



Strategic Plan CTU 2021+



Strategic Plan CTU 2021+

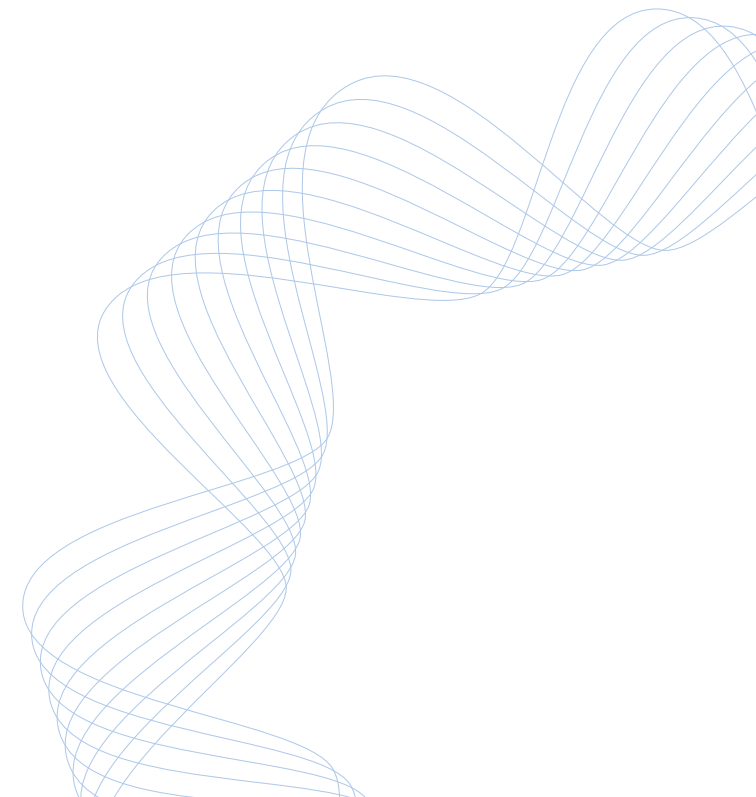
Contents

FOREWORD FROM THE CTU RECTOR	5
MISSION, VISION, KEY PRINCIPLES AND VALUES	8
1 STUDIES	12
1.1 Increase interest of talented domestic and foreign secondary school students in enrolling at CTU	14
1.2 Enhance the quality and success rate of studies	15
1.3 Include practice in the instruction process	17
1.4 Define roles and goals of lifelong learning	18
2 SCIENCE, RESEARCH AND INNOVATION	20
2.1 Achieve excellence in research through establishment of quality management methods, provision of an optimum environment and internationalization	22
2.2 Provide strong support for doctoral programmes	24
2.3 Build and upgrade research infrastructure	25
3 HUMAN RESOURCES AND THE ENVIRONMENT	26
3.1 Increase the university's attractiveness as a place to work for qualified domestic and foreign staff	28
3.2 Create a pleasant and friendly place for work and learning	30
3.3 Digitize activities and operations, make data-based decisions	31
3.4 Improve the quality of library, housing, catering and leisure facilities and services	32
4 FINANCIAL MANAGEMENT, ORGANIZATION AND PROCESSES	34
GLOSSARY	36
ACKNOWLEDGMENTS	38

Strategic Plan CTU 2021+
Prepared by: Ing. Veronika Kramaříková, MBA,
Vice-rector for Development and Strategy, CTU
Photo: Jiří Ryszawy
Graphic design: Lenka Klimtová



© Czech Technical University in Prague, 2020
www.cvut.cz





Foreword from the CTU Rector

The Strategic Plan CTU 2021+ is a fundamental document setting out development priorities of the university's education policy through 2030. It describes university-wide activities planned in coordination with faculties, higher-education organizations and other CTU components in order to meet the plan's targets, and it also presents targeted measures that need to be implemented by specific units with regard to their respective mission and profile. The Strategic Plan draws on the definition and detailed description of the process of reinforcing the strengths and minimizing the weaknesses of the university. This document may be updated in line with the progress of its implementation, whereby a major revision may be required in the event of a significant change in the external environment. The outcomes of our ongoing evaluation may also provide an impetus for revising the document.

The significance of this document is highlighted by the fact that it will create brand new opportunities for CTU's development. Its drafting and completion were affected by the Covid-19 pandemic, which unambiguously demonstrated CTU's preparedness to take action when, in cooperation with businesses, it designed literally overnight working models of protective masks and shields. The CoroVent lung ventilator, developed by a professional team of Professor Karel Roubík from the Faculty of Biomedical Engineering of Czech Technical University in cooperation with the COVID19CZ initiative and other experts, is of global importance. The pandemic helped accelerate change and progress at all universities and significantly influenced the additional internationalization of the education process. The need to rapidly respond to an unexpected situation also showed the merit of flexibility and agility in decision-making by CTU bodies on the basis of analytical data and empirical research. I believe that the necessary and often unbidden adaptation to new conditions will in the future bring us effective possibilities for combining contact and distance learning through use of multiple communication methods and tools that are available to us. I believe that technologies will enable CTU to maintain excellence in education, science and innovation and thus contribute to bettering the quality of society. If we succeed in continuing to observe the motto 'peace and unity is strength', together we will emerge from each crisis stronger.

CTU's eight faculties and six higher-education organizations cover a broad range of educational, research and other creative fields, representing a typical university with a balanced mix of engineering, natural sciences, arts, medical and economic learning. Despite the unfavourable demographic trend in recent years, demand for studying at specialized CTU faculties has been unwavering. The key prerequisite for successful development of the university is primarily professionally competent academicians and internationally recognized experts in scientific fields, applied research and development disciplines and in other creative activities, including liberal arts disciplines. Good human resources practice, motivational programmes and collaboration with graduates in accordance with the HR Award principles will be indispensable for the university's journey toward academic excellence. The knowledge gained during teaching, scientific work and creative activities, combined with students' engagement in practice, will lead to a continuous improvement of the quality of studies and the performance of our graduates. The preparation of new study programmes will

provide an opportunity to link several faculties of the university and to enhance inter-faculty cooperation. CTU, as an open and societally beneficial university, will consistently participate in the lifelong learning of our citizens on an increasing scale and in keeping with technological development and societal demand.

We view openness to international cooperation in the broadest sense as a matter of course and, personally, I consider it essential to open up to partner universities, research institutes and other universities both abroad and in the Czech Republic. Such openness is motivated by expectations of a qualitative enrichment of all partners involved in collaboration. I perceive this approach as the only way to better the quality and prestige of doctoral study programmes and habilitation and professorship appointment procedures. The internationalization of the university and fostering of relations with internationally recognized education and scientific organizations will also enhance our competitiveness on a transnational scale. The participation of our students, doctoral candidates and researchers in international conferences, research projects, along with their related study trips and other activities, will ultimately make us more competitive and, in tandem with organizing our own scientific conferences, seminars or thematic summer schools and courses, will help increase interest from gifted domestic and foreign applicants to enrol at CTU and will bring top scientists and educators to teach a modern generation of professionals.

In recent years, CTU has built state-of-the-art laboratories and unique specialized workplaces, which have helped to rank us as a competitive and open organization on an international scale in a variety of research areas. An undisputed prerequisite for excellent science will also be sharing of research infrastructure, its further expansion and modernization, including well-equipped ancillary facilities. It is critical to focus on science and innovation excellence in addressing global challenges, in particular in the fields of digitization, artificial intelligence, robotics, cybernetics, quantum technology, nanotechnology, defence technologies, space, aerospace and automotive industries, and in other areas in line with dynamically changing societal demands. Talented young men and women with postgraduate degrees from CTU and other reputed universities, in collaboration with foreign scientists, will be a necessary condition for achieving the goals set by our university. Support for publishing in reputable professional journals and setting up a transparent and simple technology transfer operation will also be of paramount importance.

To recruit and retain quality human resources, we must establish a new Merit-based Career System and Conditions of Employment that will strengthen employees' security and define transparent rules for their professional growth. Administrative processes will need to be gradually streamlined by promoting digitization of our operations.

Commercial funding, combined with internal, national, European and other sources, help stabilize financing of our research. Together with an effective management system, they provide the necessary flexibility and the ability to rapidly respond to the needs of society and implement new solutions into practice. The rapid development that we have recently seen in this regard is evidenced by the emergence of several successful spin-off companies and production licencing. These revenues and close ties with industrial partners facilitate and will sustain our ability to continuously finance our development in terms of both material and human resources. Effective and transparent use of all those resources and extensive engagement of commercial entities will result in increased financial self-sufficiency of the university in the future. In addition, such funding will help maintain one of the university's important social roles, notably its active engagement in the public sphere with the aim of promoting and popularizing science, research and innovation in the broadest sense, in an educative and comprehensible way, for children, primary and secondary school students and the general public.

For the coming decade, CTU has all prerequisites for maintaining and significantly improving its reputation as a respected public university at home and abroad. We all need to make the most of that most valuable potential of the very essence of the university; our people – colleagues, students, educators and other representatives of academia, and other staff.



doc. RNDr. Vojtěch Petráček, CSc.
Rector of CTU in Prague



MISSION, VISION, KEY PRINCIPLES AND VALUES

Mission

International excellence and competitiveness in education, science, technology, innovation and application for the betterment of life

Czech Technical University¹ meets the criteria for **international excellence and competitiveness in education, science, technology and innovation**. It has been building a university that relies on data, is open and looks into the future. It encourages curiosity and smart solutions, follows trends, addresses challenges and responds to societal demand for professional retraining. It acts in accordance with the code of ethics in a strong social context, cherishes truth-based values, and promotes internationalization, diversity, inclusion and equal treatment. It disseminates scientific knowledge uniquely and comprehensively on an interdisciplinary basis, at home and abroad. Its strategic goal is to maintain in the long term internationally recognized **excellence in education, science, technology, innovation and application that contributes to the betterment of society**. CTU aspires to remain a recognized centre of excellence with international visibility, whose erudite, inspiring and ethical approach to education, science and innovation continues the tradition of Czech technical university learning, of which it is the historical standard-bearer. Through the application of expertise, scientific knowledge and international cooperation, CTU will contribute to solving new problems and challenges. Support for its students, researchers and other employees and cooperation with domestic and foreign partners will facilitate CTU's engagement in the society-wide advancement of knowledge and education and their use in practice.

Vision

CTU will maintain and solidify the hitherto acquired leading position of a research university with the attributes of an international centre of excellence in the fields of science, innovation and education. As an important centre of technological progress, it will partake in improving technological literacy and enhancing technical knowledge and curiosity. It will promote digital skills and innovation by engaging in societal challenges and strive to become one of the world's leaders in education, science and research. It will become a globally appealing academic organization that will attract internationally recognized experts in a variety of fields.

CTU will continue to be an engaging organization providing a friendly and open environment for its students, academicians and employees, both domestic and foreign. It will guarantee quality teaching based on research and innovative approaches and observe the need for ongoing technological progress and digitization. It will disseminate knowledge gained through interdisciplinary cooperation amongst partners within and outside of the university. It will endeavour to win awards in international competitions and shape its image on the basis of research featured in internationally recognized scientific journals. It will openly share knowledge through its strategic partnerships, students, graduates and researchers and through the participation of top experts in international conferences and on professional scientific panels.

Key principles and values

CTU is committed to innovative, challenging, research-led, transformational education based on tradition and academic freedom. It engages in society-wide development and promotes the betterment of life. It acts in accordance with the values of an ethical approach to scientific work and embodies freedom of research and thinking. As an internationally recognized university, it cherishes the principles of humanity, human dignity and individuality. It maintains a non-discriminatory environment and is well aware of its social responsibility. It utilizes the latest scientific knowledge, employs modern interactive and innovative methods of learning and engages students in international science projects. It motivates its graduates to preserve curiosity, a lifelong pursuit of knowledge and the ability to adapt to unforeseen, changing circumstances, trends and societal challenges brought on by the development of modern technologies and digitization and the advancement of society. CTU creates space for encouraging creativity and critical thinking. It strategically manages, evaluates and reacts on the basis of data, implements a quality management system for activities, instruction, research and projects and fosters its strong position in international rankings.

CTU ensures its further development through targeted communication and collaboration with its students, academicians and staff members, as well as graduates and senior employees. It responds to suggestions and practical experience, forms strategic partnerships and contributes to the dissemination and application of the results of science and innovation activities. It is positively oriented and open, supporting cooperation between faculties, higher-education organizations and departments, as well as collaboration with students, researchers, university staff and graduates, and utilizes the expertise of senior members willing to continue to contribute knowledge proven by years of experience.

CTU is internationally oriented and it promotes the internationalization of instruction, research and innovation, as well as foreign mobility of students and both academic and non-academic staff. It engages students in all types of projects, including international projects where it assumes responsibility for the outcomes of research and innovation, their dissemination and application in practice. It imparts motivation to achieve better work results and aims to keep the best talent. It provides ample space and opportunities for career growth. It pays attention to the social aspect of society, promotes diversity and participation of different groups, and engages in the mitigation of social disparities. It provides equal opportunities within and outside of the university, emphasizing transparency in all its activities. It is included in a network of universities, professional platforms, national and international scientific organizations. It supports the activities of its employees in professional associations, panels and scientific councils and on editorial boards of journals and publishers. It rejects any form of plagiarism or unauthorized use of third-party intellectual property, while developing supporting tools, such as licencing of technologies and filing of domestic and international patents for the protection of intellectual property.

¹ CTU

STUDIES

1

Strategic targets

- Increase interest of talented domestic and foreign secondary school students in enrolling at CTU
- Enhance the quality and success rate of studies
- Include practice in the instruction process
- Define roles and goals of lifelong learning

2

SCIENCE, RESEARCH AND INNOVATION

Strategic targets

- Achieve excellence in research through establishment of quality management methods, provision of an optimum environment and internationalization
- Provide strong support for doctoral programmes
- Build and upgrade research infrastructure

3

HUMAN RESOURCES AND THE ENVIRONMENT

Strategic targets

- Increase the university's attractiveness as a place to work for qualified domestic and foreign staff
- Create a pleasant and friendly place for work and learning
- Digitize activities and operations, make data-based decisions
- Improve the quality of library, housing, catering and leisure facilities and services

4

FINANCIAL MANAGEMENT, ORGANIZATION AND PROCESSES

1 | STUDIES



Preamble CTU, using its professionally managed organization and attractive environment, aims to recruit talented students, researchers, teachers and other employees with high potential, both domestic and foreign. The university endeavours to continuously improve the quality of studies through knowledge gained in learning, scientific work or creative activities and through engaging students in practice. It uses modern, internationally recognized approaches in education. It applies open access to learning and data sources. It supports interdisciplinary sharing of subjects among its departments, higher-learning organizations and faculties, which assists in meeting the strategic targets of studies. As an open, societally beneficial university, it participates in the lifelong learning of citizens.

Strategic targets

- 1.1 Increase interest of talented domestic and foreign secondary school students in enrolling at CTU
- 1.2 Enhance the quality and success rate of studies
- 1.3 Include practice in the instruction process
- 1.4 Define roles and goals of lifelong learning

Sources of funding

Funding will be provided primarily within the scope of Decision on the Provision of a Contribution or Subsidy from the State Budget of the Czech Republic for the relevant year. The key focus will be on the sufficient, effective and transparent use of funding from European Structural Funds and national programmes in order to ensure the benefit of improved study results achieved through introduction of innovative teaching methods. It will be possible to make use of funding opportunities within the scope of European and international programmes in the 2021+ period accenting digital and technological skills for society, where CTU holds an important position. Funding can be supplemented with revenues generated from courses organized for the public within the framework of lifelong learning.

1.1 Increase interest of talented domestic and foreign secondary school students in enrolling at CTU

CTU creates space for students to become aware of the opportunities and potentials of modern technologies. Through the education process and preparation of study programmes, it actively participates in the transformative and innovative learning processes of society. It observes the principles of internationalization and aims to provide international experience to the majority of its students.

Operating targets

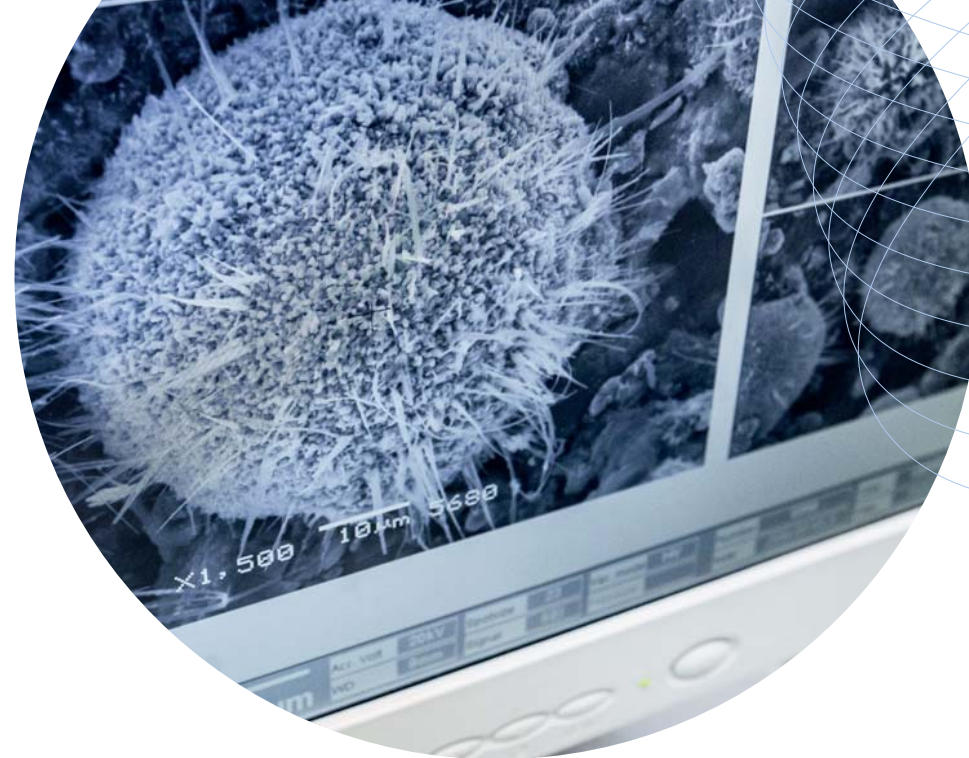
- Be an open, recognized university with international engagement and quality instruction
- Ensure diversity of instruction in line with 21st century trends
- Keep abreast of global challenges and trends in STEM (Science, Technology, Engineering, Mathematics)
- Assemble study programmes in accordance with the trends in technological development and societal demand
- Bolster the interest of domestic and foreign students in technical education
- Aim to attract gifted students, thus ensuring the quality selection of applicants
- Set rules for cooperation with secondary schools
- Simplify the conditions for the transition to university studies

Measures

- Actively reach out to potential applicants, seeking talented domestic and foreign students
- Structure the content of the admission procedure according to discipline specializations
- Provide an engaging presentation of the university for potential applicants and communicate it efficiently
- Ensure feedback and transfer of the results of research and innovation into teaching
- Support scientific activities aimed at improving the quality of instruction
- Provide students with clear and unambiguous information about the evaluation process and study conditions
- Provide system and data support for strategic management of studies and education
- Devise a methodology for lifelong learning of secondary school teachers of vocational subjects
- Accredite study programmes for teaching technical and science subjects at secondary schools
- Create a motivational system for CTU staff to support students' scientific and professional work and similar activities for secondary school students as well as after-school activities for primary school students
- Implement best practices in line with gender diversity

Tools

- Methodology for cooperation with secondary schools
- Preparatory courses for admission exams and equalization courses prior to the start of studies
- System for developing methods for regular assessments of the quality of education
- System for sharing of admission-related best practices between CTU components and foreign universities
- Communication strategy focused on students



1.2 Enhance the quality and success rate of studies

CTU is committed to providing education with a high level of quality and international prominence. The university is focused on selecting gifted and positively motivated students. It provides its students with the opportunity to work in an excellent environment with highly qualified partners, including international ones. It will strive to achieve a major contribution to society of its graduates with recognized professional qualifications. CTU engages students in research projects and the work process in technical fields within an international context.

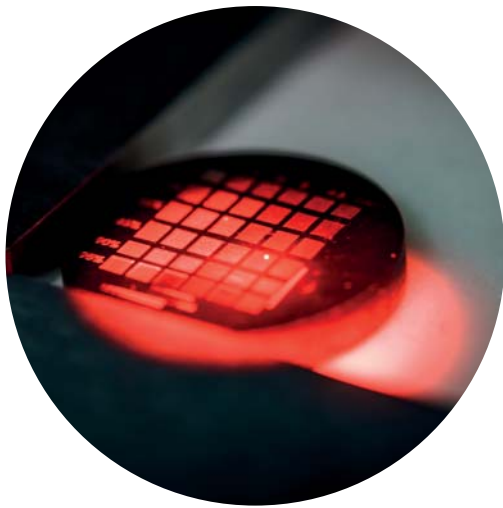
Operating targets

- Achieve excellent study results with a profound interest in learning and knowledge
- Reduce academic failures and promote adherence to standard duration of studies
- Prepare study programmes taught in English by qualified teachers and with quality infrastructure
- Enable open interdisciplinary crossover at CTU during studies
- Support talented students
- Use smart solutions, innovations and modern technologies and approaches in student-centered learning
- Internationalize learning by ensuring quality foreign experience for students and teachers
- Collaborate with leading foreign educators and researchers
- Prepare for foreign mobility by becoming acquainted with the cultures of partner organizations and their countries

Measures

- Systematize methods of regular evaluation of the quality of education with an emphasis on its improvement
- Ensure conditions for professional growth of domestic and foreign teachers in accordance with the HR Award
- Set up the accreditation process
- Develop, guarantee the quality of, and use combined distance learning in presentation programmes
- Increase the proportion of online lectures and study materials in digital format
- Streamline studies-related administrative processes by digitizing them



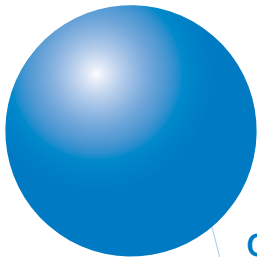


- Create an open digital education platform for the public, including foreign public users
- Engage students in cooperation on common platforms, encourage quality communication
- Motivate students to achieve a B2 and higher level of knowledge in English or another world language
- Offer alternative teaching of subjects in a foreign language within Czech programmes
- Set rules for the crediting of subjects after returning from studies within the Erasmus programme
- Improve the mobility process focusing on top institutions
- Within the framework of foreign mobility, prepare a concept for promoting understanding of the cultures of partner organizations and their countries
- Create adequate conditions for mobility of foreign teachers and researchers
- Introduce incentives to reduce academic failures
- Provide adequate conditions for balancing studies with family and work life

Tools

- Methodology for the evaluation of the quality of education
- Institutional accreditation
- Methodology for monitoring student satisfaction and for evaluation and follow-up measures
- Regular surveys, questionnaires, satisfaction polls conducted among employees and students
- Methodology for using and sharing best practice examples across the university
- System of independent mentors to ensure students' growth
- Digitization of teaching materials in accordance with the Open Educational Resources programme
- Courses taught in English within Czech study programmes
- Participation of a foreign lecturer in supervising semestral and final theses within Czech programmes
- Rules for assessing the quality of partner organizations
- Courses and training aimed at understanding the cultures of partner organizations and their countries
- Guidelines for using the EuroTeQ University programme
- Non-semestral subjects and courses conducted outside of the teaching period in the initial years of studies, camps, summer schools
- Methodology for balancing studies with family and work life

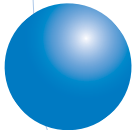
1.3 Include practice in the instruction process



Operating targets

A key prerequisite for successful studies is the use of knowledge in practice. Undergraduate students are already provided an opportunity to collaborate with research teams, and the objective of educating doctoral students is to teach them how to conduct their own independent research. Students have a chance to apply their knowledge in technological applications and innovations and thus participate in solving new global challenges. Due to the qualifications they acquire, graduates become reliable leaders in society and find jobs across disciplines, including in the international environment.

- Improve students' soft skills and general competencies
- Improve students' knowledge in the field of knowledge transfer in science and innovation
- Support cooperation with graduates, connect the university with renowned foreign graduates
- Engage external partners in the preparation of study programmes and teaching
- Ensure collaboration of students with top companies
- Deepen understanding of academic staff and students of the cultures of partner organizations and their countries



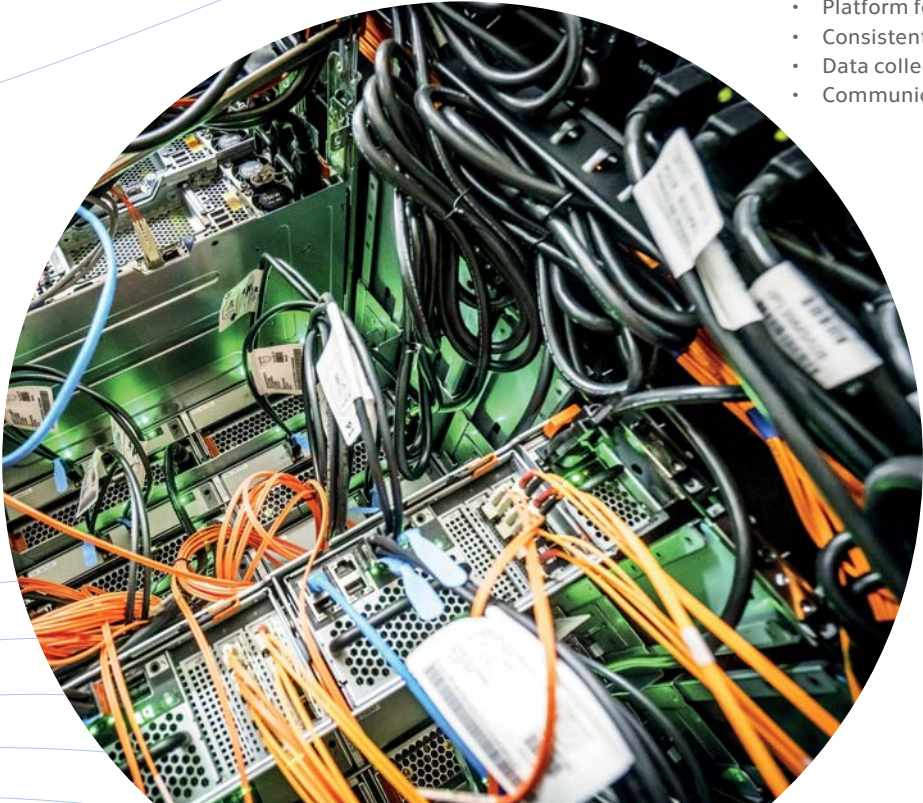
Measures

- Involve students with very good performance in solving projects during their studies at the university
- Balance the ratio of lectures to practical and creative teaching in study programmes
- Methodically manage practice and internships, including foreign internships, focused on top research
- Set up a management process to utilize capabilities and resources to develop skills in practice
- Use the potential of graduates supporting the university as their Alma Mater



Tools

- Infrastructure for skills development in practice
- Platform for collaboration and work of graduates in practice
- Consistent and targeted communication with graduates
- Data collection and analyses of graduates' employment prospects in practice
- Communication strategy targeting the private sector



1.4 Define roles and goals of lifelong learning

Operating targets

CTU supports the ongoing growth of graduates and the public within the framework of lifelong learning, thus increasing the importance of the Third Mission in society and ensuring progress through technical and technological education. CTU will provide excellent lifelong learning courses and participate in improving professional training. It will provide access to its Open Technology Lab to everyone, which is instrumental to the advancement of a modern society based on technological progress and innovation.

- Provide excellent lifelong learning courses
- Expand the offer and improve the quality of vocational education in selected disciplines
- Offer specialized courses on the international market, summer schools, e-learning, online education

Measures

- Offer lifelong learning courses in accordance with technological development and societal demand
- Offer quality retraining courses reflecting societal demand in the event of job losses
- Supplement the lifelong learning offering with mentoring, coaching and professional and personal growth
- Improve, develop and promote education of teachers, as well as non-academic staff
- Firmly establish lifelong learning as a source of important information for specialized training
- Develop interest-oriented courses within the scope of University of the Third Age, provide certified courses
- Further develop and improve online teaching according to the needs of teachers and students

Tools

- Personalized services for graduates of lifelong learning courses
- Defined offering based on market research and market consultation
- Balanced courses combining theory and application in practice where candidates are aware of why they are learning and what is the practical use of their knowledge
- Micro-credentialing system
- Comprehensive communication strategy in the field of lifelong learning and other commercial courses
- Inclusion of Open Technology Labs in the lifelong learning strategy



2 | SCIENCE, RESEARCH AND INNOVATION

Preamble

CTU will strengthen its role as a research-oriented, internationally recognized university by bolstering excellence and internationalization. It will be open to team collaboration across its components to accelerate technological progress. It will form new strategic national and international partnerships in both academic and industrial environments and respond to societal demand and the demands of its partners in order to create interdisciplinary synergies with regard to technical focus and excellence. Within the functional ecosystem, the university will endeavour to link research with business, with an emphasis on transfer of knowledge from research into practice. The modern digital age and current global challenges are increasingly penetrating the natural and social sciences. Openness, communication and cooperation at the international level are the present challenges to achieve a synergistic effect of scientific research. The key factor is ongoing support for the development of technologies with a focus on final products with high added value and on use of such potential in practice, in the application sphere, in particular in industry and other sectors.

Strategic targets

- 2.1 Achieve excellence in research through establishment of quality management methods, provision of an optimum environment and internationalization
- 2.2 Provide strong support for doctoral programmes
- 2.3 Build and upgrade research infrastructure

Sources of funding

Funding is primarily comprised of subsidy programmes of the Ministry of Education, Youth and Sports of the Czech Republic within the state budget for the relevant year. The second key source for development of science, research and innovation is European Structural Funds and national programmes, the use of which depends on the quality preparation, coordination and management of funded activities without excessive administrative burden. The aim is to also use community and international projects, programme calls and other tools and resources, in particular funds acquired from revenues from a transparently operated and newly created technology transfer structure. Another important source of funding in the field of science, research and innovation can be obtained from performance of contract research based on societal demand or demand by industrial partners in line with objectives defined by national strategies, especially in the fields of digitization, artificial intelligence and Czech industry development.

2.1 Achieve excellence in research through establishment of quality management methods, provision of an optimum environment and internationalization

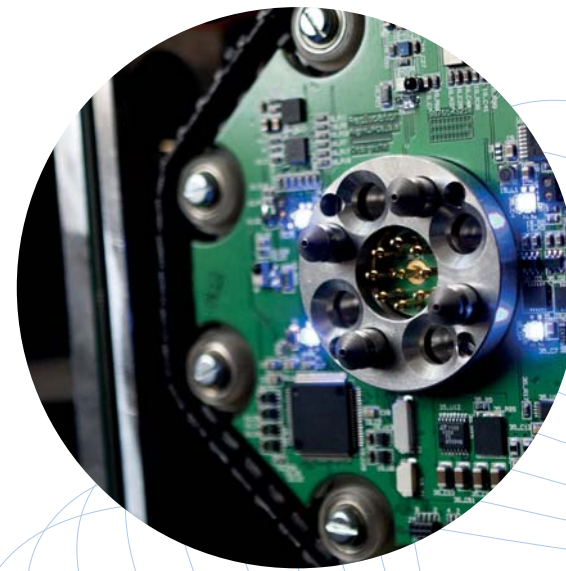
CTU's focus on science and innovation must reflect an increasing tendency to advance scientific and creative excellence and interdisciplinary cooperation at home and abroad. The results of such research and innovation will help expand knowledge and tackle global challenges, in particular with regard to environmental protection, health and safety, adequacy of resources, climate change, energy saving measures, and urban and landscape planning. Scientific research will focus on the advancement of natural and technical sciences and their applications in areas such as digitization, artificial intelligence, robotics, cybernetics, quantum technology, nanotechnology, Earth observation, satellite navigation, defence technologies, space, aerospace and automotive industries, and many more fields which are key to sustainability and dynamically changing societal and industrial demands. Scientific activities will comply with ethical rules and utilize the results of technological research and innovation.

Operating targets

- Contribute to expansion of scientific knowledge by pursuing excellence in research and innovation
- Ensure a leading position in project management, maximize the use of resources, projects and platforms
- Utilize the results of basic research in applications and innovations
- Form strategic partnerships with interdisciplinary links
- Identify priority areas, develop strategic foci in line with global technological progress
- Respond to societal demand by using knowledge potential and available capabilities
- Participate in addressing national and global societal challenges by innovating approaches to and solving them
- Target support for international cooperation to work with excellent foreign scientific teams
- Increase the degree of international experience among researchers and also among students and doctoral candidates
- Increase the number of foreign science experts at the university
- Support publishing activities and skills of researchers and students
- Gain excellent knowledge in the field of patent and licencing protection
- Set up a transparent and simple technology transfer process
- Increase the proportion of international sponsorship in research and innovation
- Set up a system for evaluating researchers with the help of an independent committee, including international members
- Establish smart and friendly administrative and support facilities for research, development and innovation
- Define the principles of ethics, professional responsibility and best practice in research and dissemination of its results

Measures

- Support the work of excellent and promising research teams and individuals
- Originate top-rank international projects
- Ensure participation in international scientific organizations, panels and platforms
- Strengthen leadership of academicians in the gatekeepers' role
- Engage foreign scientific experts in university steering and science committees



- Organize international conferences with the participation and under the auspices of international professional organizations
- Participate in the activities of editorial boards of prestigious world-renowned publishers
- Introduce a remuneration system for outstanding foreign experts working at CTU
- Promote mobility of doctoral students
- Set a high level of quality, processes and indicators management in programmes
- Improve the position of the university in international rankings according to the indicators monitored for components
- Include external and international elements in the assessment of research results
- Link monitored data with the funding distribution system
- Develop methods for assessing the quality of research and innovation of academic staff
- Introduce a system of education in the field of knowledge and technology transfer, set up an evaluation process
- Create an adequate Merit-based Career System
- Establish open, efficient, transparent, applicant-friendly and internationally comparable admission procedures
- Provide administrative support for scientific teams and staff to fulfil their scientific mission in a quality manner
- Clearly define the Code of Ethics

Tools

- Interlinking of excellent project teams for access to future funding and development of strategic research
- University-wide projects to support team excellence with central theses defence and quality assessment
- Quality management strategy for research
- Strategy of excellence with a flexible project management system
- Internationalization strategy
- Adequate Merit-based Career System
- Amended Recruitment Process Rules for employees and related faculty and institutional guidelines
- Procedure guidelines and information system for staff evaluation, faculty and institutional guidelines
- Transfer of results, including legal advisory, intellectual property, standardized licence agreements
- Code of Ethics, Statute and Rules of Procedure of the Ethics Committee

2.2 Provide strong support for doctoral programmes

CTU's mission is to provide excellence in research, development and innovation with international engagement. This goal must be achieved through bolstering scientific teams with young aspiring researchers and through cooperation and work with talented students. The university will provide resources with an open approach supporting professional growth and will strive to acquire qualified domestic and foreign doctoral students and to develop their skills by ensuring quality teaching, international experience and internships. It will facilitate publishing activities, foreign internships and participation in international teams.

Operating targets

- Increase the number of talented domestic and foreign doctoral students
- Improve skills in science and innovation work and in publishing activities
- Increase the proportion of doctoral students' mobility, create a system of post-doctoral job positions
- Provide for every doctoral programme graduate to make use of foreign internships or participation in international projects
- Facilitate balancing of family and work life for doctoral students
- Improve quality by adding a strong element of independent external or international evaluation
- Create an industrial PhD programme

Measures

- Improve the quality and openness of doctoral studies by engaging international elements in performance evaluation
- Ensure an open, attractive scientific environment for science and innovation activities
- Offer premium motivational conditions to excellent applicants for doctoral studies
- Consistently work with gifted undergraduate students and help prepare them for doctoral studies
- Assess the quality of lecturers' work
- Ensure and promote collaboration and work of doctoral students and doctoral graduates in practice
- Facilitate interdisciplinary interactions within individual study programmes
- Provide language and editorial support for publishing activities in major peer-reviewed journals
- Improve the conditions for successful studies
- Foster the social integration of doctoral students
- Promote balancing of personal, family and work life
- Maintain and require ethical values and ethical standards

Tools

- Established and functional International Advisory Board
- Admission procedure conditions with regard to enhancing international attractiveness
- Admission procedure conditions with regard to interdisciplinary interactions between study programmes
- Adequate financial conditions for quality full-time studies
- Formal and functional mentoring network for doctoral students
- Assessment system for output quality comprising international indicators and an independent external evaluator
- Rules of doctoral studies, including qualification requirements for lecturers and conditions of mutual cooperation
- Open Data, Open Access policies
- Consistent support for project funding across the university
- Affordable accommodation in separate rooms in dormitories



2.3 Build and upgrade research infrastructure

CTU is involved in creating a national innovation ecosystem attractive to research partners and large national and international companies/firms. Making the university's research capacities, such as laboratories, testing facilities and research infrastructure, available for both domestic research and international projects, will ultimately ensure proper conditions for further development. Effective use of the university's research infrastructure and its expansion and modernization is a necessary prerequisite for excellent science.

Operating targets

- Support the renewal and development of research infrastructure within and outside of the university
- Provide infrastructure for new technological challenges and societal progress
- Maximize the utilization of national and international scientific infrastructure projects
- Prepare and well coordinate large international infrastructure projects with excellent partners
- Form partnerships within large international infrastructure projects
- Put societally important projects on the map of large research infrastructures in the Czech Republic
- Ensure the university's operability as a research hub for domestic industry and foreign companies

Measures

- Implementation of the university's strategic projects
- Engagement in international scientific networks and joint sharing of best practices
- Increased awareness and sharing of opportunities for collaboration and development across the university
- Targeted cooperation between components in developing strategic projects
- High-quality and effective project preparation and project management
- Effective use of human potential and the material and technical resources of the university
- Building the infrastructure necessary to implement the innovation and entrepreneurship programme

Tools

- Flexible project management system, cooperation with project teams from among the university's components
- Fully functional CTU investment development programme, including the CTU General Development Plan and the Investment Plan
- Innovation and entrepreneurship programme
- System for equipment sharing and internal rental



3 | HUMAN RESOURCES AND THE ENVIRONMENT

Preamble

CTU will create conditions for recruiting excellent human resources and ensuring a quality environment. It will set up a Merit-based Career System and Conditions of Employment for its staff aimed at enhancing the quality of services provided and related outputs, and the streamlining of activities and operations at the university. The use of human resources will be maximized by setting social, economic, environmental and organizational standards and capacities. Digitization of activities and operations will help simplify administrative processes and improve the quality of services. The strategic goal is to create an optimum environment that will provide requisite facilities for all domestic and foreign students, academicians and employees.

Strategic targets

- 3.1 Increase the university's attractiveness as a place to work for qualified domestic and foreign staff
- 3.2 Create a pleasant and friendly place for work and learning
- 3.3 Digitize activities and operations, make data-based decisions
- 3.4 Improve the quality of library, housing, catering and leisure facilities and services

Sources of funding

This area of development will be financed primarily within the scope of an institutional plan and allocations of the Ministry of Education, Youth and Sports of the Czech Republic. Other funding opportunities will be sought within the framework of programme funding from the European Structural Funds and national and regional programmes. Additional funding can be obtained mainly through participation in European and international projects. All projects should meet sustainability and technological needs and all possible non-academic sources for project financing should be explored.

3.1 Increase the university's attractiveness as a place to work for qualified domestic and foreign staff

CTU will create conditions facilitating career growth of all employees. In the long run, this effort will improve the performance of the university by taking into account growing demands on employees and on applicants to join the academic community. Decision-making will be based on the newly drafted Merit-based Career System and Conditions of Employment. Emphasis will be placed on personal research performance and the potential and ability to deliver key innovations. Improvement of the academic community will take place step by step and will be conditioned by acknowledging the extant status of existing academic staff. The university's operability will be ensured by qualified administrative staff. With regard to meeting CTU's strategic targets, it is critical to sufficiently motivate employees and contribute to their sound personal and professional growth in accordance with international standards.

Operating targets

- Create a Merit-based Career System and draft Conditions of Employment for university staff
- Create and improve conditions for personal and professional growth related to teaching and innovation
- Support professional growth of employees
- Motivate academic staff to improve their competencies for teaching and drawing up study programmes
- Remove obstacles identified through analyses performed within the HR Award project
- Motivate employees to hone their professional skills in accordance with career advancement and the Conditions of Employment
- Ensure a top-notch HR management, evaluation and career advancement system
- Hire the best applicants for CTU jobs
- Present the goals and mission of CTU to help employees understand them and identify with them
- Respect the needs of specific groups
- Define data for collection to assess the quality of university activities
- Engage with university graduates
- Engage with researchers, academicians, other university staff and senior members of the broader university community
- Provide lifelong training for vocational secondary school teachers

Measures

- Create conditions for professional growth in accordance with the Merit-based Career System and Conditions of Employment
- Develop methods for assessing the quality of education and learning of academic staff to meet international criteria
- Create opportunities for sharing experience and discussing innovation in education
- Remove language barriers for foreign workers, draft bilingual documents

Tools

- Aim to hire bilingual administrative staff
- Amend the Recruitment Process Rules in accordance with the HR Award principles
- Improve the conditions for balancing work and family life
- Support the university kindergarten and school
- Establish processes of data collection for evaluations of quality indicators
- Provide a system for the registration of graduates and senior researchers and define the scope of care
- Merit-based Career System for academic staff
- Conditions of Employment for university staff
- Streamlining the HR policy and overseeing strict compliance with the Merit-based Career System
- Development of language, digital and other skills of employees, using the Teach the Teacher method
- Better use of International Visiting Professors, PostDoc programmes
- Regular evaluations, fulfilment of indicators, linking performance to remuneration and career advancement
- Participation of leading external experts in the internal evaluation process
- Motivation of components to improve evaluation-related indicators to meet international criteria
- Publishing and implementation of best practices for staff recruitment
- Fully operable and updated database of graduates, researchers and senior members of the broader university community
- Methodology for engaging with graduates, researchers and senior members of the broader university community

3.2 Create a pleasant and friendly place for work and learning

CTU will modernize its buildings and premises and create a quality environment that meets international standards to provide an attractive place for teaching all students. The university will be inspiring and will provide requisite facilities allowing for the enjoyment of everyday life and leisure at the campus.

Operating targets

- Set up a functional and effective ecosystem for educational, research, social, leisure and sports activities
- Create and develop campus spaces, university buildings and premises meeting the needs of students
- Establish an attractive cultural and leisure centre for students and the public
- Encourage public interest in studies

Measures

- Build modern and well-equipped classrooms and laboratories as part of the development and fulfilment of the goal of excellence
- Build quality infrastructure for interactive learning methods
- Support activities for the development of common spaces
- Develop hubs, laboratories, libraries, study rooms and other facilities for extracurricular activities
- Support student group activities
- Promote events at the Bethlehem Chapel

Tools

- CTU General Development Plan and the Investment Plan
- Project and financial management, including public procurement
- Control and management mechanisms and direct links to operational quality management
- Collection of data reflecting satisfaction, feedback and follow-up measures



3.3 Digitize activities and operations, make data-based decisions

Support for digitization within and outside of the university is one of CTU's key strategic goals. We live at a time when the public is increasingly aware of the need for digitization and its timely implementation in all sectors of the economy and society. A modern, smart, digital society is built upon high-quality processing of available data, reflecting the trend to use Open Data policy methods. The success of digitization lies in the selection of adequate methods and quality assessment, data processing and related processes. Human resources and their competences are instrumental to the implementation of digitization. The university will support the use of digitization in strategic management, administration, educational process and other activities, and it will focus on the quality of data gathering, processing and evaluation under international standards.

Operating targets

- Digitize data relevant for strategic management and quality
- Automate internal decision-making, management and change processes
- Ensure the collection and evaluation of quality data and information for strategic management and quality
- Make full use of the Open Data policy

Measures

- Systematize the collection of quality data and information on activities for analytical evaluation
- Ensure sufficient computing power and data storage capacity
- Implement measures compliant with the principles of cyber security
- Digitize the processes of accreditation, labour relations, the Merit-based Career System and the Conditions of Employment

Tools

- Effective system for gathering and analysing quality university data and information
- Guidelines for the use of Open Data and Open Access
- Definition of data repository functionality and its extension according to current needs
- Definition of the scope of data collected for evaluations required for both fiscal and non-fiscal audit functions
- Analytical centre for processing data for university-wide strategic management
- Investment Development Programme, CTU General Development Plan and Investment Plan
- Development of applications for financial management and public procurement

3.4 Improve the quality of library, housing, catering and leisure facilities and services

Building an enjoyable and smart environment, upgrading and developing the basic infrastructure for students and university staff is a key factor of attractiveness. Improving the quality of services provided and their availability is essential for evaluation under international standards. The university wants to provide excellent library, housing and catering services, as well as opportunities for leisure activities within the campus area. Smart solutions and a high level of quality will contribute to meeting CTU's strategic targets and to sound personal growth of students and employees.

Operating targets

- Implement smart solutions, build a smart campus
- Develop basic infrastructure
- Modernize library, housing, catering and leisure facilities
- Build new and modernize existing accommodation for visiting foreigners
- Elevate the quality standards of services provided to the international level
- Reduce the proportion of multi-bed rooms in housing facilities
- Modernize the existing catering facilities, ensure their sufficient capacity
- Increase the availability of quality literature and study materials, keeping in mind the need to update them
- Maintain a high standard of leisure facilities and services

Measures

- Implement services and smart applications supporting student and campus activities
- Renew and expand the technological infrastructure shared by the university's components
- Prepare an investment plan for housing, catering and leisure facilities
- Develop library, housing and catering services and leisure activities
- Set standards of services provided, including their control and evaluation mechanisms
- Support publishing of Czech textbooks by the CTU Publishing House
- Expand library services, establish study rooms and other study facilities

Tools

- Fully functional Investment Development Programme, including the CTU General Development Plan and the Investment Plan
- Merit-based Career System and remuneration system for all employees based on the motivational element
- Standards of services provided linked to the HR policy applied for service staff
- Control and management mechanisms and direct links to operational quality management
- Smart applications and services supplemented by adequate infrastructure
- Quality project management



4 | FINANCIAL MANAGEMENT, ORGANIZATION AND PROCESSES

Preamble

CTU aspires to be an internationally recognized university with an effectively implemented financial management system supported by quality management, communication across functional organizational units and well-defined project management processes. The management and assurance system within these established processes will be based on transparent rules with clearly defined financial models and a public procurement system. Further development presupposes stable, but also flexibly set conditions for the use of internal, national, European and other international existing and newly created financial resources. To fully meet the strategic targets in the area of financial management, organization and processes are instrumental to ensuring a positive evaluation of the university in order to become and remain a true leader on an international scale.

Operating targets

- Maximize utilization of project opportunities, enhance the success of submitted project applications
- Maximize technology transfer and revenues from the transfer of the results of science and innovation activities
- Support contractual research and licencing, build university capacity, e.g. in the form of funds
- Stabilize funding rules with a long-term impact on quality in international rankings
- Create a flexible and transparent funding structure using all sources of funding
- Increase revenues from the university's economic ventures
- Seek new forms of financing of the university's capital development

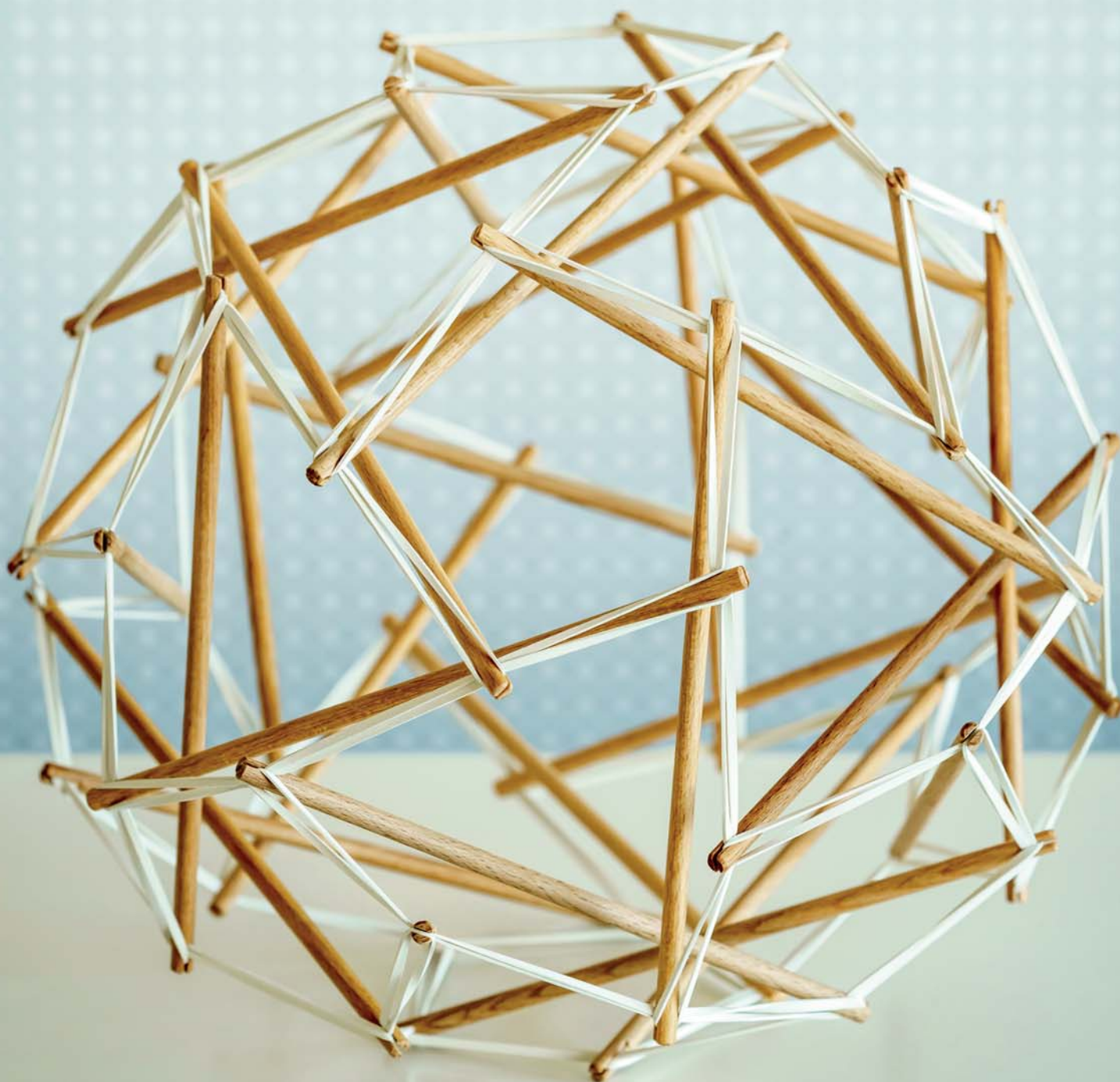
Measures

- Implement a fair and motivational system for redistributing funds to the university's components
- Prepare the CTU General Development Plan and the Investment Plan on the basis of an analysis of the current condition and use of CTU buildings, the needs of the university and the established priorities
- Efficiently process data related to financial management
- Establish an information platform for project opportunities across the university
- Continuously analyse financing options, create appropriate and high-quality funding instruments and models
- Create conditions for drawing from the Future Fund
- Actively manage the process of utilizing all available financial resources
- Set up an effective public procurement system, including bid processing
- Set up an independent evaluation system, determine project indicators
- Develop a system of project management or financial management and public procurement
- Strategically manage and support partners and legal entities in which CTU holds a stakeholder interest

Tools

- Methodology for funding long-term development
- Methodology for financing within the scope of the Future Fund, Research Seed Fund and other emerging funds
- Rules of administrative support for university project financing
- Guidelines for CRM, customer-oriented management within the university
- Open Smart Office project management strategy
- Flexible system of project management and technology transfer of innovations
- Clear-cut procedures for spin-offs, legal advisory, intellectual property, licence agreements
- Public procurement management methodology
- Effective and transparent system of internal audit and financial control meeting international standards
- Communication strategy

GLOSSARY



CRM, Customer Relationship Management means a business approach to management of customer relations characterized by the active forming and maintaining of long-term useful connections with customers.

EuroTeQ University means a joint project of international cooperation launched under the European Universities' Erasmus programme where CTU collaborates with technical universities: Technical University of Denmark, École Polytechnique, Eindhoven University of Technology, Technical University of Munich, École Polytechnique Fédérale de Lausanne, Technion - Israel Institute of Technology and Tallinn University of Technology.

Gatekeepers means designated persons who play a key role in ensuring that researchers have access to potential participants and research sites. The positive effects of gatekeepers, in the sense of those who open the gates, i.e. opportunities, can be invaluable to the research process by facilitating the smooth running of a research project through to its completion.

Industrial PhD Programme aims to boost sharing of knowledge between the university and private companies, support research with commercial use prospects and utilize competencies and research facilities for private business to increase the number of doctoral students.

International Advisory Board means an independent international science advisory body composed of internationally recognized scientists with a focus on helping the university develop scientific strategies, provide independent evaluation, and advise on a range of science-related issues.

International Visiting Professors means a programme promoting visits of foreign professors who lead courses that are currently unavailable at the university. The programme is perceived as an international scientific exchange of collaborations, which significantly contributes to the development and internationalization of university life, improves the quality of teaching under foreign standards through the activities of visiting foreign educators, and is a very effective tool with which to break down cultural barriers.

Micro-credentialing means a digital form of certification indicating a proven competence; i.e. mastery of a specific skill. The competencies are defined by the teacher, along with the requirements for obtaining the competence.

Open Access provides access to scientific information and is a unique model of science-related communication that ensures permanent, immediate and free-of-charge online access to full texts of published scientific results without restriction for anyone.

Open Data means data and information publicly available in an open and readable format. The method and purpose of data use are unrestricted and the source of data is usually required merely to specify their origin. Open Data can be used free of charge or at a minimum cost.

Open Educational Resources means openly licenced sources, documents and media, freely accessible without restrictions, used for teaching, learning and evaluation, and also for research purposes with the option to modify them to serve as textbooks, courses, software and other tools to support access to knowledge.

Open Smart Office uses intelligent technologies and provides maximum support for researchers in the field of technology, knowledge and results transfer, coupled with legal tools for intellectual property protection. The Open Smart Office is essentially based on an available offer of documents and steps that can be quickly applied and, at the same time, personalized for users.

Open Source Technology Lab means a laboratory for scientific research and development which supports technology-related projects. It provides space, support, publicity and sharing, including offers of lifelong learning or excellent extracurricular courses.

PostDoc Programme offers post-doctoral positions to talented new graduates of Ph.D. studies, and also to ambitious researchers who are looking to pursue a second PostDoc classification and intend to assemble their own teams for their own projects.

Research Seed Fund is designed to support activities necessary to promote competitive research projects.

STEM means a concept focused on four disciplines: science, technology, engineering and mathematics. This concept is not based on traditional education methods but aims to address real world challenges and emphasizes critical and creative thinking. Various teaching aids are often used to inspire students to take up the foregoing four disciplines.

Student-Centered Learning means a process where the focus of instruction is on the student and which uses teacher-to-student learning methods.

Teach the Teacher means a professional development programme for teachers and school staff conducted by a student-led group. The programme is designed and implemented by students with the support of teachers and university management. The objective is to improve professional skills of teachers and management, identify internal issues and seek optimum solutions by supporting change. It represents an internationally recognized innovation tool in education with a focus on improving student performance and communication within the school.

Transformational education means setting up an educational process with a higher demand for theoretical and professional activities using innovative solutions and alternative approaches in order to enable educational excellence.

Acknowledgments



The Strategic Plan, comprising the intentions, as well as the steps to meet the set targets, is a document of a great university-wide importance. I would like to thank all of my colleagues in CTU management for their efforts and for the very ardent cooperation of members of all faculties, university organizations and other CTU components. I also want to extend my thank you to the members of the CTU Academic Senate and to the students who jointly and very actively participated in drafting the final version of this strategy.

The Strategic Plan CTU 2021+ will accompany us in the long term through 2030 and is, therefore, a key supporting document for the future development of the university. We are entering the next period at a very difficult time, our actions are largely influenced by the Covid-19 pandemic, where academia has clearly demonstrated its importance and contribution. I believe that the stated goals and measures will lead to the strengthening of CTU's position, that we will continue to actively participate in major societal decisions: what is our path, which areas to treat as priorities, what activities to discard and where to focus on new opportunities.

I assume that in the coming period we will have enough vigour and resources to support top science and research, scientists and their teams. I also expect that we will be able to strive for the development of the university as a whole to continue to attract qualified students who will work in scientific fields or will find jobs in practical applications and will stay connected to CTU for the rest of their professional lives. I believe that we will succeed in making effective use of all available sources of funding to ensure further upgrades of infrastructure and laboratories, the development of centres of excellence, and improvement of testing laboratories to foster the university's key strengths and utilize its intellectual property and historical tradition, which is of unquestionable value today.

Thank you to all those who, with their work, talent, faith and love for science and education, want to participate in the development of CTU by fulfilling the mission defined within this Strategic Plan CTU 2021+.

Ing. Veronika Kramaříková, MBA
Vice-rector for Development and Strategy, CTU, Prague



