ANNUAL REPORT

24

TECHPARK SÜDTIROL/ALTO ADIGE

FOREWORD

We are pleased to present the NOI Annual Report 2024 – our yearly reflection on the topics, players, business ideas, research results, developments and initiatives that have shaped NOI Techpark and, in turn, South Tyrol's innovation landscape.

The year 2024 marked a period of exceptional growth. With the completion of the Free University of Bozen-Bolzano's new Faculty of Engineering complex and two additional buildings, the NOI community expanded from 1,200 to 2,400 people. More than 800 students now study and conduct research alongside institutes, start-ups and companies. The faculty's multidisciplinary approach continues to foster cutting-edge developments in artificial intelligence, robotics and automation – key drivers of innovation that each play an important role at NOI.

The growth trend extended beyond just the size of our community; it was also reflected in the key performance indicators. Over the past three years, the number of R&D projects has steadily increased. In 2024, the ongoing projects at NOI numbered 769 – a 24 per cent increase compared to 2022. At the same time, the budget for research and development projects grew by 77 per cent, reaching 59.2 million euros last year. These figures highlight the increasing significance of and trust in NOI's research infrastructure and services.

The number of companies and start-ups at NOI Techpark also continues to increase. In 2022, 91 established businesses and start-ups were based in the innovation district. By last year, that number had risen to 117 – a 29 per cent increase. These figures further underscore NOI's role as a hub for innovation and networking, both in South Tyrol and beyond.

We would like to thank all our partners, stakeholders, companies, start-ups and research institutes; their ongoing collaboration has made these achievements possible. We look forward to the developments ahead as we work together to shape the future of innovation and technology transfer in South Tyrol.

Enjoy reading the NOI Annual Report 2024!

Provincial Minister responsible for NOI
Philipp Achammer

President of the Executive Board
Helga Thaler Ausserhofer

TECHPARK SÜDTIROL/ALTO ADIGE

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R&D PROJECTS

R&D projects
pursued by research institutes and companies at NOI in 2024, 143 of them with EU funding

769

million euros
the 2024 budget allocated for these projects, 18.8 million euros of which was EU-funded

59.2

THIRD-PARTY FUNDING RATIO OF THE RESEARCH INSTITUTES

million euros
the third-party funding budget[1] of NOI's research institutes/groups

21.4

per cent
the third-party funding ratio of research institutes/groups located at NOI

53

All footnotes can be found in the imprint on page 68.

COMPANIES AT NOI

80
companies
were located at NOI in 2024

3.75
billion euros
the annual turnover of companies based at NOI[2]

START-UPS AT NOI

31
start-ups
were supported

36
per cent
the sales growth of start-ups that have been on the market for at least two years

18.1
million euros
the total investment by private investors across 6 start-ups

All footnotes can be found in the imprint on page 68.

LABS

52
labs
were active, including 49 scientific and 3 prototyping lab

624
customers
commissioned the labs for R&D projects and services, 346 of which were companies

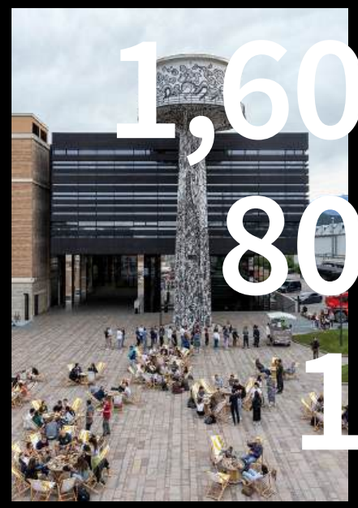
53
per cent
of the operating costs of the labs were covered by third-party funding[1]

SUPPORTED COMPANIES

1,331
customers
utilised our services, 987 of which were companies

57
per cent
of the supported companies were from South Tyrol

COMMUNITY

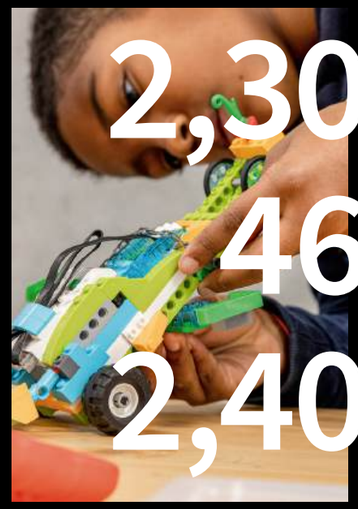


1,600 **people**
work at NOI

800 **students**
are enrolled at the Faculty of Engineering at the Free University of Bozen-Bolzano

15 **different languages**
are spoken within the NOI community

PUBLIC ENGAGEMENT



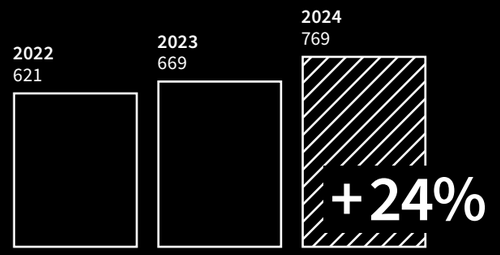
2,300 **children**
took part in MiniNOI workshops

462 **events**
were held in the Seminar Area

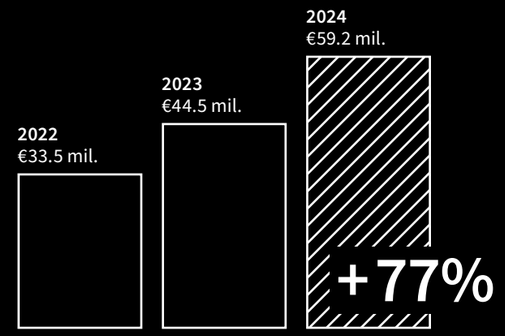
2,400 **people**
took part in public tours

GROWTH IN THREE YEARS

Number of R&D projects



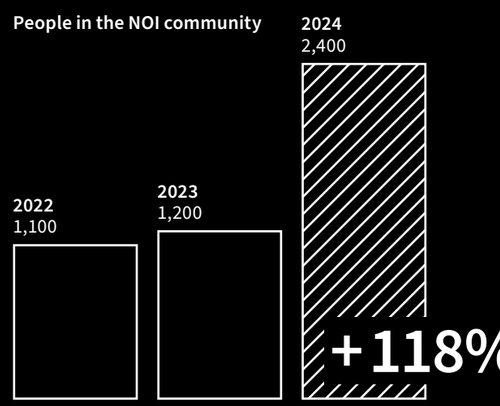
R&D project budget



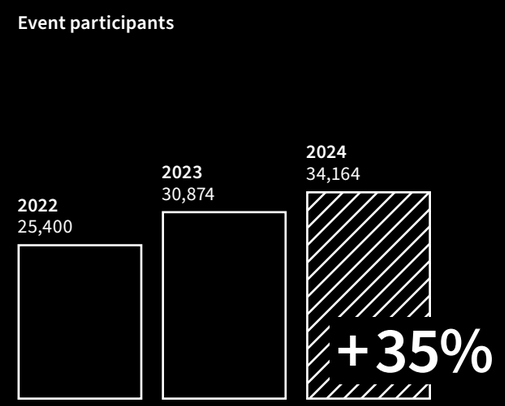
Customers supported

Companies and start-ups at NOI

People in the NOI community

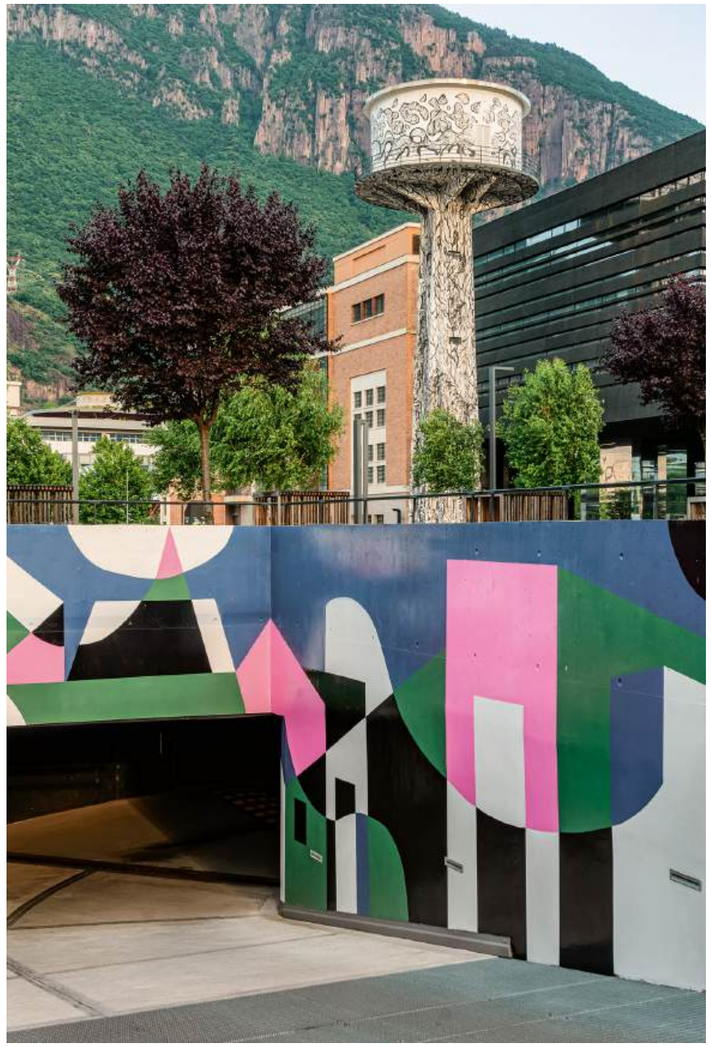


Event participants



**NOI stands for Nature of Innovation.
An acronym that captures the essence and strategic positioning of NOI Techpark.**

THIS IS NOI



Since its opening in 2017, South Tyrol's innovation district has continued to grow and develop. Today, 77 companies, 35 start-ups, 3 research institutes, 4 university faculties and a total of 2,400 people are based here, working toward a common goal: sustainable progress. A constantly expanding infrastructure, currently comprising 68 laboratories and prototype workshops, offices, co-working spaces and academic areas, provides space for this mission. The aim? To create an environment where ideas take flight and establish South Tyrol as a strategic centre of innovation.

MANIFESTO

ESSENCE

NOI is South Tyrol's growing innovation district that links economy and science to boost R&D investment, business innovation and research impact.

VISION

We choose to be one of Europe's leading next-generation science and technology parks, to serve best our territory and its companies, Europe's values and the planet's future.

NEXT GENERATION

As a next-generation European science and technology park, we focus on sustainability, open innovation, a European innovation strategy and the needs of the territory.

MISSION

NOI is power of place, culture of cooperation and nature of innovation. Here, companies and start-ups, university faculties and research institutes find and shape an inspiring, sustainable and multilingual environment with research excellence and labs, specialised services, incubation, technological institutes and public engagement.

NATURE OF INNOVATION

Nature of Innovation is our mindset. Inspired by nature, adapted to change, we rethink common patterns and create new solutions for the benefit of people and nature.

THIS IS NOI

TECHNOLOGY SECTORS


Green

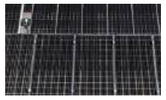

Food & Health


Digital


Automotive & Automation

We want to be at the forefront of areas where South Tyrol has potential. At NOI, companies, institutes and university faculties find the infrastructure and expertise they need to drive research and innovation in four key technology sectors: Green, Food & Health, Digital, and Automotive & Automation. Based on the province's regional innovation strategy – the RIS3 strategy – we have defined three areas of specialisation within each technology sector. These were developed through a participatory process involving businesspeople, researchers and stakeholders to reflect South Tyrol's unique strengths and development potential. Our goal is clear: to achieve excellence, lead the way and promote sustainability in each of these areas.

GREEN



Energy Systems
Systems designed to combine different energy carriers to increase energy efficiency

Sustainable Buildings and Districts
Development and optimisation of solutions for the construction sector through renewable and reusable resources and materials

Water Technologies
Technologies used to enhance, preserve and monitor the quantity and quality of water resources in a circular way

FOOD & HEALTH

Raw Materials and By-Products
High-quality primary and secondary raw materials for high-quality products

Optimal Processing and Fermentation
Processing methods that utilise and preserve valuable ingredients and organoleptic properties

Omics and Precision Health
Omics technologies for food and healthcare applications, as well as all-encompassing solutions in the field of precision health

DIGITAL

Internet of Things (IoT)
Sensors for data collection to address emerging challenges and create a sustainable digital environment

Open Data Hub
The platform for accessing and sharing data, knowledge and algorithms

Artificial Intelligence (AI)
Technological advances in data processing to optimise user engagement throughout the customer journey

AUTOMOTIVE & AUTOMATION

Automotive and Mobility
Components and systems for sustainable automotive and mobility solutions

Manufacturing
Technologies for the digital and sustainable transformation of manufacturing companies

Agri-Automation
Technologies for intelligent automation in agriculture

SUSTAINABILITY AS A DRIVER OF INNOVATION

Sustainability is at the very core of NOI – Nature of Innovation. After all, for innovation to serve both nature and humanity, it must inherently be sustainable. By developing new technologies and applying them intelligently, NOI helps preserve our world for future generations. Through close collaboration between research and industry, NOI creates new sustainable solutions every day – from smart energy systems and optimised food-processing methods to automation tools that promote environmentally friendly manufacturing and construction. On the following pages, we introduce some of these innovations.

“Europe has enormous potential: it may lack fossil fuel resources, but it is rich in renewable energy.”

Wolfram Sparber
Head of the Institute for Renewable Energy at Eurac Research

“Fermented products are the food of the future.”

Raffaella Di Cagno
Director of ICOFF and professor at the Free University of Bozen-Bolzano

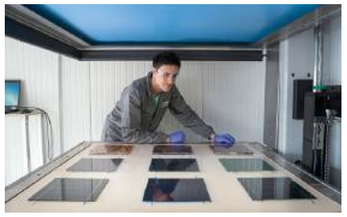
“The mobility sector is currently undergoing a transformation – one that’s set to make both consumer behaviour and technology more sustainable in the future.”

Klaus Mutschlechner
President of Automotive Excellence Südtirol

“A building has an impact over its entire life cycle. That’s why we have to conceive of construction as everything from raw materials to recycling.”

Christine Pfeifer
President of the VIVIUS Innovation Cluster

RENEWABLE ENERGY



Photovoltaics, made in South Tyrol

In 2024, Eurac Research opened a specialised laboratory at NOI to support companies and research institutes in developing customised photovoltaic modules. More than 100 PV prototypes have already been produced and tested here, including agri-photovoltaic modules that generate energy without blocking sunlight from crops and modules featuring coloured glass designed for unique architectural applications.

Cooling river water

Using glacier water to cool offices and production processes. The engineering company Bergmeister makes it possible. Their system uses glacier-cooled water from the Isarco River to provide cooling for nearby industrial plants, requiring only about one-fortieth part of the electricity consumed by conventional systems. Following an R&D project developed in collaboration with NOI, the system was successfully tested at the companies Alupress, Duka and Progress.

Energy from the vineyard

Biologik Systems have developed an innovative bioreactor that promises greater sustainability and energy efficiency in agriculture. It converts plant residues, such as grape stems and rootstocks, into heat, cooling and fertiliser – reducing waste while simultaneously generating green energy. The system is currently being further advanced through the Compost di Vino project in collaboration with the Laimburg Research Centre, Eurac Research, unibz, SBB, NOI and the Castel Sallegg winery.

SPOTLIGHT ON

3 questions for Wolfram Sparber

Wolfram Sparber
Head of the Institute for Renewable Energy at Eurac Research

Energy is one of the major topics when it comes to sustainability. What potential does it hold?

WOLFRAM SPARBER: Great potential, but there is a need for urgent action. We currently burn fossil fuels to generate electricity, heat buildings, power cars and lorries and sustain industrial processes. In all these areas, we need to transition to alternatives that reduce both CO_2 emissions and costs.

Where do you see the greatest opportunities – and the greatest hurdles – in the energy transition?

WS: The energy transition represents a profound transformation across many sectors of society. In my eyes, the biggest challenge is not so much technological adaptation but rather the accompanying social, economic and geopolitical changes. Europe has tremendous potential: while it lacks fossil fuel resources, it is rich in renewable energy. Europe stands to benefit significantly from price stability, energy independence – and thus geopolitical autonomy – the creation of domestic value chains, job growth, economic development, improved air quality and effective action on climate change.

Where does South Tyrol stand on renewable energy, and what role does research at NOI play?

WS: South Tyrol is well-positioned in several sectors. Local hydropower produces more clean electricity than the region consumes, biomass has been used early on as a replacement for fossil fuels, and energy-efficient buildings have been a focus for years, as exemplified by the KlimaHaus-CasaClima initiative. However, there's still a lot of work to do: passenger and freight transport in South Tyrol largely relies on fossil fuels, and buildings and industry continue to depend heavily on natural gas for heating and production processes. Research at NOI contributes to the necessary transformation. Through targeted projects, companies gain valuable experience with new technologies, collaboratively developing new products and solutions. The internationally accredited labs at NOI also allow quality testing to be conducted, such as for photovoltaic modules and heat pumps.

"South Tyrol is well-positioned in several sectors."

OPTIMAL USE OF FOOD RAW MATERIALS

The food of the future

The International Centre on Food Fermentations (ICOFF), opened at NOI in 2024, pursues a clear goal: to drive innovation and sustainability in the food sector through fermentation. As a unibz competence centre, ICOFF bridges the gap between science and industry, enabling companies to take advantage of the benefits of fermentation research. SMEs and corporations – both local and international – work side by side here to develop and optimise products and processes.

Healthy and sustainable seasoning

The Garum Project is paving the way for sustainable food innovation. With support from the Laimburg Research Centre, this start-up uses fermentation to turn food waste into a liquid seasoning – garum. A nutritious and healthy alternative to salt and stock cubes, it is produced exclusively from by-products of the local food industry, such as undersized vegetables, retired laying hens and whey from cheese production.

New life for waste products

Fraunhofer Italia is shifting from a linear waste management model to a circular economy approach in the food industry through the Interreg project TeBiCE. Key to this transformation are digital tools that connect all players along the value chain and enhance existing technologies. The aim is to make by-products derived from food processing economically viable, thus reducing waste from food processing.

SPOTLIGHT ON

3 questions for Raffaella Di Cagno

Raffaella Di Cagno
Director of ICOFF and professor at the Free University of Bozen-Bolzano

How can fermentation contribute to the optimal use of food raw materials?

RAFFAELLA DI CAGNO: Fermentation is the key to sustainable, plant-based nutrition. It enhances the taste and nutritional physiology of plant proteins, improves their nutrient availability and reduces antinutritive factors. It also enables the use of secondary raw materials that would otherwise be considered waste. One example is our collaboration with the company Pan Tiefkühlprodukte: we fermented apple pomace to develop a flour that can be blended with wheat flour – enriching bread with fibre, lowering its glycaemic index and extending its shelf life.

Where do you see the greatest potential of fermentation for a more sustainable food industry?

RDC: The food on our plates impacts not only our health but also the health of our planet. Our current diet – high in animal protein, a major contributor to CO_2 emissions – fuels climate change. The greatest potential of fermentation lies in its ability to create plant-based animal-product alternatives. And, of course, in the reuse of by-products, which helps conserve resources. Fermented products are the food of the future.

"Fermentation is the key to sustainable, plant-based nutrition."

How does ICOFF support companies in integrating fermentation into their business?

RDC: When we talk about the great potential of fermentation, we also need to recognise that it must be applied correctly. That's why it is so important to share scientific knowledge and expertise with the food industry. This is exactly what happens at the International Centre on Food Fermentations. Companies can even "adopt" a researcher, so to speak – meaning their research can be tailored specifically to the company's product and needs.

DECARBONISATION OF PRODUCTION AND MOBILITY

Pioneering CO_2 footprint tracking

How much CO_2 does a product leave behind? This question is becoming increasingly important. At NOI Brunico, the Automotive Excellence Südtirol network, together with the Free University of Bozen-Bolzano, is pursuing an ambitious goal: to develop standardised real-time monitoring of a CO_2 footprint across the entire production process – from raw material extraction to finished product. All based on unified standards designed not only to support companies in the automotive sector but also to act as a model for other industries.

One megawatt for electric lorries

The electrification of lorry fleets is a hot topic, and it hinges on the availability of a powerful, easily accessible charging infrastructure. This solution is being provided in South Tyrol, specifically by charging station manufacturer Alpitronic, which grew from a start-up at NOI. Its new generation of high-performance lorry chargers delivers up to one megawatt of power and, thanks to integrated load management, intelligently distributes the available energy across multiple vehicles.

Data as fuel for mobility

What if mobility could adapt precisely to our needs? That's the vision behind MENTOR, a project in which NOI brings the concept of Mobility as a Service (MaaS) to South Tyrol. The project demonstrates how bike sharing, carpooling and on-demand buses – combined with public transport – can create sustainable mobility solutions. The Open Data Hub provides the crucial real-time data to make it all work. The result: lower CO_2 emissions and more environmentally friendly mobility.

SPOTLIGHT ON

3 questions for Klaus Mutschlechner

Klaus Mutschlechner
President of Automotive Excellence Südtirol (AES)

Mobility is changing. What areas are AES companies working on to meet the growing demand for sustainability?
KLAUS MUTSCHLECHNER: The mobility sector is currently undergoing a transformation – one that's set to make both consumer behaviour and technology more sustainable in the future. Some of our priorities include reducing the ecological footprint, strengthening the circular economy and promoting energy-efficient, resource-conscious production. We are also focusing on the evolving skillsets required in the automotive sector, particularly in the areas of digitalisation and sustainability.

Where does South Tyrol's automotive industry have the greatest potential to stand out in the future?
KM: I believe that our innovative strength and agility have already helped us stand out from competitors in the past. These are evident in the many technological improvements we've made to our production facilities to boost energy efficiency and reduce consumption. What also plays in our favour here in South Tyrol is our convenient access to clean hydropower. This puts us in a strong position to embrace a transformation that is not only inevitable but also full of opportunity.

How do AES' location and network at NOI Brunico contribute to this transformation?
KM: At NOI Techpark in Brunico, the Automotive Excellence Südtirol network brings together research expertise, innovation and community. By fostering continuous learning and collaboration with all stakeholders, we work to develop solutions to the challenges of the future. One example is our joint project with unibz to develop a digitally supported, standardised approach to measure and critically assess CO_2 footprints.

"Change makes us more sustainable."

BUILDING SUSTAINABLY

Setting new standards in construction

Sustainability isn't just an environmental issue; it also has economic and social dimensions. The NOI Building Standard, developed in 2024, brings all three together. Created by the VIVIUS Innovation Cluster, this guideline outlines concrete measures for planning and constructing more sustainable buildings and urban districts. Initially applied to the upcoming expansions of NOI Techpark, the long-term goal is to establish it as a model for construction projects across the region.

Greener cities from the top down

Green roofs that store rainwater, prevent flooding and reduce summer heat – this is the business model behind ClimaGrün. The company develops innovative greening systems that improve the climate and protect the environment. With software developed in collaboration with Fraunhofer Italia, ClimaGrün can customise roof and façade vegetation to suit any climate. By leveraging advanced AI technology, the company is taking sustainable urban planning to the next level.

Smart building management

When it comes to emissions, a building's operation is just as important as its design and construction. Eurac Research works closely with companies to develop solutions that enhance building management to optimise both energy efficiency and comfort. Examples include collaborations with Würth and Hella on smart windows and home automation systems, as well as with glassAdvisor to create advanced simulation models for solar-shading glass.

SPOTLIGHT ON

3 questions for Christine Pfeifer

Christine Pfeifer
President of the VIVIUS Innovation Cluster

What does sustainable building mean?
CHRISTINE PFEIFER: Sustainable building means balancing ecological, economic and social concerns. From an ecological perspective, it's about using resources efficiently, promoting recycling and minimising energy consumption to keep a building's ecological footprint as small as possible. At the same time, buildings should do more than serve a function – they should promote well-being, ensure safety and strengthen community life, which reflects the social dimension. Last but not least, sustainable construction must also be economically viable, both during construction and operation, while supporting local value creation.

What goals does the NOI Building Standard you developed aim to achieve?
CP: The NOI Building Standard is intended to prompt a shift in construction culture. Construction shouldn't be seen as a one-time event – a building has an impact over its entire lifecycle, often spanning decades. That's why we need to approach construction holistically – from raw materials to recycling – and consistently apply sustainable principles. The NOI Building Standard raises awareness, provides fresh impetus and offers concrete solutions for more sustainable building.

How do such standards contribute to a sustainable construction culture?
CP: They can fundamentally transform the construction industry. Public institutions, in particular, should be role models: when sustainable principles are consistently applied in public building projects, it sends a strong signal to the entire sector. This drives the development of innovative, practical solutions that not only offer ecological and social benefits but are also economically attractive.

"The NOI Building Standard is intended to prompt a shift in construction culture."

GROWING INNOVATION DISTRICT

From fields and factories

During the strategic industrialisation of Bolzano in the 1930s, many farmers had their land seized to make way for industry, and several companies were founded, among them Montecatini. When its aluminium plant began operations in 1937, it created numerous jobs – especially for Italian immigrants moving north. The architecture? A masterpiece of the Bauhaus movement. The energy consumption? As high as that of all South Tyrol today. At the peak of its aluminium production, the plant supplied two-thirds of Italy's national demand. After the post-war economic boom, the factory eventually shut down. Ownership changed hands several times until it was sold to Alumix in 1991. When that company also ceased operations, the site was taken over by the Province of Bolzano.

A new direction

What to do with a decommissioned building that no one seemed to need anymore? Over the years, various plans were drawn up and then abandoned. The turning point came in 2008, when the site hosted the Manifesta 7 art biennial. That same year, two renowned architecture firms – Chapman Taylor from London and Claudio Lucchin from Bolzano – won the design competition for the redevelopment of the former Alumix site. Construction of NOI began in 2015, guided by the idea of creating a dialogue between the past and the future. Elements of the original industrial buildings were carefully restored, while a striking black monolith was added – a futuristic structure clad in aluminium foam in a nod to the site's history

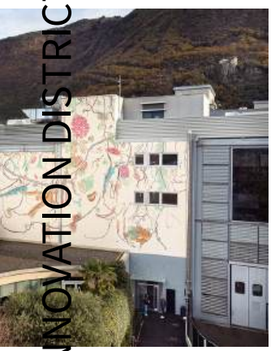
The idea: a dialogue between past and future

Space for innovation

Since its official opening in 2017, NOI has continued to evolve, becoming a living symbol of transformation. Here, visions and projects are turned into tangible innovations inspired by nature itself. Researchers work side by side with up-and-coming start-ups, while innovative companies network with young talent. The physical proximity benefits them all – not to mention the broader public. NOI is open to everyone, offering coworking spaces, seminar rooms, a restaurant and a spacious piazza. Through regular events and initiatives, NOI creates a bridge of inspiration between science and culture.

NOI is growing

From the beginning, demand for space at NOI was high, with the infrastructure almost constantly at full capacity. As a result, the campus steadily expanded. Just two years after its opening, the first building module for private companies was inaugurated. Known as D1, it welcomed 25 innovative companies in one fell swoop – rounding out the NOI ecosystem. With South Tyrol's leading research institutions already in place, the arrival of private companies added the essential third pillar of a true science and technology park. In 2021 and 2022, further expansion and renovation followed, adding new lab facilities for the Free University of Bozen-Bolzano and the Institute for Biomedicine at Eurac Research. And as NOI grew physically, so too did its appeal as a hub where science and business converge.



“NOI Techpark is now complete. Alongside the Free University of Bozen-Bolzano and South Tyrol's most important research institutes, we have created a space for the companies that are an essential component of any science and technology park.”

Arno Kompatscher
Governor of South Tyrol

Mobility of the future

The year 2023 marked a major milestone: the opening of a second NOI location in Brunico. Spanning around 6,000m², the new site combines the concentrated expertise of South Tyrol's automotive supply industry with cutting-edge research capabilities and infrastructure. Once a bus terminal, the location has been transformed into an important hub for research, business and collaboration. At NOI Brunico, work is underway to address key challenges such as integrating the circular economy, energy efficiency, Industry 5.0, electrification and smart mobility. Highly skilled professionals and state-of-the-art facilities come together here – driving the mobility of the future with a clear focus on sustainable production.

Food and green technologies

In Bolzano, two new expansion modules were officially inaugurated on 30 August 2024. Building D2 comprises state-of-the-art laboratories for food research, while Building D3 is dedicated to the development of green technologies. These spaces foster forward-thinking synergies, from food fermentation at the Free University of Bozen-Bolzano's International Centre on Food Fermentations to digitalisation and automation in the new Fraunhofer Italia ARENA. The new modules represent more than just physical growth – they send a strong message to the region. Thirteen additional companies, including Wolftank DGM and Zirkonzahn, have moved in and are supported by research institutions such as Eurac Research. The infrastructure of the Laimburg Research Centre has also seen significant expansion.

A vibrant campus

With the opening of the Free University of Bozen-Bolzano's Faculty of Engineering on 19 September 2024, NOI entered a new chapter. Now, more than 800 students are studying and conducting research in the very heart of NOI – surrounded by research institutes, start-ups and established companies. The focus of the degree programmes? Artificial intelligence, robotics and automation. The close integration between the university and the science and technology park opens up new horizons: students gain hands-on, real-world insights, while companies benefit from fresh ideas. The faculty's multidisciplinary approach, paired with its cutting-edge infrastructure, creates fertile ground for future-focused innovation. The new faculty building fits seamlessly into the broader vision of the innovation district: a vibrant campus that connects science, business and society.

Doubling in size

With the completion of the expansion buildings D2 and D3 and the opening of the new Faculty of Engineering, 2024 marked a true doubling in size of NOI. The community grew from 1,200 to over 2,400 people. The Free University of Bozen-Bolzano, which had already been part of the innovation district with 13 research labs and four faculties, became the largest player within NOI Techpark. In October, full academic operations began with a total of 15 degree programmes, and there are more to come. The vision moving forward is clear: to strengthen practice-oriented education by more closely integrating theoretical learning with real-world application. NOI offers the ideal setting for this approach.

Skilled workers of tomorrow

It was in 2018 that the provincial government decided to build the new Faculty of Engineering at NOI Techpark. Several considerations shaped this move. South Tyrol had, and continues to have, a pressing need for highly qualified specialists. The cutting-edge research the region aims to achieve in select technological fields can only be realised with top-tier, locally trained talent. Education must, therefore, focus on those sectors where the region already excels – automation is a prime example. This is not least because many South Tyrolean companies are international leaders in this field, and they are facing the challenges of rapidly evolving trends and technologies.

“For our research system, as well as for the city of Bolzano and the whole province, NOI is a key driver of development, and unibz’s new Faculty of Engineering is the flagship of our future development.”

Philipp Achammer
NOI Provincial Minister

Currently, 40 per cent of the Bolzano site is developed. Construction Phase 3 is set to begin in 2025.

The next construction phase

With the completion of Phase 2 in 2024, approximately 40 per cent of the NOI Techpark Bolzano site is now in active use. What’s next? The construction of expansion modules D3 and D4, which will focus on Automotive & Automation and Digital technologies, respectively. Also in the pipeline: a dedicated building that will house laboratories for Eco Research, the Free University of Bozen-Bolzano and the Eco Centre. This forward-looking project is set to become Italy’s first zero-carbon-certified office and laboratory building. Funding has already been secured, and the tendering process will begin in 2025. Another upcoming milestone: a construction plot will be made available for private development for the first time. Previously, companies could only hire space within the NOI premises – now they will have the opportunity to build on-site, provided their focus is on research and development.

Companies

AIAQUA
Aitonomi
AUTOMOTIVE EXCELLENCE SUSTENOL
Bio4Dreams
BioBionics
BIOLOGIK
BiSTEMS
by WAY
CAEmate
care4u
CARTORENDER
{catchsolve}
Cell Research Bozen
CID
CISMA
CImaGrün
dattec
DERGA CONSULTING
digitalps
DOLOMIA
EBITmax
eco
ecosteer.
elis
EMOTITECH
emtb
endian
Functional
GAF ENGINEERING
GARMONT
GRUPPO FOS
HBI
HiWeiss®
HYDROCELL
INDUSTRIO
IT WORMHOLE SRL
IDV
KERR s.r.l.
KONVERTO
konzept NETWORKS
KWB
LABIO
LEITNER
LIVING FUTURE EUROPE
Loacker
LULA
MAV tech
MiCROTEC
MIRNAGREEN
MOUNTAINEERING
nutramentis
ONTO PIC
PGUM
PIANO GREEN
PV Invest
pwc
RAPSODOO
R3GIS
RE:GUEST
ROPAT
SENSIT Technologies
SENSORY DESIGN
solhea
soource
SÜDTIROL
SYMPHONIE PARTNERS
TECHNE METROLOGIA
Terra
Truckscreenia
V&D ENGINEERING
veloxia
vmware
VORN BIOENERGY
WOLFTANK GROUP
WÜRTH
Xayn
YANOVIS
YDEASTUDIO
YoY
ZirkonZahn
Start-ups
agrobit
ARXAX
bikeflip
bitebase
carX
CLAVA SPORTS
enhance-d
ETERNUM TECHNOLOGY
FF COSMETICS
Fortissimo
garum PROJECT
geomatrix
hantverk
KARRY FAST
kibun.io
KINSECT
lookin
Mediatize
nanea
Naturamon
NSPulse
OpenTerra
Photogram
PlantVoice
REVEON MOTORCYCLES
RoboAlpin
SANTELMO
SQLOS
SPOAT
STG LAB
viomed
WL
VITTY KEEP IN POWER
XSPline
youAddict

COMPANIES

NOI Techpark thrives on its connection between companies, research institutes and the university. Our aim is to support private companies in their research and development efforts, promote their innovation potential and thus strengthen the local economy in a sustainable way. Each year, we welcome new companies that are pursuing future-focused projects. In 2024, we were able to accept 26 new companies out of 28 submitted applications, bringing the total number within our innovation district to 80. Here, we'd like to briefly introduce three of them.

HBI

Italy produces 3.2 million tonnes of sewage sludge a year. Roughly half is either landfilled or incinerated, while the rest is used in agriculture – without filtering out potentially harmful substances or recovering valuable raw materials. HBI has developed a polygenerative process that recovers over 90 per cent of sewage sludge in the form of water, renewable energy and secondary raw materials. This significantly reduces landfill and incineration, with potential annual savings of 120 to 150 million euros. By recovering soil nutrients such as nitrogen, phosphorus and potassium, the technology also helps reduce the EU's dependence on imported fertilisers from non-EU countries. From day one, HBI has received support at NOI – from developing its technology and forming partnerships with local stakeholders to securing funding opportunities. "Thanks to NOI's support, we've been able to refine our technology in recent years and bring it to market readiness. Now it's time to establish ourselves in the market," says Daniele Basso, CEO of HBI. In 2024, that path was paved with a capital increase of up to 15 million euros, led by CDP Venture Capital, the "Eni Joule for Entrepreneurship" award and a new industrial collaboration agreement with Ladurner.

In 2024, Daniele Basso received the prestigious "Eni Joule for Entrepreneurship" award from Italian President Sergio Mattarella for his patented sewage sludge recovery technology.

"Thanks to NOI's support, we've been able to refine our technology in recent years and bring it to market readiness."

Daniele Basso
CEO of HBI

GAe Engineering Nord

Finding the most innovative solutions while combining safety, technology and adherence to regulations – that's the mission of GAe Engineering Nord. Since 2024, the company has been based at NOI, where it is working to revolutionise fire safety in both the private and industrial sectors by providing advanced technical solutions. "We chose NOI because South Tyrol is ahead of the rest of Italy when it comes to advancing fire safety," says co-founder Nelson Righetti. What sets GAe Engineering Nord apart is its combination of consulting services and applied research. "We actively invest in R&D projects, including collaborations with international partners. Right now," Righetti explains, "we are working on digitalising fire safety regulations and developing innovative solutions that can be integrated into complex systems." Their presence at NOI fosters exchanges with other forward-thinking companies, creating synergies that are essential for the development of new technologies and materials – particularly in areas such as hydrogen and battery technology, where high safety standards and customised solutions are essential.

Nelson Righetti aims to revolutionise fire safety with GAe Engineering Nord, the company he co-founded.

"We chose NOI because South Tyrol is ahead of the rest of Italy when it comes to advancing fire safety."

Nelson Righetti
Co-founder of GAe Engineering Nord

Vehicle Engineering & Design

What began over 60 years ago as an engineering service provider for the agricultural sector has evolved into a diversified company: Vehicle Engineering & Design (V&D). With more than 130 employees across four locations in Italy, V&D operates in the automotive, aerospace, special vehicles (with a focus on electromobility), industrial plants and machine tools sectors. The company designs and constructs technical plants and systems, supports companies' technological processes and material applications and conducts FEM and CFD simulations. V&D opened its NOI Techpark branch in late 2020, starting with just one employee. By the end of 2024, the team had grown to 15 specialists. One major advantage of the NOI location is its proximity to local technical secondary schools and universities, especially the Faculty of Engineering at the Free University of Bozen-Bolzano. "Direct exchange with students brings fresh ideas and new perspectives to our work. At the same time, we can give them hands-on access to the world of engineering – a true win-win situation," says Alessio Malandruccolo, Technical Manager at V&D in Bolzano. Many students have already gained valuable real-world experience at the company – and some have gone on to launch their professional careers with V&D after graduation.

The V&D team in Bolzano is growing steadily and benefits from its proximity to the engineering faculty at unibz.

START-UPS

Whether it's a young team with an innovative solution, a company exploring a new business idea, a creative inventor or a university spin-off – they all find the space and support they need to develop their ideas in our Start-up Incubator. We accept new start-ups several times a year, evaluating each application based on the team, business idea, market potential and financing strategy. In 2024, we accepted 16 out of 28 submitted applications, bringing our total number of supported start-ups to 37 at the end of the year. Get to know three of them here.

Plantvoice

Plant health. That's what Plantvoice is all about. This start-up, co-founded and led by CEO Matteo Beccatelli, develops sensors that are inserted directly into a plant to measure sap flow and salt levels. The data, delivered via an app, reveals whether the plant is lacking water or nutrients – in short, whether it's under stress. What do Beccatelli and his team want to achieve with this? To maintain optimal plant health, reduce water and fertiliser use and help farmers cut costs while maximising yields. The potential impact is enormous: up to 40 per cent less water use and up to 20 per cent less fertiliser and pesticide consumption – a win for both the environment and the bottom line. "It's not just about efficiency but also about quality. If plants are stressed, this negatively affects the harvest," says Beccatelli. The first customers, including Italian berry co-operative Sant'Orsola, are already using the technology, and the company holds its first patent. "We now have a secure technology and are ready to expand internationally." Working out of NOI since 2024, the team has a clear game plan: first Italy, then scale into larger markets.

"It's not just about efficiency but also about quality."

Matteo Beccatelli
Co-founder and CEO of Plantvoice

With Plantvoice, Matteo Beccatelli wants to keep plants as healthy as possible.

Natural Smarter Pulse

The start-up NSPulse is bringing the idea of sustainable nutrition straight to the table – or rather, to the plate. The concept behind Natural Smarter Pulse was first developed three years ago by Federico Camiciottoli and Alberto Salvia. In 2023, they turned it into a full-fledged start-up. Their vision? To create an alternative food offering based on pulses and fermentation. Why those two pillars in particular? "Pulses for their nutritional benefits and because they're the most sustainable source of protein. And from the beginning, it was clear that fermentation would be the cornerstone of our work," says Camiciottoli. "With Marco Gobbetti and Raffaella Di Cagno, we have found two of the top researchers in Italy in this field at NOI." The choice of NOI Techpark for the start-up's headquarters was a natural decision for Camiciottoli and Salvia. "Through fermentation, we can transform plant-based proteins to make them even more digestible for the human body – and we can optimise the flavour, too," Camiciottoli explains. That's exactly how NSPulse aims to set itself apart from other companies. Their product line will launch under the brand name FERMIUS FOODS® – and the first prototypes are already available.

Federico Camiciottoli (left) and Alberto Salvia (right) want to make plant-based proteins more digestible and palatable with NSPulse.

"With Marco Gobbetti and Raffaella Di Cagno, we have found two of the top researchers in Italy in this field at NOI."

Federico Camiciottoli and Alberto Salvia
Founders of NSPulse

Sirius Game

With Sirius Game, founder Laura Cesaro is bringing education into the digital age. Her start-up has developed an app based on the principles of playful learning – transforming educational content into digital adventures that make learning more engaging and effective. The idea was born out of personal experience. "I wanted to create a tool that would help young people experience education as something positive – and that anyone involved in teaching could use," says Cesaro. The app is designed to support not only teachers of traditional school subjects but also companies and organisations running educational projects of all kinds – from financial literacy to gender equality. Sirius Game's pedagogical approach promotes self-efficacy and mental well-being – aspects that are becoming increasingly important in today's learning landscape. The start-up has been based at NOI Techpark since 2023 and is supported in its growth by Cassa Depositi e Prestiti, the European EIT Digital Innovation Fund, the BCC Iccrea Group and Cassa di Risparmio, among others. It is currently working on new partnerships to expand its range of available topics. The aim is to make education accessible, relevant and contemporary – for a new generation of learners.

With Sirius Game, founder Laura Cesaro wants to bring education into the digital age.

INSTITUTIONS

Free University of Bozen-Bolzano

- Faculty of Agricultural, Environmental and Food Sciences
- Faculty of Design and Art
- Faculty of Engineering
- Faculty of Economics and Management

Eurac Research

- Center for Sensing Solutions
- Institute of Mountain Emergency Medicine
- Institute for Biomedicine
- Institute for Renewable Energy
- Institute for Mummy Studies
- terraXcube

Laimburg Research Centre

- Institute for Agricultural Chemistry and Food Quality
- Institute for Mountain Agriculture and Food Technology
- Institute for Fruit-Growing and Viticulture

Fraunhofer Italia

- Automation and Mechatronics Engineering
- Bioeconomy & Sustainability
- Process Engineering in Construction
- Robotics and Intelligent Systems Engineering

Energy Agency South Tyrol KlimaHaus-CasaClima

- R&D Department

Trade and Service Providers' Association

- Innovation & New Markets

South Tyrolean Farmers' Association

- Innovation & Energy

hds-Unione Business Association

- Competence Centre for Urban Development, Sustainability and Digitalisation

NOI SpA

- Innovation & Tech Transfer
- Labs, Start-ups & Operations
- Building & Development
- Brand & Placemaking

South Tyrolean Health Service

- Innovation, Research and Teaching Service (IRTS)

Hoteliers and Innkeepers Association South Tyrol

- HGV Innovation Department

SMACT

- Smact Live Demo

ICOFF

- International Centre on Food Fermentations

EIT Digital

- Regional Office

FREE UNIVERSITY OF BOZEN-BOLZANO

Research is a cornerstone of the five faculties of the Free University of Bozen-Bolzano. At NOI Techpark, unibz operates 36 laboratories dedicated to applied research in fields such as Alpine technologies, food technologies, eco-friendly housing, energy production, robotics, computer science and nanotechnology. The university promotes technology transfer by using specialised pilot plants to translate research findings into real-world applications. In addition, it conducts research projects in agricultural engineering, renewable energy, food technology, sensor systems, nanotechnology, fluid dynamics, computer science and robotics. Working closely with regional partners and companies, the university fosters research and innovation while actively supporting the establishment of start-ups and spin-offs. Around 470 professors, researchers and technical-administrative staff from unibz are based at NOI, alongside approximately 950 students from the faculties of Agricultural, Environmental and Food Sciences, Economics, and Engineering.

The digital forest

Duration: 2023–2025
Project budget: €70,486
Funding: MUR (PRIN 2022)
Partners: University of Trieste, University of Udine
Lab: Agroforestry Innovations Lab

The “AI4FOREST” project is a collaborative effort between unibz and two partner universities to develop a mobile robotic system capable of autonomously navigating forested areas. Using AI, the robot maps vegetation and creates a digital twin of the forest by recording parameters such as the position, diameter and height of trees. Even in areas with poor GNSS signal coverage, the system remains operational and can assess whether or not the terrain is passable. The project’s goal? To gather data to help evaluate the impact of climate change on forests and assess the risk of potential natural disasters.

An inclusive Industry 5.0

Duration: 2024–2027
Project budget: €393,004
Funding: Autonomous Province of Bolzano
Partner: Fraunhofer Italia
Lab: Smart Mini Factory

Industry 5.0 prioritises people, focusing on social sustainability and worker well-being by adapting the work environment to individual needs. The “Inclu5ion” project aims to improve the accessibility of systems and production chains, helping to reduce workplace discrimination. The goal is to enhance the well-being and job satisfaction of employees with physical and/or cognitive impairments while closing performance gaps between them and their colleagues. Thanks to advanced technologies, socially sustainable and inclusive workplaces are being created that strengthen the human role in industry.

unibz

FACTS AND FIGURES 2024*

150 active research projects	Founded: 1997
€9.9 million – the total budget for active research projects	President: Ulrike Tappeiner | Rector: Paolo Lugli (Jan.–Sept.), Alex Weissensteiner (Oct.–Dec.) | Director: Günther Mathà
321 collaboration partners and customers, of which 124 were companies	Employees at NOI: 470 | Students at NOI: 950

*This data pertains to all the research projects within the unibz research areas at NOI in 2024.

Fertiliser from sewage sludge

Duration: 2023–2025
Project budget: €551,733
Funding: ERDF 2021–2027
Partner: HBI Srl
Lab: Bioenergy & Biofuels

The “RFD” project aims to apply a sustainable, closed-loop approach to sewage sludge treatment. Building on an innovative sewage sludge treatment system already developed by project partner HBI, the project adds an additional stage that enables the recovery of critical raw materials in the form of a fertiliser agglomerate. As part of the initiative, unibz supports HBI with laboratory testing and results modelling – delivering valuable insights to advance the development of a next-generation prototype capable of separating heavy metals from gasification ash.

New approach to coeliac disease

Duration: 2023–2025
Project budget: €63,000
Funding: Evonik Industries SpA
Partner: Evonik Industries SpA
Lab: Micro4Food

This project explores a newly developed microbial consortium as a potential complementary therapy for people with coeliac disease, aiming to reduce the effects of accidental gluten exposure. Coeliac disease requires a strictly gluten-free diet, as even trace amounts of gluten can trigger symptoms. The microbial consortium is capable of breaking down gluten into non-immunogenic fragments, supporting a balanced gut microbiota and enhancing nutritional markers. The goal is to evaluate its effectiveness in a clinical trial and, ideally, to provide a new approach to the treatment of coeliac disease.

Smart technologies for sustainable buildings

Duration: 2023–2024
Project budget: €42,000
Funding body: Fondazione Cassa di Risparmio di Bolzano (Fusion Grant)
Partner: myGEKKO \| Ekon Srl
Lab: Building Physics

As part of the project “Smart technologies for sustainable buildings”, myGEKKO| Ekon and unibz explored how advanced control solutions based on Model Predictive Control (MPC) can be used in smart building management. MPC involves simplified simulation models of a building’s systems. In the context of smart building control, these models help strike the right balance between indoor comfort and energy consumption. Intelligent systems like these are a key topic for the future, especially as buildings account for over 40 per cent of final energy consumption across Europe.

Innovative mountain regions

Duration: 2022–2025
Project budget: €8,371,054
Funding: MEF (PNRR)
Partners: Universities of Padova, Udine, Venice Ca’ Foscari and Verona, Eurac Research
Competence centre for innovation ecosystems in mountain regions

The “iNEST” project supports innovation ecosystems across all economic sectors in the Triveneto area. Coordinated by unibz, Spoke 1 of the iNEST consortium focuses on promoting new products, processes and lifestyles in mountain regions that enable the preservation of local traditions while ensuring economic, environmental and social resilience, as well as demographic vitality. Collaboration among researchers, companies, institutions and business associations has already led to the launch of over 50 projects.

EURAC RESEARCH

In South Tyrol's largest research centre, 690 professionals are actively shaping a brighter future for humanity. Notably, 40 per cent of this workforce is based at NOI Techpark. Eurac Research operates 18 laboratories focusing on crucial areas such as energy efficiency, environment monitoring technologies, climate simulation and molecular and cell biology. These facilities belong to institutes dedicated to Renewable Energy, Mountain Emergency Medicine, Mummy Studies and Biomedicine, alongside the Center for Sensing Solutions and the terra Xcube. Modern infrastructures, such as the extreme climate simulator terraXcube, and technologies for testing the performance of prototypes and systems offer great opportunities for companies and specialists. Through collaborative research, innovative ideas can be refined, product performance enhanced.

Comparing façades

Duration: 2020–2026
Funding: EU Horizon 2020
Partner: Fanti Legnami Srl
Lab: Façade System Interactions Lab
Institute for Renewable Energy

An integrated façade does more than just clad a building; it incorporates technologies for energy generation, ventilation, heating and cooling. Prefabricated façades are assembled in factories, making on-site installation faster and more cost-effective. As part of the "INFINITE" project, a multifunctional prefabricated façade was developed that combines several integrated features. It is currently being installed on a building undergoing renovation in Greve in Chianti. The case study involves the renovation of two buildings – one using INFINITE technologies and the other using traditional methods – to compare cost, environmental impact, installation time, energy consumption and performance.

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Training for extremes

Partner: Mountain rescue service of the Financial Police (SAGF)
terraXcube

The mountain rescue service of the Financial Police (SAGF - Soccorso Alpino Guardia di Finanza) conducted a training session at terraXcube to test their teams' performance and readiness under extreme climatic conditions. In the terraXcube, temperatures from -40°C to +60°C, solar radiation, altitudes of up to 9,000 metres above sea level and adverse weather conditions can be simulated. It allowed them to test their equipment and technical gear, as well as their operational readiness – all within a completely controlled and safe environment.

FACTS AND FIGURES 2024*

122 active research projects	Founded: 1992
€9.8 million – the budget for active research projects	President: Roland Psenner | Director: Stephan Ortner Deputy Director: Roberta Bottarin
426 collaboration partners and customers, of which 325 were companies	Total number of employees: 689 | Employees at NOI: 313

*The data pertains to the Eurac Research institutes and centres based at NOI Techpark.

Smart sensors against pests

Duration: 2024–2026
Funding: ERDF 2021–2027
Partners: Laimburg Research Centre, Gruppo FOS SpA
Lab: Sensor System Technologies Lab
Centre for Sensing Solutions

Insects such as the codling moth and the spotted wing drosophila cause considerable economic damage to fruit farming in South Tyrol. The Instinct project aims to monitor and control these pests in a targeted and sustainable way using traps, environmental sensors, gentle control methods and AI. This innovative approach is designed to generate insights and data that help reduce the use of pesticides in agriculture. Researchers at Eurac Research are developing an information system to transform the collected data into a practical tool to promote sustainable agricultural practices.

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Technology transfer in biomedicine

Duration: 2024–2026
Funding: Interreg VI-A Italy-Austria 2021–2027
Partners: ICGEB, Carinthia University of Applied Sciences, Medical University of Innsbruck, NOI SpA
Institute for Biomedicine

Italy and Austria boast strong biomedical research ecosystems, yet translating these scientific advances into real-world applications remains a challenge. The "PROMOS" project aims to close this gap through two pilot initiatives. The project compares regulatory frameworks in the two countries and introduces standardised pathways for technology transfer. In addition, a training programme supports researchers in transforming scientific results into tangible products. By fostering cross-border collaboration among SMEs, innovation clusters, universities and research institutions, PROMOS facilitates the development of products that have both economic and societal value.

The oldest animal mummy in Italy

Funding body: Autonomous Region of the Aosta Valley
Partner: Efisio Noussan Regional Museum of Natural Sciences
Institute for Mummy Studies

In 2022, a mummified marmot was discovered on the Liskamm in the Monte Rosa massif at an altitude of 4,300 metres. Once carefully recovered from the glacier, the specimen was preserved in a Conservation Soft Box developed by Eurac Research and transported to the Institute for Mummy Studies. Radiocarbon dating revealed that the marmot dates back to the Neolithic period, about 6,600 years ago, making it the oldest animal mummy ever found in Italy. Today, the marmot is on display in a showcase specially designed and patented by Eurac Research at the Efisio Noussan Regional Museum of Natural Sciences in the Aosta Valley. Meanwhile, scientists from Eurac Research and the museum continue to study the collected samples.

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The physiology of female alpinists

Partner: Club Alpino Italiano (CAI)
Lab: terraXcube
Institute of Mountain Emergency Medicine

Seventy years after the first ascent of K2, eight female alpinists from Italy and Pakistan set out on a unique expedition. Supported by the Club Alpino Italiano (CAI), the initiative offered an unprecedented opportunity for scientific research: a medical team accompanied the climbers to the world's second-highest peak to systematically study, for the first time, the physiological responses of the female body at extreme altitudes. Before and after the expedition, the mountaineers underwent comprehensive medical testing in the terraXcube under simulated high-altitude conditions. The resulting research protocol documents physiological adaptation processes in women that had not previously been studied in such extreme environments.

LAIMBURG RESEARCH CENTRE

At South Tyrol's leading agriculture and food processing research institute, around 230 employees work on over 350 research and experimental projects in the areas of agriculture and food processing every year. These initiatives aim to bolster the competitiveness and sustainability of South Tyrolean agriculture while ensuring the quality of its agricultural products. At NOI Techpark, the Laboratory for Flavours and Metabolites is dedicated to the chemical analysis of ingredients in agricultural products and plant tissues to assess their quality, characteristics and purity. Together with unibz, the Laimburg Research Centre also runs the NMR Spectroscopy Laboratory, which verifies and authenticates the origin of agricultural products. Additional facilities at NOI include the Laboratory for Fruit and Vegetable Processing, equipped with a DIC pilot plant for producing innovative dried products, the Laboratory for Meat Products, and the Laboratory for Residues and Contaminants. Moreover, a large amount of research in the food sector is conducted in the laboratories of the Laimburg Research Centre at its headquarters in Vadena.

LIDO – the digital open-air laboratory

Duration: Commissioned in 2022
Project budget: €620,791
Funding: ERDF 2014–2020
Partners: Various companies, start-ups and research institutes
Pomology Working Group

LIDO – the Laimburg Integrated Digital Orchard – is a digital open-air laboratory for fruit growing and viticulture. It offers companies, start-ups and research institutes a real-world environment to test and develop digital technologies for the future of agriculture. Technologies developed here include sensors for demand-driven irrigation, robots for automated harvesting and crop management, advanced forecasting models for pest and disease outbreaks, and a stationary plant protection product application system. In 2024, the focus was on image recognition systems and dendrometers for monitoring fruit growth. Currently, 30 partners have their technologies installed and operating on-site.

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Grape temperature and wine quality

Duration: 2021–2024
Project budget: €56,250
Funding: Own funds
Labs: Laboratory for Wine and Beverage Analysis, Laboratory for Flavours and Metabolites
Processes and Knowledge Transfer Working Group, Food Microbiology Working Group

During harvest, wineries often face peak workloads that require the temporary storage of grapes. However, high temperatures can pose a problem: the microorganisms naturally present on the grapes may multiply and alter key compounds, increasing the number of undesirable yeasts and bacteria and leading to off-flavours. Certain vinification steps, such as cold maceration, also require low grape temperatures. Researchers at the Laimburg Research Centre investigated the impact of grape cooling on wine quality, concluding that storing grapes at a maximum of 8°C for up to 48 hours does not negatively affect quality.

FACTS AND FIGURES 2024*

107 active research projects	Founded: 1975
€4.2 million – the budget for active research projects	Director: Michael Oberhuber
108 collaboration partners and customers, of which 43 were companies	Total number of employees: 230
1,374 agricultural businesses have commissioned laboratory services	

*This data pertains to the NOI research areas of the Laimburg Research Centre.

Bread from "Regiokorn" grains

Duration: 2022–2024
Project budget: €55,000
Funding: Own funds
Partner: Eco Research
Lab: Laboratory for Flavours and Metabolites

Sustainably produced local foods are gaining in popularity. One example is "Regiokorn" grains, which are grown exclusively in South Tyrol without the use of pesticides or mineral fertilisers. Using strontium isotope analysis, scientists can distinguish South Tyrolean grains from grains available on the global market. In this project, researchers demonstrated that the same method can reliably identify bread made from "Regiokorn" flour, making it possible to detect counterfeits. In this way, strontium isotope analysis has been proven to offer protection against food fraud – using traditional, locally produced bread as a case in point.

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Fermented South Tyrolean pulses

Duration: 2023–2025
Project budget: €55,225
Funding: Own funds
Partner: SBB
Labs: Laboratory for Food Microbiology, Laboratory for Wine and Beverage Analysis
Fermentation and Distillation Working Group, Field and Herb Cultivation Working Group

Drawing inspiration from traditional Indonesian tempeh, this project explored the fermentation of pulses using the fungus *Rhizopus*. Four pulse varieties suitable for cultivation in South Tyrol were compared with commonly used Asian pulses. Fermentation, whether applied to shelled or unshelled pulses, led to an increase in free amino acids and the formation of distinctive metabolites that characterise fermented foods. Additionally, pasteurisation and sterilisation proved effective methods of stabilising the final product.

Studies on the "Kaminwurz"

Duration: 2024
Project budget: €21,000
Funding: Own funds
Partner: South Tyrolean Farmers' Association (SBB)
Meat Products Working Group

In 2024, the Laimburg Research Centre's Laboratory for Meat Products was relocated to the new D2 building at NOI Techpark. Researchers here aim to support South Tyrol's meat processing sector through scientific research, promoting local products, optimising production processes and developing new ones. A key focus is on preserving and enhancing the quality of South Tyrol's traditional meat products. One current study is examining how the use of additives such as nitrites and nitrates in "Kaminwurz" (a traditional smoked sausage) can be reduced.

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Elderflower syrup – even more natural

Duration: 2023–2025
Project budget (total): €94,375
Funding: Own funds
Partners: Tschauphof, South Tyrolean Farmers' Association (SBB)
Fruit and Vegetable Processing Working Group, Food Sensory Analysis Working Group, Grape Varieties and Seedlings Working Group, Physiology and Cultivation Technology Working Group

In the production of elderflower syrup, citric acid – an additive that must be listed on the product label – is often used to extend shelf life. Researchers at the Laimburg Research Centre have developed a version that does not require this additive. Instead, they use verjus, the juice of unripe grapes harvested during the thinning process. Compared to conventional syrup, the new recipe showed positive results in terms of quality and taste. The outcome: an additive-free elderflower syrup that preserves quality while supporting circular economy practices.

FRAUNHOFER ITALIA

This non-profit research institute based at NOI makes digitalisation accessible and practical for SMEs. Its goal is to transform scientific knowledge into economically viable, tailored and sustainable solutions for companies. Fraunhofer Italia offers digitalisation and advanced automation services across all sectors of the economy. The Fraunhofer Italia ARENA (Area for REsearch & iNnovative Applications) is a central platform for future-oriented topics such as Applied AI & Digital Twins, Advanced Robotics & Intelligent Production and Digital Construction & BIM. Here, a wide range of technology demonstrators showcase the potential and challenges of the smart factory and the construction site of the future.

Utilising biomass

Duration: 2023–2026
Project budget: €2,052,855
Funding: Interreg Central Europe
Partners: Veneto Agricoltura (IT), National Institute of Chemistry (SI), ChemieCluster Bayern GmbH (DE), University of Warmia and Mazury (PL), Kujawsko-Pomorskie Voivodeship (PL), Slovak Chamber of Commerce and Industry (SK), Carinthia UAS (AT)
Bioeconomy and Sustainability Team

In Central Europe, the use of agricultural biomass holds significant economic potential. The “TeBiCE” project aims to utilise this potential by promoting the development of sustainable biomass-based value chains. The project partners are working to establish a market for biomass products while harmonising and improving legal frameworks across Central Europe. Key priorities include improving existing technologies, overcoming economic barriers within the internal market, reducing regulatory and political obstacles and aligning material quality standards.

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Energy-efficient refurbishment with timber systems

Duration: 2023–2026
Project budget: €676,999
Funding: Regional programme “Investments for employment and growth” ERDF 2021–2027 for the Autonomous Province of Bolzano
Partners: Eurac Research, ThinkIN, Rubner Holzbau Srl, ALPI Fenster Srl
Process Engineering in Construction Team

The “DIAMANT” project focuses on improving the efficiency and cost-effectiveness of prefabricated timber systems, aiming to increase renovation rates and replace traditional construction methods by promoting the digitalisation of the supply chain, optimising the flow of information from planning to installation and helping to minimise errors. At the same time, the project supports the use of locally sourced materials and enhances resource efficiency. The plan is to develop a digital platform, supported by flexible tools, that will enable local companies to adopt a digitalised and industrialised approach to energy-efficient building refurbishment.

FACTS AND FIGURES 2024

49 active research projects with third-party funding	Founded: 2009
€1.6 million – the amount of third-party funding	Institute Director: Dominik Matt
29 corporate customers	Employees at NOI: 35
	Interns, students & doctoral candidates: 25

KLIMAHAUS CASACLIMA

The Energy Agency South Tyrol - KlimaHaus-CasaClima is an auxiliary body of the Autonomous Province of Bolzano. This agency is recognised as a competence centre for energy-efficient and sustainable building practices, impacting construction and renovation efforts in South Tyrol and beyond. Located at NOI Techpark and staffed by over 40 employees, Klimahaus-CasaClima primarily focuses on evaluating and certifying buildings and construction materials based on energy and environmental quality standards. Additionally, the agency provides an extensive range of training and education programmes for professionals in the construction sector. It also offers tailored programmes to guide and support companies and municipalities towards enhanced energy efficiency and sustainability.

Green hydrogen in the Alps

Duration: 3 years
Project budget: €1,948,840
Funding: Interreg Alpine Space
Partners: 10 partners from 6 Alpine countries
Research and Development Department

The “AMETHyST” project is designed to foster the development of local green hydrogen value chains across the Alpine region. Its partners aim to empower public authorities by enhancing their expertise, creating support services for implementing green hydrogen solutions and incorporating these innovations into local and regional energy strategies and planning frameworks. To drive this forward, the KlimaHaus-CasaClima Agency organises expert forums and knowledge-sharing opportunities while also crafting policy recommendations to help decision-makers accelerate the uptake of hydrogen technologies.

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Greenhouse gas calculator for companies

Duration: 2024
Funding: Own funds
Partners: IDM South Tyrol, Autonomous Province of Bolzano
Research and Development Department

Companies are under growing pressure to take responsibility for their environmental impact – and to document it transparently. A central component of this effort is corporate carbon footprinting (CCF), a method of quantifying the greenhouse gas emissions caused by an organisation. In response to this increasing need, the KlimaHaus-CasaClima Agency, together with IDM and the Autonomous Province of Bolzano, has developed a carbon footprint calculator tailored specifically to SMEs in South Tyrol. This tool is part of the new South Tyrol Sustainability Label for SMEs and offers a practical, regionally adapted solution to support climate accountability. Carbon accounting not only provides a solid foundation for improving a company’s climate strategy but also represents a strategic step toward greater competitiveness.

FACTS AND FIGURES 2024*

9 active research projects	Founded: 2006
€300,000 – the budget for the active research projects	General Director: Ulrich Santa
	Employees at NOI: 42

*The data pertains exclusively to the R&D Department of KlimaHaus-CasaClima.

LVH.APA

With over 8,000 members, lvh.apa is one of South Tyrol's most important business associations, representing the interests of the region's crafts and service sectors. Its mission is to shape the conditions for SMEs in a way that ensures their competitiveness and future viability. The association's Innovation & New Markets Department is the direct contact point for the skilled crafts sector at NOI Techpark. It offers consulting services on innovation, funding opportunities, product development, digitalisation, artificial intelligence and sustainability, addressing these topics through events, workshops and in-depth consulting packages. In addition, the department connects businesses with innovation service providers and laboratories at NOI – with the goal of sparking collaboration.

Sustainability and digitalisation at your fingertips

Duration: 2023–2026
Project budget: €776,256
Funding: Interreg IT/AT SUNrise
Partners: MCI, Innovation Salzburg, tec4i, t2i

The techParcour is an lvh-organised hands-on mini trade fair focusing on innovation. The 2024 event consisted of two parts: one featured expert insights from raumprobe (Stuttgart) and MCI Innsbruck, offering a clear and practical understanding of what sustainability truly means. Part two was a guided tour through various stations, highlighting themes of sustainability and digitalisation in practice. lvh Director Walter Pöhl, Provincial Minister Magdalena Amhof and lvh Vice President Hannes Mussak (pictured from left to right) were delighted with the strong turnout. The techParcour was co-financed by the EU and held within the framework of the Interreg VI-A Italy-Austria 2021–2027 ITAT-11-022 SUNrise project.

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Sustainability label for the skilled trades

Duration: 2023–2024
Partners: NOI SpA, unibz, IDM South Tyrol

In collaboration with unibz and other partners, and as part of an EEN project, NOI developed a sustainability assessment tool for companies. This tool was taken up by lvh, together with NOI, unibz and IDM Südtirol, and established as a potential path toward a South Tyrol Sustainability Label for SMEs. Working together, the partners refined the methodology and tested it in pilot phases, adapting the process to work effectively even within small group settings. Since autumn 2024, SMEs from the crafts, trade, industry, and service sectors have been able to follow this structured path toward certification. The first skilled trades businesses to receive the label were celebrated in 2024.

lvhapa
Wirtschaftsverband Handwerk und Dienstleister
Confartigianato Imprese

FACTS AND FIGURES 2024*

152 companies supported, 13 of which in cooperation with partners at NOI	Founded: 1945
26 R&D projects by companies supported	President: Martin Haller Director: Thomas Pardeller (Jan.–Jun.), Walter Pöhl (Jun.–Dec.) Head of Innovation & New Markets Department: Kathrin Pichler
€1.6 million – the budget for the supported R&D projects	
	Total number of employees: 140 | Employees at NOI: 4

*The data pertains to the activities of the lvh.apa Innovation & New Markets Department based at NOI Techpark.

SOUTH TYROLEAN FARMERS' ASSOCIATION

As one of the largest business associations in South Tyrol, the SBB (the South Tyrolean Farmers' Association) actively represents and supports over 21,000 member companies. Its mission is to strengthen the farming community economically, socially, culturally and politically. Recognising the importance of future-proofing agriculture, the association established the Innovation & Energy Department about ten years ago. Located at NOI Techpark, this department is a vital resource for farmers seeking to innovate. It provides guidance on innovation, analyses new business sectors and trends, assists with project and funding opportunities and promotes initiatives for product development and enhancing the visibility of agricultural innovations. As a conduit between science and its practical applications, the Innovation & Energy Department focuses on networking with companies, laboratories, start-ups and research institutes.

High time for blueberries

Duration: 2024
Project budget: €10,248
Funding: LG79
Partner: NOI SpA

The cultivated blueberry holds promising potential. To better understand its properties – particularly in terms of nutritional content, storage and processing – the South Tyrolean Farmers' Association commissioned a potential analysis. The study documented the berry's nutrient composition and examined how cultivation parameters affect polyphenol levels. Innovative processing methods were also explored. The analysis confirmed the health benefits of cultivated blueberries, particularly those grown at higher altitudes. What's more, it found that even the leaves of the blueberry plant can be processed.

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Heating with compost

Duration: 2024–2026
Project budget (SBB): €90,522
Funding: ERDF
Partners: Biologik Systems Srl, Eurac Research, unibz, Laimburg Research Centre, Castel Sallegg, NOI SpA

The "Compost di Vino" project aims to develop a smart, modular and decentralised system for reusing residual viticulture materials. At its core is a compost reactor combined with a heat pump, managed by an intelligent control system designed to optimise biological and thermal processes. The pilot plant can harness the heat and compost generated during decomposition and repurpose them to heat buildings – an innovative approach aligned with circular economy principles. As part of the project, the South Tyrolean Farmers' Association is conducting surveys, developing strategic approaches, organising workshops and training sessions, sharing project outcomes, conducting market research and assessing the system's potential for application in other agricultural sectors.

Südtiroler Bauernbund

FACTS AND FIGURES 2024*

121 companies supported, 21 of which in cooperation with partners at NOI	Founded: 1904
8 active research projects	Regional Chairperson: Daniel Gasser | Director: Siegfried Rinner Head of Innovation & Energy Department: Matthias Bertagnolli
€556,000 – the budget for R&D projects	
	Total number of employees: 259 | Employees at NOI: 2

*The data pertains to the activities of the SBB Innovation & Energy Department located at the headquarters in Bolzano and at NOI Techpark.

HDS-UNIONE

The hds business association represents the interests of South Tyrol's companies in the retail, service and catering sectors. As one of the province's largest and most important business associations, it promotes the interests of its more than 5,500 member companies at various levels. Building on the expertise and experience of its employees and its province-wide network of volunteer functionaries, it offers solutions for the various member groups and their sectors. By basing its Competence Centre for Local Development, Sustainability and Digitalisation at NOI Techpark, the business association is furthering its efforts and unlocking innovative expertise and support for its members. At the same time, this location enables closer collaboration and exchange with the research institutions and public partners based in the innovation district.

Innovation on the radar

Duration: 2024
Project budget: €48,000
Funding: Autonomous Province of Bolzano
Partners: 8 companies, NOI SpA

In 2024, in collaboration with the NOI Innovation Management Team, the hds Competence Centre launched a successful pilot project: the Alpha Innovation Radar for South Tyrolean companies in the communications, advertising, IT and internet services sectors. Developed at NOI, Alpha Innovation is a toolkit for radical innovation. The project aimed to give participants a clear glimpse into the future of their industries and help them identify opportunities beyond their current horizons. The pilot focused on detecting and interpreting innovation signals, defining strategic innovation directions, developing future scenarios and initiating research, development and innovation within the participating companies.

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A sustainable event industry

Duration: 2024
Project budget: €14,000
Funding: Autonomous Province of Bolzano
Partner: Eurac Research

With the specialist group pilot project for sustainable business practices, "Sustainability as a Guiding Principle for the Event Industry", the hds Competence Centre and the specialist group of event service providers and organisers, together with the Institute for Public Management at Eurac Research, have taken a decisive step towards anchoring sustainable principles in event organisation. The project aimed to establish the groundwork for sustainable practices in the events sector. This included building a comprehensive knowledge base and encouraging active exchange among industry stakeholders. As part of the pilot project, a practical guide for sustainable events and a catalogue of self-assessment criteria were developed to support the industry in putting its sustainability goals into action.

FACTS AND FIGURES 2024*

64 companies supported, 34 of which in collaboration with partners at NOI	Founded: 1946
3 active R&D projects	President: Philipp Moser | Director: Sabine Mayr | Head of the Competence Centre for Urban Development, Sustainability and Digitalisation: Martin Stampfer
€147,000 – the budget for R&D projects	
7 events organised with a total of 200 participants	Total number of employees: 150 | Employees at NOI: 2

*The data pertains to the activities of the hds-Unione Competence Centre based at NOI Techpark.

HGV

The HGV (the Hoteliers' and Innkeepers' Association of South Tyrol) is the central organisation representing the interests of South Tyrol's hotel and hospitality industry. With around 4,500 member businesses, the association is a key pillar of South Tyrol's economy. The HGV's mission is to support its members with tailored services and to strengthen their competitiveness. Under the guiding theme of "Future Hospitality", the HGV is setting strategic priorities to prepare the industry for future challenges and enhance its resilience by focusing on innovation, employee leadership and sustainability. Improvements in these three areas are intended not only to ensure the economic success of businesses but also to contribute to the sustainable development of both the tourism sector and the broader South Tyrolean community. Through these initiatives, the HGV is pursuing a holistic approach to future-proof South Tyrol's tourism industry and to further solidify the region's position as a leading tourism destination in the Alpine region.

Future scenarios at a glance

Duration: 2024

The HGV's Future Workshops offer a platform designed to provide hoteliers and restaurateurs with hands-on inspiration for the further development of their businesses. Focusing on key megatrends expected to shape the hospitality industry by 2035, these workshops offer participants valuable insights and fresh perspectives. The goal is to develop concrete, forward-looking solutions that can be integrated into daily operations. Each session delivers actionable recommendations to help businesses anticipate and respond to change – supporting them in navigating short, medium and long-term adjustments and equipping them to successfully meet the opportunities and challenges of the future.

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Comprehensive consulting on digitalisation and AI

Partner: HYVE – the innovation company

In collaboration with the innovation service provider HYVE, HGV has developed a comprehensive consulting service to support businesses in adopting new technologies, with a particular focus on digitalisation and the integration of AI. At the core of the initiative is the specially developed Digi-Check, a tool that helps businesses assess their level of digital maturity and identify specific areas for improvement. The goal is to leverage innovative technologies strategically – for example, to enhance guest experiences, make operating processes more efficient or reduce the ecological footprint. Manuela Pattis, Head of the Innovation Department at HGV (seen standing on the left of the top left photo), relies on close collaboration with experts such as Constanze Heydkamp from the Future-Hotel innovation network at the Fraunhofer IAO (pictured opposite Manuela Pattis).

FACTS AND FIGURES 2024*

2 events organised with 320 participants	Founded: 1962
Around 50 companies supported	President: Manfred Pinzger | Director: Raffael Mooswalder Head of Innovation: Manuela Pattis
	Total number of employees: 258 | Employees at NOI: 1

*The data pertains to the activities of the HGV Innovation Department based at NOI Techpark.

NOI SPA

An ever-growing community of around 2,400 innovation drivers – including start-ups, companies, researchers and students – needs coordination. That's where NOI SpA comes in. As the development and operating company, it ensures everything at NOI Techpark runs smoothly while continuously advancing South Tyrol's innovation district. Through active networking and a broad range of services, it helps to launch and support R&D projects, foster talent and start-ups, and position the region and its businesses in a competitive and future-ready economy. Strategic direction is provided by representatives from research institutes and the region's leading interest and business associations. The NOI Board ensures that the activities and development of the science and technology park align with the needs of companies and evolve in step with the local economy.

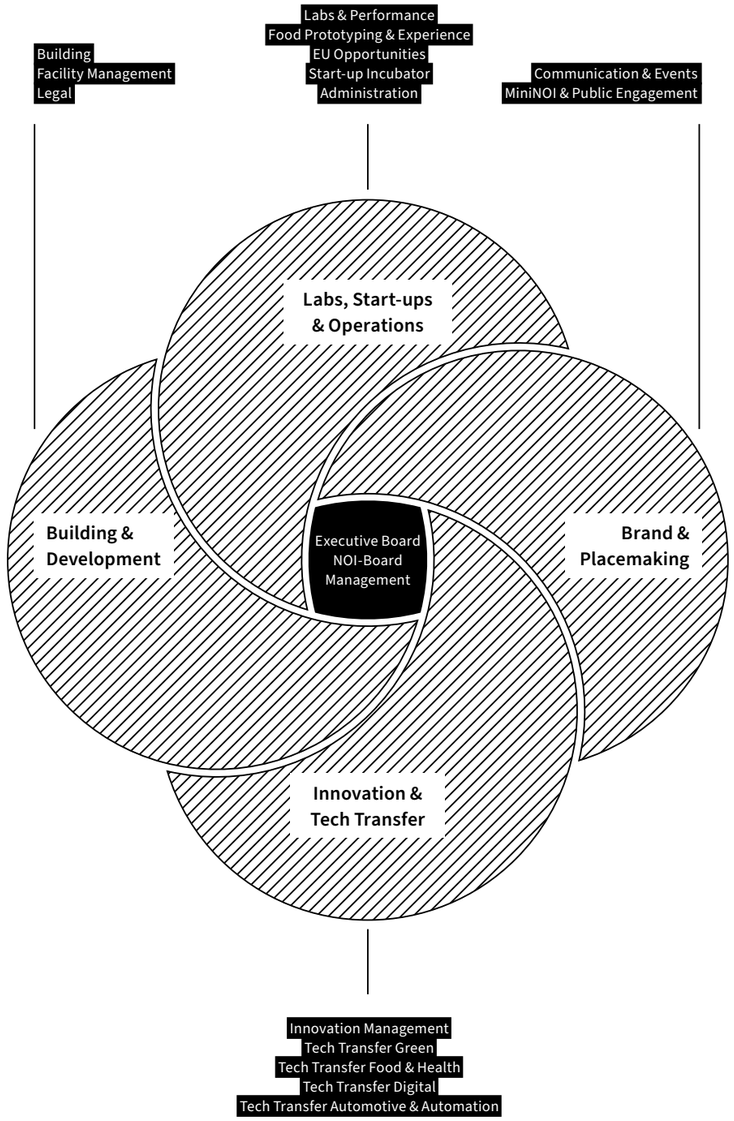
NOI SpA links companies to Europe's innovative network.

As an official partner of the Enterprise Europe Network (EEN), NOI SpA connects innovative companies to Europe. EEN is the largest support network for businesses with international aspirations, linking over 600 organisations across more than 60 countries, and is co-financed by the EU. Additionally, NOI SpA coordinates the European Digital Innovation Hub (EDIH NOI), a key contact point for Artificial Intelligence. EDIH NOI offers subsidised services, expert advice and training for companies aiming to integrate AI into their operations and production processes.

TECHPARK
SÜDTIROL / ALTO ADIGE

FACTS AND FIGURES 2024

138 R&D and innovation projects supported	Founded: 2019
€11 million – the budget for the supported R&D and innovation projects	President: Helga Thaler Ausserhofer | Director: Ulrich Stofner
387 customers supported, of which 356 were companies	In-house company with 100% provincial participation
34,164 participants in events held in the Seminar Area	Company capital: €179 million
	Employees: 103



NOI SpA is the development and operating company of NOI Techpark.

It provides technology transfer services and funding advice and facilitates connections between companies, research institutes and laboratories. NOI SpA also supports start-ups in scaling their businesses, oversees site management and expansions and engages the local community through events and initiatives. (Pictured: NOI President Helga Thaler Ausserhofer)

An overview of NOI SpA services can be found in the following chapter. → pp. 48–67

SERVICES


Labs


EU Opportunities


Tech Transfer


Open Data Hub


Start-up Incubator


Public Engagement


Innovation Management


Area & Spaces

LABS

Lab Desk & Lab Bonus
Maker Space & Prototyping
Kitchen Lab
Free Software Lab

A total of 68 scientific and prototype labs are available to support companies with everything from improving energy efficiency to developing healthier, digestible food products and automating processes. Our Lab Desk helps businesses find the lab and research team to match their specific needs.
→ pp. 50–51

TECH TRANSFER

Networking & Cooperation
R&D Consulting
Know-how Transfer Events

Our core competencies span four technology sectors: Green, Food & Health, Digital, and Automotive & Automation. Within these areas, we provide companies and research institutes with specialised consulting, networking opportunities, R&D project support and themed events and workshops.
→ pp. 52–55

START-UP INCUBATOR

Inventors & Pre-Incubation Programme
Incubation Programme
Acceleration & Scale-up Programme

In the Start-up Incubator, we offer services and programmes that help prospective founding teams and start-ups turn their ideas into reality. We support innovative business ideas by providing personalised consulting, coaching, workshops and a network of mentors and investors.
→ pp. 56–57

INNOVATION MANAGEMENT

Alpha Innovation
Pi Innovation
Start-up Match
Students Sprint

We support companies by offering tools, expertise and a broad network to enable them to develop new products, services and business models. Our in-house innovation method, Alpha Innovation, helps businesses to identify previously unimagined opportunities and pursue radical new paths. It serves as a guide, a launchpad for ideas and a decision-making aid – all in one.
→ pp. 58–59

EU OPPORTUNITIES

EU Partnering
EU Funding
Private Funding

We help companies tap into the full range of innovation opportunities Europe has to offer – from securing funding for research and innovation projects to building competence networks around key technological topics, connecting them with international partners in business, technology and research, and more.
→ pp. 60–61

OPEN DATA HUB

Data Access
Data Sharing
Data Visualisation

We collect data from across South Tyrol and neighbouring regions on public transport, tourism, traffic, mobility and weather. We help companies access this data and learn how to use it effectively to benefit their business.
→ pp. 62–63

PUBLIC ENGAGEMENT

MiniNOI
Arts & Culture
Public Tours
NOISE

Through initiatives like MiniNOI, we introduce children to the world of research and technology in a fun and engaging way. We also promote a diverse cultural programme that explores the intersection of science, art and innovation. Guided tours offer a behind-the-scenes look at our facilities and research strands.
→ pp. 64–65

AREA & SPACES

Areas for Rent (Offices, Labs, Pilot Projects)
Seminar Area

Our spacious Seminar Area offers an exclusive, fully equipped environment where companies, associations and public bodies can host events. Companies can rent offices, laboratories and spaces to conduct prototype and pilot tests.
→ pp. 66–67

LABS

A total of 68 labs, equipped with the latest technologies and staffed by researchers from around the world, serve as a gateway for private companies to tap into cutting-edge scientific knowledge – enabling them to enhance their products and services and advance innovative projects. Operated by various research institutes, these labs are available for collaborative research, contract research, scientific consulting, analyses and lab testing. In addition to scientific laboratories, NOI is also home to prototyping labs managed directly by NOI SpA: the Maker Space, the Kitchen Lab and the Free Software Lab. These hands-on spaces offer a range of facilities for companies to develop prototypes, test new products and even produce small batches. Some of the labs at NOI were co-financed with funds from the European Regional Development Fund (ERDF). Through our Lab Desk, companies can find the lab and research team best suited to their needs. We also provide financial support: the Lab Bonus, created by the Autonomous Province of Bolzano and managed by NOI SpA, is a co-financing tool to strengthen R&D activities in South Tyrolean companies.

A personalised AI assistant

Cybersecurity provider Endian set out to leverage the potential of AI, specifically large language models, to develop a custom in-house AI assistant. The goal was to create a tool that could tap into the company's internal knowledge database, including documentation and previous support tickets, to assist their customer service teams in delivering faster, more comprehensive responses. To bring this idea to life, Endian partnered with the Free Software Lab's AI Strategy Service at NOI. The result: a smart, user-friendly assistant capable of navigating complex data while distinguishing between different levels of information confidentiality.

Tinkering meets teamwork

The Maker Space offers more than just modern machines and prototyping support; it's also the setting for an exciting new team experience launched in 2024. The new Teamwork.Challenge is all about getting things moving – both literally, on the workbenches of the prototype workshop, and mentally, in the minds of participating team members. The Teamwork.Challenge is designed for companies and groups looking to strengthen their collaboration, sharpen their creative problem-solving skills and encourage out-of-the-box thinking. Teams from companies like Loacker, Konverto, Alpitronic and FlyingBasket have already stepped up to the challenge.

Kimchi from the Kitchen Lab

Whether served with fried rice or noodles, to flavour a stew or as a snack, Korean kimchi is gaining popularity in Italy. This spicy, fermented vegetable dish isn't just packed with flavour; it's also full of health benefits. Inspired by the fresh ingredients of Italian cuisine, Korean-born Erin Eun-Young Kim and her partner Mark Blackwell began crafting their own kimchi. With their brand Kimchi Pop, the duo is now aiming to conquer store shelves across Italy. A crucial step along the way was to produce a market-ready sample batch in the Kitchen Lab, where all hygiene and food safety standards are met. The lab's fully equipped test kitchen can also function as a small-scale production facility – just as it did for Kimchi Pop.

111

customers
have used our three prototyping labs

84

per cent of the operating costs
of the prototyping labs were covered by third-party funding

TECH TRANSFER

Technology transfer is essential in bridging the gap between companies and research. It is through this transfer of expertise that scientific and technological discoveries are transformed into new products and services or used to improve existing ones. We aim to facilitate this interaction by promoting and supporting R&D projects, streamlining communication, setting timelines and aligning objectives. Most importantly, we advance networking and knowledge sharing within a framework of open innovation and digital transformation.

We impart knowledge and expertise and guide R&D projects in four technology sectors: Green, Food & Health, Digital, and Automotive & Automation.

GREEN

Solutions and expertise for the energy transition

Rethinking fire safety

The rise of renewable energy – whether photovoltaic, hydrogen or electric mobility – is presenting the fire safety field with entirely new challenges that demand innovative solutions. This is where fire safety engineering comes in, offering approaches grounded in scientific and engineering principles. NOI aims to become a pioneer in this evolving discipline, recognising its immense potential for the future. The keen interest in this area was clearly demonstrated at the nextFSE conference in October 2024, co-organised with the Free University of Bozen-Bolzano. More than 200 experts from across Italy gathered in Bolzano, including companies involved in fire safety system design and development, manufacturers, service providers, research institutions and representatives of the Province of South Tyrol. For participants, the event was not only a source of information but also a platform for networking and knowledge exchange.

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CO_2 balance of biogas plants

Biogas and biomethane play a key role on the path to climate neutrality – not only as part of the circular economy but also in the utilisation of agricultural residues. To ensure economic and ecological sustainability, as well as legal traceability, it is becoming increasingly vital to optimise the entire value chain. This is where Eco8 comes in. With support from our Tech Transfer Unit Green, the company has developed an innovative software solution to calculate the CO_2 balance of biogas plants. The tool tracks material flows and logistics, analyses emissions across the full lifecycle and quantifies CO_2 savings compared to the conventional use of slurry and biomass. Eco8 thus offers a sustainable method for reducing emissions and improving plant efficiency. The market launch, set for 2025, has a clear mission: to drive sustainable transformation across the industry.

2,924

participants
have taken part in 32 know-how transfer events

FOOD & HEALTH

Food and health innovation for people and the planet

New centre for fermentation

In October 2024, the International Centre on Food Fermentations (ICOFF), initiated by Professor Marco Gobbetti, opened its doors at NOI Techpark in Bolzano. In more than ten state-of-the-art laboratories, the Free University of Bozen-Bolzano is now conducting research into fermentation to drive innovation and sustainability in the food sector. Nine food industry companies are involved in the centre, collaborating closely with researchers on projects tailored to their specific needs. Each partner is granted access to a dedicated lab, scientific expertise and the full benefits of the centre's network for a period of three years. The current partner companies are Dr. Schär, Mila BERGMILCH SÜDTIROL, VOG Products, NSPulse, Barilla, Giuliani, What's Cooking?, Puratos and THT. To mark the centre's opening, we organised a know-how transfer event, bringing together interested companies, researchers and experts to exchange ideas and explore the future of food fermentation.

Oat yoghurt from South Tyrol

With its Hafena brand, the Sennerei Algund Alpine dairy introduced the first 100 per cent South Tyrolean oat drink to the market. In 2024, building on this success, the company set out to expand its product range – and, with support from our Food & Health Tech Transfer Unit, developed YO GUAT: the first plant-based yoghurt alternative made from locally grown oats. This innovative product not only offers a sustainable, lactose-free alternative to traditional dairy but also appeals to consumers seeking new flavours and a plant-based lifestyle. By using South Tyrolean oats, the company ensures a short supply chain, supports regional agriculture and promotes environmentally conscious production. The official market launch of YO GUAT is planned for 2025.

DIGITAL

Data as the backbone of a smart, green region

Advancing AI competence

In 2024, the European Digital Innovation Hub (EDIH) initiative gained momentum, supporting 135 companies in adopting AI technologies. A major milestone was the joint development of a coordinated customer journey in collaboration with the Free University of Bozen-Bolzano, Eurac Research, Fraunhofer Italia, the Laimburg Research Centre, IDM and various industry associations. The entry point to EDIH's service portfolio is the Digital Maturity Assessment, which evaluates a company's level of digitalisation. Based on the results, businesses can access specialised services such as "test-before-invest" opportunities, training programmes and financial advisory support. The initiative is funded through the PNRR and will run until April 2026.

Efficient textile tracking

At the NOI Hackathon SFSCON Edition 2024, more than 30 mixed teams of software developers spent 24 hours tackling real-world challenges set by seven local companies and institutions. One of these, service provider Markas, was looking for a smart solution to efficiently track cleaning textiles – aiming to reduce losses and gain valuable insights into usage and lifecycle. Their requirements? Low-cost, scalable and low-maintenance. The challenge was won by Team Mopify, whose RFID and camera-based system operated offline, required only minimal changes to existing infrastructure and offered immediate cost-saving potential.

AUTOMOTIVE & AUTOMATION

Sustainable manufacturing, automotive and mobility solutions

Agri-automation in the Alpine region

In March 2024, over 100 professionals from agricultural machinery manufacturers, electronics and mechanical engineering companies, agricultural innovators, start-ups and research institutions gathered at NOI to explore the latest scientific insights and technological drivers in precision agriculture. The event's name said it all: Agri-Automation. With a clear focus on challenges and solutions specific to the Alpine region, attendees were introduced not only to exciting results from current research projects but also to real-world applications, such as drone-based field monitoring, sensor-driven smart irrigation systems and data processing with artificial intelligence to enable predictive analytics. In the future, these technologies will make it possible to create digital twins of fields, orchards and vineyards to maximise efficient and sustainable cultivation.

The future of additive manufacturing

Additive manufacturing (AM) has made significant strides in recent years, but is it ready to take its place as a fully-fledged alternative in industrial production? In March, we explored this question by bringing together around 50 researchers, design experts, AM manufacturers, software and 3D printer developers and potential users. The event fostered exchange across the AM value chain, with expert insights into practical use cases, sustainably sourced materials, advanced design approaches, decentralised production and the growing role of data and software. The event also featured an exhibition space showcasing best practices, machines and conceptual prototypes.

6.6

million euros
the budget for the supported research, development and innovation projects

126

networking and consulting services
provided for companies

START-UP INCUBATOR

Our Start-up Incubator provides founder teams with the space and support to develop their business ideas, start-ups or spin-offs. We help young companies grow by offering a wide range of services – from coaching and workshops to access to experienced mentors, investors and accelerator programmes. Flexible workspaces, offices and labs are available, along with opportunities to connect with the broader NOI community and plug into our networks across South Tyrol and the Euregio region through events and initiatives. For teams at the very beginning of their entrepreneurial journey, the Inventors & Pre-Incubation Programme offers several months of guided development as they shape their product or service step by step. Subsequently, these teams – as well as any innovative start-up based in South Tyrol – can apply for our three-year Incubation Programme. More established start-ups looking to take their business to the next level can join the Acceleration & Scale-up Programme for the extra boost they need to grow. Our Start-up Incubator is certified by the Italian Ministry for Economic Development.

18.1

million euros
the total investment in 6 start-ups by private investors

2.9

million euros
in public financing received by our start-ups in 2024

Focus on female founders

Only 14 per cent of Italian start-ups are led by women. This disparity stems in part from prevailing social structures and traditional gender roles but also from women's limited access to professional networks, a lack of visible female role models in the start-up world and persistent structural disadvantages – especially when it comes to securing external funding. To help close this gap, we launched the Female Founders Activities as part of the Interreg project MOZART. Our goal is to inform, raise awareness, support women entrepreneurs, build strong networks, improve access to financing and inspire more women to become investors themselves. Through initiatives in a variety of formats, NOI is laying the groundwork for a new wave of female entrepreneurship. And it's paying off: in 2024, we successfully hosted a well-attended networking meetup for women founders. Our Funding & Financing Academy, designed specifically for women in start-ups, also met with great enthusiasm.

Growth and internationalisation

By the end of 2024, the NOI Start-up Incubator was supporting 37 start-ups – the highest number since its founding. But it's not just the figures that are growing; interest in our support programmes is expanding well beyond South Tyrol, and we are receiving a rising number of applications from innovative companies across Italy and Europe. Only the most promising are selected. One example is Bikeflip, co-founded by Austrian mountain biking pro Fabio Wibmer, which is building a platform for the secure sale of used and refurbished bicycles. The year also saw several successful investment rounds among our start-ups and alumni, raising approximately 18.1 million euros in private capital for companies such as Sirius Game, Arxax, YouAddict, HBI and Soource. In parallel, 13 start-ups secured around 2.9 million euros in public funding. These developments reflect the NOI Start-up Incubator's growing appeal to investors and the increasing importance of South Tyrol as a hub for innovation.

81

per cent of start-ups
have received public funding

INNOVATION MANAGEMENT

We specialise in guiding companies through the innovation maze with the help of our strategies, comprehensive toolkit, expert knowledge and broad network. Our in-house Alpha Innovation method lays the foundation for radical innovation in three steps. Representing new beginnings, “Alpha” aptly signifies the initial phase of the innovation process – front-end innovation – where the fog of possibilities is thick, and orientation is difficult. Our approach helps companies uncover untapped opportunities for their business. Alpha Innovation is designed for organisations eager to explore new business domains, invest in cutting-edge technologies or stay abreast of evolving trends. It acts as a navigational tool, an idea catalyst and a decision-making aid. Our Pi Innovation service, on the other hand, helps companies refine their products or services through a five-step, incremental innovation process, drawing on market signals as catalysts for innovation. In Students Sprint, companies collaborate with multidisciplinary student teams to address real-world innovation challenges. Lastly, Start-up Match facilitates strategic matchmaking between established companies and innovative start-ups.

Digital solutions for increased sustainability

In collaboration with Cassa di Risparmio di Bolzano’s Innovation Lab LDV20, we developed a new Alpha Innovation Radar Teaser in 2024, focused on the theme of “Ecologically sustainable business through digital solutions”. For the first time, this strategic foresight tool was not tailored to a single company or specialist group; instead, as commissioned by Cassa di Risparmio di Bolzano, it was used to gather and interpret global and local innovation signals related to digital solutions for nature. The aim was to inspire companies in all sectors to initiate their own sustainable innovation processes. The Radar Teaser highlights digital solutions that enable more efficient resource use, extend the lifecycle of materials and reduce waste and pollution. It also looks at how technology can help businesses better respond to environmental risks and develop strategies for climate resilience and adaptation.

Driving innovation for South Tyrol’s SMEs

In 2024, we marked an important milestone for South Tyrol’s SMEs with the “Alpha Innovation” pilot project, developed in collaboration with the NOI Competence Centre of the hds business association. For the first time, our innovation method, which we originally developed for and with the larger South Tyrolean companies, was adapted and trialled on a group of SMEs. Eight companies from the hds industry groups for IT and internet service providers and the communications and advertising industry took part: Fill.it, Econn, Internet-Service, Limitis, Plaschke Consulting, Riedmann, SiMedia and teamblau. Using a moderated process, they were shown specific opportunities and innovation possibilities that had not previously been on their radar. The project thus offered them a structured look into the future of their respective industry. By the end, each company had initiated an individual innovation project. The success of this pilot proves that SMEs, just like larger companies, can actively shape the future and seize the opportunities that innovation offers.

4.8

out of 5 points
the Customer Satisfaction Score for the services provided

24

innovation projects
supported

EU OPPORTUNITIES

As an official partner of the Enterprise Europe Network (EEN) and through our active participation in numerous European research and innovation networks, we provide innovative companies a gateway to Europe. We help businesses tap into the full range of opportunities offered by the European Union – from securing funding for new business ideas to participating in collaborative projects with international partners and research institutions to finding technology partners from across Europe for R&D cooperation. With over ten years of experience, our team offers expert strategic guidance on EU innovation funding, technology matchmaking and access to leading European innovation networks.

26.6

million euros
the budget of the NOI-supported applications submitted for EU projects

62

customers
have utilised our services

The heart of the matter

Around 100 million people worldwide suffer from heart failure. While cardiac resynchronisation therapy remains the standard treatment, 40 to 50 per cent of patients do not respond to it. Enter XSpline, a scale-up founded by Werner Rainer (pictured above), whose advanced AI software visualises the heart's anatomy and electrical activity, providing clinicians precise guidance for pacemaker placement and reducing non-response rates to just 10 per cent. With support from the EU Opportunities Team, XSpline secured approximately 1 million euros in ERDF funding and advanced to the final round of the EIC Accelerator application process. We also assisted in the search for investors, organised pitching events and facilitated connections with venture capital funds in the smart health sector. This comprehensive backing enabled XSpline to secure vital funding and build strategic partnerships for continued growth.

A revolution in digital teaching

Sirius Game, a graduate of the NOI Start-up Incubator, is revolutionising humanities education in schools through its playful learning platform that engages pupils with interactive challenges and virtual tours of historic cities. To take its innovative concept further, Sirius Game turned to our EU Opportunities Team for support in identifying suitable funding sources. After conducting an Investor Readiness Analysis, we worked with the founding team to pinpoint the most appropriate investment funds and organised meetings that ultimately led to successful private investments. We also connected Sirius Game with EIT Digital, a European network that supports start-ups, research and education to accelerate digital transformation across the continent. Through the Open Innovation Factory, the start-up secured additional EU funding. This success story exemplifies the powerful synergy between innovative start-ups, NOI and international innovation networks.

OPEN DATA HUB

We collect vast amounts of public transport, tourism, traffic, mobility and weather data – not only from South Tyrol but also from across Italy and several other European countries. This is made possible by an improved broadband infrastructure, a comprehensive network of sensors and the growing spread of the Internet of Things. At the Open Data Hub, we bring this wealth of information together, making it openly accessible and helping companies understand how to use it to its full potential. Beyond its current use in hospitality, where it provides real-time mobility data and details on the location and opening hours of tourist attractions, the Open Data Hub can be expanded to include additional datasets in key sectors like agriculture. These extensions open new avenues for innovation and economic development across South Tyrol, Italy and Europe. By giving software companies direct access to reliable, complete and continuously updated datasets – just like research institutions, start-ups and emerging talent – they can use this data to develop innovative apps powered by the latest technologies, including AI.

Bringing digital landscapes to life

With the ËRT project, Moritz Brunner has specialised in creating interactive 3D landscape models. By merging high-resolution CNC-milled reliefs with digital projections, they offer a unique and innovative way to visualise and interact with geographical data. The project demonstrates how open data can turn creative ideas into effective solutions. By utilising datasets from the Open Data Hub, ËRT could shift from labour-intensive manual data entry to efficient, scalable workflows. The Open Data Hub's plethora of topographical, ecological and statistical data was easily integrated, enabling rapid project development and highlighting the potential of open data within the creative sector.

>18

million enquiries
per month (from apps and websites)

62

customers
utilise the services of the Open Data Hub

1,000

websites and apps
use our data

The car park of the future: digital and connected

As intermodal transport and digital access to mobility continue to grow, parking services are becoming increasingly important. Car parks are now key transfer points, connecting private transport – such as personal vehicles – with shared and public options such as car sharing, buses, trains and cable cars. To support efficient journey planning, real-time information on parking availability is essential. That's why we're working to digitise the parking infrastructure and connect it to our Open Data Hub, making this parking data digitally accessible. With our support, local companies are developing cost-effective technologies to modernise non-digitalised parking structures, particularly those in high-traffic tourist areas. We also collaborate with certified technology partners, including Skidata, ITHEL, Peter Park and Teratronik, to ensure the smooth, scalable integration of parking data into the Open Data Hub.

PUBLIC ENGAGEMENT

NOI Techpark is strongly rooted in South Tyrol's region and community, albeit with an international perspective. We actively engage the local population in our endeavours through events, workshops and guided tours, keeping them informed about developments at NOI. Our goal is to communicate the work and research taking place in our labs and offices in an easily understandable way. To achieve this, we organise various events and produce informational materials. The MiniNOI project targets children aged 6 to 14,

offering workshops and interactive sessions that explore diverse topics from science and research. Additionally, our Arts & Culture programme hosts various cultural events each year, including concerts, art installations and activities. These initiatives share a subtle yet essential common thread: they encourage us to push boundaries, experiment with new ideas and shift our perspectives on the mundane. Finally, we offer guided tours to provide deeper insights into the activities and innovations at NOI.

The journey of air

Where does the air we breathe come from? Swiss-Lebanese artist Khalil Berro revealed the invisible thread that connects all life through his installation BREATHE, exhibited at NOI. Every evening from July to August, using real-time data from ETH Zurich, Berro projected the names of cities from which the air of recent days had travelled onto the historic façade of NOI's main building. The installation demonstrates the global interconnectedness of our planet and raises the question of whether air and water could become the new currency. Through its combination of science and art, BREATHE perfectly reflects the essence of NOI's mission.

2,300

children
have taken part in MiniNOI workshops

MiniNOI is growing

In 2024, we set out to explore new ways of supporting the MiniNOI project by entering into partnerships with public institutions and private companies. Two South Tyrolean firms – Alpitronic and MiCROTEC – came on board as official MiniNOI supporters, and we developed custom activities and experiments designed to introduce their technologies and entrepreneurial mindset to young children in a playful, hands-on way. Thanks to this growing support from the private sector, along with our ongoing collaboration with the education authority, the MiniNOI programme is set to expand further in the coming years to keep pace with rising demand.

5,500

attendees
have visited our Arts & Culture events

Science and showmanship

Science, wit and wow moments came together at the second edition of the Science Slam Bolzano, held in collaboration with the Fondazione Cassa di Risparmio di Bolzano. Over three exciting evenings in October, the Free University of Bozen-Bolzano, Eurac Research and the NOI innovation district transformed into stages for young researchers to wow the audience. Each presenter had just 10 minutes to present a complex scientific topic in a way that was clear, clever and entertaining. The grand finale? The audience crowned the slam that struck the perfect balance between showmanship and science.

2,400

people
have taken part in the public tours

AREA & SPACES

NOI Techpark expands on a 120,000 m² campus, with 30,000 m² dedicated to scientific laboratories, workshops, seminar rooms and spaces designed to develop new ideas. Companies involved in research and development across South Tyrol's key technology sectors can rent office and laboratory space here, allowing them to relocate their research teams or project groups to our site. Our facility offers the highest sustainability standards within a unique historical and cultural setting. Above all, however, this is the place where companies, research and a university can connect on a daily basis. Our infrastructure and the events we organise encourage interaction between the academic and the business world, inspiring new R&D projects. We accept new companies twice a year, depending on the number of applications and the space we have available. As the operating company, we oversee the continuous development of the campus, including current and future construction, as well as the upkeep of existing buildings and spaces. Our 1,900 m² Seminar Area, featuring four seminar rooms, can be booked by companies and institutions within NOI, as well as external innovators, to host conferences, workshops, corporate gatherings and other events. The event must fit in with NOI's mission, focusing on inspiration and education rather than sales and marketing.

Seminar rooms in continuous use

In 2024, our Seminar Area rooms were once again put to a variety of uses. With 462 events and a total of 34,164 participants, the spaces served as a platform for both the NOI community and numerous external customers. At the nextFSE fire safety engineering event, renowned experts discussed the latest developments in the field of fire safety within an innovative event format. Two important events in the start-up scene were also held on our seminar premises: Bolzano Slush'd 2024 and FUSE – Fire Up the Start-up Ecosystem. In addition, following their impressive performance at WorldSkills 2024, young tradespeople were warmly welcomed to a celebratory event at NOI by political figures, industry representatives, family and friends. Last but not least, notable scientific conferences such as XP 2024, BSA 2024 and ISIEA 2024 were organised by the unibz Faculty of Engineering, bringing together researchers and experts on topics such as agile software development, building simulation applications and future challenges in industrial production.

34,164

participants
took part in 462 events in the Seminar Area

NOI becomes a campus

In 2024, three new buildings opened their doors at NOI Techpark in Bolzano. The extension modules D2 and D3, spanning over 15,000m², accommodate specialised laboratories and innovative companies in the fields of Food & Health and Green Technologies. Among the key new facilities is ICOFF, the university competence centre dedicated to food fermentation. Just weeks after the official opening of D2 and D3, on 19 September, the Free University of Bozen-Bolzano inaugurated its new Faculty of Engineering at NOI, marking a new chapter for the innovation district. With the faculty's over 800 students, lecturers, researchers and administrative staff, the NOI community has now grown to 2,400 people. The new faculty stands out for its multidisciplinary approach, close integration of computer science and engineering and strong emphasis on practice-oriented education. Its location within NOI allows students to work closely with nearby companies and research teams, familiarising themselves with the latest technologies and developing solutions to real-world challenges.

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Footnotes (pp. 5–8)
(1) Third-party funding includes public and private funding obtained by research institutes or the Free University of Bozen-Bolzano over a calendar year through competitive tenders, projects and third-party services.
(2) The total annual turnover of all companies with a registered office at NOI Techpark has been considered.

Editor's note
In the Italian Autonomous Province of Bolzano, every road, mountain, river and landmark has an Italian name alongside its German counterpart, with Ladin names present in certain areas as well. The decision to use Italian names throughout this report is purely a stylistic choice.


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