Strategy for NTNU's Department of Information Security and Communication Technology (IIK) 2021-2025

Vision

We create efficient, resilient, robust and secure communication networks, information systems and digital services

Societal mission

We are the principal national provider of research-based competence in information security and communication technology

Values

We are:
- Creative
- Critical
- Constructive
- Respectful

Societal Challenges and Strategic Focus Areas of IIK

The world and the society are rapidly evolving. For IIK this creates both opportunities and challenges. The digital transformation enables value creation, ability to adapt and sustainable development, but also generates increased complexity and introduces vulnerabilities in our systems. IIK delivers research-based expertise making the digital transformation efficient, robust, secure and resilient. In order to further develop the department's position in our disciplines, we must actively address three underlying trends in the university sector:

- More intense competition
- Strengthened interaction with society
- Organizations willing to change

The competition between universities and disciplines to attract the best students and staff is intensified, and an increasing proportion of research funding is exposed to competition. The society's expectation is dual. Firstly a short term expectation for us to provide applicable research and candidates capable of conducing applied research demanded by government and industry. Secondly, we are expected to conduct fundamental research and enable candidates to produce knowledge at the forefront of our disciplines.

Future development of basic research in IIK will increasingly depend on our ability to attract external research funding and develop applicable solutions in collaboration with the society. Our research and development activities should therefore continue to support topics that are relevant for the Norwegian welfare state's knowledge and competence development. A tendency at both national and European level is to respond to global challenges and industrial competitiveness by introducing mission-oriented research. The underlying idea is to address societal challenges by undertaking ambitious research and innovation missions with the ambition to create accelerated societal innovation.

Report to the Stortinget 16 (2016-2017) "Quality Culture in Higher Education" expresses clear expectations for increased educational quality in Norway's universities and university colleges. Strengthening study program management is highlighted as a key to ensure that programs are complete and coherent. The government expects academic environments to develop educations collaboratively, and peer review and peer mentoring are identified as central measures for education quality development. Nasjonal kompetansepolitisk strategi 2017-2021 accentuates the need for close dialogue between the society and higher educational institutions as crucial for the continued development of research, education and continuing education.

Through the strategy IIK defines how we as one department in two cities respond to both the current expectations from public authorities, private sector and our citizens, and the future needs of the society for genuine innovation and fundamental research in the area of information security and communication technology. The strategy of IIK is part of a strategy hierarchy in NTNU consisting of NTNU Strategy 2018-2025, NTNU IE Strategy 2018-2025 and NTNU i Gjøvik utviklingsplan 2019-2025.

Education:
"International quality in education"

IIK contributes to study programs with high societal relevance, and our course portfolio reflects a continuous development process involving the department and the faculty level in NTNU. Through the use of updated pedagogical methods, students in IIK's courses should acquire research-based and enduring knowledge, skills and general competence in good study environments using an updated learning infrastructure. As the principal national supplier in our disciplines, the department has a special responsibility to educate and develop a national competence base in information security and communication technology.

Targeted measures in IIK to reach the goal are:
- Continuous development of quality culture in education
- Active study program and course portfolio management
- Recruit high quality national and international students in all cycles
- Relevant, research-based and applicable educational offerings
- Foster student mobility and internationalization
- Capitalize on synergies between and the digitization of the course portfolios in Gjøvik and Trondheim.

NTNU/Ministry of Education and research reporting indicators connected to this goal are:
- Percentage of students in the bachelor educations completing on time
- Percentage of students in the master educations completing on time
- Percentage of PhD candidates completing within 6 years of their starting date
- Student score on perceived study quality
- Reported hours invested per week by students in their studies
- Percentage of outbound Erasmus+ exchange students
- Percentage of students in relevant employment six months after completed studies
- Number of ECTS per full time equivalent.

Research:
"Internationally recognized research environments"

IIK research groups are established to develop robust and productive academic environments for good research and researcher education. The research groups can have both thematic and disciplinary focus, and are a mechanism for both internal and external interaction. The department has strong partnerships in the form of a number of consortia in externally funded R&D projects. Examples are the Norwegian Research Council funded center for research driven innovation Norwegian Center for Cyber Security in Critical Sectors (SFI NORCICS), the public-private partnership in Center for Cyber and Information Security (NTNU CCIS), and the innovation platform Norwegian Cyber Range (NCR). These partnerships will be further developed and complemented to support IIK's main profile. We need to communicate our research results clearly and uniformly for increased visibility and relevance to external actors. As the principal national provider of research-based knowledge for efficient, robust, secure and resilient digital transformation, IIK seeks externally funded growth in both basic and applied research. The departments portfolio of sponsored and commission based activity should be balanced between instruments in the Norwegian Research Council, EU and other funding sources.

Targeted measures in IIK to reach the goal are:
- High international quality in our research
- Robust and long-term funding portfolio
- Internationalization through strategic use of sabbaticals and alliances
- Attract and host international conferences
- Driving the Ph.D. education as an attractive career path
- Foster academic mobility

NTNU/Ministry of Education and Research reporting indicators connected to this goal are:
- Number of publication points per full time equivalent
- Value of H2020 contracts per full time equivalent
- Value of Norwegian Research council sponsored activity per full time equivalent

Innovation:
"Research and education for welfare, value creation and societal adaptation"

IIK creates efficient, robust and secure communication networks, information systems and digital services. As the digitization changes the way people, systems and businesses interact IIK will contribute to value creation and further development of the Norwegian welfare state. Through this the department has a role in economic, cultural and social development both regionally, nationally and internationally. To succeed, we must both anticipate and respond to changes in the society's needs. We must also develop active and strategic partnerships with relevant businesses, authorities and academic institutions.

Targeted measures in IIK to reach the goal are:
- Active collaboration with NTNU TTO and other relevant actors
- Follow our innovation projects through the prototype phase
- Take a position where we influence relevant policies (industry, research etc.)
- Offer best practice guideline, training, courses and, and continuing education
- Students shall experience educations that are very relevant for the society.

NTNU/Ministry of Education and Research reporting indicators connected to this goal are:
- Value of other sponsored and commission-based research activities per full time equivalent

Work Environment:
"Good work environment with inspiring, diverse and solid academic environments"

IIK is a strong and attractive department located in two cities with competent and motivated staff members. In this community everyone has the responsibility to utilize the competence of one another for the joint achievement of our societal mission. We are tolerant and contribute to the individual development of our colleagues.

As a community we are all responsible for a working environment characterized by the values creative, critical, constructive, and respectful. To enable growth and development across our two campuses we must develop a common approach to administration, governance and management. Through this IIK will across Gjøvik and Trondheim establish two cultures with common goals.

Targeted measures in IIK to reach the goal are:
- Drive and develop internal and external meeting places
- Balanced staff with respect to age, gender and nationalities
- Collaborative development of work environment across campuses
- Encourage creativity, playfulness and collaboration
- Good participatory and governance structures

NTNU/Ministry of Education and Research reporting indicators connected to this goal are:
- Percentage of females in docent and professor posts
- Percentage of temporary employments in teaching and research posts

IIK specific reporting indicator connected to this goal
- ARK undersøkelsen

Administration:
"Effective and discipline-oriented administration"

NTNU has a particular focus on internationalization, interdisciplinary collaboration, career and skills, the work environment and student welfare, campus development and NTNU's capacity for development. In addition, the IE Faculty has a defined focus on capacity, quality and efficiency of administrative services. In order for IIK to operate according to the mandate of the Act relating to universities and university colleges we are dependent of a professional and effective administration in order to follow up our employees, our students and our partners adequately.

Targeted measures in IIK to reach the goal are:

- Support research and education management
- Support externally funded activity with focus on acquisition and implementation
- Develop administrative support functions for continuing education and innovation
- Develop effective administrate routines across campuses
- Good and respectful interaction between professional and technical-administrative staff

NTNU/Ministry of Education and Research have no reporting indicators connected to this goal.

Reference strategies and documents

- [NTNU Strategy 2018-2025](#)
- [NTNU IE Strategy 2018-2025](#)
- [NTNU i Gjøvik utviklingsplan 2019-2025](#)
- [Nasjonal kompetansepolitisk strategi 2017-2021](#)
- [Meld. St. 16 (2016-2017) Kultur for kvalitet i høyere utdanning](#)
- [Samfunnsutfordringer i Horisont 2020](#)
- [Langtidsplan for forskning og høyere utdanning 2019–2028](#)
- [Horisont Europa](#)
- [Lov om universitet og høgskoler](#)