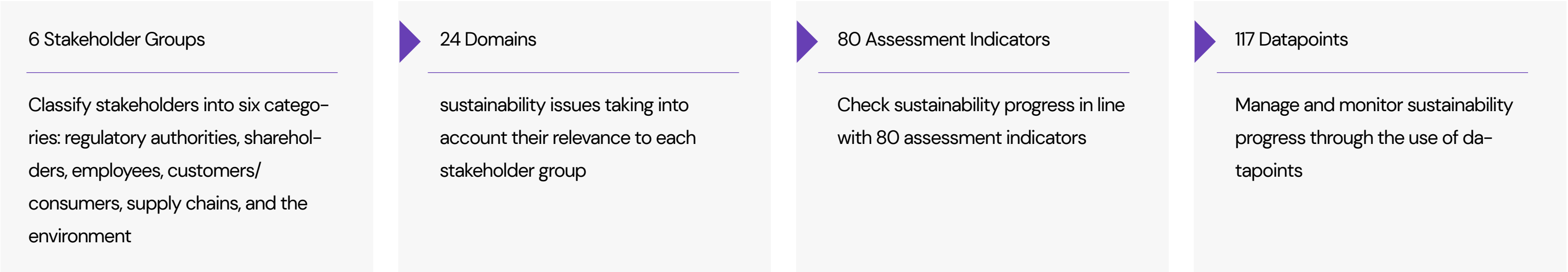
# Sustainability Performance Management

**Sustainability Assessment and Its Results**

To consistently advance sustainability in line with our management philosophy and flexibly navigate the shifting internal/external business landscape, we developed a checklist in 2021 as our sustainability performance index and have since made self-assessments each year. In 2023, we updated our sustainability checklist in light of our renewed status as a listed company by referring to the recent revisions made to domestic/overseas ESG disclosure standards and global sustainability metrics, with an aim to preemptively satisfy the ESG requirements generally expected of all global businesses.

One notable change for 2023 is the establishment of our integrated regulatory non-compliance management procedures to preemptively address the latest statutory and regulatory requirements of the industry we are associated with. We also identified a list of domestic laws that require monitoring for their application in our overall operations, further bolstering our compliance risk management capabilities. This resulted in improved implementation in the legal and regulatory compliance domain, from the medium range (34~66%) to the high range (67~100%). Meanwhile, our implementation in the environmental domain remains in the low range (0~33%) as it was in 2022, and we are managing our environmental risk at a basic level in consideration of the magnitude of our environmental impact and our current growth phase. Important to note here is that some year-on-year improvement was made through bolstering our environmental training and the systemization of environmental data management.

**Structure of Noul's Sustainability Checklist**

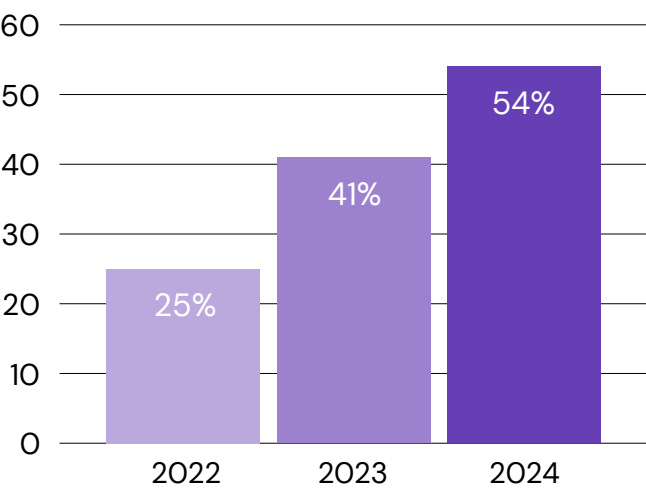| 6 Stakeholder Groups | 24 Domains | 80 Assessment Indicators | 117 Datapoints |
|---|---|---|---|
| Classify stakeholders into six categories: regulatory authorities, shareholders, employees, customers/ consumers, supply chains, and the environment | sustainability issues taking into account their relevance to each stakeholder group | Check sustainability progress in line with 80 assessment indicators | Manage and monitor sustainability progress through the use of datapoints |

**Sustainability Assessment Process**

The sustainability department took the lead in conducting the self-assessment, along with the support and participation of nine relevant departments from compliance, HR, finance & accounting, health & safety, quality systems, sales/marketing and IT/security functions.

| Step 1 | Step 2 | Step 3 | Step 4 |
|---|---|---|---|
| Update the sustainability checklist to reflect global sustainability/ESG metrics | Evaluate 80 sustainability assessment indicators | Measure 117 sustainability performance datapoints | Review results and develop departmental-level improvement plans |
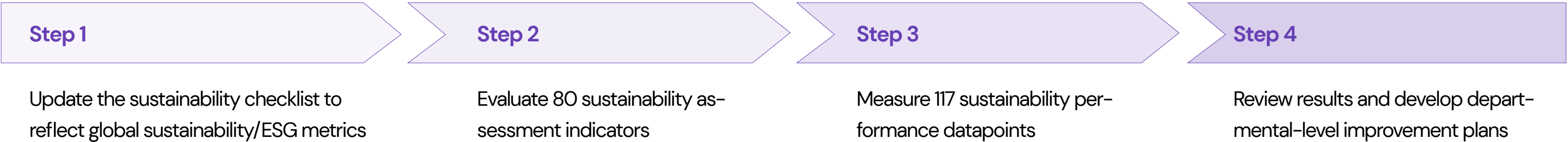
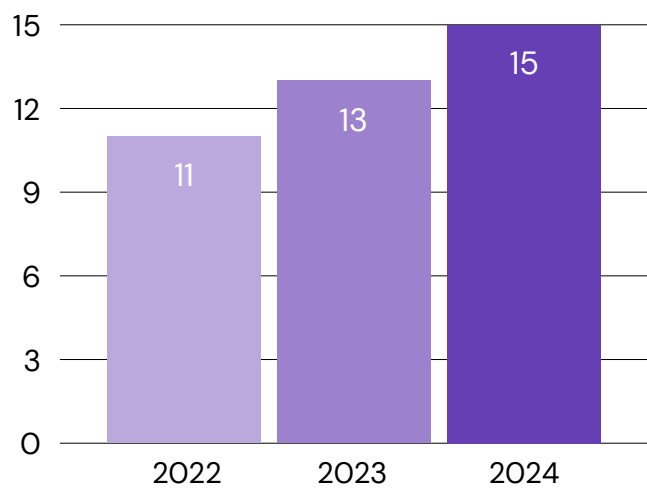**Our Progress towards Sustainability**
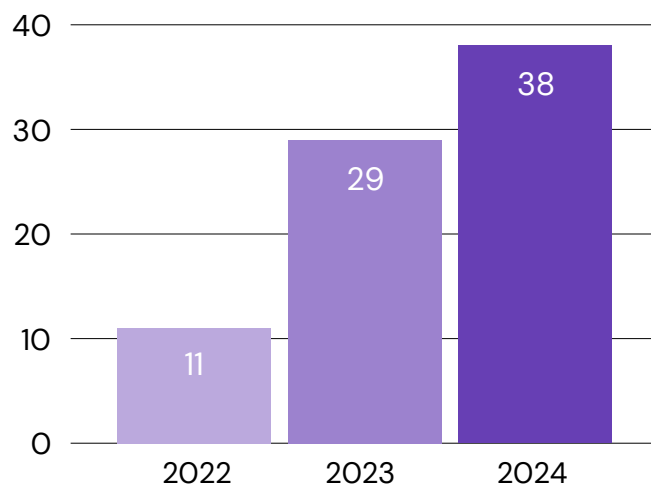
Our Sustainability Implementation Rate



Low implementation rate indicators (0-33%)
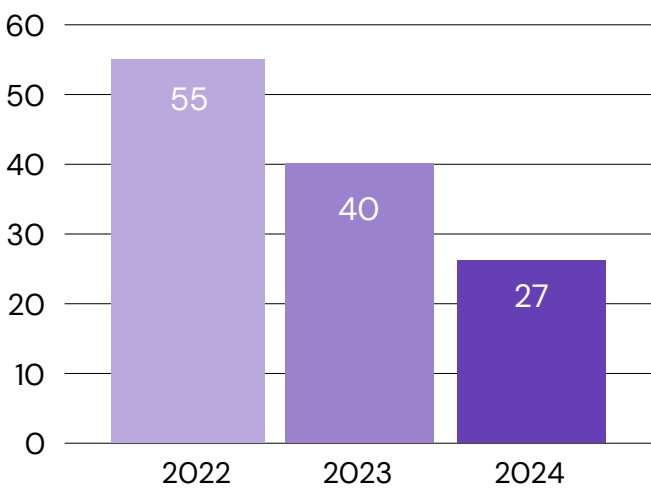


Moderate implementation rate indicators (34-66%)



High implementation rate indicators (67-100%)



While it is safe to say that our internal sustainability implementation has improved year after year, the checklist itself is subject to change as some indicators are updated from year to year, which naturally results in possible discrepancies between absolute numerical improvement in implementation rates and actual improvements made. Our checklist will be updated each year to reflect stakeholder expectations in step with our corporate growth cycle.

**Improving Sustainability over the Mid-to-long Term**

Since 2023, we have established sustainability improvement plans in each of the Sustainability Focus Areas in line with our sustainability implementation strategy, and have engaged in activities to systematically implement the set improvement plans. The working-level department has teamed up with the sustainability department in their sustainability Focus Area to develop quarterly execution plans and regularly monitor their progress and results. From the key 16 activities for 2023 and 2024, 13 are right on track, and the remaining three lag behind the slated schedule (minor gap). The detailed progress on these activities and their results appears in the corresponding pages of this report.  Going forward, Noul will progressively implement our sustainability improvement plans with a focus on the set key activities, while regularly assessing the feasibility of the plans and making necessary annual adjustments to reflect both our growth stage and stakeholder expectations.

**Our Progress towards Sustainability Improvement (as of Dec. 2023)**    ● On Track    ● Minor Gap    ● Major Gap    ⊘ Completed    ↻ In-progress

| Approach | Key Activity | Progress | |
|---|---|---|---|
| Compliance, Ethics, and Risk Management | Establish integrated statutory non-compliance management procedures and operate compliance awareness-raising programs | ⊘ Plan procedures for integrated regulatory non-compliance management<br>↻ Establish compliance guidelines and key policies<br>↻ Set key regulatory monitoring items<br>↻ Implement compliance awareness-raising programs | ● |
| | Lay the basis for the health & safety management system | ⊘ Revise the health and safety management guidelines<br>↻ Establish and/or amend manuals, procedures, and guidelines in line with our health and safety management system<br>⊘ Produce safety management guidelines for subcontract business and apply them across the board | ● |
| | Improve the effectiveness of the internal control system | ⊘ Establish an operational assessment process for the internal accounting control system<br>↻ Assess the design/operational effectiveness of the internal accounting control system and its control activities<br>↻ Improve deficiencies identified through design/operational assessments | ● |
| | Establish ethics/anti-corruption policies and stipulate ethical norms | ⊘ Create the ethics pledge and ensure all employees sign it<br>↻ Develop ethics/anti-corruption policies and stipulate ethical norms | ● |
| | Establish a human rights/sustainability risk management process | ⊘ Draft the sustainability risk management indicators<br>↻ Perform a basic review of human rights and sustainability risks<br>↻ Establish a human rights/ sustainability risk management process | ● |
| | Establish and implement a CS process | ⊘ Establish a workflow for repair and disposal processes<br>↻ Develop repair and disposal process guidelines<br>↻ Develop CS policies and align them with development processes | ● |
| | Establish policies and regulations and develop systems for information security | ⊘ Introduce backup solutions for data protection<br>⊘ Develop risk analysis and improvement plans for key internal information assets<br>↻ Establish information security policies and regulations<br>↻ Establish a key security log monitoring system | ● |
| Sound and Sustainable Governance | Amend the Board operational regulations in reflection of our commitment to strengthening independence, expertise, and diversity in the composition and operation of the Board | ⊘ Identify necessary improvements for the Board operational regulations<br>↻ Amend the Board operational regulations | ● |
| | Set goals and programs to strengthen the independence, expertise, and diversity of the Board of Directors | ↻ Set targets and programs for increased independence, expertise, and diversity at the Board level | ● |
| | Establish standards and procedures to assess directors' management activities | ↻ Establish and apply standards and procedures to assess directors' management activities | ● |
| Responsible and Inclusive Workplace | Establish our DEI (Diversity, Equity, Inclusion) policy and its operational approach | ⊘ Take stock of our DEI (Diversity, Equity, Inclusion) organization<br>↻ Set DEI policies and their operational approaches | ● |
| | Develop content for employees' capacity building | ⊘ Develop and apply internal basic programs for company-wide capacity-building<br>↻ Develop and apply internal advanced programs for company-wide capacity-building | ● |
| Protecting the Planet | Improve GHG emissions (Scope 1 & 2) measurement methodologies and systematize pollutant discharge data management | ↻ Improve GHG emissions (Scope 1 & 2) measurement methodologies<br>↻ Systematize pollutant discharge data management | ● |
| | Progressively improve the use percentage of recyclable packaging | ⊘ Develop a green checklist for products and packaging<br>↻ Establish green-packaging assessment criteria to increase the eco-friendliness of our packaging<br>↻ Seek out collaborative partners to embrace green packaging | ● |
| Improvement in Access to Healthcare | Establish an impact framework | ⊘ Establish a hybrid business model creating both business and social value<br>↻ Systematize the impact framework by product | ● |
| | Develop an impact measurement and management system | ⊘ Develop impact communication documents for miLab™ MAL<br>↻ Define social performance measurement indicators for  miLab™ and take measurements | ● |

# Material Issues for Stakeholders

**Key Stakeholders**

At Noul, we place the utmost importance on growing in sync with our customers, employees, shareholders, partners, communities, and other stakeholders, and step up our efforts to forge strategic partnerships with our key stakeholder groups to progress towards our shared goal. While official feedback or requests on sustainability from our key stakeholders have not yet emerged, we are expanding our communication channels with core stakeholder groups and are regularly gathering stakeholder feedback as planned. We are also establishing a process step-by-step to effectively integrate stakeholder expectations and requirements into our business operations and decision-making.
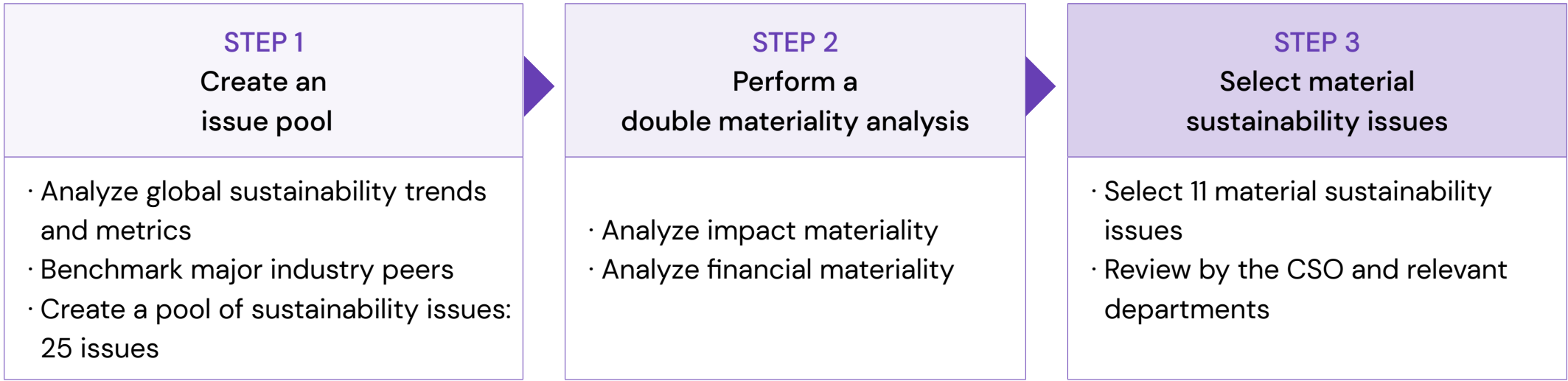
**How Noul Communicates with Key Stakeholder Groups >>**

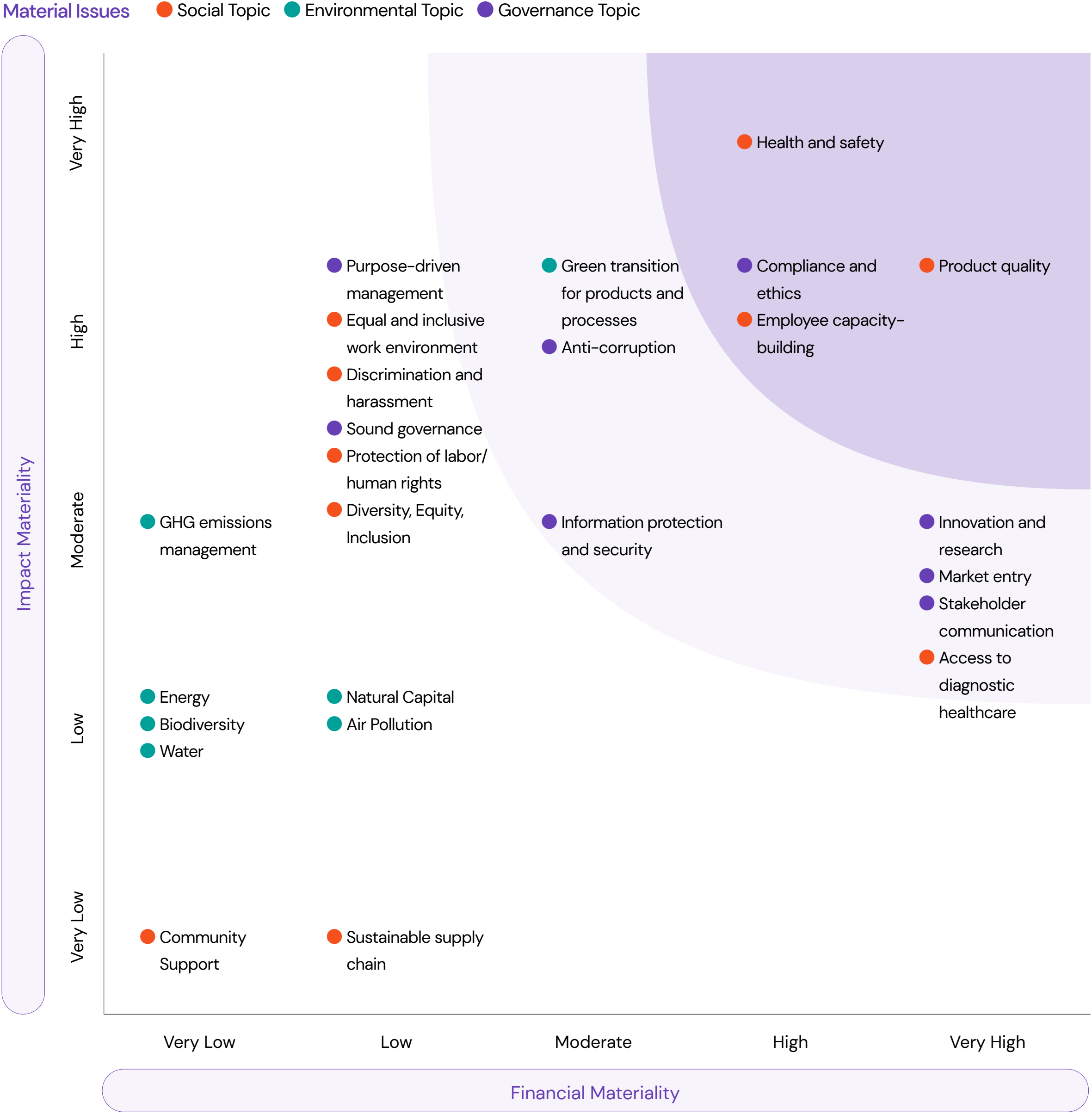| | | Objectives | Approach | Main Issues Discussed |
|---|---|---|---|---|
| **Customers** | | We closely communicate with the customers using our miLab™ at medical institutions, diagnostic testing labs, healthcare facilities, and research labs to integrate their point-of-care perspectives and experiences into our products and services. | · Collect customer feedback through CS/VoC and reflect them in our product development and quality improvements<br>· Hold on/offline meetings with users to better articulate the various use methods for miLab™<br>· Observe local miLab™ use conditions and conduct interviews through customer visits | · Ways to meet market pricing needs<br>· Effective and prompt service support<br>· Provide education and training for increased diagnostic capabilities<br>· Reduce user errors while improving diagnostic accuracy<br>· Enhance trust, with performance evidence |
| **Employees** | | We create an employee-friendly environment fostering capacity building and job engagement, and promote a work culture embedded with diversity and inclusion. | · Conduct employee Engagement Surveys (quarterly)<br>· Convene meetings with 'Noul Harmony', our Labor-Management Council (quarterly)<br>· Hold Creative Meetings as a company-wide participatory town hall meeting (weekly)<br>· Provide capacity-building and Work Ethic training<br>· Publish our in-house newsletter 'All That Noul' (monthly) | · Provide an engaging work environment<br>· Fair and inclusive systems and culture<br>· Capacity building<br>· Achieve our corporate mission and values<br>· Enhance employee engagement |
| **Shareholders and investors** | | The disclosures on our current management status for shareholders and investors are timely and transparent, and reflect the key insights they provide into our business operations and IR activities. | · Hold the Annual General Meeting of shareholders<br>· Make periodic and timely disclosures<br>· Engage in IR activities<br>· Meet with investors<br>· Publish newsletters for stakeholders | · Business strategies and goals<br>· Financial and operational performance<br>· Secure product performance and reference<br>· Progress on R&D efforts |
| **Partners (Business, R&D)** | | We have an ongoing dialog with business partners to identify market needs, and cooperate with R&D partners to delve into next-generation technology that holds the potential to improve access to healthcare. | · Attend international exhibitions and conferences<br>· Hold regular on/offline meetings with partners<br>· Implement joint research and projects | · Discover new business opportunities<br>· Improve diagnostic accuracy<br>· Save on R&D costs through automation<br>· Collaborative synergy for products and technology<br>· Extend the application scope of innovative technology |
| **International organizations and government agencies** | | We consult with international health organizations on matters needed to advance into the global public healthcare market, and pursue partnerships with country-level healthcare institutions to broaden our opportunity to enter country markets. | · Discuss global public healthcare issues and propose policies<br>· Conduct joint research and engage in project cooperation<br>· Attend domestic/international public healthcare conferences and propose agendas | · Cooperate to improve access to diagnostics<br>· Introduce innovative technology for LMICs<br>· Support R&D and commercialization<br>· Participate in public procurement business |
| **Environment** | | We consider the environment as our non-human stakeholder that could significantly influence or be influenced by our business operations. We proactively communicate with our employees and other stakeholders about any environmental issues associated with our operations, and undertake environmental stewardship initiatives. | · Share environmental issues internally/externally through in-house newsletters, company-wide town hall meetings, and reports<br>· Provide sustainability training to employees<br>· Implement in-house environmental improvement projects and energy-saving campaigns for climate change adaptation<br>· Pursue a phased transition to greener products and processes | · Efforts to reduce carbon emissions<br>· Sustainable resource use<br>· Waste management<br>· Minimize the product's environmental footprint<br>· Environmental regulatory compliance |

**Material Issues for Stakeholders**

In 2023, we conducted a double materiality assessment in analyzing material stakeholder issues to consider both impact materiality (inside-out perspective) and financial materiality (outside-in perspective). This started with creating a pool of sustainability issues based on global sustainability trends and industry-specific key metrics. This was followed by the analysis of issues within the issue pool based on how our business operations bring positive/negative and actual/potential impact on stakeholders to prioritize issues with a focus on their impact. Next, we identified the positive/negative impact of each sustainability issue according to the financial aspects of our business in terms of likelihood and scale of impact. Finally, we selected 11 material sustainability issues after careful analysis of the results. These material issues were determined through a final review from our leadership team and relevant departments.

Double Materiality Assessment Process

| STEP 1<br>Create an<br>issue pool | STEP 2<br>Perform a<br>double materiality analysis | STEP 3<br>Select material<br>sustainability issues |
| --- | --- | --- |
| · Analyze global sustainability trends and metrics<br>· Benchmark major industry peers<br>· Create a pool of sustainability issues: 25 issues | · Analyze impact materiality<br>· Analyze financial materiality | · Select 11 material sustainability issues<br>· Review by the CSO and relevant departments |

This sustainability report elaborates on our activities and achievements for 11 key issues that were placed at the top on the list both in terms of impact materiality and financial materiality. To fulfill our environmental and social responsibility as a corporate citizen, we also disclose our activities and achievements associated with seven issues discovered to be highly material from the impact materiality perspective while relatively less material from the financial impact perspective.

**Material Issues**   ● Social Topic   ● Environmental Topic   ● Governance Topic



Impact Materiality (vertical axis: Very Low, Low, Moderate, High, Very High)

Financial Materiality (horizontal axis: Very Low, Low, Moderate, High, Very High)

- ● Health and safety
- ● Purpose-driven management
- ● Equal and inclusive work environment
- ● Discrimination and harassment
- ● Sound governance
- ● Protection of labor/ human rights
- ● Diversity, Equity, Inclusion
- ● Green transition for products and processes
- ● Anti-corruption
- ● Compliance and ethics
- ● Employee capacity-building
- ● Product quality
- ● GHG emissions management
- ● Information protection and security
- ● Innovation and research
- ● Market entry
- ● Stakeholder communication
- ● Access to diagnostic healthcare
- ● Energy
- ● Biodiversity
- ● Water
- ● Natural Capital
- ● Air Pollution
- ● Community Support
- ● Sustainable supply chain

# Part.3
# Our focus

# Improvement in Access to Healthcare

· Malaria Diagnosis
· Blood Cell Testing
· Cervical Cancer Screening
· R&D Spotlight
· Partnerships and Initiatives

# Increased accuracy in malaria diagnosis and expansion of real-world product use cases miLab™ MAL

## 19 countries

where have launched miLab™ MAL (as of June 2024)

9 in Africa, 3 in Asia, 3 in Europe, 2 in the Middle East,
1 in North America, and 1 in Latin America

## 24,000

Malaria diagnostic cartridges distributed on LMICs in 2023

## 94.4% in sensitivity, 98.1% in specificity*

In diagnosing P.f infections with miLab™ MAL

## 97.0% in sensitivity, 97.6% in specificity**

In diagnosing P.v infections with miLab™ MAL

*Wellington O, Chinonye A, Oladipo O, Michael K, Rita U, et al. (2024) Analytical Performance Experimentation assessment of the miLab™ MAL Malaria system for the detection of Plasmodium falciparum in clinical samples in Lagos, Nigeria. Multilateral Initiative on Malaria Pan-African Malaria Conference.

**Ewnetu Y, Badu K, Carlier L, Vera-Arias CA, Troth EV, Mutala A-H, et al. (2024) A digital microscope for the diagnosis of Plasmodium falciparum and Plasmodium vivax, including P. falciparum with hrp2/hrp3 deletion. PLOS Glob Public Health 4(5)

## Why We Focus

Malaria ranks as one of the world's top three major infectious diseases with approximately 250 million cases reported globally: 95% of malaria infections and 96% of malaria deaths take place in Africa, and children account for nearly 80% of the fatalities. Most countries affected by malaria face the common challenge of lacking the professional medical personnel  and infrastructure needed to diagnose the disease, making swift and accurate diagnoses in such regions difficult, if not impossible.

## Our Goal

miLab™ MAL enables swift, high-quality hospital-grade testing, which holds true even in locales lacking adequate access to healthcare, thus greatly expediting diagnostic times and lowering costs while radically reducing malaria-induced fatalities.

**miLab™ MAL sales are on the rapid rise, especially within Africa.**
The global sales of miLab™ MAL are primarily driven by the African region known for its overwhelmingly high occurrence of malaria infections. In 2023, we generated sales in eight African countries, representing a 2.7-fold growth from three countries the previous year. The sales of miLab™ MAL devices and cartridges rose by 1.9 times and 1.8 times respectively year-on-year in 2023. In many African countries where we have yet to generate revenue, work is underway to evaluate the performance of miLab™ MAL offerings along with market research, and we expect to have our products registered and initiate sales at scale soon.

In addition to Africa, we see a growing demand and interest in miLab™ MAL across Europe – including Spain, Denmark, and Turkey. As conditions mature to boost our business growth, from expanding market presence and new customer recruitment to increasing consumption of cartridges per devices, we expect a surge in the use of miLab™ MAL devices and cartridges.

### User Feedback

**What made you choose Noul?**

"miLab™ is extremely convenient and produces even more accurate images than microscopy. miLab™ will help us increase the percentage of returning patients who can count on us for high-quality tests."
– the head of the diagnostic lab in Cote d'Ivoire

"miLab™ is easy to use and performs well. Before, we had to rely on rapid test kits and microscopy for malaria testing, but after we introduced the device, our malaria tests are done exclusively through miLab™."
– a manager at the diagnostic lab in Nigeria

**miLab™ performs malaria diagnostics just as well, if not better than WHO-certified level 1 microscopists**
We unveiled the results of the clinical performance study conducted on miLab™ MAL in Ghana and Ethiopia at the American Society of Tropical Medicine and Hygiene (ASTMH) Annual Meeting held in October 2023. This study was jointly performed by researchers from the University of Notre Dame in the US, Gondar University in Ethiopia, and Kwame Nkrumah University of Science and Technology in Ghana on 1,649 patients for over two years.  The findings indicated that miLab™ MAL received 94.3% in sensitivity and 94.0% in specificity in diagnosing P. falciparum (P.f) and 97.0% in sensitivity and 97.6% in specificity for P. vivax (P.v)*.

In April 2024, we attended the Multilateral Initiative on Malaria Pan-African Malaria Conference (MIM PAMC), the largest academic gathering in Africa, to announce the results of our clinical performance study conducted on miLab™ MAL in the three key African countries of Nigeria, Ethiopia, and Ghana. According to study results in Nigeria, miLab™ MAL received 94.4% in sensitivity and 98.1% in specificity in diagnosing P. falciparum (P.f)**. Noul continues our efforts for data training to improve our AI algorithms, and we are convinced that clinical performance will steadily rise to produce highly reliable test results.

**We dramatically refined our AI performance to make malaria testing even more accurate.**

In 2023, we improved the AI on our miLab™ MAL, which significantly boosted its testing accuracy, and this was demonstrated with the data from a wide range of clinical study sites. We also launched research efforts to improve the performance of miLab™ MAL in distinguishing between P. falciparum (P.f) and P. vivax (P.v) across clinical research sites with an aim to enable appropriate prescription and treatment based on accurate species differentiation right at the diagnostic test site. While civil wars affecting some regions gave rise to challenges in sample logistics and data transmission, resulting in slight delays to our research timeline, sample supplies resumed at the end of 2023 and we expect to showcase miLab™ MAL with improved species differentiation performance as planned in 2024.

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**Key Performance and**

**Usability Improvements Made to miLab™ MAL**          ⊘ Completed   ↻ In-progress

- ⊘ Secured a new AI model reaching 100% and 95% in sensitivity and specificity based on internal verification datasets
- ⊘ Demonstrated consistently high performance when additional verifi-cations were made with the data generated at two clinical study sites
- ⊘ Significantly improved user convenience by reducing the frequency of reviews required based on test results by nearly 80%
- ↻ Continued to improve species differentiation between P. falciparum (P.f) and P. vivax (P.v)
- ↻ Studied cost saving technology, applying it to products to increase price accessibility

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**We have embarked on an international project worth KRW 4 billion with prestigious global institutions.**

In March 2023, Noul received approximately KRW 4 billion in research grants from the RIGHT Foundation, an international health organization jointly invested in by the Korean government, the Bill & Melinda Gates Foundation, and biotech companies in Korea. This funding supports global clinical projects and cost-effectiveness analyses of miLab™ MAL in Africa and Asia.

In 2023, we initiated a joint project with the Ministry of Health of Ghana for clinical performance assessment, and we will simultaneously conduct usability assessments and cost-effectiveness analyses of miLab™ products. From 2024 onwards, we will pursue joint research efforts with health ministries and national malaria centers in Nigeria, Ethiopia, and Malawi. We will also increase access to malaria testing for patients in low-to-middle income countries and promote equity in international public health.

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**Project collaborators**

**Local health ministries**
- · GIDC, Ghana Infectious Disease center
- · National Malaria Elimination Programme
- · Malawi National Malaria Control Program

**Global institutions and research labs**
- · PATH, Program for Appropriate Technology in Health
- · University Notre Dame Du Lac
- · Swiss TPH, Swiss Tropical and Public Health Institute

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**We pursued productivity improvement through expanding production capacity and internalizing core processes.**

To proactively scale up reliable production capacity in sync with our global market sales plan, we pursue visible improvement in quality and productivity to build manufacturing competitiveness. In 2023, we doubled our production capacity for miLab™ Cartridge MAL and miLab™ Cartridge BCM, and engaged in facility development for the mass-production of miLab™ Cartridge CER, a new addition to our portfolio. While expanding our production capacity, we scaled up our reagent and gel liquid production and conducted more rigorous tests to ensure quality, which resulted in a 45% improvement in productivity all while maintaining identical quality performance.

We are also building a production system to internalize core processes with an aim to ensure reliable quality and cost efficiency for some cartridge products that are currently being manufactured through outsourcing. In 2024, we will fully internalize these core processes to improve the reliability of our product quality and optimize our work processes and conditions for increased manufacturing efficiency.



miLab™ MAL Digital image

# Increased accuracy in blood cell testing and enhanced product usability miLab™ BCM

## Why We Focus

Blood analysis forms the first basic step in checking a patient's overall health status and identifying diseases. While over 600 million blood analysis tests are performed all around the world each year, the vast majority of people whose CBC test results fall outside the normal range do not receive peripheral blood smear tests, missing the critical window of opportunity to predict and discover blood-related diseases.

## Our Goal

miLab™ BCM plays an instrumental role in our efforts to ensure optimal efficiency in test workflow and the lab environment, while increasing access to basic health tests for those living without adequate access to healthcare professionals and infrastructure.

**The first clinical study on miLab™ BCM demonstrated that its staining performance is comparable to conventional manual operation.**
We conduct research to verify the exceptional performance of miLab™ BCM in clinical settings. In 2023, we presented our research findings to demonstrate miLab™ BCM's capability to generate high-quality PBS (peripheral blood smear) at the PIT PDS PatKLIn XXII, a clinical pathology and laboratory medicine conference, held in Jakarta, Indonesia. This research was conducted at Dharmais Cancer Hospital,

Indonesia's national cancer center, and produced the first clinical performance study outcomes showing "miLab™ BCM produced staining quality comparable to that of conventional methods, and is highly applicable to identifying morphological abnormalities in cells for diagnosing leukemia". This will base our efforts to tap into new markets while further refining the functionality of miLab™ BCM in the first half of 2024. Starting from the second half of the year, we will pursue cooperation and business commercialization with global companies, with a focus on Southeast Asia and Central & Latin America.

**We achieved performance enhancement across a host of areas, from sample preparation to AI analytics.**
In 2023, our priority was to test in a way that considers specific use conditions of our key customers and to improve the reliability and user-friendliness of readouts to ultimately make miLab™ BCM seamlessly operable across a wider scope of conditions.

**Key Performance and
Usability Improvements Made to miLab™ BCM**  ⊘ Completed  ⟳ In-progress

⊘ Developed miLab Viewer™ for miLab™ BCM to support the remote verification of peripheral blood smear test results

⊘ Improved AI performance to facilitate the differentiation of 5 types of white blood cells and abnormal white blood cells

⊘ Studied optimal smear, fixation, and staining conditions to increase accuracy in identifying abnormal samples

⊘ Improved smear methods to ensure effective blood smear for varying red blood cell concentrations

⊘ Developed AI to determine the quality of work usually performed by experts making observations through microscopy, to improve the analytical efficiency of blood smears

⟳ Ensured optimal smear methods and staining conditions to facilitate white blood cell differentiation and red blood cell/platelet analysis

⟳ Enabled miLab™ BCM to provide the key test values normally generated by CBC (complete blood count) equipment
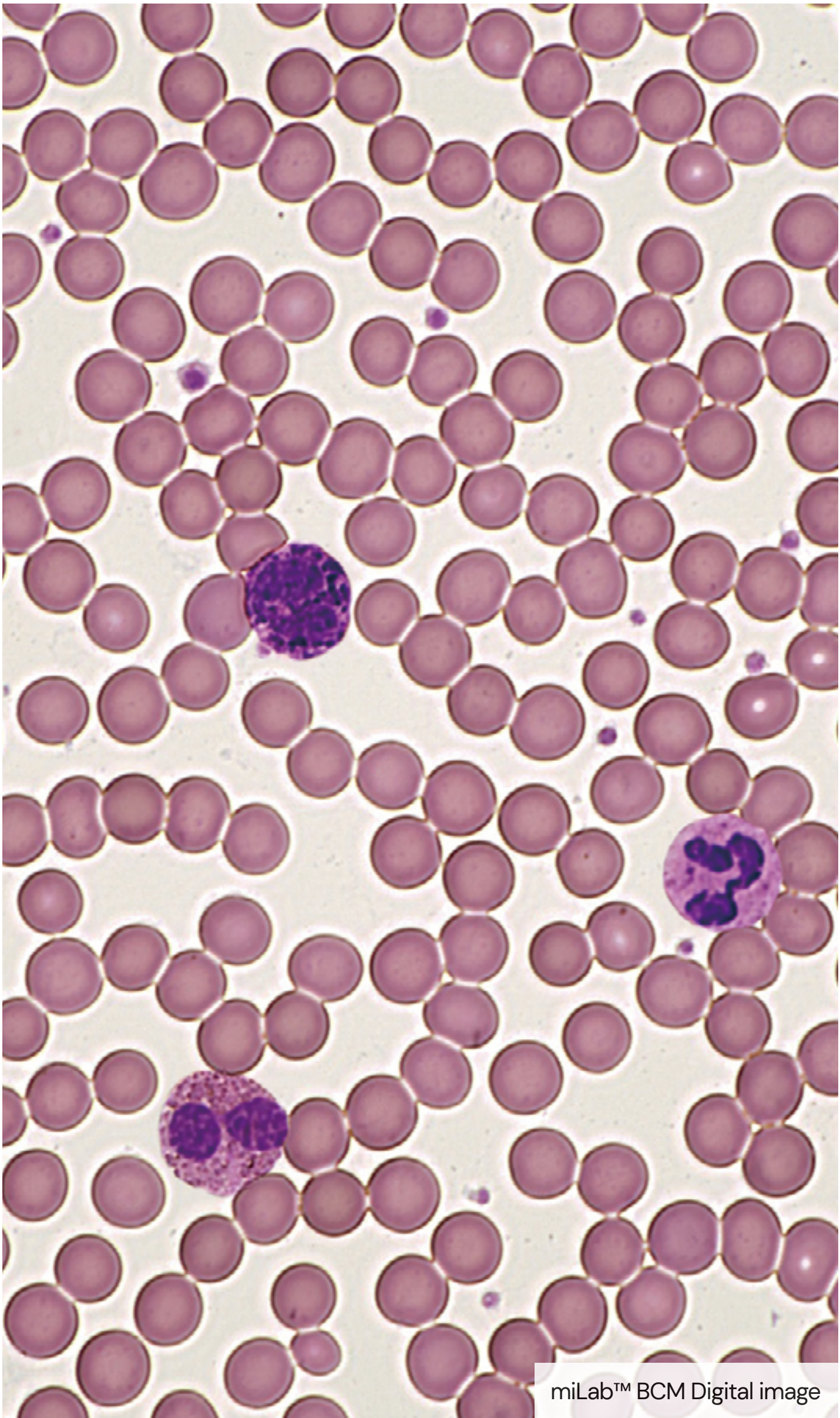
miLab™ BCM Digital image

# Developing the world first product automated Pap test for cervical cancer screening, and improved performance miLab™ CER

## Why We Focus

Cervical cancer, being a preventable disease through vaccination, early screening, and treatment, remains  the cause of death for over 340,000 women each year, and is the third most common cancer among women. Unfortunately, a large number of women find it challenging to receive early screening for cervical cancer due to the shortage of diagnostic testing infrastructure and professionals.

## Our Goal

miLab™ CER will optimize the test workflow and increase the efficiency of lab operations so that more women stand a better chance of detecting cervical cancer early on and receiving treatment.

**miLab™ CER was received by pathological diagnosis experts as a breakthrough improvement in cervical cancer screening.**

In October 2023, Noul unveiled miLab™ CER, world's first fully-automated solution for cervical cancer cytology screening at the International Federation of Gynecology and Obstetrics (FIGO) World Congress. We went on to introduce miLab™ CER at the EUROGIN, the ACOG, the USCAP and other leading exhibitions related to cervical cancer to explore partnership opportunities and collect early-phase feedback. This allowed us to gather specific use cases for miLab™ CER, which was received by a number of pathological diagnosis experts as "appropriate for patient triage after HPV screening". Our next step will be to integrate the feedback we collected from field experts in pursuing performance optimization and improvements for miLab™ CER in a way to increase access to cervical cancer screening.

**We completed the prototype development of miLab™ CER and are now improving its staining and AI technology in line with on-site feedback.**

In 2023, we completed prototype development for miLab™ CER which automates the entire process of staining, imaging, and AI analytics, along with new cartridges exclusively designed for miLab™ CER. We continue to improve product performance through reflecting a range of feedback we gleaned from the field

> **Key Performance and Usability Improvements Made to miLab™ CER**    ⊘ Completed   ↻ In-progress
>
> ⊘ Developed miLab Viewer™ for miLab™ CER to support the remote verification of Pap test results
>
> ⊘ Developed staining technology and dedicated cartridges equally applicable to conventional pap smears
>
> ⊘ Improved technology to expedite the imaging of cell population slides
>
> ↻ Pursued the development of cartridges capable of staining LBC samples
>
> ↻ Improved AI technology for increased accuracy in differentiating cervical cancer cells in cell population images



miLab™ CER Digital image

"We explore global challenges that threaten human health and life, discover novel potential solutions, and realize new possibilities."
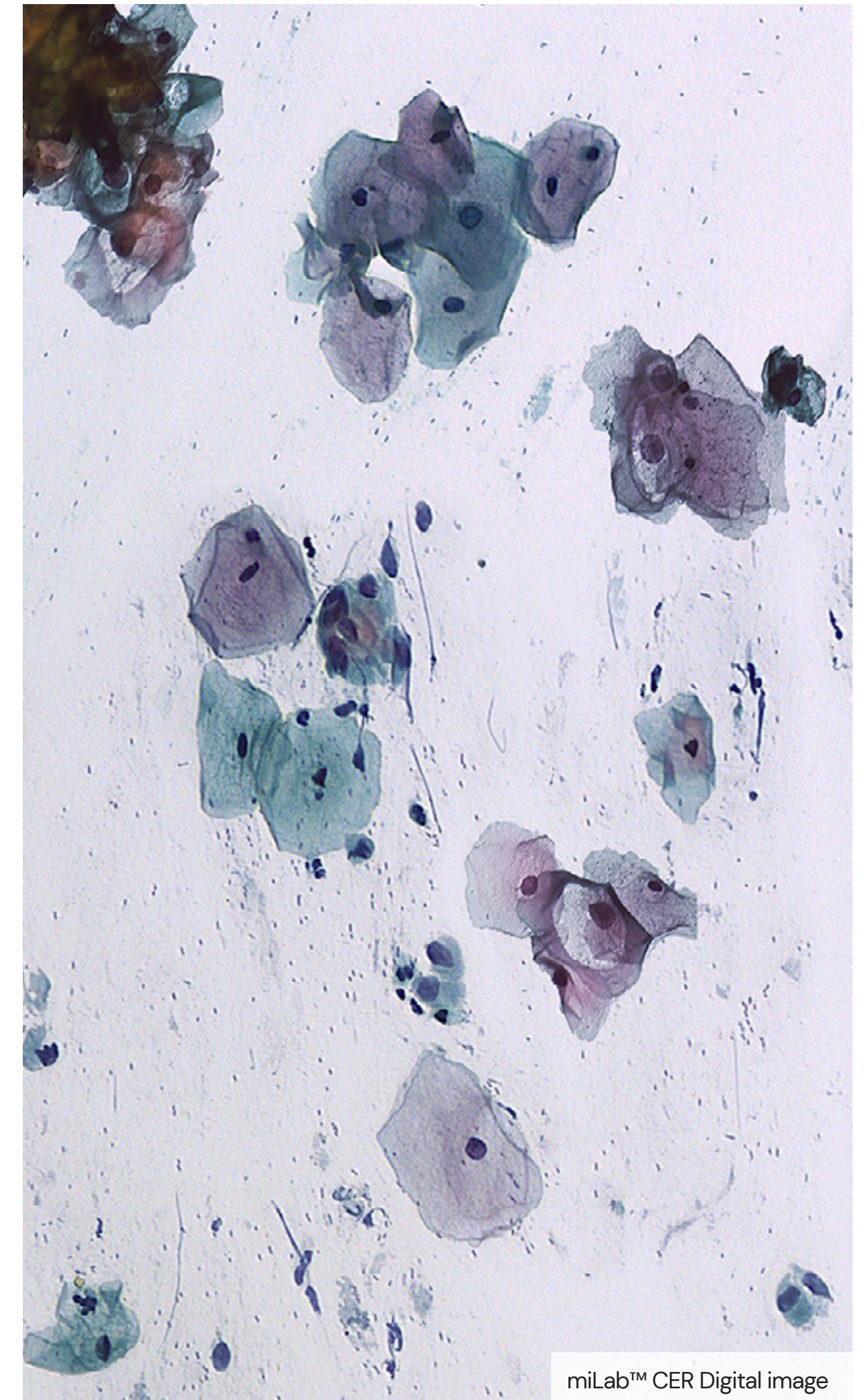
## Challenges & Plans for Improvement in Access to Healthcare

### Challenges

As we are moving from the initial global business development phase to the next phase, we actively engage with our existing and prospective customers to identify market feedback and requirements. The feedback from customers and stakeholders we collected over the years led our short-term efforts to identify three top priorities and make necessary improvements. First, customers' use cases and their positive feedback led us to step up our efforts to increase price competitiveness through cost savings and pricing policies to accelerate the expansion of our business in LMICs. Second, we are partnering with various organizations to build scientific evidence and conduct clinical performance assessments so that we earn stronger customer and stakeholder confidence in the performance of miLab™. Third, we are getting our products approved in more countries in Southeast Asia, the Middle East, Central & Latin America, and North America to raise the profile of our products globally, and continue to forge strategic partnerships with international organizations and global companies.

### Plans

· Expand the sales market of miLab™ MAL across Africa, Europe, Asia, and the rest of the world
· Strengthen strategic partnerships to expedite the sales of miLab™ BCM
· Establish country-specific pricing policies and strategies based on realistic product demand
· Secure scientific performance evidence for miLab™ products
· Proactively gather customer feedback to pursue customer-centered product improvement
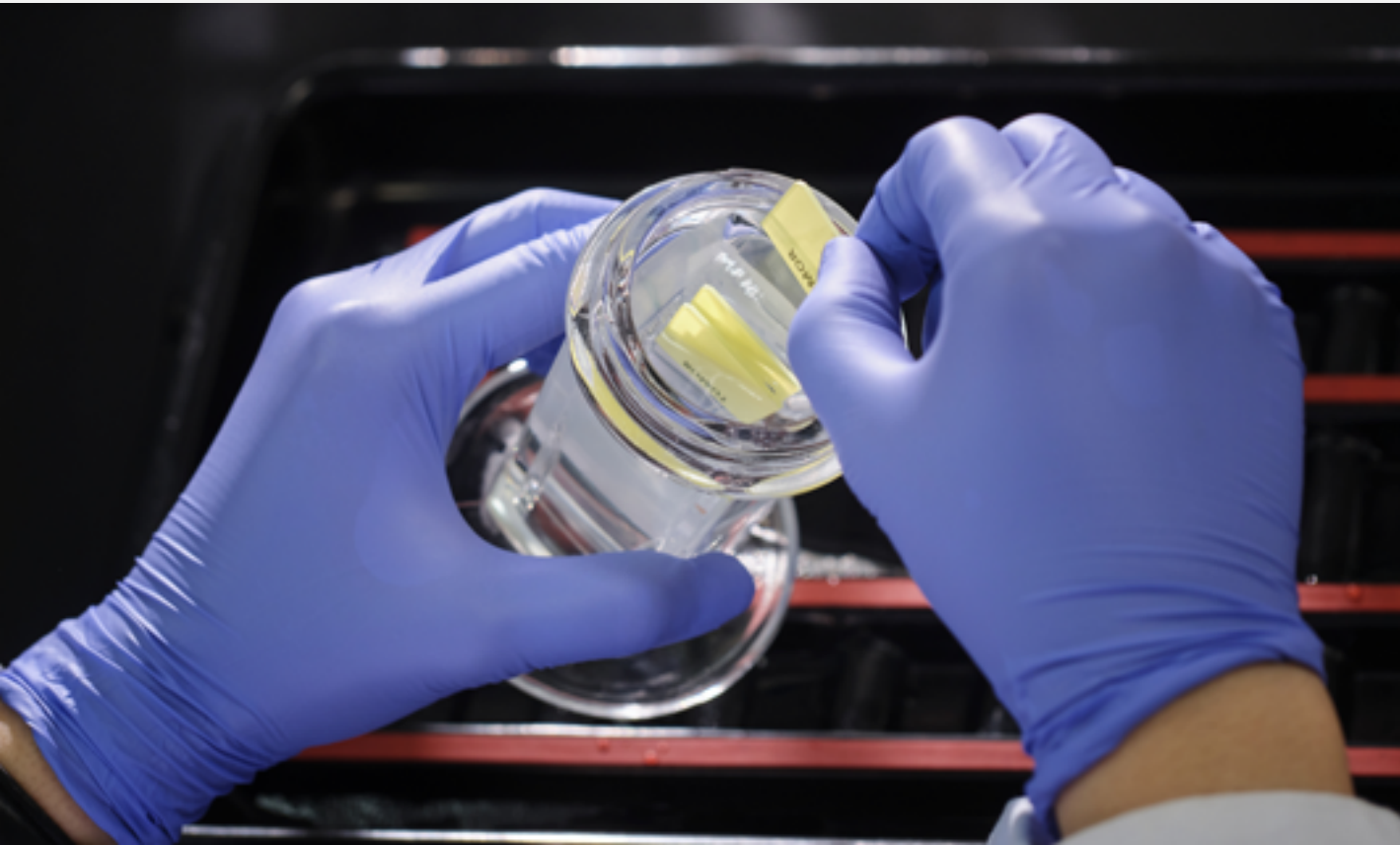
# R&D Spotlight

**Exploring New Opportunities for Innovation through miLab™ Component Technologies**

Noul's research organization engages in exploratory research to identify the emerging needs in the healthcare sector and develop new solutions while partnering with healthcare professionals and researchers recognized for their top-tier technology to develop next-generation technology. Our key R&D priorities include (1) spatial biology-based cancer profiling technology and (2) minimally-invasive intelligent cell analysis-based cancer diagnostics, all of which are being pursued as national research projects.

In November 2023, we attended a conference co-hosted by the American Association for Cancer Research and the Korean Cancer Association to publish new research findings on H&E staining technology using hydrogel-stamping. This marked a key technological achievement in our efforts to expand our business into tumor microenvironment analysis and digital pathology, and these results were featured at the 'Frontiers in Bioengineering and Biotechnology', a renowned international journal. Furthermore, we developed a prototype of miLab™ DIPA, the world's first automatic detector for intestinal parasites, and this was designated as an innovative prototype product by the Korean Public Procurement Service.



**R&D Spotlight 1.**

**Announcing Research Findings for Solid-based H&E Staining for Diagnosing Cancer**

**Q. What prompted Noul to perform this research?**

H&E (Hematoxylin and Eosin) staining is a basic histopathological technology most commonly used in observing cell structures and tissues. Low-and-middle income countries (LMIC), however, find this technology difficult to employ due to insufficient water/sewage facilities and the lack of skilled technicians. Hydrogen-stamping, Noul's proprietary solid-based staining technology, does not use or generate water or wastewater, and when coupled with H&E, holds the potential to facilitate LMICs to use H&E staining. Another reason why we started this research was to address variations in staining quality. Such variations occur when different labs apply chemical treatments and perform H&E staining on tissues as per their biopsy process. This raises the need for standardized staining methods, for which digital pathology could provide a solution.

**Q. What are the implications of the research outcomes in precision cancer diagnosis and digital pathology?**

Noul developed solid staining patches containing hematoxylin and eosin dyes respectively and applied them to H&E staining, which streamlined the conventional solution-based, multi-step H&E staining process by up to 50% all while maintaining the comparable quality of staining. Our hydrogel staining technology allows for the adjustment of the stamping time according to tissue type to easily control staining colors, and supports customized settings to suit user preferences. The consistent staining results and ease-of-use made possible with our solid staining technology will tremendously improve diagnostic accuracy in the area of digital pathology.
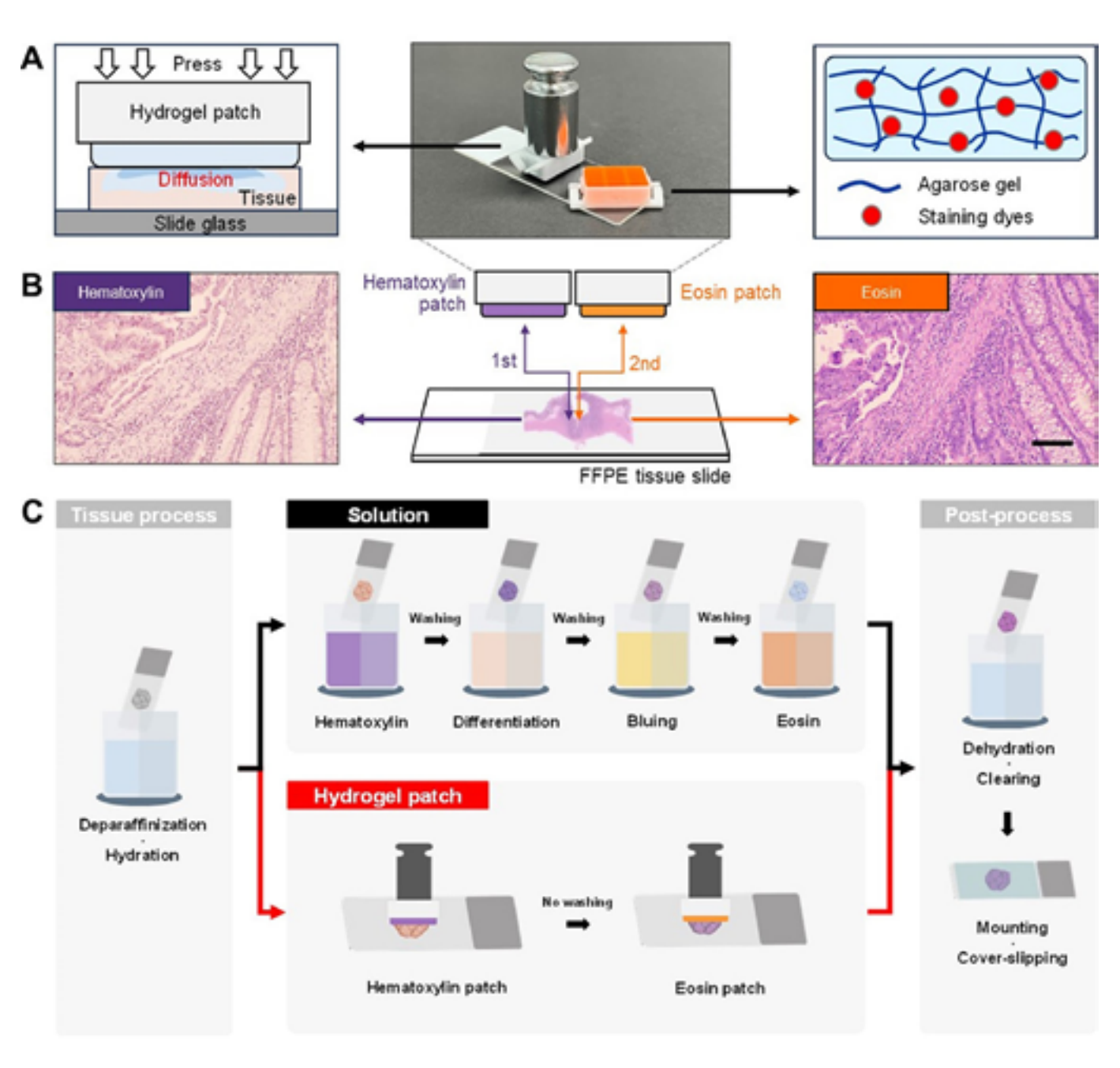


Staining outcomes using solid staining technology (above), and a comparative analysis of the simplified staining processes utilizing traditional liquid-based methods versus Noul's hydrogel-based stamping technology (below)

Kim J, Choi W, Yoo D, Kim M, Cho H, et al. (2023) Solution-free and simplified H&E staining using a hydrogel-based stamping technology. Front. Bioeng. Biotechnol

**miLab™ DIPA Prototype for the Automatic Detection of Intestinal Parasites Designated as an Innovative Prototype Product by the Public Procurement Service**
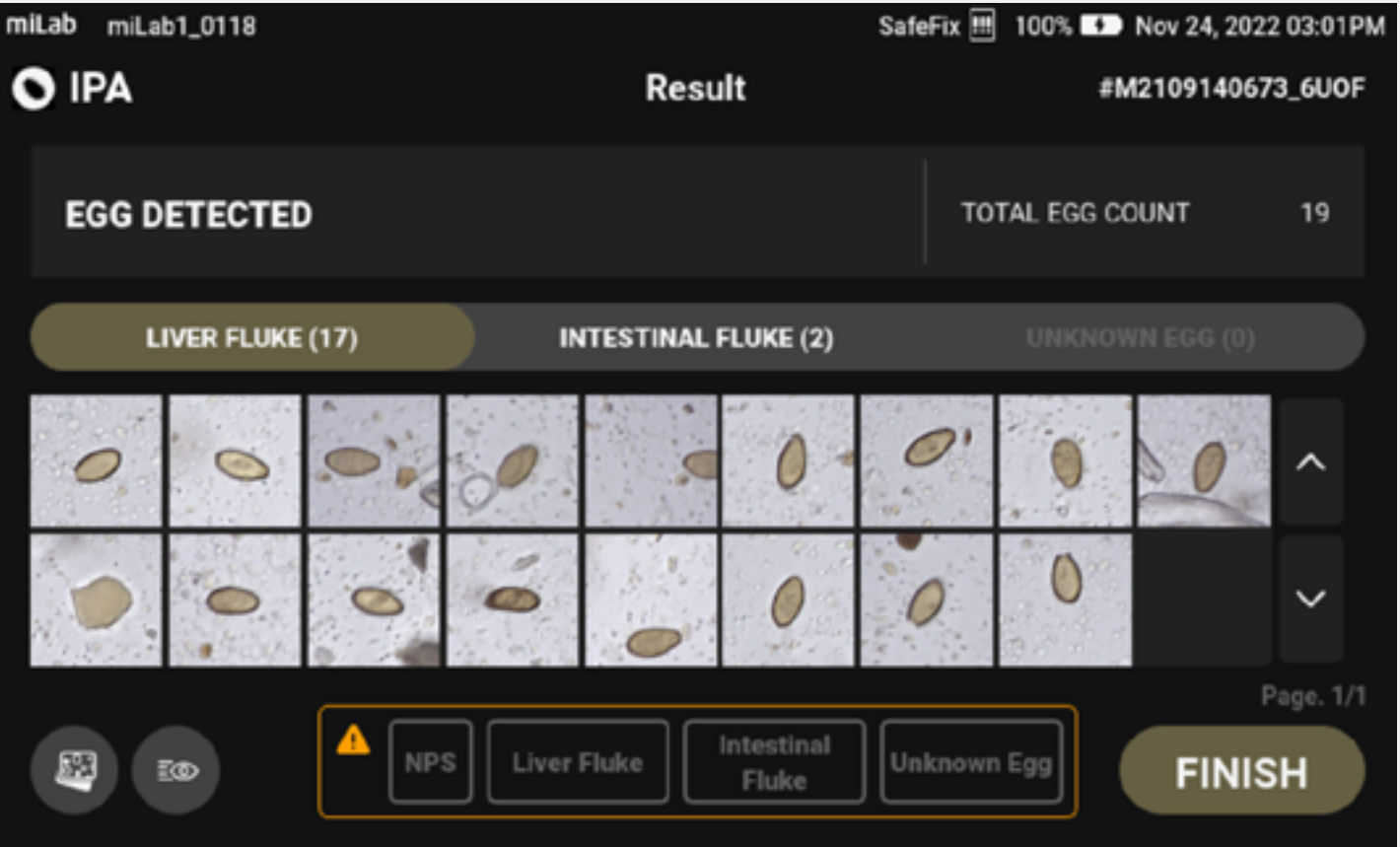


Screenshot of Result Analysis on miLab™ DIPA Prototype

**Q . What got Noul into researching intestinal parasite detection?**

Liver fluke infections caused by eating freshwater fish sourced within the vicinity of the five major rivers in Korea are considered one of the primary causes of biliary tract cancer, and this is why the Korea Disease Control and Prevention Agency performs annual infection surveys. While such infection cases are clinically significant, microscopy-based tests are limited to the subjective judgement of the tester and by the shortage of qualified professionals. To resolve this, Noul initiated this R&D project to develop prototypes capable of automatically detecting parasites using AI technology.

**Q . Please provide an overview of miLab™ DIPA.**

miLab™ DIPA is equipped with digital optics and AI algorithms to automatically detect the eggs of liver and intestinal flukes, which are intestinal parasites that are highly likely to cause human infections. Based on internal verification datasets,

our prototype product detects 98% of the parasite eggs in just 20 minutes, demonstrating a whopping 99% conformity with the test results produced by professionals. We will validate this product in multiple ways with extensive on-site samples to develop AI analytic tools with commercialization potential.

**Hosting the 1st Noul Research Conference to Share R&D Knowledge and Achievements Accumulated over the Years**

In April 2023, we hosted the 1st Noul Research Conference (NRC). Since our inception back in 2015, we have gained extensive knowledge and research outcomes on future-driven technology while developing innovative diagnostic platforms created by drawing on our expertise in over 40 distinct areas including SW, HW, AI, instrument design, and clinical pathology. The NRC served to share such knowledge and research achievements at all levels and boost synergy across various research areas. The NRC provided our future technology research team (FR) and our AI development team an opportunity to introduce the goals, principles, and outcomes of their on-going R&D efforts, along with the poster session allowing employees to engage in discussions about the presentations. The 1st NRC prompted lively discussions and Q&A sessions amongst our team of employees, piquing their interest and motivation in future technology research agendas.

**Topics Addressed at the 1st Noul Research Conference (NRC)**

· Hydrogel Based H&E Staining
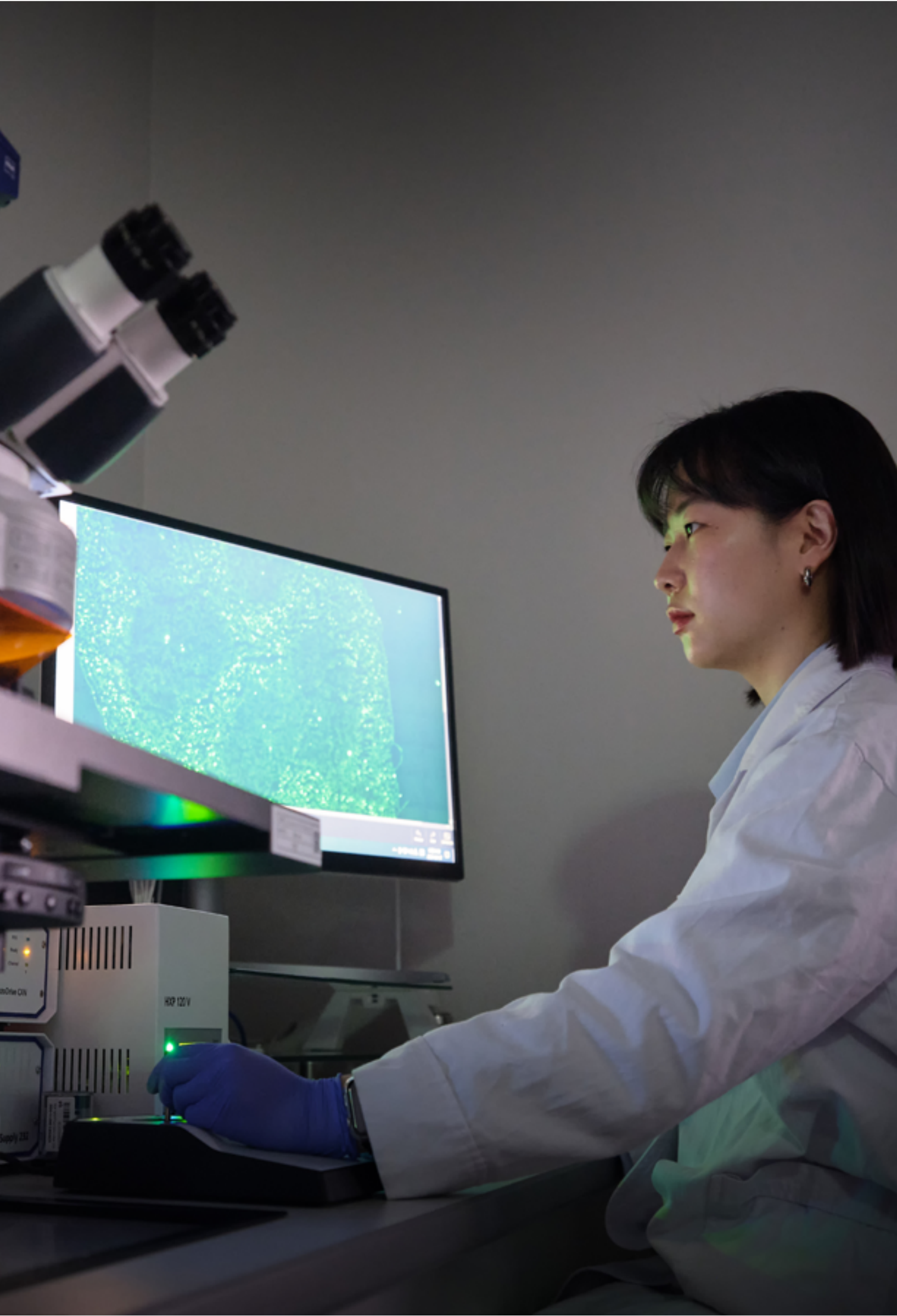· Next Generation Hyperflexed Immunohistochemistry
· Intestinal Parasite Detection by miLab™

· Towards Robust Classification of Imbalanced Data
· Biological Stains for Diagnosis: Romanowsky and Papanicolaou Stains
· Introduction to Fourier Ptychographic Microscope
· Exploring the Multi-focus BCM Open Dataset Acquired with the miLab™

# Partnerships and Initiatives

## New Initiative

**Noul became an official member of the Swiss Malaria Group.**
The Swiss Malaria Group is a public-private-industry-academia partnership network that works to eradicate malaria on a worldwide scale and is comprised of such global pharmaceutical companies as Novartis and Merck, the Global Fund fighting against malaria, and the FIND supporting innovative diagnostic technology. As a member, we will actively participate in healthcare policy decision-making to eradicate malaria globally. Drawing on the innovation realized through miLab™, Noul will enhance its global partnerships with the members of the Swiss Malaria Group.

**We joined CancerX, a cancer-fighting initiative led by the US White House.**
CancerX is co-hosted by the Moffitt Cancer Center, the most prestigious cancer research center in the US, along with the Digital Medicine Society, and is joined by world-renowned cancer institutes, digital healthcare companies, and IT companies. The CancerX initiative will help us collaborate with global institutions and companies recognized in the field of cancer diagnosis and treatment, and we will harness our on-device AI technology to lead the charge in developing innovative diagnostic technology in the fight against cancer.

## Public Partnership Highlight

**Our participation in seminars and locally-held meetings with government agencies in Africa and Asia enhanced our odds of advancing into public markets.**
· Discussed partnership opportunities with the Minister of Health of the Democratic Republic of the Congo and the nation's presidential envoy visiting our headquarters in March 2023
· Hosted a seminar with health officials from 10 countries, including the Philippines, Nepal, Cambodia, and Indonesia, under the program led by the Asian Development Bank in July 2023
· Discussed ways to distribute miLab™ products on the Indonesian public market at the invitation of the Indonesian Minister of Health in July 2023
· Hosted a seminar to pursue partnership opportunities for health officials from 10 countries, including Ghana, Uganda, and Tanzania, under the Dr. Lee Jong-wook Fellowship program in October 2023

### Europe

**Noul GmbH (Basel, Switzerland)**
· Regional base for collaboration with international organizations and healthcare companies
**Partners**
· FIND (Foundation for Innovative New Diagnostics)
· Swiss Tropical and Public Health Institute
· Swiss Malaria Group

### Africa

**Noul Tropical Infectious Diseases Center (Muzuzu, Malawi)**
· Research center focused on diagnosing antibiotic resistant and febrile diseases (Cooperation with Wezi Medical Centre)
**Partners**
· National Malaria Control Program (Malawi)
· Ghana Infectious Disease Center (Ghana)
· Center for Health System Strengthening (Ghana)
· University of Lagos (Nigeria)

### Republic of Korea

**Global Headquarters**
· Noul Co., LTD. (Yongin, Republic of Korea)
**Partners**
· RIGHT Foundation
· Institut Pasteur Korea
· Seoul National University Nano Systemis Institute SOFT Foundry
· UN Global Compact
· Impact Alliance

### United States of America

**Partners**
· University of Notre Dame du Lac
· Boston Children's Hospital
· Columbia University The Earth Institute
· PATH

Our mission 'We explore global challenges that threaten human health and life' and our aspiration to 'provide products and services that impact the lives of a billion people around the world' directly align with the global challenge of ensuring access to healthcare, and cannot possibly be achieved through the efforts of any one single company alone. Since day one, we have recognized Collaboration and Collective Impact as the key driver behind our mission, and have joined hands with globally-renowned partners and experts across a variety of areas.

# Compliance, Ethics and Risk management

· Compliance and Ethics
· Respect for Human Rights
· Quality Management System
· Health and Safety

# Compliance and Ethics

## 100%
Completion rate for compliance training provided to employees

## 100%
Employees signed the ethics pledge

**We are building an integrated legal non-compliance management process to prevent and manage compliance risk.**
To abide by laws and ethical standards while fulfilling our responsibility to stakeholders, we are phasing in our compliance system in line with our 5-year compliance risk management system development plan. In 2023, we established an integrated legal non-compliance management process and listed applicable domestic laws and regulations to effectively manage and prevent a range of possible legal non-compliance issues. This list of basic data points enables us to closely keep watch on key trends of pertinent regulations and communicate relevant information to responsible departments to avoid any non-compliance.

We are currently in the initial phase of establishing this integrated legal non-compliance management system, and are focused on identifying high-risk areas in the short-term to develop improvement procedures. Over the long-term, we will assess and improve the implementation outcomes of our integrated management process while ensuring respective departments strengthen their capability to independently review compliance-related issues.

**We introduced a process to monitor the provision of economic benefits and regularly manage relevant compliance risks.**
In response to the reporting mandate on expenditures for economic benefits which obligates pharmaceutical and medical device suppliers to report the economic benefits they provided to healthcare professionals, we introduced a process to monitor the provisions of economic benefits and share relevant data with our legal affairs department in 2023.

We also aligned our process to report any detected risk of pertinent regulatory non-compliance. Our legal affairs department keeps track of our legal and regulatory compliance, notifies the concerned department when an incidence of potential non-compliance occurs, and provides compliance risk reports to monthly management meetings. In addition, we established a process to inform all our employees of enactments and amendments to related laws and guidelines to keep related departments fully up to date with applicable laws and guidelines.

We provided compliance training reflecting our members' level of compliance awareness and interest.

### Compliance Training
We provide regular compliance-related training to strengthen our members' compliance awareness and embed compliance into our corporate culture. Work Ethic training conducted in 2023 and January 2024 served to provide training on our compliance policies and the prevention of unfair trade practices to our leadership team and all members. In the second half of 2023, training on the protection of trade secrets was offered to newly-appointed leaders.

| Training Topic | Target | Persons (Completion Rate) | Timeline |
|---|---|---|---|
| Compliance | Management and all members | 138 persons (100%) | Jan. 2024 |
| Compliance | Management and all members | 116 persons (100%) | Feb. 2023 |
| Protection of trade secrets | Newly-appointed leaders | 30 persons (100%) | Sep. 2023 |

### Compliance Awareness Survey
To identify our members' level of compliance awareness and interest, we performed a compliance awareness survey on all our members in June 2023. The survey questionnaire consisted of six categories, including compliance activity and purpose and compliance awareness level, and 79% of our members responded to the survey.

**2-23 Compliance Awareness Survey Results**
· Top priority for Noul's compliance operation : Review/monitoring (78.3%)
· Priority for embedding compliance into corporate culture : Compliance system development (72.6%)
· Areas of interest for compliance training : Concept of compliance (63.2%), trade secret/intellectual property (65.1%)

**Compliance Risk Management System Development Plan**

| | |
|---|---|
| Step 1 2023~2024 | · Set our compliance guidelines and goals<br>· Study applicable laws and regulations<br>· Perform risk assessment<br>· Develop compliance policies and procedures<br>· Provide employee training |
| Step 2 2025~2026 | · Establish a compliance system<br>· Perform compliance monitoring<br>· Conduct internal audits and effectiveness assessments<br>· Identify, address, and improve incidences of non-compliance<br>· Strengthen employee training |
| Step 3 2027 | · Supplement requirements on par with global standards<br>· Assess the effectiveness of the compliance system<br>· Monitor and improve the compliance system<br>· Establish a culture of compliance |

**Scope of Our Compliance Management**

1) Legally-binding laws and regulations in Korea and abroad
2) Self-imposed international standards (ISO 13485, ICH GCP) and internal regulations
3) Ethical standards duly required according to social norms

**Management and all Noul members signed the ethics pledge to commit to advancing ethical management.**

In 2023, the project to 'propose ways to practice fair trade' undertaken as an employee-led internal sustainability initiative, produced a draft version of our ethics pledge. This was referred to our compliance department to create our ethics pledge officially specifying Noul's standards for ethical behavior. The pledge covers nine items: compliance, fair competition, anti-corruption, conflict of interest, research ethics, privacy & security, stakeholder communication, environmental responsibility, and proactive implementation. In January 2024, all our members, including our leadership, joined the ceremony hosted to make their commitment to abiding by Noul's ethical values and behavioral norms, and signed the ethics pledge.

**Our annual Work Ethic training helps us integrate ethics awareness into all our business operations.**

At the start of each year, we provide Noulian Work Ethic* training to set our expectations concerning attitudes and specific behaviors for all members of Noul. This training is conducted in five rounds and covers comprehensive topics, from the concept of our Work Ethic at Noul, to overall company regulations concerning our corporate values and principles, compliance policies and systems, and HR/accounting compliance provisions. In 2023, Work Ethic training was attended by 100% of our members and our leadership team.

> **\* Noulian Work Ethic** describes the basic attitudes and set of ethical values that Noul members should prioritize and practice in their business conduct, in their relationships with colleagues, and in their professional life so that the mission, value and culture of Noul is safeguarded.

**We facilitate the year-round use of our whistleblowing mechanism to raise non-compliance concerns.**

Our whistleblowing compliance mechanism is available for any Noul members to use to raise concerns of non-compliance – ranging from corruptive behavior and sexual harassment to workplace bullying and power harassment. The identity of the whistleblower and the reports themselves are kept strictly confidential to protect the identity of whistleblowers. We also ensure that

whistleblowers are protected from any disadvantage for coming forward with their concerns. In 2023, one case of non-compliance with internal ethics standards was submitted: factual grounds were investigated and action was taken according to our internal regulations.

### Non-compliance Handling Process

| Step 1 Report/ submission | Step 2 Identification | Step 3 Investigation | Step 4 Action | Step 5 Follow-up |
|---|---|---|---|---|
| CLO, CSO, HR department leader | Identify the concern raised Determine whether to investigate | Investigate factual grounds Seek expert feedback | Determine action to be taken | Conduct training to prevent a reoccurrence and monitor |

**We are bolstering our information security management capabilities to safeguard our critical information assets and customer data.**

We protect and manage all our information assets, including technical data and trade secrets in accordance with our trade secret management regulations, and conduct periodic vulnerability analyses to better safeguard information assets from external attacks and/or errors. In the first half of 2023, we analyzed and assessed the risks affecting our key internal information assets, and have continued to make improvements on identified risk factors. We also introduced additional solutions to protect our corporate and customer data to bolster our capabilities to keep data secure in the event of corporate asset losses.

In January 2024, all our employees signed the ethics pledge outlining our responsibility for privacy and security and specific actions to take to 'protect personal data collected for business purposes and privacy throughout our business conduct and operations, and stringently abide by corporate security policies' to commit themselves to upholding information security. In 2024, we will stipulate our information security policies and regulations to inform our team members of clarified management regulations, and deploy a key security log monitoring system while bolstering our cloud infrastructure security.

## Challenges & Plans for Compliance and Ethics

### Challenges

The healthcare industry Noul is involved in imposes rigorous regulations across a company's business operations from product manufacturing to sales, advertising, and marketing. This prompted us at Noul to progressively establish an integrated regulatory non-compliance management system since 2023. Currently, we are in the initial phase of developing relevant procedures, and have listed up domestic regulations that apply to our overall operations and thus require monitoring. The next step will be to create a checklist of applicable laws and establish management guidelines to monitor our compliance with statutory requirements and procedures.

In raising compliance awareness, we provide annual regular training to help our team members elevate their compliance awareness. Still yet, clear perceptions are rather lacking concerning how and under what circumstances we should abide by regulations and procedures of the healthcare industry to ensure compliance. To address this issue, we will first establish our compliance guidelines and key policies, and implement compliance awareness-raising programs including anti-corruption training.

### Plans

· Establish compliance guidelines and policies
· Create a checklist of mandatory requirements pursuant to applicable laws and regulations and conduct monitoring
· Implement anti-corruption training and compliance awareness-raising programs

# Respect for Human Rights

**We apply the principle of Zero Tolerance to human rights violation issues.**
Noul is keenly aware of the importance of international human rights and labor standards. Our HR regulations specify our commitment to respecting human rights to establish systems and a culture that respect the dignity of all members. In particular, we maintain the principles of Zero Tolerance and Protection of and Care for the Victim as our top priority in dealing with workplace bullying, sexual harassment, or any other practices that undermine the value of our company or cause severe harm to our team members. For matters that call for the principle of Zero Tolerance, we follow the set internal procedures to ensure that the perpetrator is separated from the victim, receives corresponding HR action and stringent training, signs the pledge to prevent any reoccurrence, and is subject to continuous management and supervision to comply with the pledge.

**We diversified our on/offline whistleblowing channels to facilitate the submission of grievances and public interest disclosures.**
We established a company-wide grievance mechanism and operate on/offline channels to raise concerns on any type of difficulties that arise in relation to one's operations and workplaces as well as public interest disclosures. All our members, irrespective of their type of employment, are free to access our hotline, online anonymous whistleblowing channel, and offline Suggestion Box to submit their concern. Specifically, grievances raised through the hotline are directly escalated to our top management and HR officer. We make sure that we respond to whistleblowers within 24 hours to verify the submission of their report and inform them of the subsequent response procedures. Our grievance counselors also receive regular training to develop their expertise. In 2023, three grievances were raised: two of which were investigated and actions taken, while the other was closed as it did not qualify as a legitimate concern.

> **Channels that Noul members can use to submit their grievances and public interest disclosures**
> · Hotline to reach top management and the HR officer : speakup@noul.com
> · Online anonymous whistleblowing and Suggestion Box for offline whistleblowing
> · Grievance counselor : CSO (Chief Sustainability Officer), 4 HR managers, 3 members of the Labor-Management Council

> **Grievances Submitted and Handled in 2023**
> · Type and Number of Grievances : Zero for ethical non-compliance, 1 for human rights issues, 1 for other issues
> · Action Taken : Action was taken according to internal regulations for 2 cases, 1 case was not qualified as a legitimate concern

**Noul Harmony, our Labor-Management Council, serves to strengthen trust between labor and management.**
We operate the Labor-Management Council in conformity with the intent and requirements of applicable laws, and created the Council 'Noul Harmony' to convey our commitment to pursue joint growth based on trust and cooperation between Noul and its members. In 2023, Noul Harmony met regularly to deliberate on 10 agenda items spanning such diverse areas as management plans, employee welfare, HR system improvements, working conditions, and grievances. None of these items were delayed and failed to reach consensus due to differing opinions between labor and management. Looking ahead, we will evolve into an organization that enables the journey of mutual growth between Noul and its members with Noul Harmony taking the lead based on mutual trust and cooperation.

> **Noul Harmony Meetings Held in 2023**
> · 4 regular meetings held
> · Major agenda items
>   – 10 items including discussion on the amendment of HR regulations, discussion on Noul's approach to increasing diversity, and ways to systemize company-wide communication on the key decisions made

**We apply our non-discrimination policy to all HR systems and procedures.**
Our non-discrimination policy specifies against discrimination or exclusion on the grounds of gender, race, age, education or marital/parental status without justifiable reason all the way from the recruitment process to ensure that our hiring protocols are fair and competency-based. Beyond recruitment, we do our

utmost to create a fair business environment to prevent discrimination based on gender, age, or any other factors irrelevant to work across our entire HR systems and procedures concerning assignment, promotion, and compensation. We regularly conduct engagement surveys and corporate culture surveys to monitor the presence of any unjustified discrimination in the workplace while identifying and making necessary improvements on an ongoing basis.

**We fully commit to the creation of a fair business environment to avoid any discrimination based on gender or type of employment contract.**
We follow reasonable criteria in determining compensation, such as the nature of the work performed and the career experience and competency of our members, and do not discriminate in pay based on gender. This applies to entry-level pay for new hires: our new members receive compensation determined by the same such criteria in line with their individual competency and work experience irrespective of gender.

As of March 2024, female Noul employees earned approximately 81% of that of their male counterparts. Meanwhile, the average years of experience for male pool of employees was about 15 years, whereas the average for the females was 10. Currently, we are identifying and regularly collecting these data, and have not yet moved on to elucidate on their implications with an in-depth analysis. Yet, our efforts continue at Noul to improve our process to detect and remedy any gender-based discrimination in the recruitment, career development, and assignment process.

Meanwhile, we have paid above the legal minimum wage for hourly part-time workers and interns since our inception. We provide interns with pay pursuant to the living wage stipulated by Gyeonggi-do where we are based, and offer both interns and full-time members the same benefits without regard to type of employment, apart from the welfare programs designed to promote long-term employment.

**We provide human rights training in line with our HR philosophy that respects**

**human rights.**

We conduct annual training to help sensitize our members to human rights issues. In January 2024, we provided our management and all members with training to communicate our HR philosophy and systems anchored on our respect for human rights.

**Noul's HR Philosophy**

**1. Manifestation of humanity**

Noul recognizes individual employees as a decent member of the organization and of society, not merely as a component of the company which functions to fulfill its ends. We respect the unique human qualities of each member and strive to provide a working environment that empowers them to reach their professional potential all while also seeing them as multi-faceted individuals in their own right.

**2. Mission and value-driven**

As we aspire to become a Purpose-Driven Company, we go beyond expressing our corporate purpose to our members; we seek to unite our mission with what gives our members life meaning so that our corporate aspirations bear significance to our members. We believe our mission and value can be achieved only when they resonate with our members to invite their participation

**.3. Participation-based**

At Noul, 'participation' in terms of our members is defined by their pursuit of proactive and meaningful roles within the organization and doing their part in driving the organization's success and growth. Members' participation is key to improving our organizational performance and innovation as well as their own satisfaction and loyalty.

As to statutory training aiming to improve perceptions on disability and prevent sexual harassment, we not only inform our members of pertinent laws and procedures, but we also provide participatory training content to encourage all members to explore possible change, recognizing the importance of human rights for people with disabilities and gender equality as key human rights agendas that relate to all members at Noul.

| Training | Persons (Completion Rate) | Timeline |
|---|---|---|
| Improvement in perceptions on disability | 137 persons (100%) | Nov. 2023 |
| Gender sensitivity | 137 persons (100%) | Dec. 2023 |
| HR philosophy and grievance mechanism | 132 persons (100%) | Jan. 2024 |

## Challenges & Plans for Respecting for Human Rights

### Challenges

Noul recognizes statutory training conducted to prevent sexual harassment and improve perceptions on disability in the workplace as an invaluable opportunity to raise our sensitivity to human rights issues, and ensure members' feedback is integrated in conducting such training. Concerning our 2023 approach to training improvements, members suggested that our training should pertain more closely with the human rights issues specific to their daily experience and to change the format from that of a lecture to one with more group participation. We have already integrated this feedback into the planning of our 2024 sessions.

We also aim to help grievance counselors and HR personnel strengthen their capabilities and regularly gather grievances raised by members in their operations and workplaces and take timely and necessary follow-up measures. Grievance counselors will receive training focused on counseling skills and precautions, and HR personnel will receive advanced training on grievance counseling and handling.

### Plans

· Develop and implement programs to assess our corporate culture and raise gender sensitivity
· Undertake company-wide awareness-raising activities on our grievance mechanism
· Provide basic grievance handling training and advanced training on 'grievance counseling and handling' for grievance counselors and HR personnel

# Quality Management System

## 105 cases
implementing risk control for identified risks

## 100%
Taken corrective action for customer complaints as of March 2024

## 100%
Manage and assess our products categorized as in-vitro diagnostic medical devices in accordance with the international quality management system standard for medical devices

Nurtured 7 internal auditors and associated auditors in 2023 to create a pool of total 18 internal auditors and associate auditors

**We are bolstering our efforts to nurture internal auditors and conduct monitoring to enhance the consistency of our quality management system across all levels.**
Quality is key to our business operations, and we fully commit to effectively operating our quality management system in accordance with international standards to ensure market-leading quality and globally competitive technology. We remain certified to the international medical devices quality management system standards of ISO 13485:2016 & EN ISO 13485:2016 by the BSI (British Standards Institution), and our assessment and management of all products falling in the category of in-vitro diagnostic devices follows international standards governing medical device quality management systems.

To build upon the internalization of a quality management system compliant with international standards throughout our product development and process management procedures, we focused on strengthening our internal audit capabilities from 2022, and trained seven internal auditors and associate auditors in 2023. The resulting increase in our internal audit performance allowed us to discover 10 non-conformities through the internal audits conducted in 2023, from one that had been discovered the previous year, and we followed up with improvement activities. We also held regular and ad-hoc review meetings twice a year to strengthen our independent monitoring and improvement. Such endeavors achieved noteworthy outcomes as zero non-conformities were identified for two straight years through the ISO 13485:2016 & EN ISO 13485:2016 audits performed in 2022 and 2023.

**Our risk-based approach allows us to reduce the likelihood of 105 identified risks.**
We take the risk-based approach to our product development and process management to effectively operate, maintain, manage, and improve our quality management system. Risks are identified and verified for their severity and likelihood of occurrence in the product development and process management process, and identified risks are controlled following the 5-step process.

| Establish process handling procedures | Set quality forms | Appoint the process manager | Define and grant qualifications for the process manager | Conduct trainings and exercises |
|---|---|---|---|---|
| 22 cases | 9 cases | 6 cases | – | 3 cases |

In 2023, 14 new risks were identified from the previous year, and eight known risks were re-identified through process monitoring. Risk controls were placed on all identified risks, reducing the likelihood of occurrence for a total of 105 risks, and it was verified that all such risks were managed within the set acceptable range.

**We are reinforcing the database-driven quality management process.**
Our product development process is highly technology-intensive and complex, spanning a host of areas including HW, SW, bio, and AI. In response, we take the Advance Products Quality Planning (APQP) approach to our product development process to preemptively check quality-related issues from the product development phase. In 2023, we built a database of issues that arise in the product shipping and customer use phases and established issue management criteria.

**We are developing a quality assurance process to reduce product disposal for the good of the environment.**
Since 2023, we have adopted the small sample validation method based on the dispersion of parts characteristics for our mass-producibility review process. This approach aims to lower the disposal of validation samples required for development validation as well as loss rates in the mass-production process. Our small sample validation process is still in its early development phase, and will evolve in a way to minimize the waste of resources all while maintaining quality through effectiveness verification and continuous improvements.
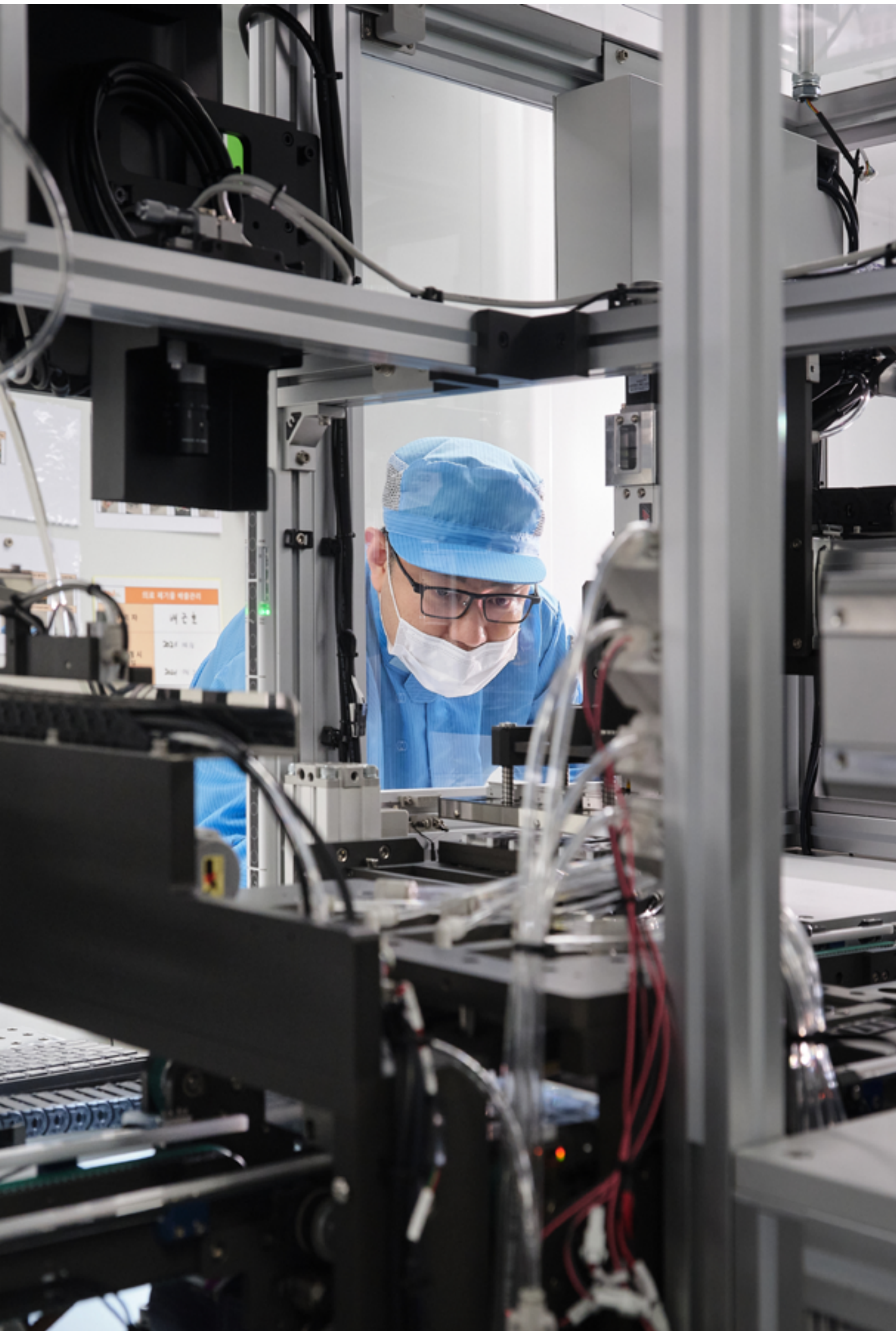
**We improved our product recovery and repair procedures to expedite CS process responses.**

Our CS process aims to identify issues from the customer experience perspective and promptly respond to customer feedback. While our plan was to develop internal/external CS policies in 2023, we pushed it back to 2024 due to changing internal/external conditions. Meanwhile, we focused on establishing a systemic internal response process to improve our internal product receiving/repair workflow to expedite the entire process of dealing with recovered defective products, from receiving such products to analyzing the causes of such defects and performing repairs. In 2024, we will upgrade our human/physical resources and processes to accelerate our handling of customer complaints and establish our interna/external CS policies to gain greater credibility from our customers in terms of product quality and customer response capability.

**Key Results for Our CS Process in 2023**

· As of March 2024, we have handled all customer complaints with corrective action.
· There were no recalls that occurred due to product quality issues in 2023.
· Our response time for customer complaints/feedback ranges from 24 hours to 3 days.
· Product repairs are completed within one to two weeks of receiving the product.
· We systematically document and manage our investigatory results and follow-
　up actions for all complaints and feedback collected.

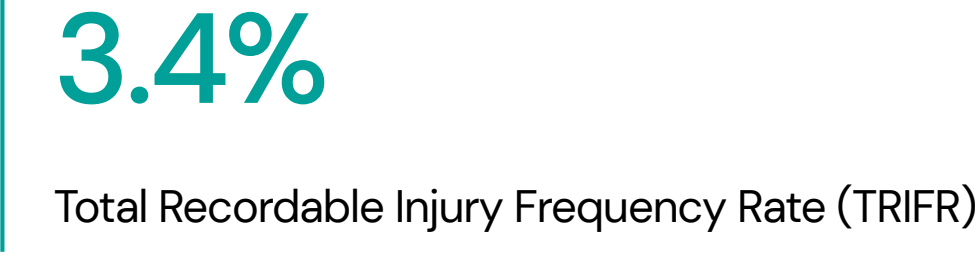## Challenges & Plans for the Quality Management System

### Challenges

To meet the requirements of the ISO 13485 international quality management system standard for the medical devices industry, we have bolstered our company-wide quality management capabilities with an emphasis on reliable quality and safety. While such efforts enabled us to reach the target we set in operating the quality management system and delivering reliable product quality, there are still areas where we could pursue further improvement efficiency in our QMS operations. Going forward, we will eliminate inefficiencies while maintaining reliable quality to boost our productivity to a new level. Furthermore, we aim to progressively adopt APQP (Advance Products Quality Planning) in the product development process to advance systemic quality management from the initial product development phase and ensure product reliability and safety.

### Plans

· Improve the operational efficiency of the QMS and internal
　computer systems
· Advance our product development process in line with highly
　complex technology combining bio, HW, SW, and AI
· Clarify department-level roles and responsibilities and establish
　specific guidelines in sync with the growth of our organizational
　scale

# Health and Safety

**0%**

Occupational accident rate

**0 cases**

Lost Time Injury (LTI)

**100%**

Improvements on hazards and risks

**3.4%**

Total Recordable Injury Frequency Rate (TRIFR)

**We progressively reinforce our health and safety management system.**
We place the life and safety of our members, customers, and stakeholders above all else in all our business operations, and commit to creating a safe and healthy workplace. As a venture company still in its growth phase, Noul is in the process of establishing our health and safety management system. To systematically reinforce our health and safety management system, we developed mid/long-term sustainability improvement plans in 2023 to take a phased-in approach to building our health and safety systems with the ultimate goal of introducing a health and safety management system.

**· Revising health and safety management guidelines and setting health and safety goals**
In 2023, we amended our health and safety management guidelines and set our health and safety goals from 2023 to 2024 to renew Noul's goal and commitment to advance health and safety. We also re-established our health and safety policies to prevent high-consequence injuries to faithfully meet requirements stipulated by the Serious Accidents Punishment Act and other applicable health and safety laws.

**Health and Safety Management Guidelines**
(Regulatory compliance ) Abide by laws and international standards governing health and safety issues
(Workplace safety) Create a safe and pleasant working environment
(Management system) Establish and operate a health and safety management system in line with international standards
(Corporate culture) Create a corporate culture promoting voluntary and self-directed health and safety activity participation and improvement
(Disclosure and communication) Transparently disclose health and safety information and communicate with members and stakeholders

**· Bolstering the health and safety management organization**
Our health and safety organization operates in full compliance with the Industrial Safety and Health Act and the Act on the Establishment of Safe Laboratory Environment, and the roles and responsibilities of pertinent personnel are clearly defined. In 2023, we created a biosafety management organization in line with the nation's biosafety management law (LMO (Living Modified Organisms) Act) to ensure systemic health and safety management.

**· Monitoring and improvement**
Our general manager and supervisor responsible for health and safety management first engage in semi-annual self-assessments before second assessments are made by our EHS department to raise awareness on health and safety roles and responsibilities. We also prepared a checklist in reflection of mandatory requirements specified in applicable health and safety regulations to perform checks at least on a half-yearly basis and make necessary improvements.

**· Subcontract safety management**
While we are yet to actively employ subcontractors, we have established subcontract health and safety management guidelines to ensure systemic safety management in this regard. Candidates are assessed for their qualifications to select subcontractors with proven health and safety capabilities in the bidding process, and health and safety information is provided to help related companies improve their accident prevention and health and safety capabilities.

**· Heeding the voice of members**
Our Workplace Health and Safety Committee convenes every quarter to collect

feedback from members, and our health and safety programs serve to gather members' feedback on health and safety on an ongoing basis. We also have a mobile feedback channel up and running for all members to make health and safety suggestions and requests.
· Feedback gathered and action taken (as of May 2024)
 – Request to install a separate storage box for protective gear in areas using acidic/alkali substances within the chemical lab / Action taken
 – Request to provide tools needed in disposing of used liquids / Partial action taken

**We provided participatory health and safety programs to effectively raise members' health and safety awareness**
We provide a range of member-engaging health and safety management activities to create a safe and pleasant working environment for all Noul members.

**· Health management support for members**
We provide regular general/special health checkups for members with specific medical conditions and/or falling into high-risk groups, and offer monthly health counseling to members diagnosed with work-related illnesses and/or high-risk members for follow-up management.

**· Health and safety training**
In 2023, we switched our health and safety training from online to offline to make such training more engaging. Our internal safety manager directly led the training to help identify internal hazards and potential risks in more substantive terms and ensure effective responses.

| Category | Type of Training | Target | Hours | Persons (completion rate) |
|---|---|---|---|---|
| Workplace health and safety training | Regular supervisor training | Supervisors | 16hr | 5 persons (100%) |
| | Training for new hires | New hires | 8hr | 28 persons (100%) |
| | Regular training | All members | 3hr per quarter | 131 persons (100%) |
| | Special training | Members performing work that require such training | 16 hours by target task | 51 persons (100%) |

· **Cleanup and organization campaign to improve the working environment**

To improve our working environment and swiftly identify potential workplace risk factors, we launched the cleanup and organization campaign in September 2023. This served to underscore the close link between cleanup & organization and safety management and convey the importance of cleanup and organization among members.



· **Risk prediction training program**

In November 2023, we provided the 'Let's All be Safe at Noul' program in commemoration of Safety Day. This program consisted of activities to discover potential risks in one's operations and workplaces so that they could better recognize and prepare for them.

**Safety awareness improvements**
**before and after the 'Let's All Be Safe at Noul' program**

| | Level | Before Participation | After Participation | Change |
|---|---|---|---|---|
| Health and safety awareness | Very high/high | 41.3 | 65.9 | ▲24.6 |
| | Low/very low | 15.2 | 12.2 | ▼3 |
| Problem-solving skills | Very high/high | 47.8 | 85.3 | ▲37.5 |
| | Low/very low | 15.2 | 4.9 | ▼10.3 |



'Let's All Be Safe at Noul' program
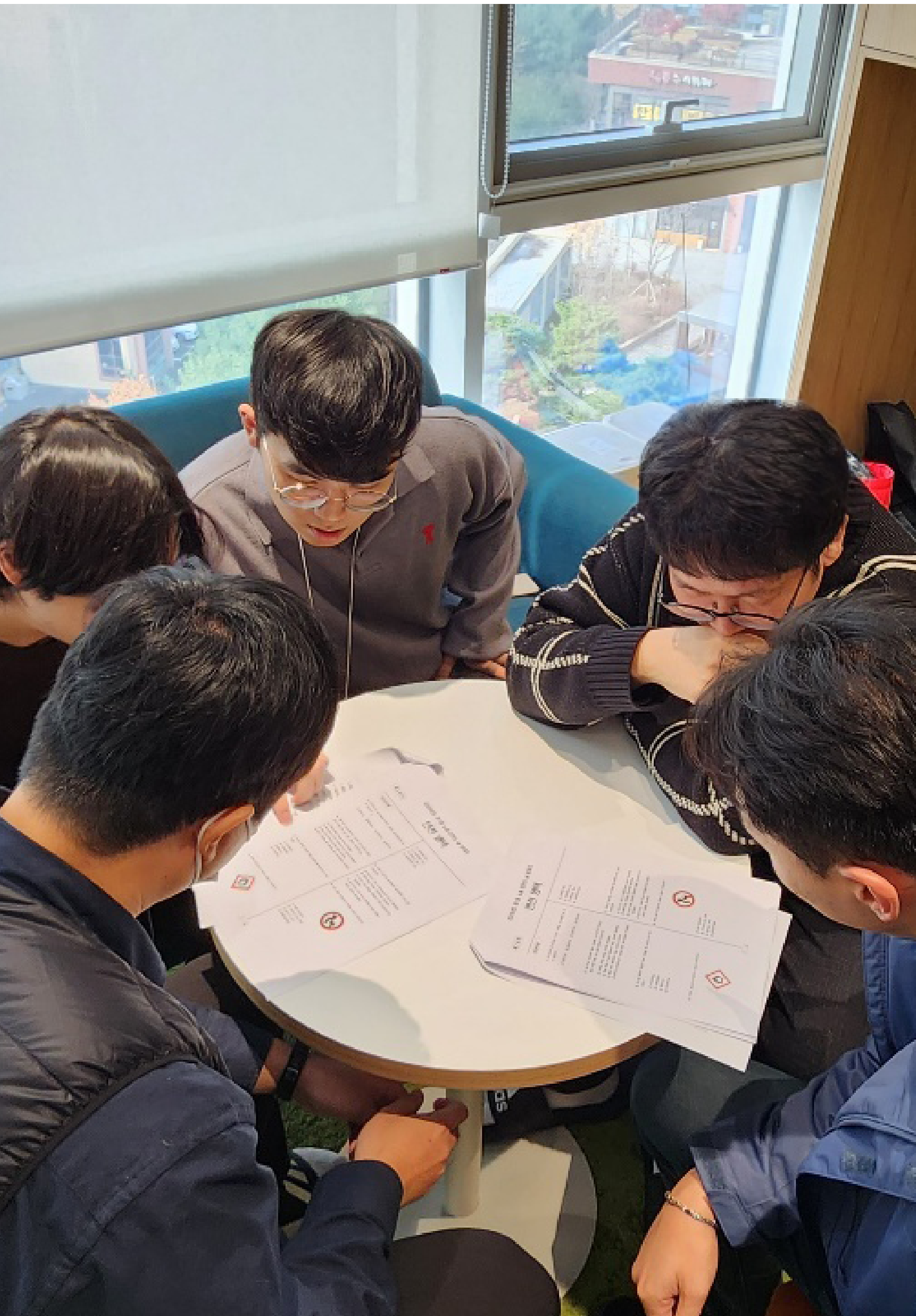
'Let's All Be Safe at Noul' program

**We increased the frequency and intensity of our risk assessment and improved our hazards and risks by 100%.**

Along with regular risk assessment, we also conduct year-round risk assessment when introducing or switching to new machines/devices or changing work methods and procedures to identify and improve potential hazards and risks in the workplace. The following illustrates the key improvements made for our risk assessment in 2023.

1. Introducing a mobile feedback collection system: We introduced a mobile feedback collection system for increased accessibility to encourage our members to actively participate in risk assessment.
2. Segmenting risk assessment tools: We further segmented the frequency/intensity methods under the Korea Risk Assessment System (KRAS) to conduct risk assessment from large-scale processes all the way to specific work units, and this allowed us to identify a total of 305 hazards and risks across 60 processes.
3. Developing risk assessment analysis tools: We developed risk analysis tools to more systematically conduct risk assessments, improving the consistency between hazard/risk information and risk assessment checklists. We also continuously monitored the progress made to improve potential hazards and risks on an ongoing basis.
4. Developing additional measures: While all of the identified hazards and risks were within the acceptable range, we developed additional measures to improve our health and safety performance, reducing the risk for 10 hazards and risks.

| | |
|---|---|
| Total Number of Processes | 60 |
| Number of Hazards and Risks | 305 |
| Number of Unacceptable Hazards and Risks | Zero |
| Number of Improvement Measures | 10 |
| Improvement Rate | 100% |
| Number of Acceptable Hazards and Risks After Improvement | Zero |

## Challenges & Plans for Health and Safety

### Challenges

We establish necessary health & safety policies and guidelines as we phase in our health and safety system and inform our members of such policies and guidelines. Presently, we recognize the need to engage in sufficient communication along with training and promotion to ensure the smooth application of the policies and guidelines we created into our shopfloor and working-level operations as well as to ensure they closely align with our daily operations.  As such, we plan to upgrade our process to reflect shopfloor work processes, risks and member feedback in establishing policies and guidelines, and conduct training to internalize them into the day-to-day routines of our members. Furthermore, we will develop procedures to perform health and safety patrol checks and remedy the unreasonable practices identified through such checks. In tandem with this, we will provide trainings and drills under various emergency scenarios to bolster our capabilities to respond to emergencies.

### Plans

· Establish new health and safety policies and provide members with training on process changes along with continuous management
· Establish an overall process on health & safety patrol checks
· Provide training and drills to strengthen capabilities to respond to safety accidents

# Sound and
# Sustainable Governance

· Sound Governance

· Governance for Sustainability
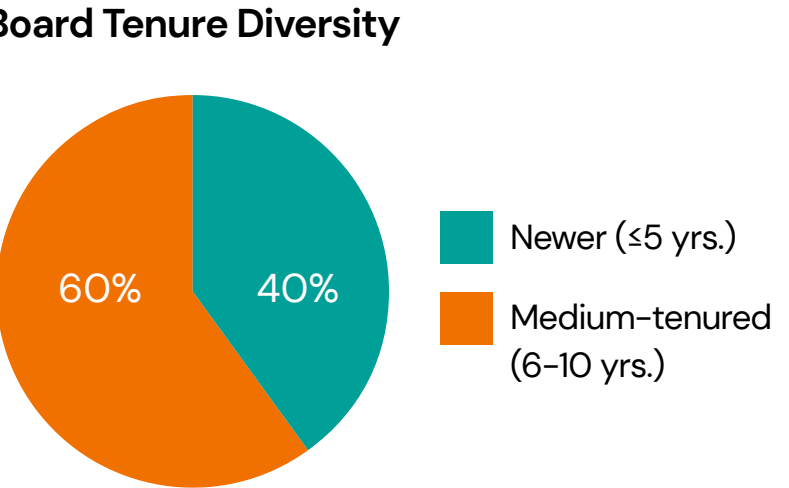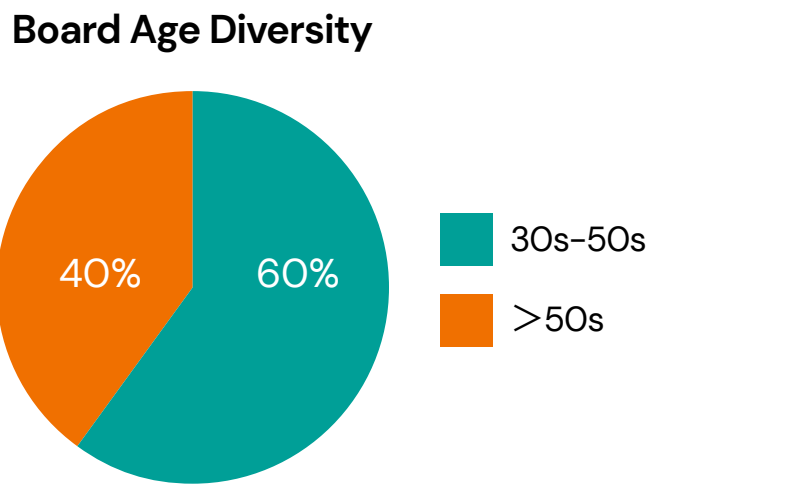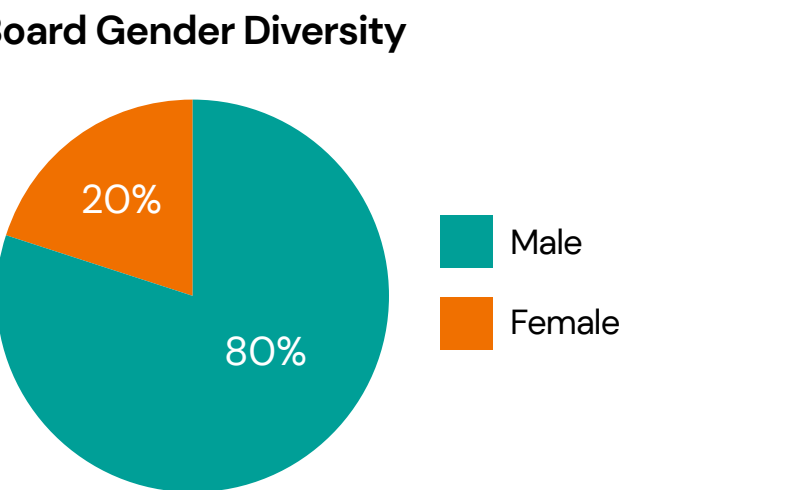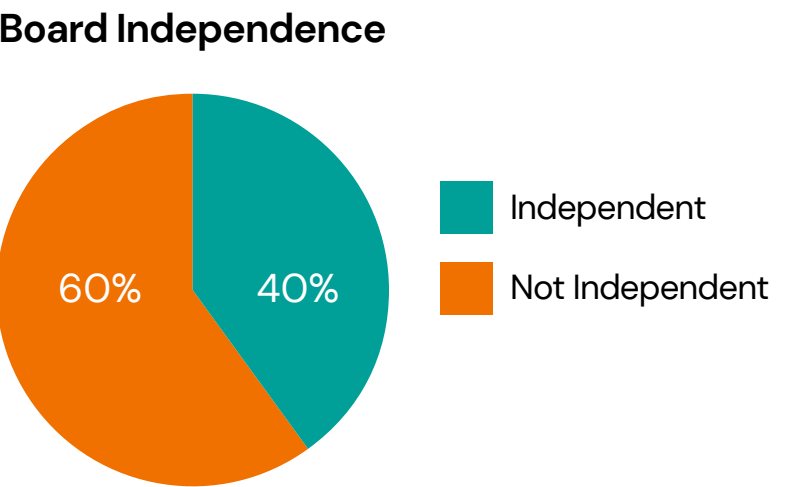
# Sound Governance

**We are improving the transparency of our decision-making through a more diverse and experienced Board of Directors.**
We appointed two outside directors in August 2021 to strengthen the operational expertise and transparency of our Board of Directors, and have since maintained the composition of the Board with five members. The Board operates pursuant to applicable law and regulations, Noul's Articles of Incorporation, and the Board operational regulations, and deliberates and decides on the matters stipulated by pertinent laws and the Articles of Incorporation, matters delegated by the Annual General Meeting of shareholders, and critical matters concerning Noul's basic policy and business execution. The Board is chaired by our founder and CEO, David Lim, to ensure stable business operations and responsible decision-making. We intend to maintain the current composition of the Board for the time being in consideration of Noul's current growth phase, business conditions, and investor trust, and will continue to improve our governance for increased operational independence and transparency of the Board over the mid-to-long term.

**We bolstered the pre-briefing procedure for Board meetings to enable more effective decision-making at the Board.**
We pursue Board-centered management as one of our key components of responsible business conduct. In 2023, not only did we provide outside directors with the necessary materials, but we also introduced a new procedure whereby our legal affairs department and financial department brief individual directors and auditors on Noul's current status and agenda items prior to Board meetings. This helps these outside directors fully understand the agenda items to be discussed and be aware of any relevant information ahead of time. This results in our directors being better informed on our key management issues so that they can more easily lend their depth of expertise and experience to the Board's decision-making process. In 2023, the Board met six times, and all directors attended these meetings to provide their objective oversight and advice on our business operations.

| Name | Area of Expertise | Key Experience | Tenure | Independence |
|------|-------------------|----------------|--------|--------------|
| David Lim | General management (R&D) | (Current) CEO, Noul<br>(Previous) Managing Partner, SOL Invest<br>(Previous) Manager, Partners Investment<br>(Previous) Business Dept. Head, MGB Endoscopy | Dec. 2015 ~ Mar. 2027 (reappointed in Mar. 2024) | |
| Peter Kim | Law, Patents, Quality control | (Current) CLO, Noul<br>(Previous) Lawyer, Legal Affairs Team, KT<br>(Previous) Senior researcher, Institute for Future Internet Technology Convergence, LG Electronics<br>(Previous) Assistant researcher, LEADTECH | Dec. 2015 ~ Mar. 2025 (reappointed in Mar. 2024) | |
| Justin Ahn | Sustainability strategy, HR organization | (Current) CSO, Noul<br>(Previous) CSO, slowalk<br>(Previous) Lead auditor, British Standard Institution<br>(Previous) Senior researcher, POSCO Research Institute | Mar. 2018 ~ Mar. 2026 (reappointed in Mar. 2024) | |
| SeonJee Lee | Law, Compliance | (Current) Attorney, Kim & Chang Law Firm<br>(Current) Member, Public-Private Partnership Deliberation Committee, Ministry of Economy and Finance<br>(Previous) Member, Regulation Interpretation Review Committee, Financial Services Commission<br>(Previous) Member, Dispute Meditation Review Committee, Korea Exchange | Aug. 2021 ~ Mar. 2027 (reappointed in Mar. 2024) | o |
| Seongsoo Jang | Medical diagnostics technology | (Current) Head, Laboratory Medicine, Asan Medical Center<br>(Current) Associate Professor, Department of Laboratory Medicine, University of Ulsan College of Medicine, Asan Medical Center (UUCM AMC)<br>(Current) Chairman of Board, Korean Society of Hematology<br>(Previous) Residency in Clinical Pathology, Hanyang University Hospital | Aug. 2021 ~ Mar. 2027 (reappointed in Mar. 2024) | o |

**Board Independence**



- Independent — 40%
- Not Independent — 60%

**Board Gender Diversity**



- Male — 80%
- Female — 20%

**Board Age Diversity**



- 30s-50s — 60%
- >50s — 40%

**Board Tenure Diversity**



- Newer (≤5 yrs.) — 40%
- Medium-tenured (6-10 yrs.) — 60%

## Board Activity and Attendance in 2023

| Meetings Held | Decision Item | Information Item | Attendance |
|---|---|---|---|
| 6 meetings | 7 items | 4 items | 100% |

### Key Decision/Information Items for the Board in 2023
· Decide on rights/bonus issues to raise funds for product research and development and business operations
· Report on the operational status of the internal accounting control system to ensure financial stability

**We focused on protecting the rights of shareholders and stakeholders and strengthening their ability to exercise them.**
To protect the rights and interests of shareholders and stakeholders, we ensure that accurate, timely disclosures are made on our financial conditions and important business activities as specified in applicable laws and Korea Exchange regulations. We make periodic and timely disclosures on our major business conditions to provide necessary corporate information equally to shareholders and stakeholders. We also offer voluntary disclosures in respect to the signing of sales and purchase agreements, key management issues with the potential to influence investment decisions, and the publication of sustainability reports.

In 2023 and 2024, we hosted the Annual General Meeting of shareholders outside the peak days designated by the Korea Exchange so that more shareholders could attend our AGM and duly exercise their shareholder rights. From the early days of our inception, we have stipulated in our Articles of Incorporation that our shareholders are free to exercise their voting rights through proxy if they can't physically attend the AGM. This enables proxies to attend the AGM and exercise voting rights on behalf of shareholders.

**We expanded stakeholder communication channels and strengthened both scheduled and unscheduled communication activities.**
As a KOSDAQ-listed company, Noul helps shareholders make informed decisions on the Company's integrity and growth potential so they can avoid any error in their investment choices. To this end, we hosted quarterly Investor Relations (IR) events on three occasions between 2023 and early 2024 to reach out to even more stakeholders to introduce Noul's current business and future plan while fully integrating investors' feedback into our business strategies and IR activities. We also hold in-person meetings with investors and journalists, publish stakeholder

newsletters outlining the most current information on our business operations, and support NDRs, conference calls, and company tours, reaching ever close to stakeholders in so doing.

> Number and Dates of Hosted IR Events
> · 3 occasions / Jul 25, 2023, Nov. 30, 2023, Feb. 5, 2024
> In-person/virtual Meetings Held with Investors and Journalists
> · 94 meetings with investors (IR events, NDRs, company tours, conference calls), 11 meetings with journalists
> Stakeholder Newsletters published
> · 7 occasions in 2023

**We rigorously reviewed our key risks to optimize the operational effectiveness of our internal/external control system.**
Noul's internal accounting control system is designed and operated in accordance with the conceptual framework on internal accounting control system design and operation published by the nation's Internal Accounting Control System Operation Committee, and key control activities are chosen for review each year to ensure its operational effectiveness. In 2023, we reviewed our design and operational process governing funds controls to specifically focus on the prevention of risks arising from insufficient funds control.

It was revealed that appropriate controls were established for the clear separation between the authorizing party and the executing party, the accurate and complete management of deposit/withdrawal accounts, and the management of borrowings and corporate credit cards, and that control activities were effectively implemented. In addition to funds management, company-wide reviews were made on nine work processes including sales and production and 119 control activities. According to the review performed by external auditors, no significant deficiencies nor critical vulnerabilities were identified as to the design and operation of our internal accounting control system.

As a listed company, Noul discloses quarterly and semi-annual audit reports pursuant to the Financial Investment Services and Capital Markets Act. In 2023, inventories that account for a sizeable portion of our financial statements and have a significant impact were chosen as the key audit matter, and external audits were performed by Samil PwC, with a focus on the accounting of inventory asset evaluations. Samil PwC issued unqualified opinions, demonstrating that Noul's financial statements were reasonably prepared in accordance with the Korean-International Financial Reporting Standards (K-IFRS).

## ▶ Challenges & Plans for Sound Governance

### Challenges

We pursue gradual improvements in our policies and systems to establish transparent and sound decision-making based on an independent, professional, and diverse Board of Directors in consideration of our current growth phase and our approach to sustainability. In the short-to-mid-term, we will revisit our Board operational regulations, which were laid out before our listing, from the perspective of sustainability, and focus on actionable improvements at this time, including policy directions on qualifications for independence of the Board and its diversity.

In response to increasing interest among investors and stakeholders and their disclosure requirements, we plan to increase the expertise of our IR department and reinforce the communication structure between our IR function and the CEO. This will be coupled with our efforts to expand communication opportunities with stakeholders by hosting company briefings and NDRs and attending industry conferences, which will help us promptly communicate information on our business activities and closely interact with stakeholders.

### Plans

· Revise the Board operational regulations in reflection of our commitment to increase independence, expertise, and diversity in Board composition and operation
· Improve IR organizational capabilities to strengthen stakeholder communications

# Governance for Sustainability

**We are establishing a decision-making system that prioritizes sustainability across the overall business and organizational operation.**

Soon after we began doing business, Noul appointed the Chief Sustainability Officer (CSO) to head our company-wide sustainability operations. As a member of leadership and the Board of Directors, our CSO is mandated to fulfill his/her responsibility and authority to always consider sustainability perspectives in all decisions made across the board. This ensures that our decisions are made from the lens of sustainability in a systemic and impactful way from product development and business planning to corporate culture and public communications. The CSO is responsible for sustainability issues at Noul, and directly reports on these issues to the Board of Directors when necessary.
In 2023, our CSO continued to provide the sustainability report outlining our business operations and activities undertaken in the preceding fiscal year along with social accomplishments, and gained approval.'
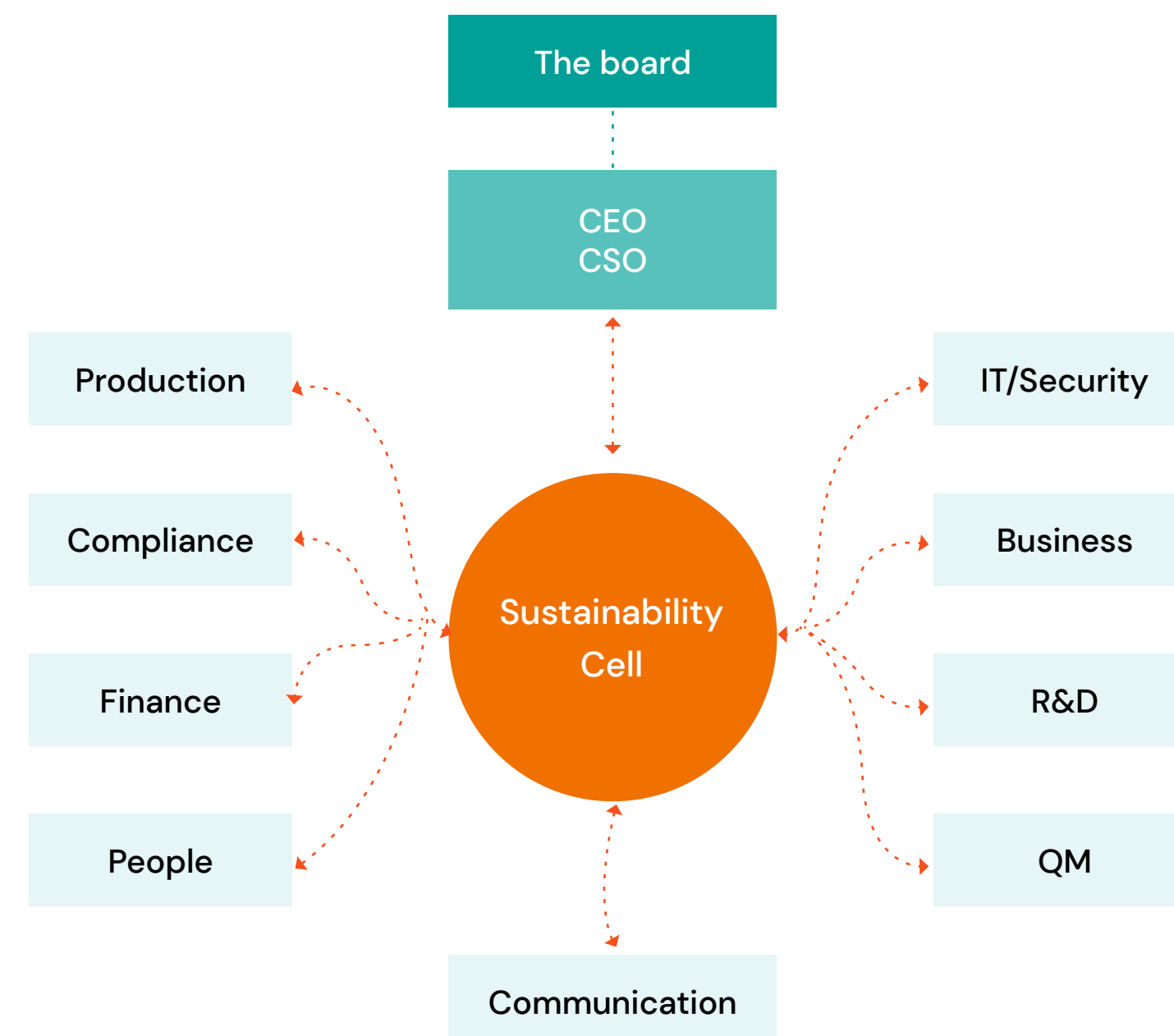
**We pursue the continuous improvement of sustainability performance and regularly manage such performance.**

We use our self-developed checklist to check our sustainability performance metrics in making a company-wide self-assessment each year, and the results guide our efforts to improve our sustainability performance. Presently, we are focusing all our capabilities on acquiring global customers before generating profits at scale, and set our sustainability priorities and developed mid/long-term sustainability improvement plans in 2023, taking into account our current growth phase and market conditions. Our sustainability department and seven relevant departments are working together to improve our sustainability, and the sustainability department monitors our progress and achievements on a quarterly basis.
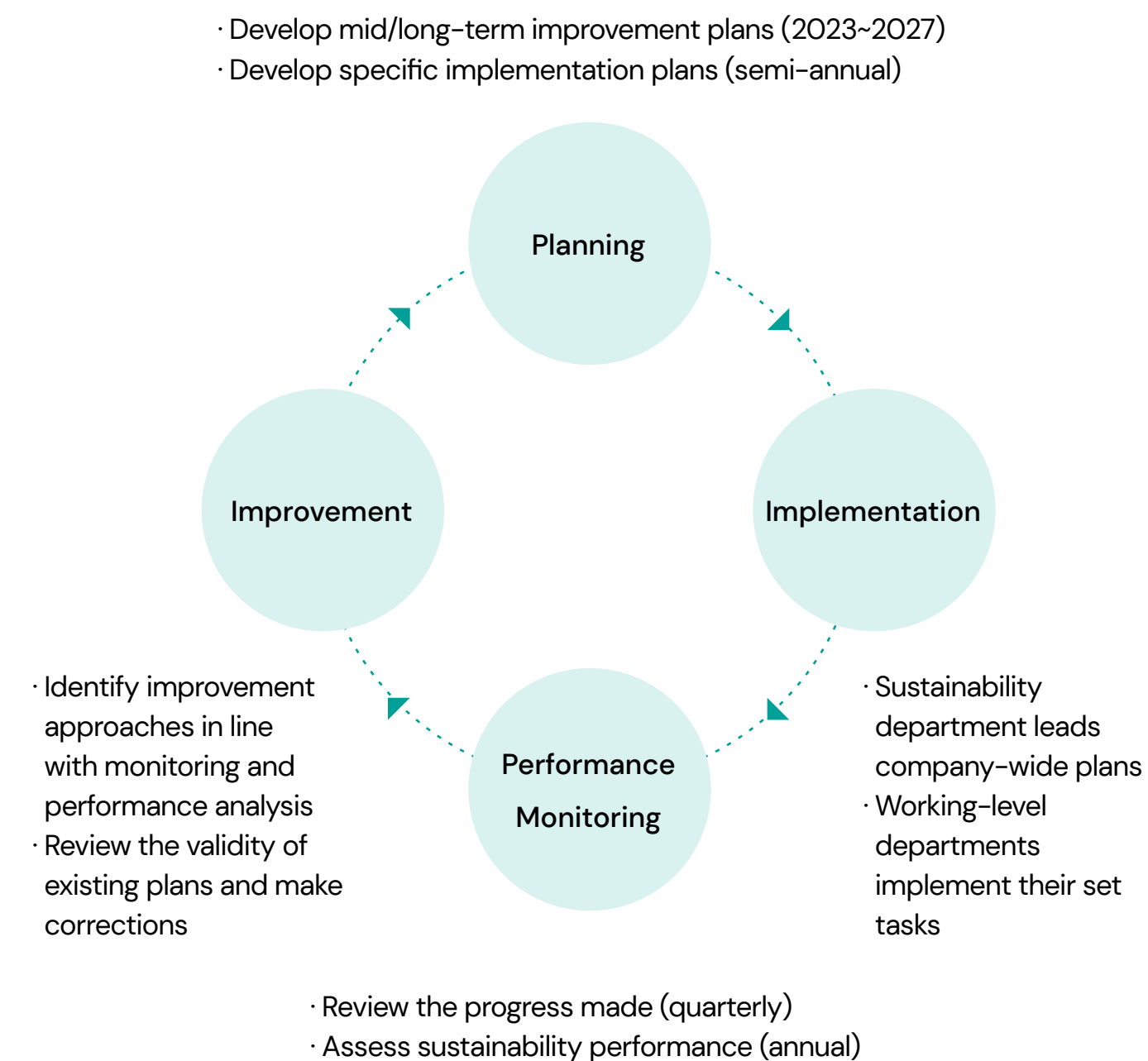
**We engage in a broad array of activities to raise our members' awareness on and encourage them towards sustainability.**

· **Sustainability Award**
Since 2017, we have been granting the Sustainability Award to members who seek and practice sustainability in their operations and workplaces. In 2023, this award went to a member for the improvement made for materials and designs while considering their environmental impact in the product development process.

· **Sustainability onboarding training**
We have provided onboarding training to new hires to introduce them Noul's sustainability policies and implementation approaches since July 2023. This training helps new members develop an advanced understanding of Noul's sustainability philosophy and motivates them to implement sustainability by taking the initiative in their operations and workplaces.

· **Sustainability workshop**
To bolster organizational capability at the departmental level, we have designed and operated sustainability workshops based on departmental demands since 2022. In October 2023, the product development department hosted a sustainability workshop to increase the eco-friendliness of our products, and discovered ways to reduce the environmental impact of products and packaging.



The board

CEO
CSO

Sustainability Cell

Production | IT/Security
Compliance | Business
Finance | R&D
People | QM
Communication



· Develop mid/long-term improvement plans (2023~2027)
· Develop specific implementation plans (semi-annual)

Planning

Improvement

Implementation

Performance Monitoring

· Identify improvement approaches in line with monitoring and performance analysis
· Review the validity of existing plans and make corrections

· Sustainability department leads company-wide plans
· Working-level departments implement their set tasks

· Review the progress made (quarterly)
· Assess sustainability performance (annual)

**We provide internal sustainability training programs to strengthen our sustainability execution capabilities.**

Sustainability 101 is our internal training program designed to help members be more proactive and embrace the values of sustainability at work. This company-wide, mandatory training is to be completed by all members, and consists of six rounds of lectures on the concept and case studies of sustainability, tours of companies advancing sustainability, and undertaking of member-led internal sustainability projects. Participating members are highly satisfied with this training as it allows them to delve into the theories and practices of sustainability which is at the core of our business philosophy and to explore methods for implementing sustainability in their operations and workplaces by putting their own expertise into action.

**1st Sustainability 101 Training Outcomes in 2023**

· Attended by 15 members who 100% completed it
· Provided 360 hours of training
· Undertook 4 sustainability improvement projects
– Proposed ways to recycle used coffee grounds generated from Noul, With You
– Proposed possible ways to collect and recycle products
– Proposed possible applications for fair trade
– Proposed ways to protect the data privacy of sample providers

1

**2nd Sustainability 101 Training Outcomes in 2023**

2

· Attended by 10 members who 100% completed it
· Provided 360 hours of training
· Undertook 3 sustainability improvement projects
– Proposed ways to clean-up and organize the working environment
– Launched the 'Zero Carbon Playlist' campaign to achieve net zero
– Proposed ways to increase access to remote work and IT from the DEI perspective

**Participating Member Reviews of Sustainability 101**

"I've learned a lot about sustainability, which was never a familiar topic for me, and it really changed the way I do things."

"I've come to look for companies genuinely committed to sustainability and think deeply about how I could pursue sustainability in my daily life and at work."

"After the weekly lectures, we ate lunch together which provided such an invaluable opportunity to share each other's thoughts about sustainability."



Graduation Ceremony for the 'Sustainability 101' Training

## Challenges & Plans for Sustainable Governance

### Challenges

At Noul, we have closely aligned our organizational philosophy and operations towards sustainability, working to raise our members' awareness on sustainability and integrating sustainability perspectives in our company-wide decision-making. The growth of our organization, however, urges us to advance our sustainability philosophy beyond the overarching framework of organizational regulation to establish more specific policies and regulations and to encourage respective functions to engage in sustainability activities and generate relevant outcomes. As such, we will ensure our working-level sustainability department strengthens its expertise and integrated management capabilities across the overall sustainability areas while relevant departments improve their capabilities to effectively advance sustainability by drawing on their subject matter knowledge.

### Plans

· Establish a systemic performance management process to implement our mid/long-term sustainability improvement plans
· Develop ESG risk management plans and make necessary improvements
· Supplement our training programs to raise members' sustainability awareness

# Responsible
# and Inclusive Workplace

· Diversity, Equity and Inclusion (DEI)

· Capacity Development

· Employment and Work Environment

# Diversity, Equity and Inclusion (DEI)

**We are laying the necessary institutional and cultural settings to embed the values of DEI across all operations.**

Since our initial founding, our respect for diversity and protection of human rights have been evident in our HR regulations. With our commitment to furthering a corporate culture and building a more robust organizational system to support Diversity, Equity, and Inclusion (DEI), we are doing our utmost to ensure such values thrive within the fabric of our corporate DNA. Our recruitment process explicitly bans any discrimination on the grounds of gender, education, age, religion or any other factors irrelevant to one's job roles. Furthermore, we encourage fair and inclusive policies and systems to ensure that the value of diverse backgrounds, experiences, and perspectives that individual employees bring are welcomed in and promoted at the organizational level.

In 2023, we took stock of our DEI implementation status and identified necessary improvements by drawing on the gender gap analysis tools of the UN Women's Empowerment Principles and the DEI Framework of GoodCorporation* to systematically integrate the value of DEI into our overall organizational operation. It was revealed that despite our DEI-conscious hiring procedures and DEI-related grievance mechanisms, we have a way to go in establishing DEI policies and increasing the diversity of leadership in terms of strengthened DEI governance. The results will help guide our efforts to develop training programs to raise DEI awareness at the leadership level and make continuous improvements to expand long-term leadership opportunities for women from the second half of 2024.

*Good Corporation. (2023). The GoodCorporation Diversity, Equity and Inclusion Framework.

## Noul's efforts to promote DEI

· We established non-discrimination and equal opportunity policies, and made these openly available to all employees.
· We do not request any information irrelevant to job duties in the hiring process.
· We perform regular DEI surveys on employees.
· We regularly identify gender-based disparities in wages and benefits.
· We are conscientious in our word choices and expressions to ensure there is no implicitly discriminatory or exclusive language in our communications for the planning of key corporate events and engaging in internal/external communications.
· We have fully confidential grievance systems in place to help raise DEI-related complaints or concerns.

## Noul's improvement approach for promoting DEI

· We will develop policies outlining our commitment and approach to DEI.
· We will continue to improve our DEI to bring greater diversity to our workforce and increase leadership opportunities for women.
· We will provide leadership training to raise DEI awareness and respond to DEI issues.
· We will upgrade our support process to provide systemic support to employees returning to work after parental leave.
· We will develop interviewer etiquette guidelines from the DEI perspective.

**We announced our CEO Ambitions to set the course ahead for DEI in commemoration of International Women's Day.**

Each March 8th on International Women's Day, we host company-wide commemorative events to build broader consensus at all levels on the overall topic of diversity and gender equality. In 2024, the CEO Ambition and keynote speech 'Noul's Future Aspirations from the Vantage Point of Gender Equality and Diversity', set the course ahead for DEI. This internal seminar facilitated meaningful dialog on women's rights and the value of gender equality and also provided the space for two female members to share their insights about what they experienced along their journey in assuming senior and leadership roles and what it has been like to be a woman at Noul.

Noul stands behind the belief that diversity and inclusion positively impacts all – women, men, and the Company; moreover, it helps improve our operational efficiency and hone our competitive edge. Going forward, we will continue exploring and seizing opportunities to more deeply embed the value of diversity and inclusion into the intricate workings of our internal policies, systems, and culture.
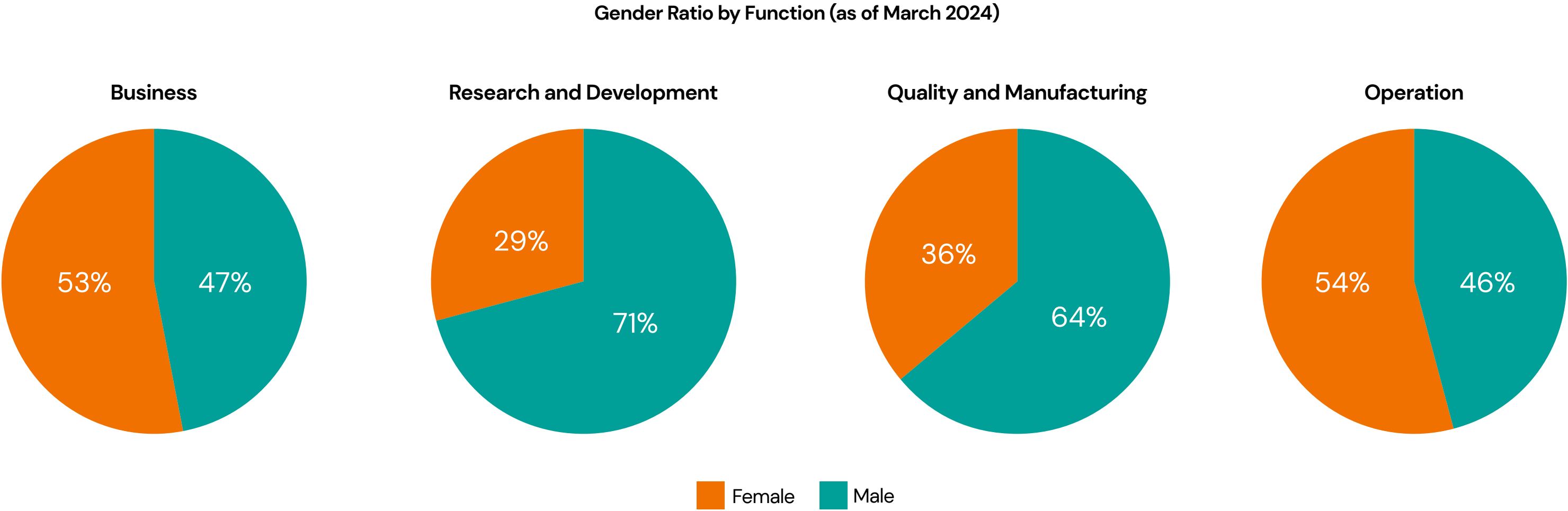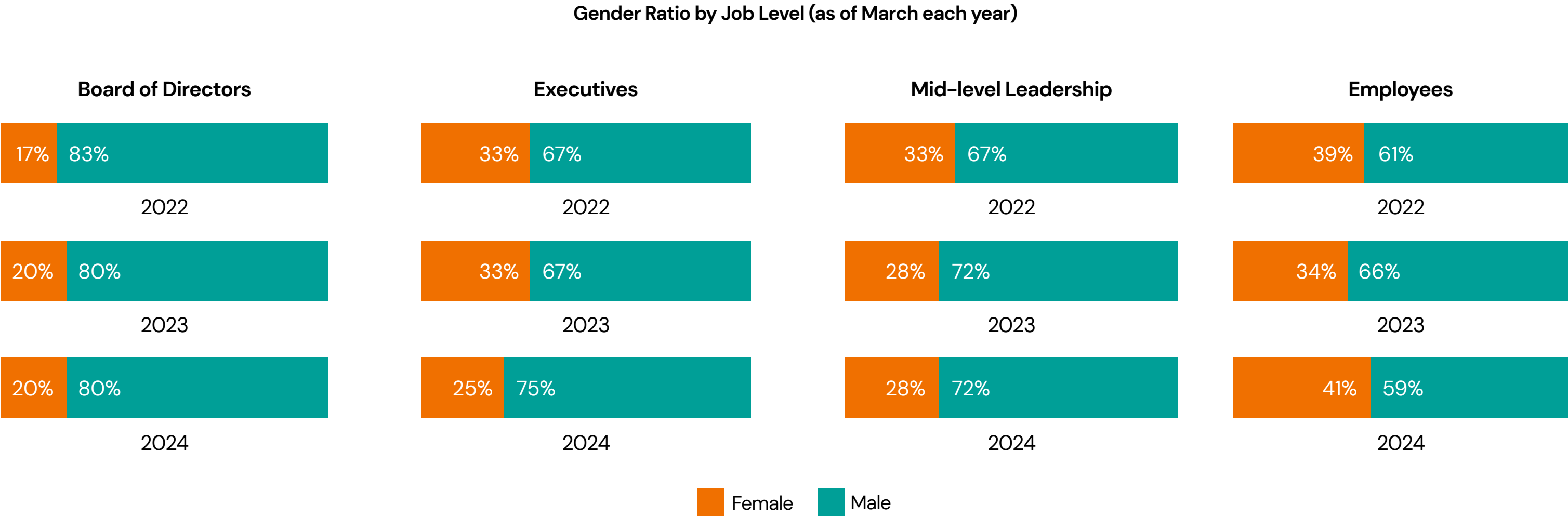
### CEO Ambition 'Noul's Future Aspirations'

· Everyone feels respected and free from discrimination
· Both men and women are provided the opportunity to discover and contribute their unique best at work
· Members from differing backgrounds and identities freely collaborate and generate synergy
· An inclusive corporate culture drives organizational performance and competitiveness

Our hiring and assignment process is fair and impartial, and does not factor in a candidate's or employee's gender, race, age, or educational background. Roles are assigned through objective assessments made by leaders and colleagues on one's job competency. While disparities in the gender ratio diminished year-over-year as we hired more females for the year ending in March 2024, such disparities increased in middle management roles during the same period.

This is externally attributable to the issue of glass ceiling still prevalent in Korean society which naturally affects Noul directly and indirectly. Internally, the availability of leadership positions is inherently limited by the size of our organization, and this makes it challenging to systemically expand leadership opportunities for women. We plan to remedy this through securing an institutional foundation that bolsters female leadership capabilities over the long haul and bring greater diversity and expertise to leadership in step with the growth of Noul as a company.

### Gender Ratio by Job Level (as of March each year)

**Board of Directors**

| 17% | 83% |
2022

| 20% | 80% |
2023

| 20% | 80% |
2024

**Executives**

| 33% | 67% |
2022

| 33% | 67% |
2023

| 25% | 75% |
2024

**Mid-level Leadership**

| 33% | 67% |
2022

| 28% | 72% |
2023

| 28% | 72% |
2024

**Employees**

| 39% | 61% |
2022

| 34% | 66% |
2023

| 41% | 59% |
2024

■ Female  ■ Male

### Gender Ratio by Function (as of March 2024)

**Business**

53% / 47%

**Research and Development**

29% / 71%

**Quality and Manufacturing**

36% / 64%

**Operation**

54% / 46%

■ Female  ■ Male

**'Noul, With You', a Place to Celebrate Differences and Engage in Meaningful Communication**

Noul, With You is our in-house cafeteria staffed by baristas with disabilities, and is made possible through our collaboration with HISBEANs, a social venture company. This unique cafeteria enables us to abide by the nation's affirmative action mandate to hire individuals with disabilities and to advance the value of diversity and inclusion in the workplace. Our baristas came on board in June 2022 and are duly fulfilling their roles and sharing their expertise. At the Noul Awards 2023 hosted to recognize and thank members for their dedication, these baristas received the 'I Am a Barista' Award in recognition of their hard work.

Furthermore, 'Noul, With You' is openly considered a venue for meaningful communication among our team of employees. In 2023 alone, 'Noul, With You' hosted 15 'Golden Bell' events and served as the perfect venue for official gatherings such as International Women's Day, Noul's anniversary, and celebratory events for the attainment of important business milestones. It is also an ideal spot for colleagues to gather to share individual achievements and celebrate special occasions . Looking ahead, we will ensure that Noul, With You serves as a meaningful space that sets the tone for diversity and inclusion.

## 15

Congratulatory events hosted at Noul, With You
8 member-led, 7 Company-led

### Diversity with Inclusion

Noul defined 7 Value Pairs under our company-wide core value framework, and included 'Diversity with Inclusion' as one of these pairs. This will guide us to develop the specifics of putting the value of diversity and inclusion to action. At Noul, Diversity with Inclusion is not about merely embracing differences while recognizing diverse ideas and backgrounds but about taking a more proactive stance to generate synergy through inclusive attitudes.

**Diversity as Noul defines it**
· Harmonize different backgrounds, identities, and perspectives
· Recognize and value the differences in others
· Practice zero tolerance in the presence of unreasonable discrimination
· Embrace the universal value of human rights and equity

**Inclusion as Noul defines it**
· Respect and welcome different backgrounds, identities and perspectives
· Proactively and substantially ensure inclusion for all
· Ensure fair decision-making full participation in opportunities
· Communicate and collaborate to bring out positive synergy out of differences

## Challenges & Plans for Diversity, Equity, and Inclusion (DEI)

### Challenges

To more systematically embed DEI into our organization, we will pursue a range of institutional and cultural improvements over the mid-to-long-term. In line with our organizational growth, we witness the increasing HR needs to establish a process to take stock of our internal diversity profile and gather relevant datasets. Our plan is to regularly collect data to capture our organizational diversity in addition to basic HR data based on gender, age groups, and nationalities. This will inform our efforts to set the DEI policies and goals that suit our specifics and establish an inclusive culture and systems.

Moreover, we will ensure a more efficient implementation of our company-wide DEI awareness-raising programs, including seminars held to celebrate International Women's Day and training on our core values. DEI training content will also be developed to meet the needs of different groups – female members, new hires, and our leadership team – and provide training programs tailormade to diverse groups within our organization.

### Plans

· Understand and analyze basic data on Noul's basic diversity profile
· Provide seminars for female members' leadership and career development
· Strengthen DEI training for new hires and our leadership team

# Capacity Development

**26.9** hours

Occupational accident rate

**4.55** out of 5 points

Internal training satisfaction

**60** occasions, **31** occasions

Conducted external training, Conducted internal training

**100%**

Supported members with regular opportunities to review their performance and competency

**3,370** occasions

Exchanged frequent feedback among coworkers

Monthly 1:1 meetings based on CFR(Cognition, Feedback, Recognition)
Quarterly regular feedback session



**We diversified the scope of our in-house training programs and their supporting channels to render them more accessible.**

We support our members with basic training programs to help them develop capabilities required in each phase of their growth. Our induction program for new hires consists of the three steps of organizational understanding, adaptation, and capacity building, and all our members are provided with internal and external training programs according to their individual training needs and capacity-building requirements.

In 2023, we conducted internal training on 31 topics across the four areas of Domain Knowledge, Leadership & Management, Fundamentals, and Work Skills. Learning at Noul was also established as our e-learning center, which made training more accessible with offline training available in an online video format. Such efforts earned us high scores in employee satisfaction with internal training, with 4.55 points out of five in 2023. In supporting external training, we fully assist our members in investing the time and expenses needed to receive training based on their needs and expected benefits it will have on their work competency, setting only minimum requirements for the applicant's career, position, training period, and expenditures.

**Our OKR-centered performance management process serves to motivate each department in taking the initiative to reach our company-wide milestones.**

At Noul, a company-wide OKR (Objectives & Key Results) performance management system is up and running to closely unite our organization from department-level operations all the way to our corporate mission, and encourage each team member to take the lead in their roles with clear objectives and priorities. Currently, we are integrating OKR into our performance and organizational management system at all levels, and building our OKR process in a way that makes the performance measurement more objective. In 2023, we bolstered our procedures to establish objective measurement criteria to ensure consistent results, even when departmental and company-wide OKRs are analyzed by third-parties. We also developed an early-phase system to articulate and monitor mutual contributions made to company-wide OKRs and departmental OKRs. In 2024, we plan to keep improving our corporate milestones and OKRs and establish a real-time monitoring process to ensure more systemic OKR management.

## In-house Training Program

**Domain Knowledge**

Learn basic and advanced knowledge within each domain of Noul (organizational functional areas) and improve one's overall understanding on respective domains

**Leadership & Management**

Develop leadership skills in each phase of the leadership journey from understanding the concept of leadership oneself, to exercising leadership skills across all levels

**Fundamentals**

Develop a proper understanding of Noul's mission, values and philosophy and adopt the basic mindset and specific behavioral protocols required by all at Noul

**Work Skill**

Learn the basic mindset and cultural skills needed to be a successful Noul employee

**Our feedback system promotes a lively exchange of opinions between colleagues on capacity development.**

We strive to promote employee growth by way of horizontal interaction between colleagues and coaching provided by leaders, rather than one-way instructions, and operate regular and ad-hoc feedback programs to this end. We operate our regular feedback program four times annually on a quarterly basis, and it is categorized into 90-degree, 180-degree, and 360-degree feedback according to the target and method of feedback. Meanwhile, our Peer Feedback program enables employees to communicate supportive messages in real time to express their gratitude, recognition or encouragement for their fellow coworkers. In 2023, such ad-hoc feedback was exchanged among members on 3,370 occasions, and 9,796 Noul coins were exchanged in the process.

In 2023, we established the Noul Leadership Skills Model, which serves as a working definition for the attributes of an Ideal Noul Leader, and introduced a 360-degree leadership feedback program, allowing members to provide feedback to leaders in line with the Leadership Skills Model. This new feedback program covers 19 specific skills across the five areas of alignment, goal management, organizational and member management, fairness, and communication & collaboration, and serves to help our leaders recognize their role as a leader while identifying and addressing areas for improvement.

| Type of Regular Feedback | Feedback Approach and Item |
|---|---|
| **360-degree feedback** Every December | · Target: Employees who have been with Noul at least 4 months<br>· Request leaders and colleagues with whom one worked for the past year to provide feedback on 17 quantitative items and 4 qualitative items |
| **180-degree feedback** Every June | · Target: Employees who worked at Noul for 3 or more months<br>· Request 2 or more persons (including one's direct supervisor and colleagues of their own choosing) to provide their feedback on 6 open-ended question items related to their competencies and attitude |
| **90-degree feedback** Every March and September | · Target: Employees wishing to receive feedback<br>· Personally select one's own feedback provider, choose their preferred 3 feedback items, and request feedback accordingly |
| **360-degree Leadership Feedback** Every December | · Target: Leaders at Noul<br>· Provide quantitative and qualitative feedback in line with the Noul Leader Skills Model (19 specific skills in 5 areas). Each leader receives feedback from members and line managers. |

We provide all members with the opportunity to reflect on their individual strengths and areas requiring improvement and to seek necessary support through one-on-one meetings with leaders and our internal mentoring program. One-on-one meetings with leaders are hosted regularly each month in line with the CFR approach prioritizing Conversation, Feedback, and Recognition. The mentoring program allows members to either choose their own mentor or let our HR department match them with an appropriate mentor from a pool of internal mentors.

## Challenges & Plans for Capacity Development

### Challenges

We at Noul make sweeping efforts to update our systems and processes to ensure our mid-level leadership efficiently manages their departments and supports the growth of our members in step with the growth of our organizational scale. While our mid-level leadership team is segmented by job category and function, the roles and responsibilities of different leaders are not yet clearly defined nor documented. This makes the documentation and internalization of leadership roles, authorities, and responsibilities by leadership level our priority for 2024.

Our onboarding program for new hires will be improved to facilitate their acquisition of necessary capabilities upon their joining Noul. Previously, our onboarding program focused on informing new hires of the basic policies and procedures they need to understand as a member of Noul, and we will shift this focus to help them develop a deeper understanding of the industry we are in and of core technologies. Our future onboarding program will be designed to support new hires quickly understand our organization and acquire the necessary capabilities early on. It will include video-based learning from our e-learning center, 'Learning at Noul'.

### Plans

· Elaborate on our external training support system
· Update training content to reflect necessary improvements for internal training
· Pursue process improvement for the efficient operation and management of one-on-one meetings
· Articulate and document leadership roles, authorities, and responsibilities by leadership level

# Employment and Work Environment

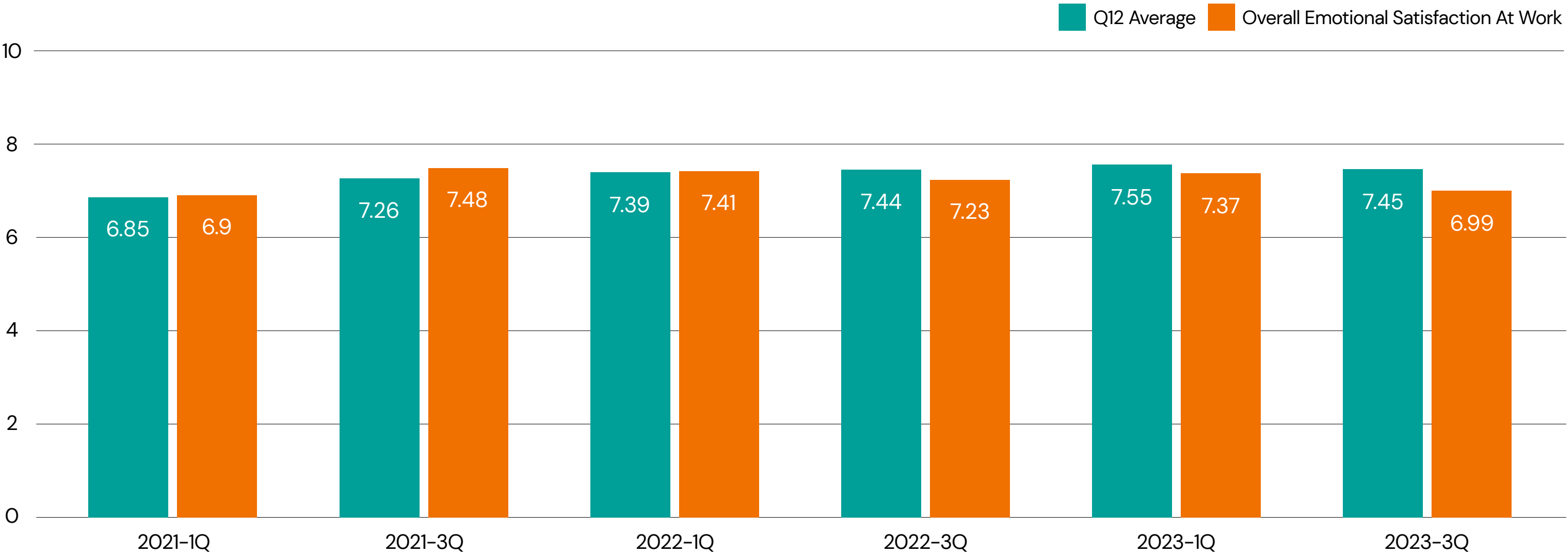**We regularly monitor our employment status data and strive to provide a great work environment.**

As of the end of 2023, our total headcount was 133, up by nearly 14% from the previous year. We welcomed a number of research and development experts responsible for translating innovative technology into products, along with industry experts leading the commercialization of new products and the exploration of business opportunities. In 2023, our total turnover was 12.6%: 3.6% of which included short-term part-time workers and interns who left as their contract ended, with only the remaining 9% being voluntary turnover. Voluntary turnover remained static from the previous year, and turnover attributable to the termination of short-term contracts declined from the previous year as the year-over-year expansion of our business and project scale resulted in the reduced frequency of signing short-term contracts

**The semi-annual Engagement Survey helps us gauge how satisfied and engaged our members feel.**

We conduct the Engagement Survey in the 1st and 3rd quarters each year to monitor our employees' engagement and satisfaction at work. Ninety team members (76%) responded to the survey performed in Q3 3023, and the average score on the 12 items pertaining to work engagement was 7.45 points out of 10. Out of these 12 items, average scores were particularly high in the following statements: "My supervisor, or someone at work, seems to care about me as a person" and "I have a best friend at work", indicating that our employees responded positively in terms of mutual respect and team rapport.

Meanwhile, relatively low scores were found with such statements as "At work, my opinion seems to count" and "At work, I have the opportunity to do what I do best every day". We interpreted these responses to mean that frequent changes in our organization and shifting work conditions inherent to any fast-growing organization present challenges for some of our members. We have regularly integrated semiannual survey results into our efforts to improve the work environment and organizational operation. Our goal in so doing is to ease any source of anxiety our members may feel and increase their sense of belonging at Noul.

**The Average For Gallup's Q12 Employee Engagement Survey And Overall Emotional Satisfaction At Work**



Legend: ■ Q12 Average   ■ Overall Emotional Satisfaction At Work

| | 2021-1Q | 2021-3Q | 2022-1Q | 2022-3Q | 2023-1Q | 2023-3Q |
|---|---|---|---|---|---|---|
| Q12 Average | 6.85 | 7.26 | 7.39 | 7.44 | 7.55 | 7.45 |
| Overall Emotional Satisfaction At Work | 6.9 | 7.48 | 7.41 | 7.23 | 7.37 | 6.99 |

We identify our members' engagement at work with the help of the Gallup Q12, developed by Gallup. Emotional satisfaction at work is measured from the average score calculated for the question 'All in all, how satisfied are you with your work at Noul?'.

**Key Results from the Q3-2023 Engagement Survey**

| I'm satisfied with.. | It's regrettable that.. |
|---|---|
| · My supervisor, or someone at work, seems to care about me as a person. <br> 8.95 points out of 10 points | · At work, I have the opportunity to do what I do best every day. <br> 6.99 points out of 10 points |
| · I have a best friend at work. <br> 8.40 points out of 10 points | · In the last seven days, I received recognition or praise for doing good work. <br> 6.76 points out of 10 points |

**We conducted one-on-one interviews at all levels to identify priority tasks for improving our working environment.**

We explore appropriate solutions to help individual members meet their needs and resolve difficulties, bolstering our company-wide capabilities and providing an engaging working environment in so doing. As such, one-on-one interviews were conducted at all levels under the leadership of our HR organization in September 2023. The tasks identified through these interviews – strengthening mid-level leadership capabilities and implementing programs and making institutional improvement to facilitate collaboration and communication in alignment with the company-wide, shared objectives – will be pursued as the key operational goals of our HR organization to make visible improvements.

**We fully support work-life balance along with operating a range of programs for improved engagement at work.**

We strive to provide a working environment that motivates individual members to fully engage in their work, generate exceptional performance, and contribute to the growth of the Company along the way. To ensure our members stay engaged at work as key contributors to our corporate performance, we operate autonomous and flexible work arrangements in terms of working hours, locations, and use of leave so that our employees flexibly respond to their varying individual situations that may hamper their engagement at work. Noul earned the family-

friendly business designation by the Ministry of Gender Equality and Family in December 2022, and continuously commits to creating a workplace conducive to work-life balance.

We also set the conditions for employees to take maternity leave before and after childbirth as well as parental leave, and ensure positive experience for both Noul and its members as they return to work after parental leave, encouraging our members to take parental leave in so doing.

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· Family-friendly business designation (designated in Dec. 2022)
· Number of employees who took parental leave: 1 male, 3 female employees
· Percentage of employees who returned to work after maternity leave/ parental leave: 100%, Retention rate: 100%
· Percentage of employees relocated to roles not related to their career background

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## Challenges & Plans for Employment and the Work Environment

### Challenges

Noul is a convergence-driven organization in which experts from SW, HW, bio, AI and other diverse fields work together; in fact, much of the work is performed through close cross-functional communication and cooperation. One of the key suggestions of the 2023 Engagement Survey and from the company-wide one-to-one interviews was the need for increased support to facilitate cross-functional communication and collaboration. We are already planning to implement programs to support such communication and collaboration in 2024. We will couple this with various teambuilding activities throughout different departments and between incumbent and new staff members at all levels.

As our organization scales up in size, we will accommodate members in their diverse phases of life, and expect an increased level of participation in our programs for family care needs. This prompts us to boost our support to members returning to work following parental or family care leave so that they may successfully acclimate to any changes and fully engage in their work unhindered.

### Plans

· Develop guides for members to smoothly return and adapt to work following maternity and/or parental leave
· Provide support to facilitate department-led communication and collaboration
· Plan and operate company-wide activities to boost a sense of belonging and solidarity among members

# Protecting the Planet

· Green Transition of Our Products and Processes
· Green Transition of Our Work Environment

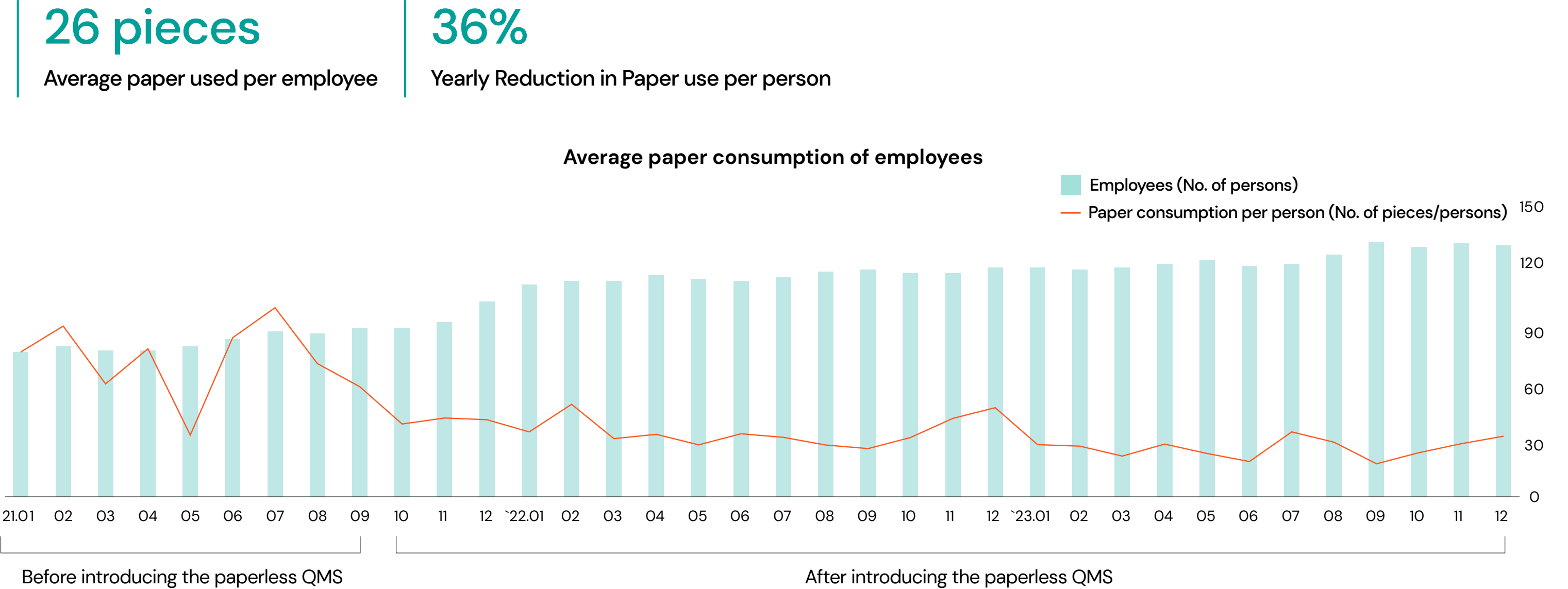# Green Transition of Our Products and Processes

**We have shifted to a paperless QMS for over 90% of all QMS operations**
As part of our effort to develop green work processes, we have pursued a paperless Quality Management System (paperless QMS) since October 2021. Currently, our paperless QMS operates to minimize hard documents across the overall system and replace all quality documents and records with electronic forms. Since adopting the paperless QMS, we have extended its scope and improved operational convenience each year. In 2023, we digitalized our manufacturing batch records on all our manufactured products, which saved 10 sheets of paper per manufacturing unit. This also greatly facilitated our work processes, as documents were made easier to access and revise. As of March 2024, the paperless QMS covered over 90% of our operations required to implement the QMS, and it has been touted to streamline workflows both for our members and our external auditors. We will continue with training in the years ahead to communicate user instructions on our e-document system and raise awareness on green work processes.

**We developed a checklist to ensure the eco-friendliness of miLab™ products and packaging.**
As we are in our early commercialization phase, our current focus at Noul is on acquiring global customers. We have not received any official feedback/requests from key stakeholders concerning product environmental impact to date. Nonetheless, we developed a checklist through the analysis of domestic/international standards and benchmarking industry practices for three months from July 2023. This helped us internally consider the environmental impact of our products across the entire product cycle so that we can preemptively prepare for the domestic/global environmental regulations that may apply to our operations in the years ahead.

The checklist consists of 26 specific questions pertaining to the potential environmental impact of our products and packaging across seven key factors instrumental to product development, including materials, design, energy efficiency, and product life. Though our current product development phase does not support the immediate implementation of all the checklist items, we will gradually phase in their application for future product developments in the mid-to-long term.

## 26 pieces
Average paper used per employee

## 36%
Yearly Reduction in Paper use per person

**Average paper consumption of employees**



Legend:
- Employees (No. of persons)
- Paper consumption per person (No. of pieces/persons)

Before introducing the paperless QMS

After introducing the paperless QMS

### Key Checklist Items for Greener Products and Packaging

| Materials | Design | Energy Efficiency | Reuse & Recycling | Standardization & Modulization | Product Life | Packaging |
|---|---|---|---|---|---|---|
| · Content percentage of recycled materials<br>· Uniform material composition<br>· Alternative to chemical substances | · Reduction in product weight and volume<br>· Streamlined assembly process<br>· Reduction in non-essential aesthetic elements | · Improvement in energy efficiency<br>· Consideration of energy-saving factors | · Improved ease of repair<br>· Battery removal<br>· Recycling of raw/subsidiary materials | · Modular product design<br>· Improved interoperability through standardization | · Improved durability<br>· Longer product lifespan | · Content percentage of recycled materials<br>· Optimal packaging efficiency<br>· Reduction in weight and volume<br>· Elimination of non-essential parts |

**We identify methods to pursue the green transition of our miLab™ products through cross-functional collaboration and progressively implement these methods.**

In October 2023, we held a company-wide workshop to explore how to pursue the green transition of our miLab™ products and packaging against our green transition checklist. Our leadership team, the product development department and all other members seized this opportunity to gain environmental awareness and discover diverse improvement ideas. It also provided a venue to discuss the international community's response to climate change/other environmental challenges, the concept of the circular economy, and the best practices of global companies in environmental stewardship. Furthermore, each department – product development, future research, business, quality, and manufacturing – contributed their own functional perspectives to the discussion on how to render our products and packaging more eco-friendly.

Following the workshop, the product development department and the sustainability department discussed issues of  prioritizing stakeholder materiality and actionability to materialize six out of the 15 ideas suggested at the workshop. In the second half of 2024, we plan to review the application of these six ideas in developing new miLab™ platform products.

> · [Materials] 1 idea to increase the proportion of recyclable materials
> · [Design] 1 idea to streamline the manufacturing process through design improvement
> · [Energy efficiency] 2 ideas to reduce energy consumption while optimizing data storage capacity
> · [Packaging] 2 ideas to increase the use of recycled materials and eliminate unnecessary parts

We are currently searching for eco-friendly, user-friendly, high-quality designs and materials in the product development process to mitigate the environmental impact of our single-use plastic cartridges. In 2023, we improved our design by switching from a design requiring the adhesive bonding of parts to one that eliminated the bonding process and still achieved the same functionality without the use of adhesives. Looking ahead, we will progressively reduce our product and packaging footprint in step with the pace of our business growth.

## Challenges & Plans for Green Transition of Our Products and Processes

### Challenges

miLab™ testing cartridges deploy solid-based staining technology which benefits the environment as they reduce the consumption of reagent to as little as 1/100 of the conventional liquid-based staining and do not require any washing or drying to ensure no wastewater is generated. Due to their specific use, however, the cartridges are mostly composed of plastic and are disposed of as single-use, in-vitro diagnostic medical device waste. Naturally, any increase in cartridge use will result in increased carbon emissions.

This is why we at Noul are delving into various ways to mitigate the environmental footprint of our cartridges. First, we are improving their design structure to reduce the volume of cartridge parts that are discarded. This improvement process is not without challenges as we need to consider a range of factors beyond environmental impact, including affordability for LMICs, the quality of substitute materials, and user convenience. Still, Noul remains committed to searching for actional alternatives to implement in sync with our growth phase.

### Plans

· Develop product designs to reduce single-use product waste
· Explore and adopt ways to reduce the volume, weight, and raw material consumption of packaging

# Green Transition of Our Work Environment

**Our total GHG Emissions amounted to 445.18tCO2eq in 2023, up by 8.2% year-over-year.**
Since 2021, we have independently calculated our GHG emissions along with regular monitoring in reference to international standards. In 2023, we improved our methodology to measure our use of electricity and heat in the office we lease, which had previously been cumbersome to measure, and included the results in the scope of our Scope 2 GHG emissions calculation. We also updated the calorific values used for energy consumption conversion, as well as GHG-specific national grid emissions factors, to improve the accuracy of our GHG emissions measurement. We remeasured our GHG emissions for 2021 and 2022 in line with the improved methodology to generate comparable three-year GHG emissions data.
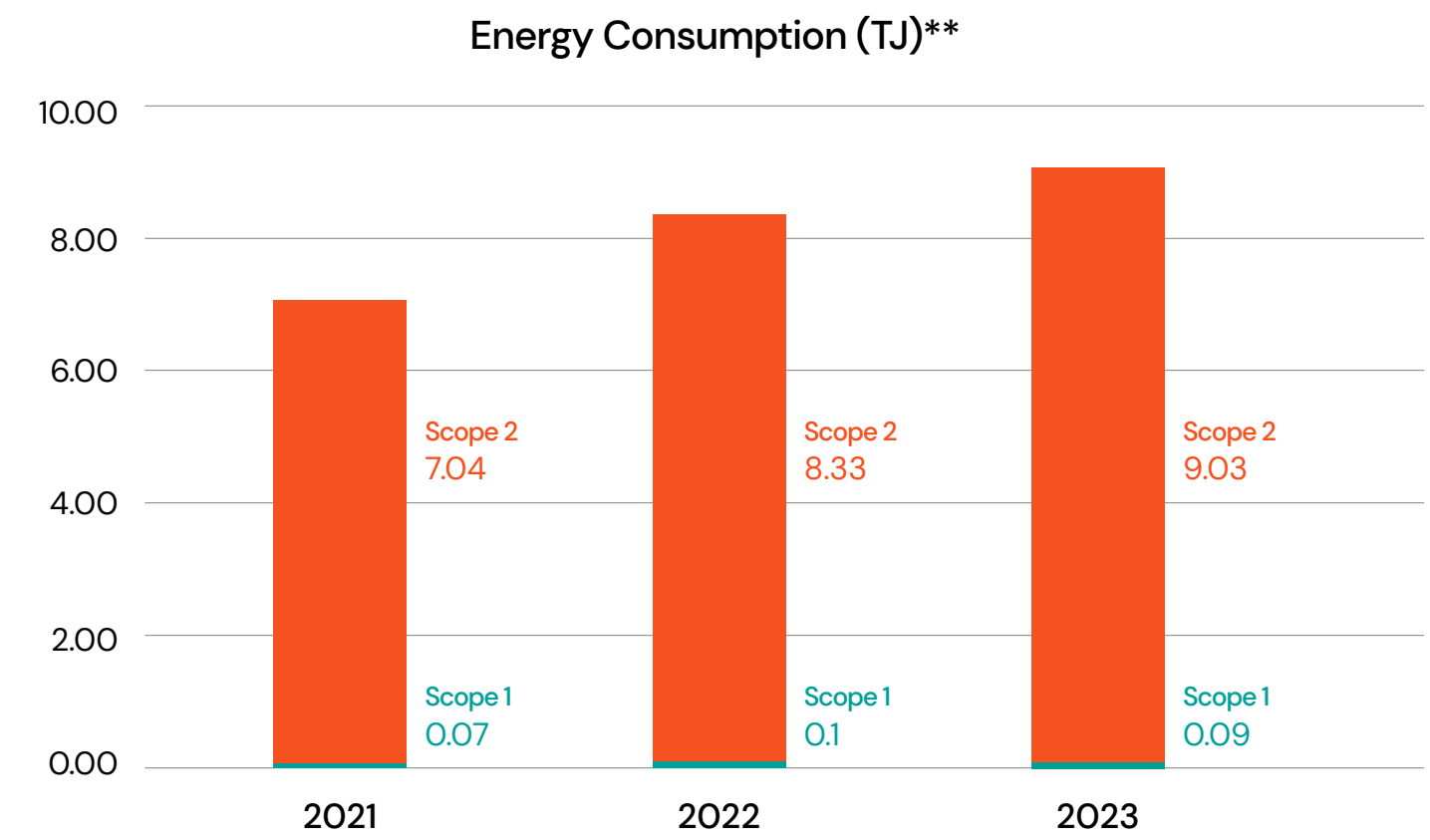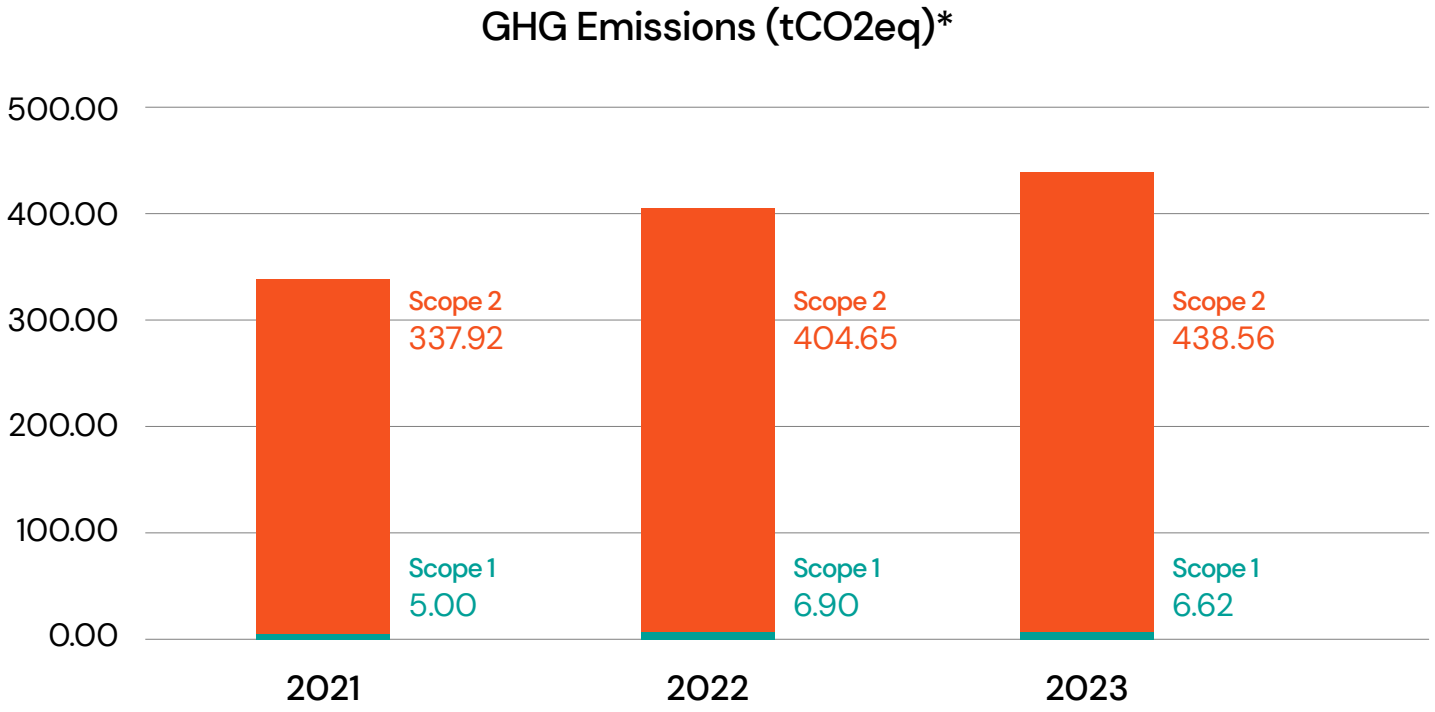
In 2023, our GHG emissions totaled 445.18tCO2eq, up by 8.2% (33.63tCO2eq) from the 2022 GHG emissions of 411.55tCO2eq.

**6.62tCO2eq in Direct Scope 1 emissions**
– Our switch from internal combustion engine cars to hybrid cars for our corporate fleet vehicles resulted in a year-on-year 4.1% reduction in GHG emissions from mobile combustion.

**438.56tCO2eq in indirect Scope 2 emissions**
– Our indirect emissions rose by 8.4% from 404.65tCO2eq in 2022 to 438.56tCO2eq in 2023. From these indirect emissions, emissions from manufacturing facilities and offices accounted for 66.7% and 33.3% of total respectively. While we have continued our efforts from 2022 to conserve power through improved process efficiency for manufacturing facilities, the year-on-year growth in cartridge production volume resulted in increases in power consumption and a 24.8% rise in GHG emissions. Meanwhile, GHG emissions from our office operations dropped by 14.3% from the previous year, despite the fact that our total headcount rose. We attribute this positive outcome to the daily efforts of our members, who were conscientious to turn off office lights during lunch and shut down HVAC devices when leaving work.

## GHG Emissions (tCO2eq)*

| Year | Scope 2 | Scope 1 |
|------|---------|---------|
| 2021 | 337.92  | 5.00    |
| 2022 | 404.65  | 6.90    |
| 2023 | 438.56  | 6.62    |

## Energy Consumption (TJ)**

| Year | Scope 2 | Scope 1 |
|------|---------|---------|
| 2021 | 7.04    | 0.07    |
| 2022 | 8.33    | 0.1     |
| 2023 | 9.03    | 0.09    |

*Carbon Dioxide equivalent (CO2eq.): GHG emissions are converted into the representative GHG of carbon dioxide, and are calculated by multiplying the emissions by the associated GWP (Global Warming Potential).
**Tera Joule: A unit of energy in the International System of Units

## Noul Co., Ltd.'s GHG Emissions Measurement Data

• **Scope of Organization**
· All offices (research labs), manufacturing facilities, and vehicles owned by Noul Co., Ltd.
· Address: 6,9,10F, 338, Gwanggyojungang-ro, Yongin-si, Gyeonggi-do, Korea
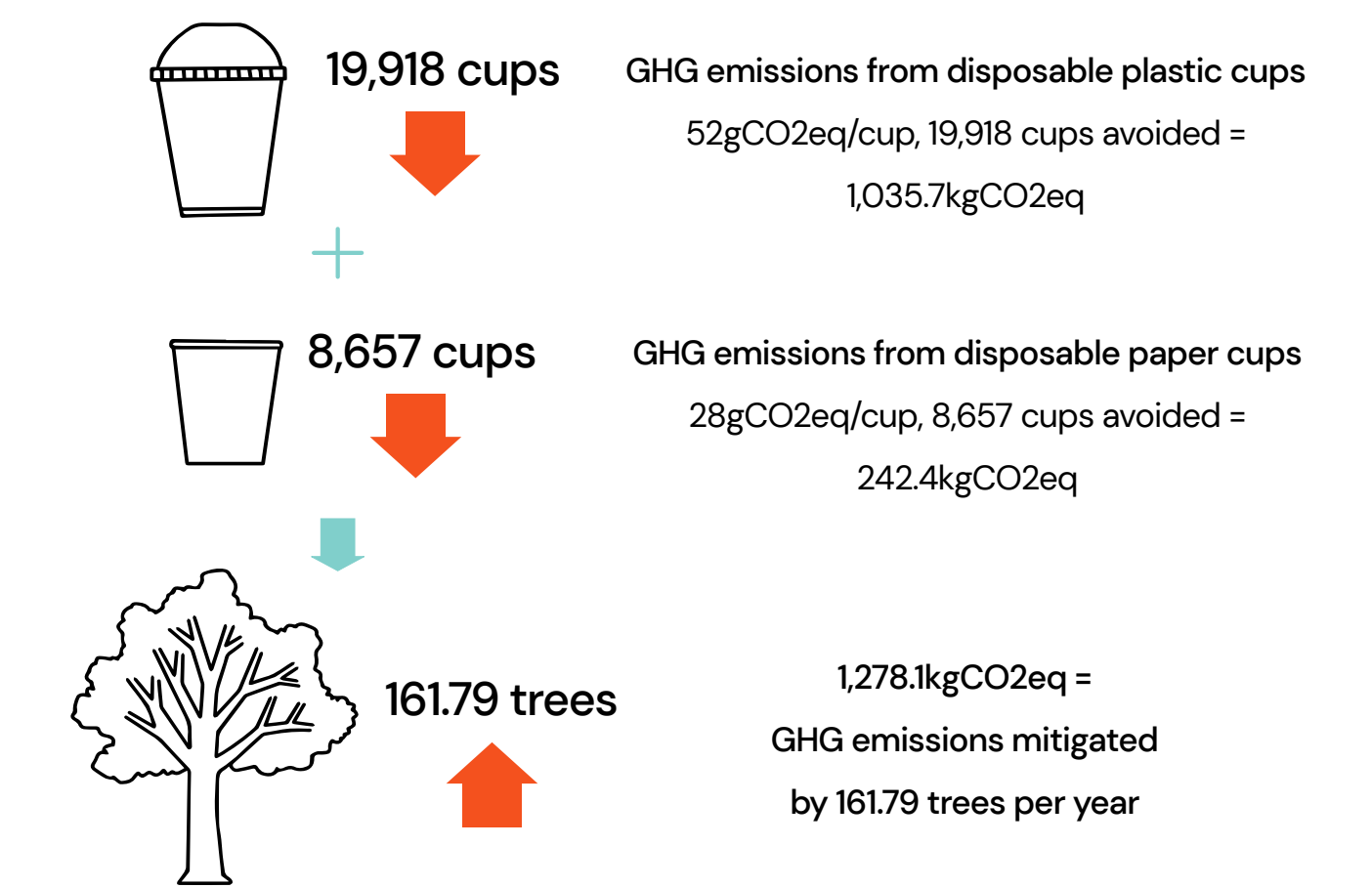
• **Emission Source**

| Scope | Calculate emissions by identified emission source |
|-------|---------------------------------------------------|
| Scope 1 | (mobile combustion) Corporate vehicles owned by Noul in 2023 Documentary evidence for emissions: Fuel efficiency |
| Scope 2 | (indirect emissions) Electricity charges/consumption(kWh) for 2023 Documentary evidence: Power bills, maintenance fee statements |

• **Calculation Methodology/Tool**
· Guidelines on GHG/Energy Target Management Operation and Others (Ministry of Environment, 2022)
· Guidelines on the Reporting and Verification of Emissions under the GHG Emissions Trading System (Ministry of Environment, 2022)
· Carbon Emissions Management Guidelines and Calculation Tools for SMEs (ASEIC, 2022)

As we gradually expand our business opportunities, our power consumption in the product manufacturing process is naturally on the rise. Given that we are still in our initial business phase, we do not have a high volume of product sales, nor are our GHG emissions high compared to other companies subject to GHG emissions management. Therefore, it has been manageable to independently measure our own GHG emissions. Starting from 2024, however, we will seek out procedures to ensure our GHG emissions measurement results are more objective and credible, and explore ways to improve our processes to reduce power consumption.

**Replacing disposable cups with tumblers at our in-house cafeteria Noul, With You saved 28,575 disposable cups.**
We promote the reduction of disposables throughout our daily business routine. To help mitigate the use of disposables, we gift our new hires with a welcome package containing a tumbler, eating utensils, and an eco-friendly bamboo toothbrush to substitute for their less eco-friendly options. We mandated the use of personal tumblers at our in-house cafeteria Noul, With You operating since June 2022 to discourage the consumption of disposable cups. In 2023, we avoided the use of 8,657 single-use paper cups and 19,918 single-use plastic cups, reducing nearly 1,278.1kgCO2eq in GHG emissions that could have been generated through the use of disposable cups.

**19,918 cups**
GHG emissions from disposable plastic cups
52gCO2eq/cup, 19,918 cups avoided =
1,035.7kgCO2eq

+

**8,657 cups**
GHG emissions from disposable paper cups
28gCO2eq/cup, 8,657 cups avoided =
242.4kgCO2eq

**161.79 trees**
1,278.1kgCO2eq =
GHG emissions mitigated
by 161.79 trees per year

Data aggregation period : Jun. 1, 2023 – Dec. 31, 2023
Reference : Disposal cup GHG emissions reduction intensity (Korea Environment Corporation, 2021), Standard Carbon Sequestration of Major Forest Tree Species (National Institute of Forest Science, 2019)

**We launched an in-house action campaign to reduce carbon emissions at work.**
In the second half of 2023, we piloted a one-month 'Zero Carbon Playlist' campaign to provide points to members as they completed eco-friendly missions both at work and at home. Initiated as a member-led project through our internal sustainability training, 'Sustainability 101', this pilot campaign marked the beginning of environmental activities among our members, and became an official regular in-house campaign aiming at reducing carbon emissions in March 2024. With the goal of mitigating over 36,800kg of carbon dioxide emissions a year at work, we will create a corporate culture that engages our members in fun simple activities that reduce carbon emissions and encourage proactive participation.

**What is Noul's 'Zero Carbon Playlist'?**

Zero Carbon Playlist is a program that supports our members in reducing GHG emissions and encourages eco-friendly daily practices.

**Step 1.** Members complete eco-friendly missions and track their activities on the logging app to earn green coins (points awarded for the completion of eco-friendly missions)

· **Eco-friendly missions**
① Opt for low-carbon commuting, ② Properly sort waste, ③ Shut off HVAC devices when leaving work, ④ Flip off office lights when leaving work/during lunch, ⑤ Power off extension cords when leaving work, ⑥ Use the stairs

**Step 2.** Members can turn in their green coins for eco-friendly product such as sustainable toothbrushes, tumblers, and powder detergents at the unmanned green market located in Jungle, Noul's sustainability space.

**Our member-led 'Trash Attack' initiative helps build awareness on waste sorting.**
Our members are free to form Special Interest Groups(SIG) to suit their varying work and professional interests and engage in fun yet meaningful activities. The

members of the SIG, 'Use.Focus.Again' are specifically interested in resource circularity and head  the Trash Attack initiative to demonstrate how to sort waste. These members use a self-developed checklist to check office waste bins every two months and share the results with other members. In 2023, our waste sorting performance received an average rating of 66 points. While there were periods when the awareness on waste sorting was rather low, proper practices of waste sorting are on the rise, such as cleaning cans, glasses and plastic and removing labels. From 2024 onwards, the analysis results will further guide our activities to actively engage our members in resource circularity.

**We raised awareness on resource reuse through a clothing exchange event.**
In December 2023, we hosted 'Change Outfits' as a year-end internal event for members to exchange the clothes and fashion accessories they no longer use. Members brought in clothing and fashion accessories from home and exchanged them in proportion with the donations they made. This event was attended by 25% of our members and any remaining unexchanged  items were donated to 'Goodwill', a store that sells donated items to create jobs for people with disabilities.

## Challenges and Plans for Green Transition of Our Work Environment

### Challenges

As more than a majority of our Scope 2 indirect GHG emissions stem from the electricity consumed for manufacturing facilities, we have implemented plan-based power consumption reduction activities, and with the manufacturing department leading the charge, continued our efforts to improve process efficiency. Our manufacturing and sales will increase as our global market presence broadens, which underscores the need for systemic analysis and improvement to reduce GHG emissions from the manufacturing process itself beyond any departmental efforts.  Hence, our focus in the second half of 2024 will be to identify energy efficiency levels across our manufacturing processes and facilities to uncover ways to save resources and energy. This will be followed by the development of mid/long-term improvement plans to progressively mitigate GHG emissions in step with the growth of our organizational scale.

### Plans

· Discover ways to improve energy efficiency for product manu-
  facturing processes and facilities
· Ensure objective credibility for GHG emissions measurement
  results
· Implement activities to encourage participation in the internal
  action campaign

# Appendix

# Noul's Mid/long-term Sustainability Improvement Plan

| | 2023~2024 | 2025~2026 | 2027 and Onwards |
|---|---|---|---|
| **Sustainability Stage** | **Set-up**<br>Lay the policy/system/cultural foundation | **Speed-up**<br>Bolster execution and facilitate communication | **Level-up**<br>Advance the system and establish a sound reputation |
| **Key Actions** | · **Social & Governance** : Establish policies and regulations<br>· **Environmental** : Lay the basis for data management<br>· Make improvements in the 1st phase based on priorities | · **Social & Governance** : Secure an implementation system and organizational capacity, further reach out to stakeholders<br>· **Environmental :** Establish the policy and management system<br>· Make improvements in the 2nd phase based on priorities | · Establish an integrated goal and performance management system<br>· Internalize global ESG standards at the departmental and company-wide levels |
| **Compliance, Ethics, and Risk Management** | · Establish an integrated regulatory non-compliance management process and operate compliance awareness building programs<br>· Lay the basis for the health and safety management system<br>· Improve the effectiveness of the internal control system<br>· Develop ethics/anti-corruption policies and stipulate ethics standards<br>· Establish a human rights/sustainability risk management process<br>· Establish and implement a CS process<br>· Establish information security policies/regulations/systems | · Establish a compliance risk management system<br>· Systematize the company-wide health and safety management system and operate safety culture dissemination programs<br>· Strengthen the capacity and expertise of the internal control organization<br>· Conduct human rights impact assessment and establish a human rights management policy<br>· Perform LCC analyses and strengthen the CS process system<br>· Bolster the information security system and raise internal security awareness | · Upgrade the compliance management system on par with international standards<br>· Advance the internal control system<br>· Establish a health and safety management system on par with international standards<br>· Pursue information security system reliability certification |
| **Sound & Sustainable Governance** | · Amend the Board operational regulations in reflection of our commitment to improving the independence, expertise, and diversity of the Board's composition and operation<br>· Develop goals and programs to strengthen the Board's independence, expertise, and diversity<br>· Establish standards and procedures to assess directors' management activities | · Systematize the remuneration policy and remuneration calculation process for Board members<br>· Bolster the process for regular reporting and discussion of sustainability agendas within the Board<br>· Establish a stakeholder reporting and engagement process | · Advance the Board operational system on par with global sustainability standards<br>· Systematize the stakeholder reporting and engagement process |
| **Responsible and Inclusive Workplace** | · Establish our DEI (Diversity, Equity, Inclusion) policy and its operational direction<br>· Develop content for employee capacity-building | · Implement institutional/cultural improvement programs to promote DEI<br>· Develop and implement female leadership capacity-building programs<br>· Strengthen leadership training for employees<br>· Establish supply chain assessment criteria and processes from the sustainability viewpoint | · Establish a company-wide DEI goal and performance management process<br>· Stipulate our supply chain code of conduct and conduct regular supply chain due diligence |
| **Protecting The Planet** | · Improve our GHG emissions (Scope 1 & 2) measurement methodology and systematize pollutant discharge data management<br>· Gradually improve the percentage of recyclable packaging materials | · Establish our environmental management policy<br>· Develop and implement GHG emissions (Scope 1 & 2) reduction plans<br>· Gradually improve the percentage of recyclable raw materials | · Pursue international environmental management system certification<br>· Recognize the boundary of GHG emissions (Scope 3) and pilot the calculation of such emissions<br>· Fully shift to renewable energy for business operations |
| **Improvement In Access To Healthcare** | · Establish an impact framework<br>· Develop an impact measurement and management system | · Develop and implement projects to disseminate impact business cases | · Develop and implement projects to disseminate impact business cases |

# Sustainable Development Goals (SDGs)

As a corporate citizen, Noul conducts business responsibly and develops diagnostic testing solutions that increase access to healthcare, joining hands in attaining the UN Sustainable Development Goals (UN SDGs) in the process. The UN SDGs provides important milestones in our sustainability management journey, and will guide our efforts to continuously monitor the social and environmental impact of our operations. The monitoring results will base our efforts in mitigating any adverse impact on stakeholders while expanding the positive ones on an ongoing basis.

| Level of Impact | ⊕ DIRECT POSITIVE | ⊕ INDIRECT POSITIVE | ⊙ NO IMPACT | ⊖ POTENTIAL NEGATIVE | ⊖ DIRECT NEGATIVE |
|---|---|---|---|---|---|

*Indicating the level of impact on the SDGs was informed by the Sustainable Development Goals section of Nudie Jeans' sustainability report 2021.

The table below demonstrates our business operations that directly/indirectly align with each of the UN SDGs and the social/environmental impact of miLab™ products.

| UN SDGs | | Our Activities |
|---|---|---|
| **1 NO POVERTY** 1.5 Reduce social vulnerability to natural/man-made disasters | ⊕ | + Leverage miLab™ to help the resilience of the poor and those in vulnerable situations to respond to disasters caused by infectious diseases<br>+ Leverage miLab™ to increase resilience to disasters and infectious diseases caused by disasters |
| **2 ZERO HUNGER** – | ⊙ | |
| **3 GOOD HEALTH AND WELL-BEING** 3.2 Reduce deaths of children under 5 years of age<br>3.3 End communicable diseases<br>3.4 Prevent non-communicable diseases<br>3.8 Achieve universal health coverage | ⊕ ⊕ | + miLab™ MAL enables quick and accurate malaria diagnostic testing to help eradicate malaria<br>+ miLab™ CER provides improved access to automated testing to help in the early detection of cervical cancer<br>+ miLab™ BCM provides improved access to general blood tests |
| **4 QUALITY EDUCATION** 4.4 Provide vocational skill building training<br>4.7 Education for sustainable development | ⊕ | + Provide employees with capacity building programs<br>+ Provide all employees with mandatory sustainability training programs<br>+ Provided company-wide training to improve perceptions on disability and to raise awareness on gender sensitivity<br>+ Hosted an internal seminar on International Women's Day to raise awareness on gender equity |
| **5 GENDER EQUALITY** 5.1 Ban discrimination against women<br>5.5 Ensure women's participation and opportunities for leadership | ⊕ | + Stipulate policies to promote gender equality and women's rights<br>+ Endeavor to establish systems and a culture at all levels to promote gender equality<br>+ Employee training to embed respect for human rights<br>+ Establish a non-discrimination policy to ensure gender is not factored in recruitment and promotion<br>+ Monitor the ratio of women in leadership positions |
| **6 CLEAN WATER AND SANITATION** 6.3 Minimize water pollutants<br>6.4 Improve the efficiency of water use | ⊕ ⊖ | + Develop eco-friendly NGSI (Next Generation Staining and Immunostaining) technology to reduce the consumption of staining reagents required for diagnostic testing by 1/100 compared to liquid staining as well as the generation of wastewater to zero in the staining process<br>– Need for systemic management of water pollutant discharge and water consumption |
| **7 AFFORDABLE AND CLEAN ENERGY** 7.3 Improve energy efficiency | ⊕ ⊖ | + Endeavor to improve the efficiency of energy use at manufacturing facility<br>– Need to reduce energy consumption and transition to renewable energy |
| **8 DECENT WORK AND ECONOMIC GROWTH** 8.5 Create high-quality jobs for people with disabilities and youth<br>8.7 Ban child labor<br>8.8 Protect workers' rights | ⊕ ⊖ | + Abide by the affirmative action to employ people with disabilities<br>+ Certified as a Great Employer by Gyeonggi-do<br>+ Stipulate human rights promotion policy<br>+ Endeavor to establish systems and culture at all levels to uphold human rights<br>+ Operate a dedicated channel to submit grievances and public interest disclosures<br>– Need to manage supply chain sustainability due to potential adverse impact concerning child labor and workers' rights protection due to the lack of supply chain sustainability management |

| | | | |
|---|---|---|---|
| **9 INDUSTRY, INNOVATION AND INFRASTRUCTURE** | 9.5 Bolster science and technology research | ⊕ | + Invest in R&D on next-generation technology |

| | | | |
|---|---|---|---|
| **10 REDUCED INEQUALITIES** | 10.2 Promote inclusion of all<br>10.3 Ensure equal opportunity and reduce inequalities<br>10.4 Adopt wage policies for equality | ⊕ | + Establish a non-discrimination policy to ensure gender is not factored in recruitment and promotion<br>+ Pursue non-discrimination and non-exclusion in our HR policy and process<br>+ Match intern pay with the living wage threshold of Gyeonggi-do, provide equal welfare and benefits to both interns and full-time employees |

| | | | |
|---|---|---|---|
| **11 SUSTAINABLE CITIES AND COMMUNITIES** | | ⊙ | |

| | | | |
|---|---|---|---|
| **12 RESPONSIBLE CONSUMPTION AND PRODUCTION** | 12.1 Sustainable consumption and production programs<br>12.4 Chemicals and hazardous waste management<br>12.5 Waste reduction<br>12.6 Integrate sustainability action plans into the reporting cycle | ⊕<br>⊖ | + Work to reduce waste generated by product/packaging unit and increase recycling and reuse<br>+ Manage chemicals and hazardous waste<br>+ Opt for tumblers in the workplace and provide waste sorting and recycling guides<br>+ Regularly report sustainability implementation plans and improvement results internally and externally<br>– Need to increase the use of recyclable materials for products and packaging<br>– Need to manage supply chain sustainability for potential adverse impact in the environmental sector |

| | | | |
|---|---|---|---|
| **13 CLIMATE ACTION** | 13.2 Integrate climate change measures into policies and strategies<br>13.3 Improve education and awareness-raising on climate change adaptation | ⊕<br>⊖ | + GHG emissions measurement and management (Scope 1 & 2)<br>+ Reduce power consumption in the workplace to mitigate $CO_2$ emissions<br>+ Develop and implement mid/long-term sustainability improvement plans for climate change adaptation<br>+ Provide employees with climate change adaptation training<br>– Need to establish goals and implementation strategies to reduce GHG emissions<br>– Need to define and calculate Scope 3 emissions |

| | | | |
|---|---|---|---|
| **14 LIFE BELOW WATER** | – | ⊙ | |

| | | | |
|---|---|---|---|
| **15 LIFE ON LAND** | 15.2 Promote sustainable management of forests | ⊕ | + Introduce FSC-certified paper for miLab™ packaging step by step<br>+ Introduced a paperless QMS for over 90% of operations requiring QMS implementation to reduce paper consumption |

| | | | |
|---|---|---|---|
| **16 PEACE, JUSTICE AND STRONG INSTITUTIONS** | 16.5 Reduce corruption and bribery | ⊕<br>⊖ | + Provide compliance and ethics training<br>+ Operate a compliance-related whistleblowing channel to report corruptive practices and others<br>+ Adopted monitoring procedures for the provision of economic benefits and strengthened compliance risk management<br>– Need to bolster the compliance system continuously due to the potential occurrence of corruption |

| | | | |
|---|---|---|---|
| **17 PARTNERSHIPS FOR THE GOALS** | 17.16 Enhance global partnerships<br>17.17 Encourage public, public-private, and civil society partnerships | ⊕ | + Established public partnerships in Cameroon, Ghana, Nigeria, Malawi, and other African regions<br>+ Bolstered global partnerships to eradicate malaria as a member of the Swiss Malaria Group, a Swiss-based public-private-industry-academia network<br>+ Strengthened partnerships with institutions and companies in the cancer diagnosis and treatment sector as a member of CancerX, an initiative launched by the US government to fight cancer<br>+ Cooperate with public/private international healthcare partners for research & development and market entry |

# Noul Sustainability Fact Sheet

## Summary of consolidated financial results

(Unit : KRW 1K)

| Item | Term 9 | Term 8 | Term 7 |
|---|---|---|---|
| GAAP | K-IFRS | K-IFRS | K-IFRS |
| | 31-Dec-23 | 31-Dec-22 | 31-Dec-21 |
| [Current assets] | 25,163,920 | 14,073,321 | 12,866,481 |
| · Trade receivables | 1,199,413 | 398,659 | 363,043 |
| · Cash and cash equivalents | 6,612,044 | 2,043,039 | 194,805 |
| · Short-term financial assets | 13,000,000 | 8,413,605 | 10,002,000 |
| · Inventories | 3,478,466 | 2,665,893 | 1,879,411 |
| · Other current assets | 873,997 | 552,125 | 427,222 |
| [Non-current assets] | 30,412,941 | 11,778,093 | 7,094,641 |
| · Investments | – | – | – |
| · Property, plant, and equipment | 9,639,348 | 10,968,821 | 6,566,243 |
| · Intangible assets | 170,197 | 256,025 | 188,118 |
| · Other non-current assets | 20,603,396 | 553,247 | 340,280 |
| Total assets | 55,576,862 | 25,851,414 | 19,961,122 |
| [Current liabilities] | 4,153,764 | 6,462,173 | 13,343,728 |
| · Trade payables | 75,081 | 21,363 | 120,936 |
| · Short-term borrowings | 1,944,000 | 4,344,000 | 1,200,000 |
| · Other current payables | 2,134,683 | 2,096,810 | 12,022,791 |
| [Non-current liabilities] | 8,434,148 | 7,993,554 | 4,760,381 |
| · Long-term borrowings | – | – | – |
| · Other non-current payables | 8,434,148 | 7,993,554 | 4,760,381 |
| Total liabilities | 12,587,913 | 14,455,726 | 18,104,108 |
| [Issued capital] | 18,473,530 | 5,726,765 | 4,440,025 |
| [Capital surplus] | 85,944,962 | 50,965,927 | 29,200,738 |
| [Elements of other stockholder's equity] | 1,168,420 | 702,014 | 441,818 |
| [Other comprehensive income/loss accumulated amount] | (2,023) | 4,979 | 2,488 |
| [Retained earnings] | (62,595,939) | (46,003,997) | (32,228,056) |
| Total equity | 42,988,949 | 11,395,688 | 1,857,014 |
| | Jan.-Dec. 2023 | Jan.-Dec. 2022 | Jan.-Dec. 2021 |
| Revenue | 2,733,841 | 541,879 | 1,475,309 |
| Operating income (loss) | (16,138,745) | (15,632,237) | (11,437,908) |
| Consolidated profit (loss) | (16,321,080) | (13,680,015) | (12,313,092) |
| Basic earnings (loss) per share (unit: KRW) | (609) | (1,243) | (1,571) |
| Diluted earnings (loss) per share (unit: KRW) | (609) | (1,243) | (1,571) |

## Environmental Performance

| Category | Subcategory | 2023 | 2022 | 2021 | Unit |
|---|---|---|---|---|---|
| GHG | Total GHG emissions | 445.18 | 411.55 | 342.92 | tCO2e |
| | Direct (Scope 1) | 6.62 | 6.9 | 5 | |
| | Indirect (Scope 2) | 438.56 | 404.65 | 337.92 | |
| Energy | Total energy consumption | 9.12 | 8.43 | 7.11 | TJ |
| | Direct (Scope 1) | 0.09 | 0.1 | 0.07 | |
| | Indirect (Scope 2) | 9.03 | 8.33 | 7.04 | |
| Water | Water consumption | 2,573 | 2,706 | 1,136 | Ton |
| Waste | Chemical waste discharge | 1,892.50 | 3,004.60 | 1,924.80 | Kg |
| | Pathological waste | 502.5 | 1,023.00 | 512.5 | |
| | General medical waste | 1,385.00 | 1,970.50 | 1,407.10 | |
| | Sharps waste | 5 | 11.1 | 5.2 | |
| Environmental training | | 128 | 12 | 22 | Persons |
| | | 1,050 | 144 | 330 | Hours |

## Compliance and Ethics Performance

| Category | Subcategory | 2023 | Unit |
|---|---|---|---|
| Environmental non-compliance | Penalties and non-monetary sanctions imposed for environmental non-compliance | 0 | Cases |
| Governance non-compliance | Penalties and non-monetary sanctions imposed for governance non-compliance | 0 | Cases |
| Social non-compliance | Penalties and non-monetary sanctions imposed for social non-compliance | 0 | Cases |
| Compliance and ethical non-compliance | Violation of compliance and ethics including corruptive practices at work, power harassment, sexual harassment, or bullying | 1 | Cases |
| Corruption | Total incidences of corruption | 0 | Cases |
| Grievance reporting | Grievances raised due to workplace bullying, sexual harassment or other grievances | 3 | Cases |

## Social Performance

| | Category | 2023 | | 2022 | | 2021 | |
|---|---|---|---|---|---|---|---|
| | | Number of Persons | Percentage | Number of Persons | Percentage | Number of Persons | Percentage |
| Employment | Total employees (y-o-y increase) | 133 (14%) * 136 when registered executives are included | | 116 (15%) * 119 when registered executives are included | | 100 (41%) * 104 when registered executives are included | |
| | By employment terms — Full-time | 120 | 90% | 106 | 91% | 83 | 83% |
| | By employment terms — Contract | 13 | 10% | 10 | 9% | 17 | 17% |
| | By type of work — Manufacturing | 9 | 7% | 9 | 8% | 13 | 13% |
| | By type of work — Office | 54 | 40% | 51 | 44% | 40 | 40% |
| | By type of work — R&D | 70 | 53% | 56 | 47% | 47 | 47% |
| | By gender — Female | 46 | 35% | 40 | 34% | 40 | 40% |
| | By gender — Male | 87 | 65% | 76 | 66% | 60 | 60% |
| | By gender — Other | 0 | 0% | 0 | 0% | 0 | 0% |
| | By leadership level — Female | 9 | 26% | 7 | 30% | 7 | 35% |
| | By leadership level — Male | 25 | 74% | 16 | 70% | 13 | 65% |
| | By leadership level — Other | 0 | 0% | 0 | 0% | 0 | 0% |
| | By age group — Youth (under 34) | 44 | 33% | 40 | 34% | 41 | 41% |
| | By age group — 34~50 | 84 | 63% | 72 | 60% | 55 | 55% |
| | By age group — Over 50 | 5 | 4% | 7 | 6% | 4 | 4% |
| Recruitment and turnover | Recruitment — Total new hires | 32 | | 34 | | 41 | |
| | Recruitment — Percentage of female new hires | 16 | 50% | 8 | 24% | 12 | 29% |
| | Recruitment — Percentage of male new hires | 16 | 50% | 26 | 76% | 29 | 71% |
| | Turnover — Total turnover | 16 | 12.6% | 30 | 26% | 30 | 30% |
| | Turnover — Full-time | 12 | 9% | 10 | 9% | 9 | 9% |
| | Turnover — Contract | 4 | 3% | 19 | 16% | 21 | 21% |

## Training

| | Category | 2023 | | 2022 | | 2021 | |
|---|---|---|---|---|---|---|---|
| | | Persons (completion rate) | Hours | Persons (completion rate) | Hours | Persons (completion rate) | Hours |
| | Prevention of sexual harassment (diversity) | 137 (100%) | 205 (1.5 hours/person) | 119 (100%) | 238 (2 hours/person) | 100 (100%) | 150 (1.5 hours/person) |
| | Improvement in perceptions on disability | 137 (100%) | 205 (1.5 hours/person) | 118 (100%) | 118 (1 hour/person) | 100 (100%) | 150 (1.5 hours/person) |
| | Personal data privacy | 136 (100%) | 136 (1 hour/person) | 119 (100%) | 142.8 (1.2 hours/person) | 100 (100%) | 120 (1.2 hours/person) |

| Category | Topic of Training | Completed by in 2023 (completion rate) | Hours | Type of Training | Completed by in 2023 (completion rate) | Hour |
|---|---|---|---|---|---|---|
| Occupational health and safety training | Regular supervisor training | 5 (100%) | 80 (16 hours/person) | Regular training | 131 (100%) | 1,572 (12 hours/person) |
| | Induction training | 28 (100%) | 224 (8 hours/person) | Special training | 51 (100%) | 816 (16 hours/target task) |

## Safety

| | Category | 2023 | 2022 | 2021 |
|---|---|---|---|---|
| | Lost time injuries (LTI) | O | O | O |
| | Lost time injury frequency rates (LTIFR) | O | O | O |
| | Total recordable injury frequency rates (TRIFR) | 3.4 | O | 4.7 |
| | Fatalities per 10,000 workers (‰) | | O | O |
| Occupational Injury Rate | Total | O | O | O |
| | Work-related injuries | O | O | O |
| | Work-related illnesses | O | O | O |

· Lost time injuries (LTI): Number of work-related injuries or illnesses that result in the loss of one full day of work or more
· Lost time injury frequency rates (LTIFR): (Number of LTIs/total hours worked) × 1,000,000
· Total recordable injury frequency rates (TRIFR): (Total number of recordable injuries/total hours worked) × 1,000,000
· Fatalities per 10,000 workers: (Number of fatalities/number of workers covered by workers' compensation insurance) × 10,000
· Calculation method of injury rates: [Number of injuries (work-related injuries + work-related illnesses)/number of workers covered by workers' compensation insurance] × 100

## Maternity Leave and Parental Leave

| Category | 2023 | 2022 | 2021 |
|---|---|---|---|
| Employees who took maternity/paternity leave | 5(male) 1(female) | 2(male) 3(female) | 2(male) 1(female) |
| Employees who took parental leave | 1(male) 3(female) | 1(male) 2(female) | 2(female) |

· Designated as a family-friendly business (Dec. 2022)
· Certified as a Great Employer in Gyeonggi Province (valid until Jul. 9, 2023 / first certified in 2019 and re-certified in 2021)
· Certified as a company which pays for interview expenses

# About This Report

## Purpose

As we drive our growth in line with our management philosophy of sustainability, we publish sustainability reports to periodically review our corporate activities and achievements from the economic, social, and environmental aspects and to disclose the results to stakeholders. Our annual sustainability reports help us identify our sustainability accomplishments and necessary improvements at all levels and transparently communicate them with wide-ranging stakeholders to elevate our corporate value and stakeholder trust over the long haul.

## Reporting Principle

Prepared in reference to the GRI (Global Reporting Initiative)
Standards for sustainability reporting

## Reporting Boundary

All domestic operations and the subsidiary in Switzerland(consolidated)
Financial data: Prepared in accordance with K-IFRS in a consolidated basis

## Reporting Period and Cycle

Jan. 2023 ~ Dec. 2023 (including a portion of the performance data generated in the first half of 2024)
Annual (first report published in 2020)

## Report Publication on the Web

https://noul.com/en/sustainability

## Publishing Month and Lead Team

June 2024, Noul Sustainability Cell
Inquiries: Pearl Lee (pearl@noul.com)
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