

STRATEGY 2018–2025

KNOWLEDGE FOR A BETTER WORLD

Norwegian University of Science and Technology – NTNU

Approved by the Board of NTNU

Guide to readers

The strategy consists of three parts.

Part 1 describes our vision, values, mission, key challenges and main objectives.

Part 2 deals with NTNU's core tasks. These are education and the learning environment, research, artistic activities, innovation, and dissemination and outreach.

Part 3 addresses cross-cutting themes. These include internationalization, interdisciplinary collaboration, career and skills, work environment and student welfare, campus development and NTNU's ability to evolve.

Parts 2 and 3 describe the core tasks and priority areas. They describe the preferred state for NTNU at the end of the strategy period. In addition, they specify development goals of particular importance for each area.

The strategies and related development goals are intended to help realise NTNU's main objectives as they are described in the chapter "Main objectives – NTNU 2025."

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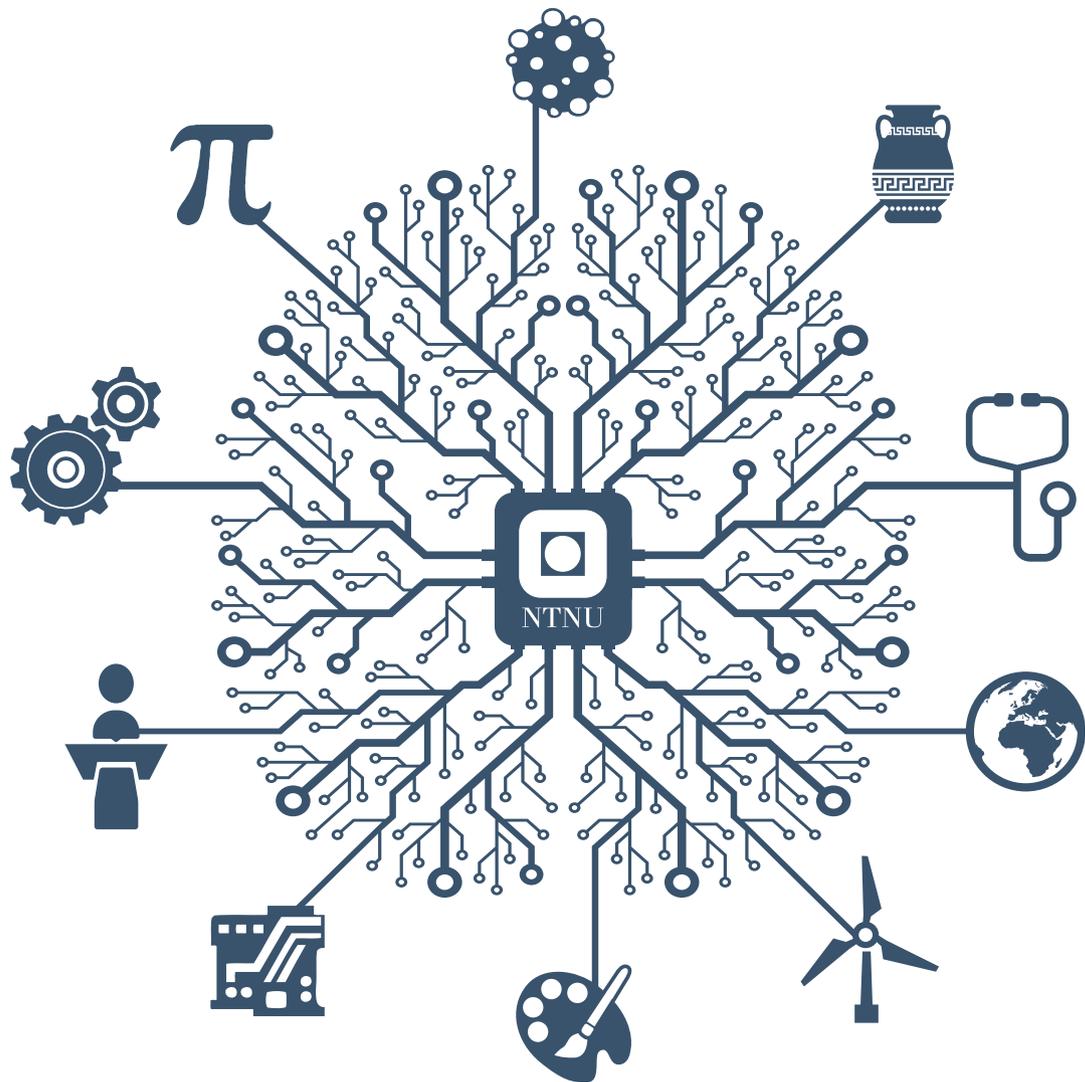
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VISION
VALUES
SOCIAL MISSION
KEY CHALLENGES
MAIN OBJECTIVES

01





VISION: KNOWLEDGE FOR A BETTER WORLD

Knowledge provides people with opportunities and influence, as well as a foundation for making wise choices. Knowledge inspires and challenges. It changes attitudes, mindsets, and how we perceive the world around us. Informed debate strengthens our democracy. NTNU's activities should benefit society as a whole and society can trust that our findings comply with best scientific practice.

Knowledge and technology development create opportunities for increasing sustainable value creation and finding answers to major challenges. Through the United Nations, the world has agreed on 17 Sustainable Development Goals. NTNU will contribute actively towards achieving the Sustainable Development Goals.

NTNU's strength is our competence in science and technology combined with academic breadth and interdisciplinarity.

VALUES

NTNU's values serve as a guide for all staff and students, and our behaviour reflects these values. Our work is founded on four values: to be creative, critical, constructive and respectful.





CREATIVE

Academic freedom is the basis for our activities. We take on challenging questions and tasks, and seek innovative solutions through interdisciplinary collaboration. NTNU supports the development of disciplines, people and cultures. We value and encourage innovation among students and staff as well as innovative teaching, research and artistic activities.

CRITICAL

Our activities build on fundamental democratic values and we represent an unprejudiced and independent voice. The hallmarks of our academic culture are debate, critical reflection, fact-based knowledge, impartiality and ethical integrity. We challenge conventional ideas and solutions.

CONSTRUCTIVE

We engage in an open and solution-oriented dialogue with society and emphasize both external and internal collaboration. We take social responsibility and we influence, advice and develop each other and our environment through dialogue and dissemination of knowledge. NTNU places emphasis on co-determination and active involvement by students and employees.

RESPECTFUL

Every employee and student has a responsibility to contribute to a work and study environment characterized by respect and consideration. We facilitate personal growth and professional development. We contribute to diversity and equal opportunity in society and in our own activities. We promote equality and tolerance. At NTNU, we show respect for varying attitudes and opinions.

MISSION

Our mission covers both the expectations that society has of NTNU and the problems in society that we ourselves want to solve. We have a general mission, similar to other universities, and a specific mission, which makes us unique.



General mission

As a university, NTNU has a responsibility for basic research and for educating outstanding graduates. We offer research-based education at all levels. We develop and disseminate knowledge and manage expertise about nature, people, society and technology. NTNU promotes and disseminates cultural values, and contributes to innovation in society, business and public administration.

One of the university's responsibilities is to participate in a knowledge-based public debate. We use our knowledge to benefit society. We commit ourselves to solving global challenges. Our activities promote development, human rights and intercultural dialogue.

Specific mission

NTNU is a multi-disciplinary university with a strong profile in science and technology, and a focus on programmes of professional study.

We contribute to Norway's development. We create value – economic, cultural and social – and have a national role in developing the technological foundation for the future society.

Through our competence in science and technology and interdisciplinary strengths, we help to solve complex problems. We are an agenda setter for change processes and sustainable development, and we contribute to competitive business and industry as well as a capable public sector through collaboration in new practices, processes and products.

Artistic disciplines play a key role in NTNU's identity. We have a leading university museum with unique scientific collections and public exhibitions.

NTNU is an important partner for development in the cities and regions where we are located.

OVERVIEW OF CHALLENGES IN 2018

NTNU's activities have a long-term perspective. At the same time, national and global social changes are rapid and wide-ranging, and some of their effects are unpredictable. The importance of knowledge, quality and expertise is increasing. Universities face demands and expectations that directly reflect the trends in society. We have identified three specific trends that will be important for NTNU in the strategy period until 2025: more intense competition, strengthened interaction with society, and willingness to change.



Photo: Kristin Støylen

More intense competition

NTNU will experience more intense competition, both in recruiting excellent staff and students and in obtaining research funding. Competition will become increasingly global. To ensure that the best applicants for higher education choose NTNU, we must secure study and learning environments that are recognized for their high quality. We must ensure that our students succeed in the job market, and prevent drop-out and delays in the completion of studies. NTNU must be positioned to succeed in both national and international competition for research funding. A higher proportion of research funding will come from external sources and in collaboration with international partners. Competition for the best employees will increase, which will place new demands on NTNU as an employer.

Strengthened interaction with society

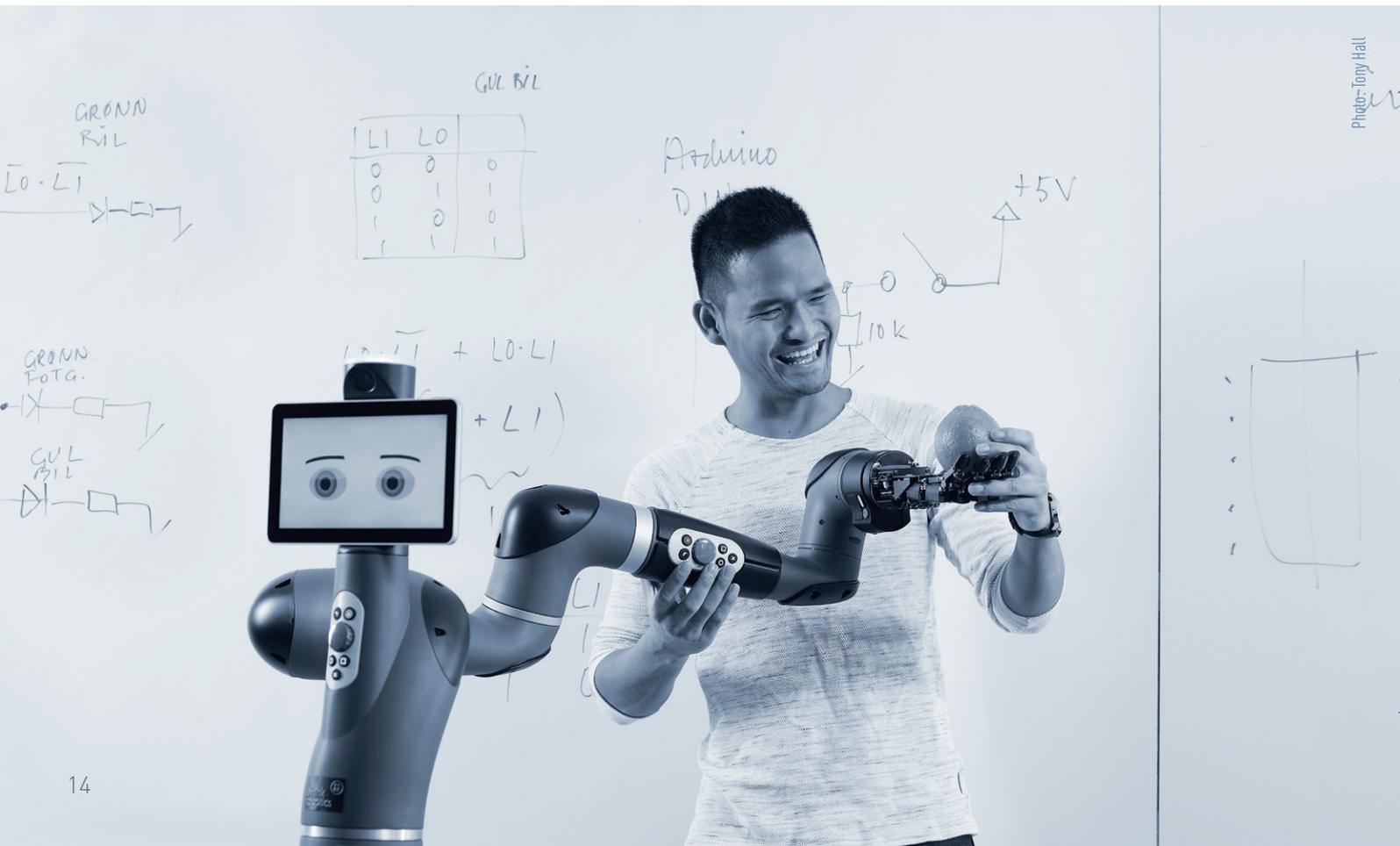
Society expects NTNU to be a partner and contributor in developing the solutions of the future. Major technological changes present challenges, but also offer new opportunities and a strengthened competitive edge. Here, NTNU must lead the way. Teamwork and innovation are cultural traits that must play an even greater role in all our academic environments.

An organization willing to change

For us to succeed in the competition for research and learning environment excellence, and to be an attractive partner, we must improve our activities further. Through well-designed, inclusive processes, we must take advantage of our resources by setting clear priorities and extending our use of new technology. More rapid changes in the world around us require us to change faster than before, while taking care of the university's fundamental and lasting values.

MAIN OBJECTIVES – NTNU 2025

NTNU 2025 presents a desired state for NTNU at the end of the strategy period. The overview of objectives sums up the ambitions in the strategy.



In 2025, we expect that:

We have strengthened our position. We have systematically improved the quality of all our activities. At the same time, we have paved the way for several of our academic groups to be internationally leading. We have achieved the status of an internationally oriented, high-quality research university.

The best students choose NTNU. Our learning environment is innovative and exciting, and our student environment is recognized as the best there is. Graduates from NTNU are highly attractive to employers, both in Norway and abroad.

We perceive NTNU as one unified university, with creative academic environments and exciting interdisciplinary collaboration. We have realized more of the potential offered by the integration of education, research and innovation at the university. In addition, our role as a partner for innovation is an even more distinctive characteristic of NTNU. During the strategy period, we have succeeded in our systematic efforts to develop a culture of innovation among our students and staff.

Our employees are clearly visible in society and contribute actively to its development. We use modern communication methods and disseminate our results according to open access principles.

We have developed and modernized the technical and administrative support services and provide services of the right quality tailored to the needs of end users. Each employee's skills and capabilities are valued and developed systematically. Together, we have created inviting university campuses and work environments, and NTNU's employees refer to their workplace with pride.

In 2025, we have achieved our most ambitious goal; all our departments have academic groups proven to be at a high international level in at least one of their core areas.

We have contributed to knowledge for a better world by setting clear priorities for our efforts and resources in line with the UN's Sustainable Development Goals.

CORE TASKS

EDUCATION AND LEARNING ENVIRONMENT

RESEARCH

ART

INNOVATION

DISSEMINATION AND OUTREACH

02



■ EDUCATION AND LEARNING ENVIRONMENT



THE THREE PILLARS OF OUR EDUCATION AND LEARNING ENVIRONMENT STRATEGY ARE:

Education of internationally outstanding graduates

Quality of education

Development of an excellent learning environment

DEVELOPMENT GOALS

NTNU will:

Improve the quality of our study programmes through coordination and concentration as well as on the basis of international trends in the education and job markets

Prioritise innovative and exploratory learning processes of high quality, grounded in research-based knowledge about learning

Develop the portfolio of lifelong learning programmes in cooperation with working life

Establish programmes for systematically improving educational competence

NTNU is an outstanding educational institution that attracts the best students. Our graduates are in demand in Norway and abroad. They are highly skilled in their disciplines, with an interdisciplinary focus, and have expertise relevant to working life.

Our study programmes are attractive internationally. In collaboration with academic environments in Norway and abroad, we have a portfolio of programmes relevant for lifelong learning. All study programmes provide insight into scientific literature, critical reflection and ethics. They are based on a solid research foundation in academic disciplines and educational competence. A key to developing quality is our close dialogue with the private and public sectors.

Students are involved in developing content and learning processes in a tailored learning environment. New technology enables stimulating and varied approaches to learning and assessment, and facilitates access to lifelong education. Students are involved in research; and teaching, work practices and research are linked. We are systematically learning from best practice, experiences and results from our centres and strategic research areas.

Teaching staff at NTNU are engaging and highly competent. We develop effective systems that promote quality through systematic evaluation and follow-up. We are an active partner in national and global arenas and a driving force in sharing learning resources.

RESEARCH



THE THREE PILLARS OF OUR RESEARCH STRATEGY ARE:

Development of talented researchers and excellent research environments

Quality improvement throughout our organization

Research within and across disciplines

DEVELOPMENT GOALS

NTNU will:

Increase our success in external competitive arenas, especially in international competition for excellent research

Develop research collaboration with other research communities as well as with public- and private-sector organizations

Improve the quality of our publications to strengthen our scientific impact

Facilitate knowledge sharing through open access to our publications and research data

The close interaction between basic and applied research is our strength. Basic research is the foundation for development for all areas. We have a strong profile in applied research, and a broad-based platform for collaboration with the private and public sectors. SINTEF is a close partner, strengthening our national and international competitiveness.

Our research performance is at a high international level. Our research groups have a distinct profile that supports education and innovation and that takes advantage of interdisciplinary opportunities. We develop robust research groups and support internationally leading researchers.

Our research infrastructure is one of our competitive advantages. Shared use across the university and co-location of the infrastructure ensure effective utilization.

External funding helps to build capacity and develop quality in our research projects. NTNU paves the way for and expects our researchers to succeed in national and international competition for research funding.

We publish our research results and research data with open access, through renowned channels and increasingly together with international partners.

Our PhD education maintains high international standards and our candidates are important resources for our research. Our PhD graduates are in demand among knowledge-intensive organizations outside academia, and they find relevant work both in and outside academia.

ARTISTIC ACTIVITIES



Foto: Diana Lindbjerg

THE THREE PILLARS OF OUR STRATEGY FOR THE ARTS ARE:

Developing outstanding artistic communities

Strengthening artistic development

Interacting with technology, science and society

DEVELOPMENT GOALS

NTNU will:

Develop art with documented high international quality

Continue to develop the interaction between art, science and technology

Contribute actively to strengthening the role of art in society and schools

With NTNU's total academic environment for higher education in the arts and artistic development, we have a unique platform for artistic activities and development with proven international quality. Based on our artistic practices, we develop and study the relationship between art and society, and further develop the interaction between art, technology and science. We are an active partner in strengthening the role of art in society.

Art creates new forms of insight, experience and recognition. Art interprets and shapes social interaction and is a key element in developing engagement and social awareness. NTNU places art in an interdisciplinary, social and international context, in addition to developing the critical and constructive role of art and the artistic disciplines for the individual, the public and schools.

■ INNOVATION ACTIVITIES



THE THREE PILLARS OF OUR INNOVATION STRATEGY ARE:

Collaborating with **established business**

Collaborating with the **public sector**

Helping to create **new business**

DEVELOPMENT GOALS

NTNU will:

Strengthen long-term collaboration with established business and public sector to improve the innovation capability

Increase the number of innovations, commercialization projects and start-ups from staff and students

Include training in innovation in our students' education

NTNU is an important contributor to research-based sustainable value creation, innovation and increased competitiveness. Focusing on creating value for businesses and the public sector, we collaborate with our partners to help solve problems and seize opportunities by combining theory and practice. This makes us an attractive partner.

Based on ideas from our employees and students we stimulate and realize commercial activities. We put knowledge into practical use through a well-functioning ecosystem for innovation. In cooperation with partners, we succeed in creating societal impact by supporting the establishment of new businesses.

Our students gain skills in innovation and take on issues relevant to business and the public sector. In this way, our graduates become attractive employees, contributing to innovation and development.

■ DISSEMINATION AND OUTREACH



THE THREE PILLARS OF OUR DISSEMINATION AND OUTREACH STRATEGY ARE:

Dissemination of results from research and artistic development to the research community and to students

Communication and outreach to share knowledge with the public

User-oriented communication of research aimed at specific groups who can apply the knowledge and technology in their work practice

DEVELOPMENT GOALS

NTNU will:

Increase our participation in public debate and ensure that our perspectives, ideas and results become better known and used

Strengthen dissemination and outreach skills among employees and PhD students

In particular, strengthen dissemination in technology and science

Increase knowledge about NTNU, nationally and internationally

We ensure that knowledge developed at NTNU becomes visible and accessible to individuals and society. Our communication and outreach spark interest and understanding of science and innovation among children and young people. We contribute to an evidence-based public debate.

We adapt our communication to the different user groups and contribute actively to the design of knowledge-based work practice, policymaking and public administration.

Our communication is open, true, engaging and involved. We use innovative methods, arenas and media.

Our work with dissemination, communication and outreach strengthens our reputation and helps us to recruit talented employees and students nationally and internationally. It makes us an attractive collaborative partner for business, the public sector and research organizations in Norway and abroad.

PRIORITY AREAS

To meet future challenges, NTNU will focus on selected priorities during the strategy period: internationalization, interdisciplinary collaboration, career and skills, the work environment and student welfare, campus development and NTNU's capacity for development.

03





INTERNATIONALIZATION

NTNU is an important contributor to global knowledge development, and internationalization is integrated in the activity of all our academic groups.

Internationally oriented study programmes ensure diversity and increase quality, international experience and insight into global issues. NTNU facilitates exchange of our own students as well as integration and inclusion of international students.

Our participation at the forefront of international research results in high scientific quality. An increasing share of NTNUs research projects finds international funding and involves collaboration with international partners.

Our broad international network of contacts and expertise makes NTNU an attractive partner for companies that operate globally. Systematic collaboration with institutions in low- and middle-income countries contributes to mutual capacity and competence building.

DEVELOPMENT GOALS

NTNU will:

Take better advantage of the EU's funding for research, innovation and education to ensure high quality and relevance in our activities

Establish strategic partnerships with selected institutions worldwide

Strengthen international recruitment of outstanding researchers and increase the international mobility of our employees

Increase the proportion of full-degree students who spend a study period at an educational institution abroad

INTERDISCIPLINARY COLLABORATION

NTNU values and encourages interdisciplinarity. We facilitate collaboration and a culture of sharing across units.

NTNU has cross-cutting strategic research areas that help to focus and boost NTNU's research, education and innovation activities in areas especially relevant to society. We have clear commitments to enabling technologies, which make an important contribution to solutions in our strategic research areas.

Disciplinary knowledge is the platform for effective interdisciplinary collaboration, and our core subjects are the basis for the quality of our programmes of professional study. Collaboration with businesses and the public sector helps to ensure relevance in education and research, in addition to meeting the needs of society for innovation and interdisciplinary skills.

The skills of our graduates clearly reflect NTNU's distinctive characteristics, and an NTNU graduate is different from other graduates. Our students develop teamwork capabilities. Graduates from NTNU have tools, methods and sufficient digital knowledge to meet future needs.

DEVELOPMENT GOALS

NTNU will:

Take advantage of strategic research areas and enabling technologies to realize ideas and solve problems in society through interdisciplinary research projects

Develop interdisciplinary study programmes and give students insight into interdisciplinary teamwork through learning activities across subject areas and professions

Encourage a culture of sharing and the use of resources and skills across units



Photo: Geir Mogen



CAREER AND SKILLS

NTNU is an attractive and professional employer, which offers favourable working conditions and a basis for all employees to develop throughout their careers.

NTNU has recruitment processes consistent with our strategy to ensure high quality in our activities.

Academic staff have several career paths of equal value. NTNU is open to and encourages the use of different career paths. Academic positions at NTNU are advertised internationally.

We have capable academic leaders who generate enthusiasm and pave the way for all employees to develop and use their abilities.

NTNU has well-designed support functions and a highly competent administrative and technical staff.

DEVELOPMENT GOALS

NTNU will:

Have an ambitious recruitment policy and effective procedures to achieve successful appointments

Have a systematic dialogue with academic employees about individual goals for academic development and career plans

Develop the leadership role and boost the skills of our managers and employees

WORK ENVIRONMENT AND STUDENT WELFARE

NTNU has motivated, engaged and skilled staff and students. Everyone at NTNU takes independent responsibility for contributing to an inviting, health-promoting environment for work and study, and to a workday in which staff and students experience challenges, development, and joy in their work. Managers take a particular responsibility for the work environment and work systematically with health, safety and the environment.

NTNU has active co-determination with strong involvement of staff and students. We practise inclusive leadership and openness, and work in close cooperation with student democracy and employee unions.

We focus on students' well-being and achievements. Studentsamskipnaden, the student welfare association, is our main partner in taking care of student welfare.

NTNU emphasizes and works towards diversity and gender balance among students and staff.

DEVELOPMENT GOALS

NTNU will:

Integrate health-promoting work in our day-to-day activities

Contribute to an excellent context for learning, through welfare services and voluntary activities on our campuses

Improve gender balance in top-level academic positions



Photo: Tone Moines



CAMPUS DEVELOPMENT

Our university campuses are outstanding environments for learning and work, contributing to high academic quality. They gather students and staff within the same subject area, while creating opportunities for interaction across disciplines. Our campuses are living laboratories. They are open and attract collaborative partners. They encourage vibrant student communities with student volunteer activities and student culture.

DEVELOPMENT GOALS

NTNU will:

Establish workspaces and learning environments based on research and experience

Develop sustainable technological solutions

Develop a forward-looking, integrated campus in Trondheim that serves as a model for future public-sector development in Norway

NTNU'S CAPACITY FOR DEVELOPMENT

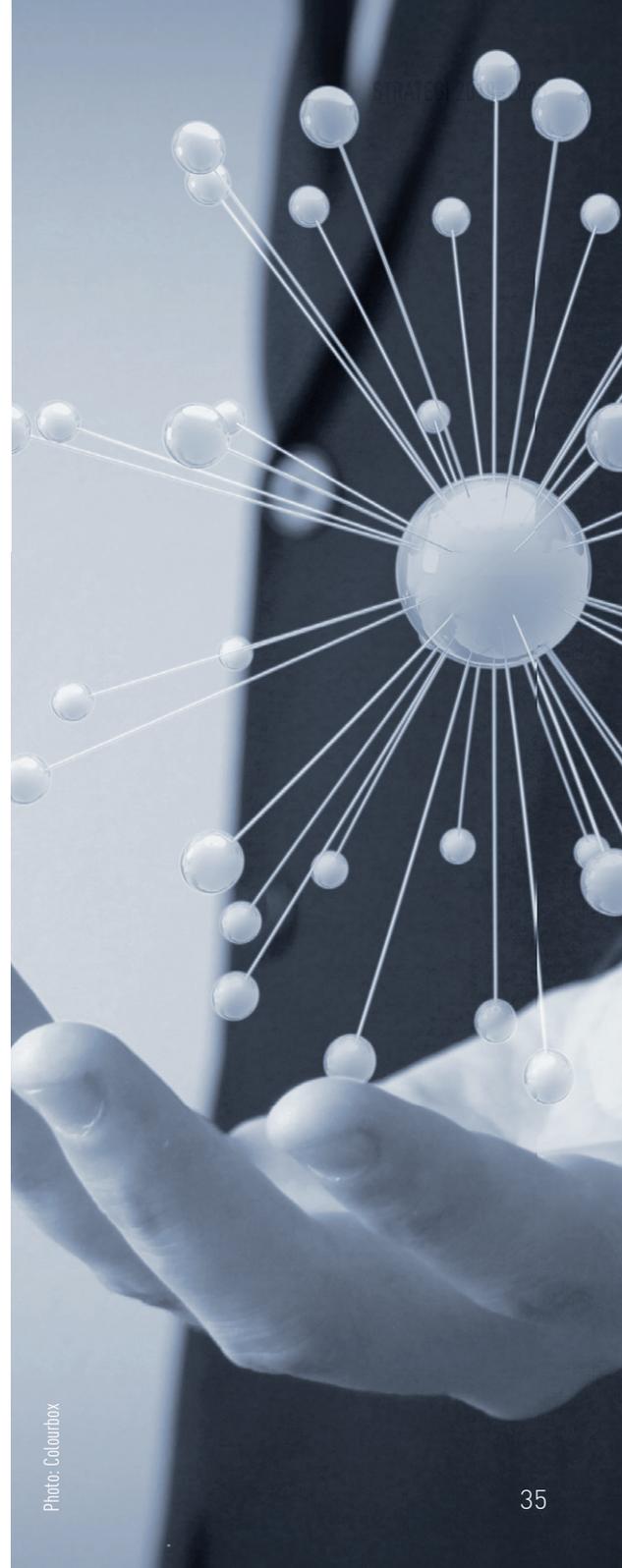
NTNU sets priorities for resources to ensure high quality in our core activities, and develops a leading position in our disciplines so that we can meet society's changes, needs and expectations. NTNU has user-friendly and effective support systems. Future-oriented digital services focused on user needs are available to students and staff. NTNU has robust systems to meet the need for information security, emergency response capacity and protection of privacy.

DEVELOPMENT GOALS

NTNU will:

Have resource management that contributes to increased productivity and creates room for manoeuvre in terms of strategic priorities and renewal at all levels

Launch digitalization initiatives and improvements that support integrated, standardized procedures and work processes



FROM VISION TO REALITY

2018–2025

NTNU's vision and strategies will be specified in more detail in the strategies and priorities of the faculties and the NTNU University Museum.

For selected themes, separate action plans will be developed with a horizon of three to four years. These will include specific initiatives and policies that apply across our organization.