

Summaries of the PROFi 2 final reports Profi 2 loppuraporttien yhteenvedot

Aalto University

Funding 12,012 €m

Summary

The Profi2 funding significantly strengthened Aalto University's three multidisciplinary grand challenges identified as part of our key research areas: Advanced energy solutions, Human-centered living environments and Health and wellbeing.

Supported by Profi2 funding, Aalto has consolidated research excellence in these themes by recruiting tenure track professors and by developing and launching new cross-disciplinary research platforms. Profi2 has allowed us to proactively renew faculty and direct resources to these promising research areas. Platforms have enabled researchers to draw expertise from neighboring fields to tackle grand societal challenges and provide multidisciplinary education involving hands-on projects and real-life problems. The three Profi2 areas are central to future development of Finnish society and the Platform structure also supports efficient external stakeholder communication and transferring research results to society. The societal impact has manifested for example in several technology transfers, spinoff companies and numerous Research to Business grants from Business Finland.

The rise in academic excellence is clearly demonstrated by several indicators. During the Profi2 period, Aalto has improved in rankings specific to all these core competence areas. The aspired research excellence is reflected also for example by the very positive trend in

the progress of our publishing records in all our Profi2 areas, and our ability to win important competitive research funding grants. Aalto University actively continues to develop all the Profi2 areas; in all subsequent Profi projects (Profi3-6) we have developed spearheads within these key research areas and their combinations, focusing on themes relevant to Finland's competitiveness.

Lappeenranta-Lahti University of Technology LUT

Funding 1,22 €m

Summary

LUT received 1.22 M€ Profi 2 funding from the Academy of Finland. The funding was allocated to strengthen our core competences, and two tenure track professorships were recruited using international open calls to strengthen clean energy and circular economy profiling areas. LUT works constantly with universities, research institutes and other relevant organisations to collaborate within our profiling areas and make the division of work more explicit.

LUT has occupied a position as a high-quality, productive and influential player in Europe in our profiling areas. Our high-level science is highly relevant. These statements are based on e.g. the international peer-review panel evaluation (RIA) of LUT's research and impact in 2019. We are at the national top when research achievements are compared with the number of teachers and researchers or corporate funding.

In 2015-2020 five multidisciplinary research platforms implemented LUT's strategy in the two profiling areas. International RIA 2019 panel 2019 stated that the platforms are excellent initiatives.

We have created solutions for society and industries in our profiling areas: new business

models, inventions and patents, new products and spin-off companies. We have reported numerous high-impact cases in different fields of technology. Tens of globally used products stem from LUT research. Our research in the profiling areas results in about 60 inventions annually. LUT applies for more patents than any other university in Finland. About five research-based spin-off companies are established each year.

Tampere University of Technology

Funding 3,499 €m

Summary

The profiling actions were targeted to strengthening the Advanced Photonics Technologies and the Intelligent Machines areas, the latter focusing especially on Embedded Computing and Communications for Future Networked Systems. The aim was to reach critical mass in these areas and in total 14 new tenure track professors were recruited to these areas with the aid of profiling funding and university's own investments in 2016-2020. The size of the research community almost doubled during the profiling actions.

Tampere University has established itself as a leader in the national photonics community and it has clearly strengthened the leadership in Intelligent Machines and established TAU as a key player in international domain in applying most recent research directions in artificial intelligent solutions.

The Flagship of Photonics research and innovation (PREIN) is pushing forward the national photonics ecosystem, linking academic partners, research institutions and industry. In the intelligent machines and embedded systems, several key initiatives have been established to integrate and intensify the dialogue from research to deployment, like RAAS (Rethinking Autonomy and Safety) interdisciplinary innovation ecosystem, Sustainable Industry X (SIX) initiative, AI Hub for Intelligent Machines and System-on-Chip design center of excellence.

University of Tampere

Funding 4,65 €m

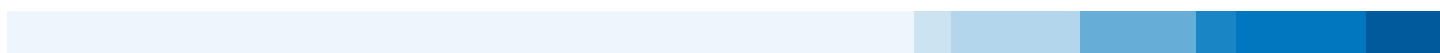
Summary

The Academy of Finland funding to strengthen university research profiles has been an integral part of the strategic process, resulting at merging the two Tampere Universities. Following the new University of Tampere strategy immediately after its adoption, the profiling application (Profi 2) sought to reorientate the strength area of its research, social sciences, to the world of multidisciplinary, internationality and impact. The resulting New Social Research (NSR) programme has been one of the main drivers in major change in perception of and discourse on interdisciplinarity. Internationalisation has meant intensive co-working and with international scholars, publication in English, and mobility. Impact has meant seeking engagement with policy-makers, community groups and business.

The basic approach was to recruit, develop and retain new researchers who would act as an engine for change. To pursue these objectives, NSR made 15 appointments – a director (0.7) and vice-director (0.3), three professors, nine associate professors and one university researcher. Recruited tenure tracks have their positions secured in the Faculties and are making excellent progress. This group of scholars have had significant ‘soft’ impact on the new university. They have all curated significant new lines of impactful internationally-recognised research. They have excellent funding records. The NSR scholars have also led by example in changes in professional practices (publications, funding applications, approach to social engagement etc.).

University of the Arts, Helsinki

Funding 852 000 €



Summary

Profi 2 funding has helped Uniarts Helsinki to strengthen its three strategic profiling areas of research – history of music (arts), artistic research, and arts education. In line with Uniarts Helsinki’s strategy (2017–2020), the University has expanded its postdoctoral research community via strategic recruitments, supported the building of a widely networked international research community and promoted research-based development of arts education and pedagogy.

Research in the profiling areas has been scientifically and societally influential in the following ways:

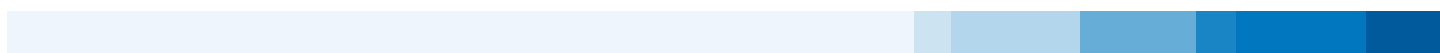
Research in the field of history of the arts, especially in the history of music, has promoted methodological awareness in the field in Finland. Profi funding has enhanced the cultivation of a research community with a distinctive research profile which is unique in Finland. Also, significant national and international networking platforms have been established.

In the field of artistic research, the funding has contributed to national and international development of the research field, and also the career development of artists for whom research is integral in their artistic practice.

In arts education, interdisciplinary research collaboration and cross-sectoral cooperation with global equality and human rights organisations have contributed novel innovations and research-informed policy recommendations for decision-makers and practitioners in Finland and internationally.

University of Helsinki

Funding 10,342 €m



Summary

HELDIG has successfully managed to reduce fragmentation and promoted interdisciplinary cooperation in SSH, both within the UH and between organisations. The collaboration has been constant with the Aalto University and many expert organizations in the field of culture, museums, libraries, and archives. This has led e.g., to the national proposal “Common Language Resources and Technology Infrastructure” included in the AoF's new roadmap for research infrastructures. Significant steps in teaching have been a new master's programme in Digital Humanities and an annual Hackathon, where teams of students and international experts work together to solve versatile research problems. HELDIG ensures that SSH areas can utilize the novel computational methods and Big Data and that the new generation of scientist have an opportunity to learn to use them.

GLAW was initiated to strengthen global approach in legal research and legal education. Within the Faculty of Law, aimed to connect and partly redefine two strong research traditions in European law and in international law and human rights. GLAW activities are foremost linked to three professorships at the UH 1) Law and globalization and 2) Transnational European law, both at the Faculty of Law, and 3) Russian law and governance. The most important joint activity of the three projects has been a new international master's program (GGL) which welcomed its first students in 2020.

LEAD as a profiling area has strengthened research, teaching and collaboration in the field of digital learning through its four tenure track positions placed in the Faculty of Educational Sciences and Faculty of Medicine. LEAD has had a wider effect in the Faculty of Educational Sciences and beyond by deepening understanding of digital learning and sharing the know-how of the cutting-edge platforms in pedagogy. By combining high-level research in the fields of education, neuroscience, cognitive science, data science, and psychology LEAD has created a multidisciplinary approach to study learning processes, timely in the era of pandemic accelerating the development of digital solutions.

INTERRUS consolidated the position of the UH as a leading centre of interdisciplinary Russian Studies in Europe and globally, and made possible further development of research in the major fields such as digital Russian studies, Russian environmental studies, Russian law in comparative perspective, and governance in Russia. Cooperative efforts resulted in major advancements and recognition of the UH scholarship, including major domestic and international research funding, publications in the leading academic presses and journals, and the Norwegian Nils Klim Prize awarded to PROF12 scholar, Daria Gritsenko, in 2021.

The development of Behavioural Life Science enabled meaningful structural changes at UH by relocating the Departments of Psychology and Logopedics to the Faculty of Medicine in Meilahti. This was a successful step, stemming from a long history of collaboration, and it has already had an impact in both research and teaching. New professors were recruited in eHealth and wellbeing, Behavioural genetics, and Behavioural brain research. They will enrich UH Psychology with their novel multidisciplinary approaches, and aid UH students in their careers moving forward.

University of Jyväskylä

Funding 3,727 €m

Summary

The Strategy of the University of Jyväskylä (JYU) for 2015–2020 with the core research areas has been the strong basis of JYU profiling. The results and implementation of the profiling actions in all the profiling rounds have been one of the key drivers to the renewed JYU strategy called “Wisdom and wellbeing for us all”. The formation of this new strategy continues the profiling work, which at the same time speeds up the focusing of JYU into solving global societal problems and developing excellence of our research environment.

JYU selected three profiling actions in Profiling round two, directly linking JYU strategy and

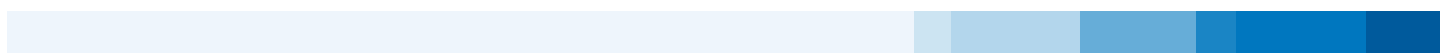


vision to the core fields and continuing the Profiling round one. Applied language studies, later The Research Collegium for Language in Changing Society (RECLAS), brings together Language learning, teaching and assessment, Policies and the social structure and Discourses on language, diversity and (in)equality and fosters their interlinkages. Interdisciplinary Nano Science (NSC) researchers deepen the understanding of the nanoscale processes using multi- and interdisciplinary approaches, and the mission to provide an environment for world-leading research. The third profiling area Physical Activity Through Life Span, (PACTS) has focused on physical activity that is a basic human need with effects cross-cutting from physiology to psychological wellbeing and societal and economic effects.

The tremendous impact, which JYU achieved with these profiling actions, has been based on carefully implemented recruitment plans to further increase number of leading researchers in the core research areas. Commitment, support for the necessary infrastructure and resources by the university itself were essential, e.g. JYU allocated funding for each of the profiling for doctoral students, started programs for International Visiting Scholars and supports open science in many ways. International conferences, seminars, community events and summer schools have been channels to disseminate and publish research results. The number and level of peer reviewed international publications, research funding and national and international collaboration activities have substantially increased during the profiling period 2016-2020. These actions of the profiling areas have led for instance realizations on the inherent role of language in societal matters, profound discoveries in cell surface structures and general policies on exercise and research evidence on topics like “why sitting kills”.

University of Lapland

Funding 843 000 €



Summary

The University of Lapland PROFI2 funding was targeted at a single profiling area “Arctic design & arts”, which was recognized as an emerging research area with high potential. With the PROFI2 funding, the university strengthened the research area with one professorship for ‘Arctic design and art’ and one post-doc researcher position. Other measures to support the development of this research area included international visiting scholars program and actions to support international and interdisciplinary research projects and high-quality publishing. In addition to the PROFI2 funding, the University allocated internal strategic funding to reinforce the research area. Together these investments have secured the consolidation of the profiling area and enabled the accumulation of critical mass in volume and increase in research quality. The two key recruitments have built cumulative effects as the research groups have succeeded to receive new positive funding decisions for external funding to ensure the continuation of the development of the profiling area even after the PROFI2-funding period. There is already some indication that the research area has reached a new phase of maturity. The wide range of collaborative partners and their geographical diversity suggests that the research carried out in this profiling area has potential for significant contributions also beyond the Arctic context. The collaborative networks include also a number of other stakeholders along with the academic partnerships, indicating high societal relevance of research in this area.

University of Oulu

Funding 1,703 €m

Summary

Profi2 funding has enabled hiring several tenure-track professors, all rated as excellent by external evaluation, and hosting high-level visiting professors. The Profi2

Space theme has supported UO 's role as the principal investigator of the national EISCAT activities, involved in building the next-generation EISCAT_3D radar (ESFRI Landmark) for geospace environment studies. The Ubiquitous Wireless Sensor Systems contributed to the founding of the 6G Flagship in 2018.

The Profi2 activities have contributed to European Infrastructure building and they have been highly successful in gaining access to the Finnish Infrastructure Roadmap 2021-2024 (PII, FUWIRI, E2S) and in securing funding from FIRI calls. The themes also relate to the AF Centre of Excellence on the Sun-Earth coupling (ReSoLVE), and to securing an ERC grant and an Academy professorship.

The Profi2 support in the Space theme has led to several externally funded projects, new space and geophysics observing capabilities, organization of an international EISCAT Radar School and a Symposium in Oulu, and the building of the first satellite of UO, the Lappi Sat-1 aurora satellite. UO 's leadership position in international projects and teams has been strengthened, and the facilities at SGO and FSCI provide one of the world's leading research environments in geospace research.

To generate large impact in the ICT theme, UO has emphasised matching the profiling measure with technological advancement, close collaboration with industry, and supporting the transfer of research results into new products and services with an agile research-to- business model, with new infrastructures, and with new ecosystems. Company collaboration and research-to-business are advanced by the 6G Ecosystem and the national Allied ICT Finland program (both founded in 2018 and involving Profi2 researchers).

Altogether, the AF-funded Profi programmes have become an excellent tool to develop UO 's research profile. UO 's Profi1 proposal was considered too broad by AF 's evaluators and, hence, was not funded. Thus, UO selected carefully the two themes that were proposed for the Profi2 to represent internationally strong and

impactful research. The Profi2 results have been impressive. In subsequent Profi calls UO has systematically built its research profile, ranked as 3rd best among all universities in the Profi4 and 5 calls, and the 2nd best in the Profi6 call. Clearly, the Profi programmes have provided an excellent tool to develop UO's research.

University of Turku

Funding 7,616 €m

Summary

The Profi2 funding has had a major role in supporting the implementation of the university's general strategy and multidisciplinary research at UTU. Three profiling areas were funded through Profi2 funding; new bioresources, digital futures and bioimaging. All three areas have been developed in close collaboration with the ÅAU.

The strategy of UTU strongly emphasizes the strengthening of molecular biosciences. The scientific output of the New bioresources profiling area has diversified and improved through the recruitment of the three Profi2 funded new tenure track professors.

Digital futures builds on the multidisciplinary strengths of UTU, and brings together key disciplinary fields from inside UTU and ÅAU. Profi2 funding has strengthened the research collaboration within university, creating new possibilities for joint activities and has enabled the use of large infrastructures and supported the development of new research topics.

Drug development and diagnostics has been acknowledged as strategically important for the Turku region. The reinforced resources and infrastructures have led to increased visibility and impact of drug development, diagnostics and bioimaging in the area. The recruited professors have strengthened the fields of functional neuroimaging, image and



bioimage informatics and detector technologies, radiochemistry and diagnostics. Major impacts of Profi2 include e.g. development of the DD-portal and industry-academia networking event, Life Science Live.

University of Vaasa

Funding 559 000 €

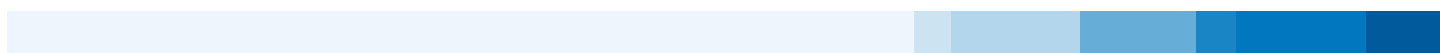
Summary

The profiling area of the University of Vaasa (UVA) was Sustainable Energy Business – From Technology to Business Concepts and Societal Value (Profi 2).

In Profi 2, UVA concentrated on strategic deselection, combination of UVA's strengths in business and energy-related research, and on building up a new transdisciplinary research platform with its large research infrastructure.

Deselection led to a decision to transfer the degree education and research in languages at UVA to the University of Jyväskylä. The deselection enabled UVA to re-allocate considerable resources to the present profiling area. To combine its strengths, UVA established a research platform, Vaasa Energy Business Innovation Centre (VEBIC), that calls experts from business, technology and administrative sciences to form transdisciplinary research teams. UVA also built up a versatile laboratory infrastructure for research of renewable fuels, hybrid power generation, geoenergy, and integration of future energy systems.

The profiling measures have led UVA into a number of EU-, nationally and industry-funded transdisciplinary research projects, most of them based on large academic and industry consortia. UVA has also increased activity in international scientific events and in the cooperation platforms of sustainable energy.



The profiling has led UVA to deepened academic and industrial collaboration both nationally and internationally and improved UVA's and Finland's competence within sustainable energy business.

Åbo Akademi University

Funding 2,87 €m

Summary

Prof2 supported the strategic goals of ÅAU (strategy for 2015 – 2020) in three profiling areas: Minority Research, Molecular Process and Material Technology (MPMT) and Drug Development and Diagnostics (DDD). Common ambitions were to increase the interdisciplinary and international reach of the research. Principle measures for achieving this were the recruitment of tenure track professors and international visiting professors. The impact of these investments is evident and mirrors the specific characteristics of the research in the profiles: In Minority Research, scholars from three faculties have come together to work with each other as well as international collaborators and national stakeholders. This has strengthened the recognition of our unique minority angle abroad and its relevance for society and education. MPMT demonstrated successful cross-disciplinary collaboration by securing funding for developing smart materials. The profile also takes an active role in networking with industrial and other academic actors in the area of bioeconomy and thereby promotes co-creative research for developing a sustainable industry in Finland. In DDD, major steps towards international acclaim were taken when the headquarters of the Euro-BioImaging infrastructure were established in Turku and when DDD received ÅAUs first ever ERC Grant. DDD is well integrated into the programmes that promote research and innovation activities in the health campus and pharma industry in Turku.