IEP INSTITUTIONAL EVALUATION PROGRAMME

VSB — TECHNICAL UNIVERSITY OF OSTRAVA

EVALUATION REPORT

EVALUATION WITH A SPECIAL FOCUS ON MANAGEMENT OF RESEARCH AND USE OF RESEARCH RESULTS

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1. Introduction

This report is the result of the evaluation of VSB — Technical University of Ostrava (VSB-TUO), situated in Ostrava, Czech Republic. The evaluation took place between September 2020 and January 2021 and was done fully remotely due to the pandemic.

1.1 Institutional Evaluation Programme

The Institutional Evaluation Programme (IEP) is an independent membership service of the European University Association (EUA) that offers evaluations to support the participating institutions in the continuing development of their strategic management and internal quality culture. IEP is a full member of the European Association for Quality Assurance in Higher Education (ENQA) and is listed in the European Quality Assurance Register for Higher Education (EQAR).

The distinctive features of IEP are:

- A strong emphasis on the self-evaluation phase
- A European and international perspective
- A peer-review approach
- A support to improvement

The focus of IEP is the institution as a whole and not the individual study programmes or units. It focuses upon:

- Decision-making processes and institutional structures and effectiveness of strategic management
- Relevance of internal quality processes and the degree to which their outcomes are used in decision-making and strategic management as well as perceived gaps in these internal mechanisms.

All aspects of the evaluation are guided by four key questions, which are based on a "fitness for (and of) purpose" approach:

- What is the institution trying to do?
- How is the institution trying to do it?
- How does the institution know it works?
- How does the institution change in order to improve?

The evaluation with a special focus on management of research and use of research results uses the same IEP methodology but within this context pays special attention to the policies, structures, and processes in place for supporting research activities at the institution and how the institution manages the exploitation of the results of research in order to convert the knowledge resulting from research activities into socio-economic benefits.

1.2 VSB — Technical University of Ostrava s profile

VSB – Technical University of Ostrava (VSB-TUO) is a public university situated in Ostrava, located in the north-eastern part of the Czech Republic, close to Poland and Slovakia. With roughly 290 000 inhabitants Ostrava is the third largest city in the country. It is the administrative centre of the Moravian-Silesian Region, an important centre for coal mining, heavy industry and metallurgy in the past. Due to the decline of these, the region has undergone over the past thirty years – and still is undergoing – a deep process of transformation and restructuring, which also has a direct impact on the university, since it was historically linked to mining and heavy industry. Originally founded as Montane Study School in 1849 in Příbram and transferred to Ostrava almost 100 years later, VSB-TUO looks back at over 170 years of history and has become one of the driving forces in the transformation of the city and the region.

VSB-TUO consists of seven faculties (Mechanical Engineering, Electrical Engineering and Computer Science, Safety Engineering, Materials Science and Technology, Civil Engineering, Economics, Mining and Geology), two major research institutes (IT4Innovations and the newly established Centre for Energy and Environmental Technologies - CEET) and some university-wide departments such as the Department of Social Sciences and the Institute of Languages. The university offers around 256 study programmes at bachelor's, master's and doctoral levels. In the academic year 2019/2020, over 11 000 students were enrolled. VSB-TUO employs 2 455 staff (2019), almost half of which (1 394) are academic (948) or research staff (446). Of all academic and research staff, roughly 31.6% are women (academic: 34%, research staff: 26%).

The main campus of VSB-TUO is situated in Ostrava-Poruba and is considered one of the largest in Central Europe. Five of the seven faculties are located in Poruba: four on the main campus and one at the outskirts of Poruba, while the Faculty of Economics is located in the historical centre of Ostrava, and the Faculty of Safety Engineering in Ostrava-Výškovice, in both cases more than 10 kilometres away from the main campus. It is the intention of VSB-TUO to concentrate most of the activities on the main campus. For example, the Faculty of Economics will be moved to the main campus fairly soon. Besides offering enough space, the idea of the campus is also to function as a "living laboratory", so that students and the general public have the opportunity to see and experience what the research conducted at VSB-TUO means in practice.

VSB-TUO positions itself as "one of the pillars of technical and economic education, not only in the region, but also in the whole country", with a distinct awareness of and commitment to its responsibility for society. This is reflected in a close cooperation with industry, a strong involvement in the development of the region and a range of activities to popularise science and technology. The university wants to become "a university of European importance" that offers quality technical and economic education, quality research with an emphasis on the application of results, and opportunities for lifelong learning (SER p. 7). Following that aim, VSB-TUO has identified and already started to seriously pool its R&D activities around two main directions: energy, which is understood in a broad sense and includes nanotechnology and energy management; and high performance computing, including artificial intelligence.

One of the main challenges that VSB-TUO faces is a quite drastic decrease in student numbers in recent years. Reasons include the demographic decline as well as structural changes in the region, the persisting reputation of being in a highly polluted region, which is changing only very slowly, and a low interest in study programmes in STEM.

1.3 The evaluation process

The self-evaluation process was organised by a self-evaluation group consisting of 11 members mainly from the Internal Evaluation Board (IEB), which ensured the representation of all faculties in the process. Furthermore, this was based on the assumption that because of their function in the IEB, team members would know the institution well. The self-evaluation group also included the scientific director of a major research institute of the university, the chair of the Academic Senate (AS) and a student member (doctoral student) from the Student Chamber of the AS. The group was led by the Vice-Rector for Science and Research.

The university reported that the group has held three meetings, during which the strategy to obtain information was set and the SWOT analysis compiled. The team was told that the topic of staff policy was not discussed in the context of this evaluation, since VSB-TUO is currently in the process of obtaining the Award for HR Excellence in Research. The self-evaluation report was shared mainly at management level, not with the larger community. Although the student chamber repeatedly invited students to comment on the report, little student feedback was received.

The self-evaluation report of VSB-TUO, together with the appendices, was sent to the evaluation team in September 2020. The evaluation team found the report very informative, well-organised, reflective and self critical. The online visits of the evaluation team to VSB-TUO took place from 14-16 October 2020 and from 18-26 January 2021, respectively. In between the visits VSB-TUO provided the evaluation team with some additional documentation regarding staff appointment and promotion, key data on funding and the university's costing model, study regulations and example study plans, survey outcomes and the almost final draft of the new Strategic Plan 2021-2027.

The evaluation team (hereinafter named the team) consisted of:

- Professor Sokratis Katsikas, Norwegian University of Science & Technology, former Rector of the Open University of Cyprus, and of the University of the Aegean, Greece, team chair
- Professor Brian Norton, Director of the Dublin Energy Lab, former President of the Dublin Institute of Technology, Ireland
- Professor Francesc Xavier Grau Vidal, Secretary General for Universities and Research of the Government of Catalonia, former Rector of the Universitat Rovira i Virgili, Spain
- Ms Anna Klampfer, Master's student, Technical University of Vienna, Austria
- Dr Lil Reif, Expert for European and International Research Funding, Austrian Research Promotion Agency, Austria, team coordinator

The team thanks Rector Prof. Václav Snášel, the coordinator Vice-Rector Prof. Jana Kukutschová and the liaison person Kateřina Angus for the efficient organisation of the virtual visits to VSB-TUO and the swift responses to all requests for additional information and clarification, despite an ever changing situation in the ongoing pandemic. The team would like to thank all staff members, students and external stakeholders for their time, as well as their friendly and open attitude during the discussions online. Also, the team thanks all staff and students who were involved in the preparation of digital opportunities for the team to get a virtual impression of VSB-TUO's environment from afar, which was very helpful and much appreciated.

2. Governance and institutional decision-making

Main bodies for governance & decision making

The r**ector** oversees the whole institution and determines its direction and development together with four vice-rectors (for Study Affairs, for Science and Research, for Commercialisation and Cooperation with Industry, and for Development and Investment Construction), who are appointed by the rector (SER p. 5). VSB-TUO's management and administration is overseen by the bursar, who is also appointed by the rector and accountable to the rector. A permanent advisory or consultative body to the rector is the **Rector's College**, the members of which are appointed by the rector. It includes the vice-rectors, all deans, the directors of the university institutes, the chair of the Academic Senate and the chair of the student chamber of the Academic Senate, the bursar, the chancellor and the director of the Centre for Information Services. It holds weekly meetings on all major items of VSB-TUO's activities. As the team perceived it from the SER and during the online visits, the Rector's College is central for discussing and preparing consensus at institutional level, and in particular for aligning strategy and budgeting. The other main governance bodies at university level are the Academic Senate, the Scientific Board, the Internal Evaluation Board and the Administrative Board. Their roles are as follows:

- The **Academic Senate (AS)** is the representative of VSB-TUO's academic body – academic staff and students – with three academic staff members and two student members from each faculty and three members representing the three university-wide units with teaching or scholarly character, namely the Department of Social Sciences, the Institute of Languages, and the Institute of Physical Education and Sports. Inter alia, the AS announces the elections to the AS and the election of the candidate for the position of the rector. It approves the strategic plan, its annual implementation, the report on internal quality evaluation and the budget, and monitors the financial management. The AS gives consent to the proposals of the rector regarding members of the Scientific Board, the Internal Evaluation Board and the Disciplinary Board, and it makes decisions on changes in the organisational structure of the university. The meetings of the AS are open to the public.

- The **Scientific Board (SB)** is a body that discusses the draft strategic plan, its annual updates and reports, and the internal evaluation report, all before they are passed on to the Academic Senate. The SB also discusses the proposal for a quality assurance system and, at the proposal of the rector, approves the intentions a) to submit an application for institutional accreditation for an area or fields of education or to extend the institutional accreditation for another area or fields of education; and b) to renounce the institutional accreditation, to cancel a degree programme, or to give up the accreditation of the procedure for conferring associate professorship or the procedure for appointing a professor. The SB is chaired by the rector, its members are important representatives in the fields carried out at VSB-TUO and are appointed by the rector, based on prior approval of the AS. It includes all vice-rectors and deans, the vice-deans from several faculties as well as the (scientific) directors of some of the research institutes and the chair of the Academic Senate, thus largely overlapping with the **Rector's College**. At least one third of the SB's members has to be from outside the university. In the case of VSB-TUO, the SB includes 14 external members who are mainly representatives from other Czech and Slovak (technical) universities and from organisations such as the Fire and Rescue Service of the Czech Republic, the Czech Mining Office or the state enterprise DIAMO that deals with the consequences of mining.

- The **Internal Evaluation Board (IEB)** is a body that was established as a result of the national changes in study programme accreditation in 2016, allowing HEIs to independently create and realise study programmes in fields of studies for which they have been granted institutional accreditation (37 fields potentially). It serves as a self-governing body to approve study programmes and monitor their quality. Its 15 members are intended to reflect the fields of education relevant for VSB-TUO, and they are appointed by the rector (four members at the rector's discretion, four on the proposal of the AS, four on the proposal of the SB, one from among students, and at least two non-members of the VSB-TUO academia), after prior discussion with the SB and after the approval of the AS. It approves the draft rules for the system of quality assurance of educational activities, manages the direction of internal evaluation of the quality in education and prepares reports on internal evaluation of the quality of educational activities. It also approves degree programmes within the framework of institutional accreditation and the applications for the accreditation of conferment procedures (SER p. 6). VSB-TUO reported that the IEB has also set up a Commission for Educational Activities which serves as advisory body for the IEB and is entrusted with assessing the quality of training activities (SER p. 29).

- The **Administrative Board (AB)** consists of 12 external members, all appointed by the Ministry of Education, Youth and Sports (MEYS) for the duration of six years. It meets at least twice a year and its responsibility according to the HE Act is to ensure that the university "serves the purpose for which it was established, that its activities are in the public interest and that it manages its assets properly." In particular, the AB discusses the internal quality evaluation report, approves the budget and the strategic plan and discusses the annual report regarding all university activities and the financial management.

With the exception of the Internal Evaluation Board and the Administrative Board, the above described bodies for governance and decision-making are also in place on **faculty level**, in line with the provisions of the Higher Education Act, with deans, vice-deans, academic senates and related commissions, and the scientific boards. Similar to the rector appointing the vice-rectors, the deans appoint the vice-deans – currently between three and five – and define the scope of their responsibility that can differ from faculty to faculty, but usually cover the areas of study affairs, science and research, external / international cooperation and sometimes also cooperation with industry.

Furthermore, VSB-TUO has created two consultative bodies at university level for deepening its relationships with external stakeholders both in the business and the school sectors of the region.They include: first, the i**ndustrial board**, serving as format for VSB-TUO senior leadership – rector, vice-rectors, deans and vice-deans, directors of the major research institutes – to engage with representatives from 34 companies in the region; and second, the e**ducational board**, established in 2018 with the intention to deepen links with the secondary schools in the region. The latter is composed of the vice-rectors, the head of the PR department and representatives from 38 secondary schools.

A bit different in nature is the **Council for Commercialisation**, which is the supervisory, advisory and decision-making body on technology transfer and promotion of cooperation with industry. The establishment of such a council was required for a project submitted to the Technology Agency of the Czech Republic (TA CR), with funding in the form of a central budget which is then divided by the Council for Commercialisation among research teams. The council has eight members of which two are from within VSB-TUO (the Vice-Rector for Commercialisation and Cooperation with Industry, and the scientific director of one of the university research institutes). The other members are

representatives from external entities such as the Moravian-Silesian Innovation Centre, CzechTrade, Technology Agency of the Czech Republic (TA CR), CSOB Bank and others (SER p. 13). In the future, VSB-TUO plans to extend the council's competences towards the selection process regarding the financial support of intellectual properties (i.e., maintenance fees of patents).

Strategic planning

The main document for strategic development is the Long-Term Strategic Plan (LTP). It comes with an implementation plan that specifies the objectives of the LTP on an annual basis, and an institutional plan with funding sources and the responsible staff (SER annex 1). The team was provided with a summary of the annual specification of the objectives for 2020 and indicators used to monitor progress for the LTP 2016-20. Since the evaluation coincided with the development of the new long-term strategic plan for the period 2021-27, the team also received during the second visit a summary as well as the full draft version, that was being finalised just during the second visit.

Overall, the team finds that VSB-TUO has developed a clear vision and plan, which is well structured and ambitious. It is structured along three priority areas:" practical education", "recognized research" and "efficient functioning". It includes eight strategic objectives plus related operational objectives and, linked to them, resources and main responsibilities. The team noted positively that the new LTP 2021-2027 contains key performance indicators, which according to VSB-TUO was not the case in the LTP 2016-20. The team found that with the focus on Energy and High Performance Computing / Artificial Intelligence VSB-TUO has identified its new "themes" and ideas to develop in the future, which are relevant for the region, the country as well as broader areas. The team was also pleased to see that learnings from the pandemic in the field of teaching and learning were proactively taken on board in the new LTP.

The team also found that processes and structures in strategic planning are clear and the representation of staff and students in the main governance bodies is ensured. However, the team was not fully convinced of the inclusiveness of the process itself, and in particular of mechanisms allowing staff and students without a formal position in governance to contribute their ideas to the strategic plan or its yearly updates. The team received mixed impressions in this regard. Sometimes staff and student representatives noted that there was no information available, while others said that they were not interested or did not have time. This leads to another observation the team made, related to the interest of staff and students to be involved, and in particular to students. VSB-TUO reported that it has been carrying out satisfaction surveys for its staff and students since 2012/13, the results of which are included in the yearly report of the institutional plan. As the name indicates, the overall intention is to understand the level of satisfaction among staff and students, identify main strengths and weaknesses of the university as perceived by them, and identify causes for dissatisfaction and areas for improvement. The survey also asks for the respondents 'opinion regarding the social responsibility of the university and the level of loyalty of staff and students. Interestingly, there is persistently low interest among staff and students to contribute to these surveys with feedback (SER, p. 17). According to a summary of the surveys taken in 2019, the team learned that this is in particular the case with student feedback, with only as few as 710 respondents out of an overall student population of more than 11 000 students, so only around 6% (whereas 421 out of 2 455 employees or 17% at that time took the opportunity). This matches the team's overall impression of rather low student involvement in institutional development, despite student representation in the various governance bodies. Therefore, the team recommends that VSB-TUO *reflect on the position and involvement of the student chamber at faculty and institutional levels and in relation to the overall student community, and think of ways to improve the work of the student chamber in representing the student voice in the overall development of VSB-TUO.* During the online

visits, the team learned that the university management has introduced some new formats to be in touch with students, such as the "Tea with the Rector" programme, or online chats with the rector and deans organised during the pandemic, which were much appreciated by students the team had talked to. Therefore, the team encourages VSB-TUO leadership and staff to continue with these proactive, inviting efforts to be in touch with their student community. More generally, the team takes the view that *an overarching theme for VSB-TUO in the future should be to break down the silos" and recommends the university strengthen communication and collaboration within and between faculties & research institutes as much as possible.*

Furthermore, the team recommends that VSB-TUO *reconsider and consolidate the structure within faculties in terms of the number of departments, the size of management teams (vice-deans) and related offices and services.* In particular, the team thinks that VSB-TUO should *continue with integrating / centralising services that are of key importance for VSB-TUO to reach its goals: research support services, services for developing student-centred teaching & learning, and training opportunities for all academic staff.* There are good examples in place such as the Innovation Support Centre, and in particular the Project Support Centre and the Career Centre. Another example is the common approach in the promotion of study programmes and student admission that shows the impact of critical mass that comes with a more integrated, centralised approach. The team would like to stress that it does not suggest having fewer staff, but rather rethinking prevailing structures and how resources are organised in terms of fitness for purpose and in view of what is needed for the future development of VSB-TUO.

Human resources

HR management and development at VSB-TUO is mainly dealt with at the level of the faculties and research institutes. At central level, the personnel office is responsible for setting up work contracts for all staff including the administrative staff; furthermore, it is in charge of the documentation related to the staff promotion procedures, and it provides statistics for the ministry or for projects. There is a university-wide regulation for the staff selection procedures, but there is no overall structure for staff recruitment. VSB-TUO reports that it sees the improvement of its HR management as fundamental to improving its performance in all aspects, and that it wants to develop systematic support that is based on individual needs and with a link to the career development procedures (SER p. 17), which the team commends. VSB-TUO has changed the way it conducts its yearly staff evaluation; this is now based on a yearly self-evaluation, which is also used as a basis for staff promotion.

With regard to staff training opportunities, there is a variety of opportunities offered at different units of VSB-TUO from which staff can benefit. Prominent examples the team was given are: language courses offered at the Institute of Languages (at discount prices, while some departments take over the costs for their staff), IT courses at the Lifelong Learning Centre, training in Engineering Education offered at the Department for Social Sciences, courses on IPR and business support offered from the Innovation Support Centre, as well as a range of smaller and larger training offers in the field of management at the Faculty of Economics. Other prominent examples are the Academic Writing Centre, aiming to enhance the publication skills of staff and doctoral researchers as well as staff mobility to go abroad (SER p. 17f.); and Twinning, used by administrative staff. According to the head of the personnel office a unit for professional staff development was recently set up. The team thinks that this is a good development; yet, it is not confident that there exists a fully developed overall strategy explicitly linking staff development to the provision of staff training, independent from staff being affiliated to a certain faculty and the resources available. Rather, it is the team's impression that emphasis is on mechanisms to evaluate and monitor staff achievements, as done through the yearly

staff evaluation. That said, the team recommends *that VSB-TUO put more emphasis on providing opportunities to grow.*

The university has a general regulation for the habilitation procedure and the procedure for appointing professors at VSB-TUO, but the team learned that there are also regulations at faculty level and that the actual promotion criteria for appointing professors vary greatly from faculty to faculty. Some staff explained this by disciplinary differences – but looking at a comparison of the actual criteria applied by the different faculties, the team found this argument unconvincing.

Along with the need to improve English language skills among its staff, the main challenge VSB-TUO sees in the area of human resources is to retain its highly skilled staff, as well as to attract new staff, and in particular foreign staff. Regarding the latter, the university reported its difficulty in doing so as a weakness, especially at the faculties where VSB-TUO would like to have more foreign staff. Of its 1 394 staff members in 2019, 101 (7.2%) were foreign (81 researchers and 20 academic staff). From the discussions with researchers, the team understood that potential candidates from abroad are approached through direct links or have been former foreign students, which is a way to start. However, what the team found missing is an overall strategy for staff recruitment at VSB-TUO; accordingly, there is a *need to ensure that there is open, transparent, competitive and international advertisement for all academic and research positions.*

The main reason for losing highly qualified staff, according to VSB-TUO, is higher salaries in industry as well as in the school sector. Another reason given is poor management (SER p. 36). Regarding the latter, it was explained to the team that VSB-TUO actually has the financial means to increase salaries (in the wording of the university: the financial tools to motivate staff), and that it is the responsibility of the dean or head of department to decide how these financial resources are applied. If this is done in an inconsistent manner, it can be perceived as unfair and leads to a situation where staff leave the university.

With regards to the pay system, the team learned that VSB-TUO has recently adapted its internal wage regulation, discussed and agreed on by the salary commission of the university, which includes representatives from the Academic Senate, the head of the HR department, the bursar, the labour unions and other invited members appointed by the rector. The new wage regulation differentiates not only between qualification and experience required for the levels within the staff categories “academic staff”, “researcher” and “lecturer”, but also levels based on job descriptions, which also have an impact on the wage bracket. The team found this a reasonable approach towards a shared and more consistent understanding across the university of the expectations on positions and salaries. Yet, what the regulation does not specify is the workload of the academic staff regarding the amount of teaching and research, since this “differs depending on the field of specialisation” (cf. additional information). The team also learned that the actual workloads differ greatly between staff and faculties, and that this is not perceived by staff as fair. Similarly, the team learned that on top of the salaries defined in the wage regulation, there can be extra payments, framed as motivational tools to incentivise staff performance and in particular their publication performance in research. The team was told that this can lead to a situation where a PhD student would could occasionally receive more than a senior staff member; this might be perceived as unfair. Apart from that, the team also thinks that with this apparent emphasis on financial incentives for research, the aspect of excellence in teaching, which is equally important, is overlooked and should be valued in the same way.

To sum up, the main challenge, as the team perceives it, is that staff recruitment, promotion and development are mainly dealt with at faculty level and there is a need for more consistency across the institution. In the team’s view, *VSB-TUO needs consistent and clear HR policies, practices and*

procedures. That said, the team was pleased to learn that VSB-TUO is currently in the process of obtaining the "HR Excellence in Research Award" and recommends *that it use the process of obtaining the HR Award as a good opportunity to think things over, moving towards more coherence and fairness within institutional HR policy.* As one staff member put it during the discussions, most difficulties in this process are expected in relation to varying salaries and standards of what is actually expected from staff, since there are no overall rules, but all depend on the standards at faculty level. This is also relevant in relation to double contracts for staff in and outside the institution and the question of accountability towards the university.

Following that, the team would like to comment on the way VSB-TUO is trying to incentivise research quality, as this has direct links with the issues mentioned above. As the team sees it, the current approach relies much on financial rewards such as the IF Cup for publications, a scoring system for publications that is converted into a financial reward paid to the author, or the rector's financial reward for teams that participate in the European Framework Programme for Research and Innovation. There are financial incentive systems also within the faculties, for publishing articles in journals, for the granting of a patent; financial rewards for the conferment process and professorship appointments; and financial rewards for doctoral researchers, even for their graduation. The team questions the current approach, especially since the wage regulation and the yearly self-evaluation provide a framework on expectations towards the scope of the work to be done. The team also takes the view that finances "arriving" from the MEYS for published work and other research results should preferably be assigned internally to the research group rather than to the individual pay packages, and that financial rewards should go into resourcing, based on productivity and impact.

That said, the team recommends that VSB-TUO *consider evaluation of research groups at university level for financial rewards, and further, reconsider how research is recognised in individual salaries and in career progression.* From a more general point of view, the team thinks that *VSB-TUO should consider whether guidance should be provided on research targets to inform the annual evaluations of each member of academic / research staff, thus ensuring a consistent ethos across the institution.* After all, why put additional financial rewards into something that is part of the job description?

Furthermore, the team suggests that *VSB-TUO focus on improving the scientific impact of publications and support its staff by providing the means for high-quality publications, by ensuring a conducive research environment*. The team reiterates that the quality of the publication comes from the quality of the scientific work underlying the publication, and it is convinced that VSB-TUO has the capacity for high quality scientific work. That said, the team recommends that *VSB-TUO concentrate less on rewards post-publishing and more on support towards a high-quality publication*. The work of the Academic Writing Centre is a very good example of such support, as well as the services of the Project Support Centre, through which VSB-TUO intends to minimise the workload for researchers regarding the administrative aspects of research grants and to free time for the actual scientific work – whether teaching, research, or writing for publications, etc. Furthermore, the team recommends that VSB-TUO *analyse the reasons for rejected publications, and provide mentoring for younger staff.* With regards to the rejection of articles in quality journals, the team would like to add here what has been discussed during the online visit: there can be a variety of reasons for the problem, additional to language skills. In case one major reason for rejections is the writing skills of staff, another quick measure could be providing editing services in parallel to training in academic writing.

Finally, the team would like to bring to VSB-TUO's attention the report "Reimagining Academic Career Assessment: Stories of innovation and change"[1] and the two DORA Advocacy Resources "Rethinking Research Assessment: Unintended Cognitive and Systems Biases"[2] and "Rethinking Research Assessment: Ideas for Action"[3], as references for VSB-TUO's further work in this area.

[1] A joint publication from DORA – the San Francisco Declaration on Research Assessment, the European University Association and SPARC Europe – Scholarly Publishing and Academic Resources Coalition (SPARC) Europe, published January 2021, https://eua.eu/resources/publications/952:reimagining-academic-career-assessment-stories-of-innovation-and-change.html

[2] https://sfdora.org/wp-content/uploads/2020/11/DORA_UnintendendedCognitiveSystemBiases.pdf

[3] https://sfdora.org/wp-content/uploads/2020/11/DORA_IdeasForAction.pdf

3. Quality culture

VSB-TUO sees quality policy as an integral part of the management of the university, a strategy to fulfil its vision. The university has a comprehensive system in place that covers all areas of its activities, which is laid down in the document "Rules of the Quality Assurance System for Educational, Creative and Related Activities and Internal Quality Evaluation of Educational, Creative and Related Activities of VSB-TUO". It has defined principles for quality in the areas of management, teaching and learning, science and research, professional cooperation with industry, business and the public sector, the development of academic staff, external school relations and student services which are subject to continuous improvement (SER p. 27). VSB-TUO reports that the senior leadership of the university and the faculties and research institutes are involved in quality management through regular meetings and discussions. For example, the vice-deans for study affairs are directly involved with controlling the quality of teaching and learning, as is the rector's college, as well as the vice-deans for science and research and the directors of the research institutes, who hold regular meetings. Also mentioned in the context of quality in teaching and learning is the scientific council of the university, where study activities are discussed during regular meetings; this can also be the case for the scientific councils at the individual faculties (SER p. 29). A central body for quality assurance in the field of teaching and learning is the Internal Evaluation Board (IEB) described in the previous chapter, established in the context of the institutional accreditation to control the quality of newly accredited study programmes and evaluate existing study programmes (SER p. 29).

The quality management system is based on ISO 9001, which is in place since 2003 and serves as an integral part of VSB-TUO's management (SER p. 27). The team noted that ISO 9001 was most frequently mentioned by staff in relation to quality assurance, along with the methodology used by the MEYS for research assessment (Methodology 2017+), so it is well known and, as the team observed, integrated in the institution. The team sees the benefits of ISO 9001 in terms of good documentation and administration of (quality) processes. Yet, the team holds that the Standards and Guidelines for Quality Assurance in the European Higher Education Area are more appropriate for establishing a quality culture in teaching and learning, research, and in the academic environments, since they put more emphasis on quality enhancement. The team is convinced that the university is aware of these standards and guidelines, since they were mentioned as one of the strategic documents underlying the Strategic Plan 2016-2020 (SER appendix 1 p.2), noted as a reference in the aforementioned Rules of the Quality Assurance System of VSB-TUO (Art. 2 (7)), and mentioned in the SER (SER p. 20). Even though the team is convinced that there is a high awareness of the quality assurance system and the documentation processes around it, it is doubtful whether the actual standards and what they entail are indeed widely known and shared.

The university reported that it has a Department for Strategic Analyses to provide data and do analytical work for strategic development. Although under the responsibility of the Vice-Rector for Science and Research, the department's analytical work relates to all aspects of VSB-TUO, including the aggregation and triangulation of data for all sorts of questions, allowing for informed decision-taking, all of which the team thinks is highly important. The impression the team gained is that, in particular, data related to research results and publications are very refined, mainly linked to the Methodology 2017+ as underlying mechanism for research funding. So also are all data related to the indicators used in the LTP (such as student numbers, study success rates, employability, number of international students, teacher-student-ratio, publications registered with the WoS, Scopus and ERIH, citations, licensed patents, etc.) (See SER p. 28). VSB-TUO reported that, for the purpose of collecting data related to quality in research, it has a Personal Bibliographic Database that is managed by the Vice-Rector for Science and Research, and into which staff input their results. The database is checked

by the faculty administrators and later transmitted to the administrator at central level before it is passed on to grant providers at national level. This database is linked to the register of grants and projects and it will also be used as a tool to analyse the quality of publishing outputs, as a basis to evaluate the performance of departments and individual staff. The university reports, as an example, the placement of journals within the field. Also, an adjustment of the personnel policy of VSB-TUO to the performance of academic staff and researchers (SER p. 24) is planned for the future.

However, with regards to quality in teaching and in particular the student perspective, the situation is slightly different. Although the process for student feedback for each course is in place, the team learned that there is a persisting low student participation in the student evaluation, similar to the already discussed low participation of students in the overall satisfaction surveys discussed in the previous chapter. This means that, along with the problem of the response rate in the student satisfaction surveys, there is a lack of information that is actually needed for the quality cycle. The team takes the view that this is a major issue that VSB-TUO has to solve, not for higher return rates *per se*, but for achieving a shared understanding among staff and students that this is an essential format to improve and develop quality in teaching and learning. From the discussions the team learned that there are many reasons for the problem, including mistrust among students that feedback remains anonymous. Beyond this, the team wondered if there is actually a sense among students that their feedback is essential. In that respect, initiatives such as the "Tea with the Rector" programme are good examples to build trust and, even more, a sense of belonging to the university (the "my university" feeling among students). It is also a topic that links back to the aspect of student participation in decision-making that was discussed in the previous chapter. That said, the team believes that VSB-TUO is aware of the issue. It sees the development of its feedback system – with an emphasis on obtaining feedback – as an opportunity (SER p. 20). To this the team would like to add: it is a necessity, and action is required.

Furthermore, the team observed that quality assurance in teaching and learning involves many different roles (in addition to the aforementioned IEB and the senior management at university and faculty levels and the scientific councils, there are both a study programme guarantor and subject guarantor, but also heads of departments, supervisors, and guarantors of education areas who were mentioned as involved in the process of assuring teaching quality). This is a rather complex system that is built on broadly distributed responsibilities, the details of which are described in the Rules of Accreditation, Study Quality Management and Assessment of VSB-TUO. The team is aware that the system is in line with the requirements, but it appears that, for example, student feedback remains at the level of the study programme, not at the level of the university or at least the faculty. This means that VSB-TUO is deprived of its ability to know what is going on at a higher (university) level. The team also understood that there is a line of interaction and discussion between the vice-deans for study affairs as well as a line with the IEB, but there is little evidence that all these channels and formats of reporting and discussing are leading to change (although they are meant to). This might be due to the missing support structures at university level, that will foster quality in teaching and learning, innovative curriculum design, etc., a topic the team will return to later on.

That said, the team believes that there is a need for developing a sense of quality culture across VSB-TUO as a whole, where emphasis is put on quality enhancement, and in particular that student feedback and progression data enhance each study programme. Therefore, the team recommends that the university *think of formats for reflection and exchange across the institution.* Also, the team suggests that VSB-TUO *consider the simple grid of the PDCA-cycle Plan-Do-Check-Act", with an emphasis on closing the loop from check" to act", to move towards a culture defined by pro-activeness to learn and improve.*

From a more general perspective, the team recommends that *VSB-TUO work on its internal institution-wide quality culture, with an emphasis on discussion and action, in particular in the fields of (a) teaching and learning – student involvement and feedback and (b) identifying support mechanisms for improving the research capacity of its staff (not in the form of personal financial means, but rather in accepting institutional responsibility for providing an environment that is conducive to research, including opportunities to improve research skills, publishing skills and transferring results) and (c) defining clear responsibilities and accountability lines for all involved in the process.* While (b) has already been dealt with in the previous chapter under the HR heading, aspect (a) will be discussed in more detail in the chapter on teaching and learning.

The team sees that VSB-TUO has a clear vision, but from the perspective of quality culture and enhancement in the field of teaching and learning and the question of how to get there, it seems that VSB-TUO is somewhat "stuck in structures" in the complexity of the system and the different levels involved (senates, commissions, documentation). In any case, there is a lack of external references. Therefore, as a start, the team recommends that *VSB-TUO think more outside the (Czech) box and pick one or two institutions for inspiration to ensure an international perspective and to benchmark its practices and activities against practices of similar international peers, e.g., through the Urban Research and Education Knowledge Alliance (U!REKA) consortium of which VSB-TUO is a member since 2019.* Also, the team believes that the EUA publication EUREQA MOMENTS! Top Tips for Internal Quality Assurance (2015) might be a good source of inspiration for the university.[4]

With regards to the research assessment methodology Methodology 2017+ the team understands that there are some limitations, since it either does not reflect on research areas which are actually highly relevant, such as safety research, or includes scientific areas in which the university is not active at all, such as biology. However, seen from the angle of quality enhancement in research, the team suggests that *VSB-TUO use / leverage its technological and social impact, and in particular that it use mechanisms such as the recently created International Evaluation Panel for benchmarking with institutions outside the Czech Republic to compare with peers, and for stock-taking of research output and the impact of research.*

[4] Anna Gover & Tia Loukkola (2015): EUREQA MOMENTS! Top Tips for Internal Quality Assurance. European University Association

4. Management of research and use of research results

The mission of VSB-TUO is "to support and develop excellent science, research and innovation", and puts emphasis on interdisciplinary work based on cooperation across the university and with partners from abroad in fields such as high-performance computing, Industry 4.0 and energy research. The vision is to be "a high-quality, technical-oriented research university that is perceived as a key partner for scientific research and innovation activities both by industry and other R&D workplaces in the Czech Republic and abroad." (SER p. 21). In its SWOT analysis, VSB-TUO notes as a particular strength its strong links with industrial partners and a high percentage of contractual research. Another strength is that it has been quite successful in obtaining national funding for applied research projects, and that it has modern infrastructure and equipment. Additionally, the directions it takes in R&D are focused on interdisciplinary questions related to modern energy systems, artificial intelligence, biomedicine, advanced materials and security research (SER p. 36).

In the new strategic period 2021-2027, two strategic goals are directly related to research and development: first, to become a respected centre for the aforementioned research areas, which the VSB-TUO has "carved out" as particular strengths. Here, VSB-TUO wants to increase the number of quality publication outputs; increase excellence in the aforementioned key research areas; develop interdisciplinary and international cooperation; develop the university's business potential; and build infrastructure for open science. As key success indicator, VSB-TUO notes an increase of the overall number of publications above the median in the given fields and of the citation index of publications affiliated with VSB-TUO by 15% overall. The second strategic goal is to be an "incubator for promising employees", and here, the field of doctoral studies is a prominent area for action. In a nutshell, VSB-TUO wants to increase its research capacity and results, and wants to lower the administrative burden for the academic staff and researchers. The team believes that VSB-TUO has the capacity for this.

In the following, the team will comment on the way research is organised and supported from a management and organisational perspective, and on the topic of doctoral training. For the topic of increasing quality publications and impact, the team refers to chapter 2 where this has been dealt with already in the context of HR management and the particular topic of staff motivation.

To start with, the team observed that research at VSB-TUO takes place within the faculties as well as in the Department for Social Sciences, the all-university Center for Advanced Innovation Technologies (CPIT), and in the two major university research institutes IT4Innovations National Supercomputing Centre (IT4I), established in 2011, and the Centre for Energy and Environmental Technologies (CEET), launched in the beginning of 2021. Both the IT4I and the CEET stand for the two aforementioned major research directions VSB-TUO has identified and around which it is pooling its research activities: energy, which is understood in a broad sense and includes nanotechnology and energy management; and high performance computing, including artificial intelligence. At faculty level, the examples for research show a rather fragmented picture with regard to research capacity and activity. This, in the team's view, is partly due to the large number of departments in some faculties, which are rather carrying on the old notion of the chair, but lacking critical mass. In contrast, the team learned that for example the set-up of the CEET was a strategic decision to improve the position of the university in the field of Energy.

Two of the vice-rectors are in charge of research management and the use of research results: the Vice-Rector for Science and Research and the Vice-Rector for Commercialisation and Cooperation with Industry, the latter having been established in 2018, with the aim "to increase efficiency in the area of

cooperation with companies and commercialisation" (SER p. 13). The team perceives this as a clear signal of the importance that VSB-TUO ascribes to this area.

The university has a Project Support Centre in place, which shows very good results. The team finds that this centre has the capacity to be a driver when it comes to supporting staff and students in the application and realisation of research and development projects. The Project Support Centre is part of the Innovation Support Centre (ISC), the same unit to which the Technology Transfer Centre and the Business and Career Centre also belong. Having these units in proximity is, according to the team, a conceptually good approach for future developments. Furthermore, the team was told that the Innovation Support Centre is preparing a methodology for establishing university spin-offs, since the concept is often interpreted in diverging ways. Overall, the team understands that the ISC is central when it comes to the promotion of results outside the university, with a more coherent and better coordinated approach in technology and knowledge transfer, an area where the university reported that there is still room for improvement.

Another important unit is the Office for Science and Research Management, responsible for the management of the national grants for students, for doctoral researchers, the grants for talented students and support grants from the Moravian-Silesian Region. The office is under the direction of the Vice-Rector for Science and Research. With regards to student grants, the team is aware that the university is currently setting up the Georgius Agricola Grant Agency, which the team understands will aggregate all student grants supported by the university, being part of the budget, including also grants for doctoral and postdoctoral researchers.

That said, the team recommends that *VSB-TUO further centralise and integrate services around funding for research/managing of research results, their application outside the university, and career development as much as possible, and that it keep support offers at faculty level to the minimum needed.* As emphasised earlier, this is not to eradicate, but rather to pool resources to the maximum possible towards achieving critical mass, and for more efficiency and effectiveness. Apart from that, VSB-TUO should *ensure that the offering of such services is well known among the whole institution.*

Following that, the team would like to comment on the set-up of the two major research institutes IT4I and CEET, as they serve well to discuss the topic "integration" from the perspective of research areas, including related organisational aspects.

The IT4I is the National Supercomputing Centre, working in the field of high performance computing, advanced data analysis and artificial intelligence (AI), aiming to be a leading centre in this field, since all disciplines are somewhat related to these topics. As national supercomputing infrastructure, it is the national node of EU HPC infrastructures, which means that it is directly involved in relevant platforms and partnerships such as the Partnership for Advanced Computing in Europe (PRACE), the European Technology Platform for High Performance Computing and the EuroHPC Joint Undertaking. The IT4I is also clearly committed to teaching and learning through the involvement of students in projects, student supervision, and staff participation in study programmes such as computational sciences, nanotechnology, and applied mathematics, but also on a European level through the involvement in the context of PRACE. It has 160 staff (FTE), almost 70% of which are in research and development, 10% in supercomputing services and 20% in management and administration. Part of its staff are fully employed by the centre, but there is also staff that the centre "shares" with the faculties. The IT4I is headed by a director who is exclusively working in that position, and a research-director with a combined position at the centre and at a faculty. Research is organised in five research laboratories with a head and a deputy head each being in charge. The team was told that, in

accordance with the requirements of the HE Act, the IT4I also has a research council serving as advisory board, but the director can make their own decisions.

The team was impressed by the achievements the IT4I has made in the roughly 10 years of its existence. It is well anchored in research and in European consortia and has a strong commitment to collaboration with the faculties. The team believes that one major reason for that is the clear, integrated governance model and the lean management structure.

The other major research centre is the Centre for Energy and Environmental Technologies or "CEET", officially established by the time of this evaluation. It brings under one roof four research centres of the university which in the SER were still independent units: the Centre for Energy Utilization of Non-Traditional Energy Sources (CENET), the Nanotechnology Centre (CNT), the Institute of Environmental Technology (IET) and the Energy Research Centre (ERC). The overall idea for the CEET is to create a large infrastructure that will lead to better chances in Horizon Europe and to develop towards a centre that is seen and respected on an international level. The vision of the CEET is to "develop new methods, materials and technologies for modern, low-carbon and sustainable energy in accordance with strategic documents at the national and international level", the main reference being the Green Deal of the European Union, which the CEET will realise through the "sharing of a unique laboratory background led by well-founded experts for education, research and development in the field of modern energy, and in cooperation with partners from the application sphere and research organisations" (cf CEET presentation).

The CEET will work in five defined research areas, namely (1) advanced materials for energy; (2) the use of secondary raw materials and alternative energy sources; (3) energy accumulation and transformation; (4) energy management and (5) environmental aspects of the energy sector and self-sufficiency of the Czech Republic in raw materials. Another important grid for the self-understanding of the CEET is that its activities will cover the full scale range of the Technology Readiness Level (TRL), from basic research to the activities of the Energy Research Centre. Overall, the CEET brings together 235 staff (FTE) and infrastructure worth EUR 40 million. Around 80% of the CEET researchers are solely working for the CEET, and around 23% of the publication output from VSB-TUO is from the CEET.

From the discussion with the directors of the four centres involved as well as from the leadership of the university, the team first understood that the idea is to copy the governance model from IT4I, meaning that the organisational structure of the CEET will evolve around the five research areas of the CEET. However, it was clarified later in the discussion that the idea is actually to keep the four centres, but that they will continue as departments, with staff working in the five different research strands. It was also explained to the team that there will be individual budgets for the four centres (then departments), plus a shared budget. Thus, it appears to the team that the governance model for CEET is actually quite different from the approach taken in the IT4I. It seems rather a federation or platform type, that aims at increasing the already existing cooperation between the centres, with an eye mainly towards increasing participation in the funding opportunities of Horizon Europe. Likewise, the concept of having all TRL levels covered appeared to the team rather funding-oriented, presenting an integration challenge due to the different cultures and logics involved. This could lead to a dual mission. The team has discussed this in detail with the university leadership and understood that VSB-TUO has to some extent considered the pros and cons of the issue. The team also believes that there is a potential for possible side dynamics between the CEET and the Faculty of Material Science and Technology and wonders whether VSB-TUO has taken this into consideration. In any case, the team believes that the CEET has a huge potential due to well-defined research areas and excellent facilities. In view of the points raised above, the team suggests that the success of *the IT4I as an integrated centre should serve as the governance model for CEET*.

Doctoral Researchers and Doctoral Studies

Since doctoral studies are located at the intersection of education and research, with an emphasis on research, the team also took a closer look at doctoral studies in the context of this evaluation. To start with a general comment, the team gained the impression that doctoral students are primarily seen at VSB-TUO as "students", regardless of the mode of their funding, their status as internal vs. external candidates, or the simple fact that the core of doing a PhD is original research. Therefore, the team suggests the *university take another view on this particular group – regarding them as research colleagues at the beginning of their research career.* It is for this reason that the team will use in the following comment the term doctoral researcher.

Another observation the team made is that VSB-TUO has only limited knowledge about its doctoral researchers. The university is not monitoring the drop-out rate of doctoral researchers and is also not studying the reasons for their leaving the university. This failure to do so is despite the fact that it clearly identified as a threat the problem of insufficient staffing of junior scientific positions due to the decrease of doctoral researchers, and the lack of new high-quality human resources as a particular weakness in R&D (SER p. 36). Based on the numbers provided, doctoral researchers make up approximately 10% of the overall student population, but only a small number actually graduate. For example, in 2019 there were 97 PhD graduates, against 1 092 doctoral researchers enrolled in a programme. There are even higher numbers a couple of years earlier (e.g., in 2014 there were 1 389 doctoral researchers). At the same time, the university reported that the average time-to-degree in doctoral studies is 3.8 years in full-time mode and 5.5 years for part-time, which is not too far from the standard length for doctoral studies (three or four years). So, all in all, the drop-out rate seems to be rather high – in one faculty it was estimated to be around 50%. Here, the team thinks that *further analysis is essential to determine the key reasons for doctoral researchers drop-out and the actions required to ameliorate the situation.*

Pursuant to the HE Act, doctoral studies offered in Czech are free of charge at VSB-TUO. For programmes offered in a foreign language, the university sets a fee. In the case of doctoral programmes at VSB-TUO, this is 3 500 EUR per academic year, except for doctoral researchers involved in a research project on a contractual basis, where the fee is 100 EUR per academic year (VSB-TUO Statute). The standard length of doctoral programmes at VSB-TUO is three or four years, with a tendency towards four years, based on the information provided (SER annex 7). The team was told that there are some cases where the programme duration was changed from three to four years so that it is actually feasible to finish the doctorate within the standard duration. In any case, the thesis must be submitted within five years after the beginning of studies or maximum after seven years, in case studies have been interrupted.

VSB-TUO offers doctoral programmes in two modes, called "present" and "combined" mode. The main difference is that for the present mode studies are mainly carried out on campus, while for the combined mode studies are carried out mainly "on a stand-alone basis", which is to say, based on the doctoral researcher's own preparation and consultations with the supervisor. The way VSB-TUO put it is that while the standard length does not differ, the two modes come with "different forms of teaching". Apart from that and despite the standard length of the two modes being the same, doctoral researchers in the present mode need to obtain at least 40 credits per academic year in order to progress without having their personal study plan changed, while for the combined mode this is only 30 credits. According to some staff, doctoral researchers often start in the present mode, as what the university calls "internal PhD students", and then they get a job offer and change to the combined mode, which means that they are referred to as "external PhD students". From a financial point of view, doctoral researchers in the present mode receive a "doctoral student scholarship" financed by

the MEYS, which also comes with some obligations, whereas doctoral researchers in the combined mode do not receive this particular scholarship. But regardless of the mode, all doctoral researchers are entitled to other scholarships and financial support. The team noted there are many opportunities available at university and faculty level (e.g., the Moravian Silesian Support to Doctoral Researchers, the motivational scholarship, funding for conferences, and stays abroad for article fees but also for the completion of their studies). The team also noted that a main driver for these financial contributions is keeping doctoral researchers as internals so that they do not move to the combined / external mode or leave the university.

The set-up of doctoral programmes as well as the admission, progression and graduation falls within the remit of the faculties. They are managed and monitored by a doctoral studies board, the chair of which acts as the guarantor of the respective doctoral programme. The team understood from its discussions with doctoral researchers, that there are potential topics for doctoral research published at faculty level for which interested candidates can apply. They can as well suggest their own idea for a topic to a potential supervisor, who then would formally seek approval from the respective doctoral studies board. After having been admitted to a doctoral programme, the doctoral researcher would define with the supervisor their personal study plan, within the requirements of the overall VSB-TUO regulation for doctoral studies, the study regulation at the respective faculty and the study plan of the particular doctoral programme. Doctoral studies consist of a study part with usually 70 credits and a scientific-technical part – the doctoral thesis, with 110 credits in the case of three-year programmes and 170 credits in four-year programmes, which according to the VSB-TUO study regulation is evaluated and counted through the activities of the "dissertation seminar". Under this heading, a range of activities is subsumed (for example, publications, engineering work, mobility to a foreign university, teaching, guidance of bachelor's thesis, and participation in "academic writing"), for which doctoral researchers can receive credits to fulfil their study obligations. VSB-TUO also noted that activities under this heading are in particular relevant for doctoral researchers in the combined mode. Doctoral studies are finalised through the state doctoral examination in front of a state doctoral examination board and the defence of the thesis in front of the doctoral thesis defence board.

VSB-TUO offers a large number of doctoral programmes, meaning that there are several doctoral programmes at faculty level which, in the team's view, might be leading to fragmentation. Therefore, the team *suggests the university have fewer doctoral programmes, with more room for choice.* Furthermore, the team suggests that VSB-TUO *consider doctoral programmes as a means to foster interdisciplinary cooperation within/across faculties, giving as much room as possible to doctoral researchers.* From discussions with the leadership of the university, the team understood that VSB-TUO is contemplating ways to have the study regulations as flexible as possible for students to select their course work for their PhD thesis, while ensuring that study regulations comply with the HE law, and the requirements from the National Accreditation Bureau (NAB), but also with the internal regulations on doctoral studies (university level and faculty level). As it was explained to the team, the current situation is that each student has to pass six exams (five plus one in a foreign language), and that the intention is to have fewer exams and study requirements based on credits. One example mentioned was a doctoral programme in geoinformatics, where the requirements to finish subjects with an exam were changed from the aforementioned model (five plus one) to two plus one, while all other credits are accumulated through other activities such as publications, conferences and course work.

Overall, the team believes that all developments towards more flexibility in terms of research options for the doctoral researchers, including opportunities involving other faculties, as well as the developments around supporting doctoral researchers, go in the right direction. Yet, as a more general

remark on doctoral study regulations and the overall design of doctoral programmes, the team would like to add that *consideration should be given to ensuring that university-wide PhD regulations give clear attention to the original research content.*

The team also observed that doctoral researchers are mainly linked to their supervisor and, in case one exists, to a specialist supervisor in or outside the institution. There is some interaction among the "internal PhD students", since they need to spend around 25 hours per week on campus where they share an office at the department of the faculty to which they belong from a study programme perspective. Other opportunities for interaction among doctoral researchers derive from joint work in related research projects. Some faculties organise "doctoral days" once a year, where doctoral researchers have the opportunity to present their work. The team found this a very good example for bringing doctoral researchers together and could be developed as a cross-faculty format around some of the research areas. With regards to the group of "external PhD students" (studying in the combined mode of study), the team's impression was that they are not in the center of attention of the university. Rather, they are framed as students who have a lot of responsibilities outside the university (job, family), and – as the team perceived it – are not seen as part of the research community and, in particular, the community of doctoral researchers. To summarise, what the team found missing is a community of doctoral researchers, including "external" doctoral researchers, that spans disciplines and faculties.

Against this background the team was pleased to learn that VSB-TUO has developed a PhD Academy that is planned to start as a pilot in autumn 2021, the goal being to "provide doctoral students and young researchers with a comprehensive range of courses that will help them further develop their scientific careers and provide them with support in fulfilling the topic of their dissertation". Apart from that, the university hopes that the PhD Academy will enhance the collaboration between the faculties, which the team found a sensible approach. The conceptual design of the PhD Academy is clear, and the team found that it offers a range of relevant topics in the areas of scientometrics and publishing, project management, basics of scientific work and soft skills; units involved are the central university library, the Innovation Support Centre, the Institute of Languages, the Department of Social Sciences and the Math Support Centre. For the future, the plan is to add also new courses and increase capacities. It should be noted here, that the team had changing impressions regarding the long-term scope of the PhD Academy, since it was first presented as a doctoral school. This impression was corrected during the second visit, when it became clear that the PhD Academy offered support for doctoral researchers from all faculties, with a focus on non-subject related course offers. Yet, the new strategic plan takes up again the notion of a doctoral studies school, where under the strategic objective number four" – incubator for promising employees" — the establishment of a "School for Doctoral Studies" is mentioned, with the key success indicator that at least 90% of all internal doctoral researchers have successfully completed courses from there.

That said, the team *suggests that VSB-TUO make improving doctoral programmes a strategic priority in the next years and that it consider placing doctoral studies under the VR for Research; ideally this should be reflected at the faculty level.* Furthermore, the team recommends that VSB-TUO *consider evolving the PhD Academy to a doctoral school, particularly in terms of open, transparent and competitive admission through a unified international call, progression, and graduation.* For references in doctoral education, VSB-TUO could look into activities of the EUA Council for Doctoral Education and the Association for Professionals in Doctoral Education.

5. Teaching and learning

VSB-TUO sees itself as a leading institution in technical and economic education in the region and it wants to become a university of European importance (SER p. 7). The university is granted institutional accreditation in 10 fields of education, namely safety, economics, electrical engineering, energy, computer sciences, mathematics, civil engineering, engineering, technology and materials, mining and processing of raw materials, and earth sciences (SER p. 20 and annex 7). VSB-TUO currently offers 256 study programmes at bachelor's, master's and doctoral levels, a large number of which (110) are taught fully in English or both in Czech and English (85), plus a few programmes that partly also have German as a language of instruction (SER annex 7). There are some examples of joint study programmes with universities from the UK, China, Italy, Finland and Japan, as well as joint study programmes with other Czech universities (SER p. 20).

Study programmes are offered in present and combined mode (combining on-site and distance), which the team learned are two of the three general modes set in the Czech HE legislation, the third mode being "distance", which so far is not offered at VSB-TUO. The team was told that in the combined mode, courses are organised in a way that allows students to better balance studies with other obligations such as work, but with no effect on the standard length of the study programme. It should be noted that it took a while for the team to understand the difference between the two modes. They were often presented as full-time versus part-time, which the team thinks is somewhat misleading if the overall duration and the work load remain the same from a student perspective, regardless of the mode. The team also noted that the high number of programmes at VSB-TUO can partly be explained by some programmes being accredited in both of the two modes, or in Czech and in English, resulting in more programmes, while the content is rather the same.

Of its over 11 000 enrolled students (academic year 2019/20), around 7 000 study at the bachelor's, 3 000 at the master's and 1 000 at doctoral level. The ratio students over staff in 2019 was 12.52, varying between 8.64 and 24.39 among faculties. The share of students studying in the present mode for all VSB-TUO is around 70%, ranging between 46.2% and 81.1% among faculties.

A major concern of VSB-TUO is the marked decline in student numbers the university has seen over the last years, with numbers going down from 18 146 students in the academic year 2014/15 to 11 262 in 2019/20. The university is well aware of the primary reasons for the falling numbers, namely the demographic decline and structural changes in a region previously linked to heavy industry and mining. Other reasons given are the persisting reputation of a highly polluted region, which is changing only very slowly, and a low interest in STEM. The team fully understands that it is a complex task for the university to operate in an environment that is characterised by deep transformations. Yet, the team would like to add as a note that such profound changes are not unique to VSB-TUO or Ostrava, and recommends that VSB-TUO *consider benchmarking with universities that have been or are in a similar situation, to address these challenges* (e.g., TU Eindhoven, University of Newcastle), and that it continue to put forward its apparent strengths such as a solid, top infrastructure and research areas linking to very valid and interesting study subjects.

To tackle the decreasing student numbers, VSB-TUO has, as the team learned, set up a common and coordinated approach in student recruitment and admission, based on a common strategy and involving all faculties. Measures include not only the centralisation of the university's promotional activities, but also the simplification of the way programmes and admission criteria are presented towards potential students. The university has made these materials easier to manage for potential applicants, developed a joint landing page for all faculties and study offers, and organised a completely

online format for the application process. VSB-TUO has established new formats of interaction and cooperation with the school sector in the region, through establishing an educational board; sending students to act as ambassadors during educational fairs; and organising science popularisation activities. Furthermore, VSB-TUO has now information and support services in place for its first year students as well as motivational scholarships; also, it offers bridging courses to ensure the transition from school to university, which the team finds very sensible. As a result, the numbers of enrolment have stabilised, indicating that these measures seem to have made an impact. Overall, the team believes that this is an excellent example for the impact such a joint approach/integrated action can have.

Furthermore, it was mentioned both in documents (SER, new LTP) and during discussions with the leadership that VSB-TUO sees the attractiveness of study programmes as key to triggering interest among potential students to study at VSB-TUO. According to the SER, the university offers students many educational courses that are optional, plus opportunities such as the Green Light programme where students can learn how to start a business (SER p. 18 f.), which is very good. However, it is the study programmes and their requirements which remain in the first place of interest of the students. Here, the team observed that VSB-TUO offers a large number of narrow programmes, with only very little room for students to choose from their own faculty as well as from others, despite the broad educational portfolio that VSB-TUO offers. The team also found a lack of cooperation between the faculties in curriculum design and delivery. It discussed whether the IEB could serve as a format to trigger cross-faculty curriculum development and discussion at university level, since it has a broad overview over all programmes. Yet, since the IEB discusses items at a stage when ideas are already far in their development, the team thinks that this would not to be fit for purpose.

In view of these observations, the team *recommends that VSB-TUO broaden its curricula, and give more freedom and options for students to choose from, including from (technical) faculties other than the student s own*. As noted earlier, VSB-TUO has developed a number of joint study programmes with other Czech universities of which it is proud (e.g., with the Palacký University in Olomouc in the fields of bioinformatics and computational biology, industrial design and environmental technology, or with the University of Ostrava in the field of biomedical technology) (SER p. 20). It appears natural, then, to apply this mindset also within the university, to foster cooperation across the faculties in curriculum design and delivery. To work towards a broader range of optional subjects for students to choose from could be a first step. Similarly, the team thinks that *VSB-TUO should consider common teaching of general subjects such as mathematics or physics across faculties*. An impression the team had was that in some programmes the number of students is rather small and it therefore *recommends that VSB-TUO consider amalgamating and consolidating study programmes, allowing for more choice and larger groups, thus making studies more interesting from a student point of view*.

The team also observed high drop-out rates among first year students at bachelor's and master's programmes. In the team's view, this is a major issue where VSB-TUO needs to take action. For the academic year 2018/19, VSB-TUO reported that 41,9% of all newly enrolled bachelor's degree students in present mode dropped out (in some faculties even well above 50% and 60%), and 55,3 % of bachelor's students in the combined mode. Although the drop-out rate is lower at the master's level, there are faculties with drop-out rates of first year master's students above 30% and up to 50%. The team learned that VSB-TUO monitors the drop-out rate of first year bachelor's and master's students (not at doctoral level) and that there are two major reasons for almost all cases of dropping out: first, because students did not meet the requirements of the studies and second, because students left their studies based on their own decision. To illustrate the extent of these two reasons: out of 2 129 newly enrolled bachelor's students in 2018 (present mode), 893 dropped out during their

first year. Of these, 616 did not meet the requirements, followed by 262 who quit the programme based on their own decision, which the team finds worrying.

The team also learned that VSB-TUO has analysed the drop-out rates in the first year and, as a result, has established a support centre for mathematics and physics, which led to a slight increase of the success rate in 2019 by 2,3% (SER p. 18). Also, the team noted that the new LTP includes the objective to improve success rates among first year students and sets the goal to increase the study success rate by a further 5% compared to 2019. This is to be done by providing compensatory courses and counselling services for students, all important measures of additional support, which the team appreciates. Yet, in view of the high failure rates, the team believes that more should be done. The team suggests that VSB-TUO work on the role and skills of its academic staff in teaching and learning, towards employing more practical and interactive ways of teaching and learning. In more general terms, the team thinks that *VSB-TUO should switch from programme-perspective to student-perspective*. As the team sees it, this is not about "lowering the bar" for certain subjects, but about reflecting on the ways of getting students to the level needed, in addition to the aforementioned support offers for students. The team also believes that this topic has links to the missing student feedback on the teaching quality in individual subjects, which also indicates a blind spot VSB-TUO has on the student perspective regarding the causes for drop-out during the first year. Therefore, the team concludes that further analysis is essential to determine the key factors for drop- out and the actions required.

The team noted positively that the new LTP emphasises the view that academic staff is to "serve students more as guides, coaches and mentors rather than merely as teachers in the traditional sense", and that VSB-TUO wants to develop further flexible forms of education, with several measures planned in the area of enhancing teaching methods and competences (LTP 2021-2027). Although mainly motivated by the university's learnings during the pandemic and linked to developing on-line formats and related teaching methods and skills, the team thinks that this could potentially also impact the teaching methods irrespective of the mode of delivery.

That said, the team found a scattered picture regarding exchange of good practices and the support for improving teaching methods and skills conceptually and training-wise at university level. There exist some didactical-oriented training opportunities, such as a programme run by the Department for Social Sciences. However, as the team could see from the discussion with senior management, it is neither the Department for Education Management and Development under the Vice-Rector for Study Affairs, nor any other unit that would take a central role in supporting innovation in teaching and learning at the university level. None of these units is a real driver to push developments in this area, a centre of gravity that is committed to and has the resources for driving change for all TUO-VSB regarding the conceptual and didactical design of curricula, new approaches in learning and teaching, the use of IT and the development of digital skills. Instead, this takes place at faculty level, based on funds distributed to them. When the team asked about the reason for this decentralised approach, it was explained that there is enough pressure from the outside to ensure innovative teaching. The team is not convinced that leaving developments to external pressure is fit for purpose, both in terms of effectiveness and efficiency, and suggests that this is another area where the VSB-TUO would benefit from an integrated approach and the development of institutional support structures. The team believes that there is a need at VSB-TUO to *facilitate communities of practice,* that will serve to enhance student-centredness in teaching and learning at university level, organised as regular, but informal exchange for anyone interested – primarily staff involved in teaching. The purpose of such communities is to learn about practices, initiatives and experiences related to curriculum design, assessment forms, interactive teaching methods, experiences with certain online tools and formats

etc., that are already existing at VSB-TUO or that staff is aware of and that can inspire colleagues. Furthermore, the team recommends that VSB-TUO *consider training for new staff on teaching, learning and assessment, and consider making such training available free for all academic staff. This could be facilitated and coordinated by a university-wide centre for teaching and learning.*

VSB-TUO has a well-equipped and attractive campus and study environment, with sport facilities, areas for students to sit, work and meet. As a particular strong point, the team noted the career services that support students in their transition from studies to employment, and that these services are also offered to foreign students. Services also include psychological counselling services, that are offered to both domestic and international students. However, the service needs better signposting among the students. VSB-TUO reports that it has a list of degree programmes for students with special needs, a directive in place that defines the scope of the services for students with special needs and assistance to arrange these services with the respective faculty. Also, the team learned that the Faculty of Economics has a specialised unit offering comprehensive support to 20-25 students each year. This shows that more can be done and the team *recommends that VSB-TUO consider if such good examples for supporting students with special needs could also be applied across the university.* Also, the team was pleased to see in the new LTP that VSB-TUO is aware of this and plans to intensify its support measures, mainly in the form of individual counselling and the further removal of barriers in the physical environment.

The university offers very good library services. The team met with proactive staff that is also involved in major strategic developments related to open access at national level, with a clear self-understanding of its role regarding the provision of relevant skills for studies and research, including the use of citation software, which the team finds commendable. However, there is one critical remark that relates to the opening hours of the university library (workdays from 8 am – 5 pm), which the team found very limited. It *recommends that VSB-TUO looks into ways to arrange a schedule that would facilitate independent study and invites VSB-TUO to see this also from the perspective of the library as a space for interaction between students from different faculties*.

With regards to Lifelong Learning (LLL), the team noted that LLL is part of VSB-TUO's vision. The team saw some good examples which the university mainly links to its third role, and in some aspects also to training opportunities for its own staff. The current spectrum of activities covers learning opportunities for the elderly, which is done through the University of the Third Age, a format that is organised at five faculties and the Department of Social Sciences (SER p. 8). There are requalification courses for mainly unemployed people from outside the university, offered by the Lifelong Learning Centre (LLC), a unit that was established in 1991 and is offering a rather narrow and specific IT-reskilling portfolio. The Faculty of Economics organises programmes that are directed towards upskilling of professionals, sometimes presented as "continuing education" – examples are the HR Academy, the MBA programme and the management training.

Overall, the team thinks that LLL is a good opportunity to consolidate the role of VSB-TUO in cooperating with the region and with industry, and in particular, reskilling and upskilling human resources. At the same time, the team observed that an overall strategic orientation for LLL is missing, despite being a relevant area for VSB-TUO. Similar to other areas touched upon in this report, there is missing internal coordination and a shared understanding of what the concept means for the university. In view of the existing activities, the team recommends that VSB-TUO *consider the title and the role of the Lifelong Learning Centre", and seek opportunities to create a joint roof under which VSB-TUO s portfolio can be presented and developed further. The team's view is that such a move will help* to facilitate a more strategic and coordinated approach, with beneficial effects in a broader sense, towards more visibility on opportunities for cooperation with external stakeholders. The plan to

establish a centralised offer of programmes in the field of LLL / continuing education as outlined in the new LTP is a good first step in this direction.

6. Service to society

VSB-TUO is tightly linked to the development of the city of Ostrava and the Moravian-Silesian region, and acts as a driver to change the reputation and image of the city and region. It puts strong emphasis on service to society (third mission) and in particular on collaboration with industry, both in teaching and learning, where the university aims to offer curricula that are relevant to industry and ensure employability of its graduates, as well as in research and the transfer of results. This focus on industry is reflected in the main strategic documents and the extensive links with industry and other local and external stakeholders close to industry that VSB-TUO has developed over the years. The university has a business incubator in place and is one of the shareholders of the Moravian-Silesian Innovation Centre, which develops and implements new services which positively impact the development and attractiveness of the local environment for entrepreneurship and innovation. Furthermore, VSB-TUO is a member of other industry clusters such as the Moravian-Silesian Automotive Cluster involved in management and strategic groups of the region in the field of industrial development, innovation and entrepreneurship (SER p. 13). As noted already, the university's cooperation with industry is a particular strong point. The team *recommends that VSB-TUO continue to develop the strong links it has with industry, via the existing bodies (Industrial Board and Council for Commercialisation).* Also, the team noted positively that VSB-TUO is working towards a more coordinated and effective way to manage its relations with industry and *recommends that VSB-TUO consider how to best use the university CRM for collaboration with industry.*

Apart from that, VSB-TUO reported a range of examples for serving society in other ways such as through the participation in the blood challenge, which the university has been doing since 2016, or in the context of the current pandemic, where the university actively supports the region through technology and knowledge. It has done so by developing a new type of filter for masks, producing disinfectant and protective shields, and analysing the mobility of the population by using its supercomputer. Another example of the university's service to society is the aforementioned support for students with special needs run at the Faculty of Economics. That said, the team thinks that VSB-TUO more generally should *develop a culture for service to society, building on current examples and on its links to industry, but not only.* More particularly, the team thinks that VSB-TUO should *consider the systematic application of the methodological concept of service learning"* across the institution. This might include having students develop examples of regional problems that are used as objects of their study, internships, practical experiences, and activities in volunteer organisations.[5]

The team was also pleased to see the variety of activities VSB-TUO has developed since 2012 in the field of popularisation of science and technology, such as the Art and Science festival, educational events and excursions organised by the Planetarium Ostrava and the Geological Pavilion, or the Earth Day with topics around environmental protection and ecology. All these activities are seen as a form of support for the restructuring of the region, which the team finds convincing. It recommends that VSB-TUO *continue to be strongly active in the popularisation of science and technology*.

The university noted that there is a long-term environmental policy aiming at the overall reduction in the energy use of buildings (SER p. 8). The idea of having a green campus serving also as a living laboratory for students and the general public is, in the team's view, an excellent approach insofar as it is tightly linked with the transformation of the city and the region. The team also noted that the new

[5] The European Association of Service-Learning in Higher Education (EASLHE) provides good examples of the concept, for example in the annual report 2020. https://www.eoslhe.eu/wp-content/uploads/2020/12/FINAL-2020-Annual-Report_web.pdf

strategic plan includes one strategic goal that links the management of the university with better energy management (e.g., reducing the carbon footprint with better management). On the other hand, the team heard from staff and students that in normal times the campus is full of cars and finding a parking place is difficult, a problem that in the near future will be solved by an underground parking. The team found this example contradictory to the overall idea of a green campus and recommends that VSB-TUO *ensure that the principles of sustainability and the green campus concept are enshrined in the curricula and campus life*. The team noted that just as VSB-TUO is striving to integrate the topic of entrepreneurship into its curricula, so also it could aim for something similar with sustainability, in view of the major themes the university has identified for its future development. Regarding the aforementioned issue of cars on campus, the team recommends that *VSB-TUO also consider reducing individual car use among students and staff to improve environmental sustainability.*

To summarise, the team sees clearly the opportunity for VSB-TUO to play a leading role in the regional economic, environmental and societal development. In that context, the team thinks that the *university should work more closely with the city and the region in the context of a strategy/plan for regional development that encompasses education; complementarily, it should involve these major partners more in the VSB-TUO s own strategic planning process*. The team understands that the city of Ostrava sees a central role of VSB-TUO in the development of the city and the region – which is encouraging and something of which the university should take advantage.

7. Internationalisation

VSB-TUO sees internationalisation as a horizontal activity spanning all activities of the university (SER p. 13). Although not reflected in a strategy on its own, internationalisation was covered in the LTP 2016-20 in a dedicated chapter. The team learned that the focus in 2020 was on higher rates of student and staff mobility, in particular outgoing mobility, which includes the search for mobility opportunities outside Europe. Secondly, efforts were made to offer more study programmes in English and to establish a support mechanism for foreign students and staff in Ostrava. The team noted that among the activities described for 2020, twinning was also mentioned as a scheme to enhance the professional competences of administrative staff working in technology transfer, project support and career support (SER annex 1) and that VSB-TUO regularly attends conferences such as the European Association for International Education (EAIE). All of these are very useful approaches to establishing and deepening contacts outside the Czech Republic and to learning from there.

In the new LTP 2021-2027, internationalisation remains in the centre of attention, as one of the eight strategic objectives, supported by twelve operational objectives. To summarise them: VSB-TUO wants to raise the attractiveness of the university for foreign students and to improve the awareness of study opportunities offered at VSB-TUO, and it wants to increase the number of its own students going abroad for studies and internships. Noteworthy is the emphasis that VSB-TUO puts on increasing the number of its more experienced staff — associate professors and postdocs – going abroad and vice-versa, increasing the number of experienced foreign academic and research staff coming to Ostrava.VSB-TUO sees this as a means of strengthening its capacities in both teaching and learning, and research and development. For both foreign staff and students, VSB-TUO wants to create an inviting and supportive environment, and contribute to their integration into the Czech Republic, including the development of language skills. Other objectives are the introduction of a paperless administration of student mobility and the development of virtual or blended mobility formats, which requires work in terms of conceptual design, technical and administrative backing. Since the amount of international cooperation is still very low in some faculties, VSB-TUO also wants to achieve greater engagement in major education and R&D projects in Europe and beyond. There are also some operational objectives under other strategic objectives with a direct link to internationalisation, for example A2.3 “Strengthening students ’language skills” (including also opportunities for staff), and B3.3 “Development of interdisciplinary and international co-operation”.

The team was impressed by the achievements and the range of activities at VSB-TUO to build up an environment that is open to students and staff from abroad as well as the efforts made to provide own staff and students with opportunities to go abroad. As mentioned, 110 study programmes out of the 256 programmes are offered in English, another 85 are offered in Czech and English, and there are a number of programmes based on cooperation with institutions from abroad, including in doctoral programmes.

As in other areas, the team noted that VSB-TUO makes use of differentiated data, which allows the university to understand mobility flows and rationales for staff and students going abroad. VSB-TUO is doing particularly well in recruiting students from abroad. There are some faculties with very broad experience and there is a very active Erasmus community. VSB-TUO has overall around 2 000 international students, a number that has been more or less stable during the past five years. The team was told that around 23% of all foreign students are full degree foreign students studying English taught programmes at the university, which is a level VSB-TUO wants to keep. The team also learned that roughly half of the 2000 students come from Slovakia, the other half mainly from the Russian

Federation or Ukraine, since they are also able to study in Czech. The university has also continuously been raising the number of self-paying international students from 86 out of 1 870 in the academic year 2014/2015 to 412 out of 1941 in the academic year 2019/20.

Regarding outgoing mobility, the picture is slightly different, with only around 2-3 % of the students going abroad. This is interesting insofar as the main motivation to study at VSB-TUO, for some of the students the team talked to, was the very good opportunities to go abroad. The team sees this as a big advantage. It learned that the low level of outgoing mobility is mainly due to financial reasons as well as to students' fear of losing their jobs while being abroad. Also, this is linked to the employment market, where local students prefer work experience instead of going abroad for studying. Another point made is that the destination "Europe", although well-funded, has lost its attraction for students – if at all, students want to go to Asia, South Korea and Japan. Apart from all that, the team was told that the biggest obstacles for mobility are linked to administrative and visa issues. During discussions, VSB-TUO mentioned 5% of its students going abroad as a target for the future, although cautiously formulated as "still a long way to go". Yet, the team would like to note positively that the university is not only making use of existing mobility funding such as Erasmus+, but has proactively developed its own financial instruments such as the Georgius Agricola Scholarship. This is a financial instrument to attract foreign students for short-term internships at VSB-TUO, which the university uses in turn to negotiate reciprocal benefits for students going abroad.

The recognition of credits from studies abroad is not perceived as a problem or even a reason for not going abroad. The university reported that it applies the European Credit Transfer System, and the team learned that if at all, issues around recognition mostly arise when students deviate from the study agreement. Nevertheless, VSB-TUO sees this as something that can be dealt with and that faculties and the university as a whole do their best to solve such cases. However, the team came across some inconsistencies in this respect and recommends that VSB-TUO *ensure consistency and clarity across the institution regarding practical recognition of credits from studies abroad.*

VSB-TUO has a well-staffed and established University International Office under the Vice-Rector for Study Affairs, with currently 10 staff members in the office. The team learned that each faculty has at least one person that is responsible for the coordination of the mobility programmes at faculty level and that a working group of these coordinators and the University International Office is in place. The working group meets 2-3 times per semester, while the main interaction takes place on a daily basis through phone and email, the scope by and large including scholarships and agreements. In addition, VSB-TUO established an International Contact Point with two additional staff members, serving as a main point of reference for international staff and students, which provides support on a wide range of issues relevant for settling in Ostrava, including support for searching and applying for jobs in the Czech Republic or psychological counselling. The team found this another very good example for pooling resources at central level with a good coordination across the faculties. This has resulted in more effectiveness and efficiency than would have been possible within a faculty alone, thus unlocking a broader view on opportunities that is beneficial for all constituent parts of the institution.

Overall, the team thinks that for the next period, VSB-TUO has developed a clear vision and goals regarding its internationalisation activities, which are ambitious and feasible at the same time. As the team sees it, internationalisation is an area that can serve as a very good example of what can be achieved by proactiveness and strong internal cooperation. Plans for the future are not taken from the air, but are well anchored in achievements so far and thorough reflection upon challenges and opportunities regarding mobility and international cooperation. Thus, the team thinks that VSB-TUO has good chances to reach its goals in internationalisation and to create momentum in VSB-TUO's

visibility outside the country. Having said that, the team invites VSB-TUO to consider the following suggestions as food for thought on some aspects related to its activities in internationalisation:

- Regarding the many offers of study programmes in English, the team would like to stress the need to develop and maintain appropriate language skills among staff and students. During discussions and also in the SER, the need to develop language skills was mentioned as an area that VSB-TUO has identified and plans to work on during the next years, mainly through the provision of language courses for students and staff. Yet, the team was not sure about the role of the Institute of Languages in this process, and suggests that the university *reflect on the overall role of the Institute of Languages in curriculum design, and think of mechanisms to involve them more actively in these processes*.

- In one discussion, the outlook of attending a language course together with colleagues was given as one reason for some staff not to take a language course, since they would feel uncomfortable when practicing in front of others. Here, the team invites VSB-TUO to *reflect more in depth on forms and formats in which language learning can be organised and supported.* Although this note derives from the perspective of staff, it is valid for language learning opportunities for both staff and students. Needed are more flexible forms of language learning apart from the classical language course, including support to develop language learning skills. The team thinks that there are many more options and opportunities that VSB-TUO could make use of, not least in view of digital resources and technology available nowadays and the profile of the university, its staff and students. Equally, to the previous point, the team thinks that the Institute of Languages could take a leading role here.

- The team invites VSB-TUO to *consider the way services for the international community are organised also as a blueprint for student services in general, in the sense of pooling services offered to the student community at faculty level*.

- The team thinks *VSB-TUO could more actively approach students who have been abroad, to hear and learn from their experiences: how they have experienced teaching and learning, the study environment, etc., and use this as food for thought for the university s own development in curriculum design, student services, and overall development.*

8. Conclusion

The team hopes that the reflections and recommendations presented in this report and the evaluation exercise as a whole will help VSB-TUO in its development for the years to come.

Overall, the team found that VSB-TUO leadership is aware of what is at stake. Many of the observations and recommendations are related to the further integration of the university, towards more consistency across the university. VSB-TUO has developed a clear vision, but there is a lack of references on the how-to. Yet, in view of the established international co-operations, the team is confident that there are many options to choose from.

With regards to the organisational structure, the team found that there is an inclination of putting new things on top old ones, with old structures prevailing. The team often heard that something (for example, many departments, or programmes) is so "for historical reasons". In quality assurance, the team wonders if there is also a sense of the intrinsic purpose of processes (why have them?) apart from simply having them in place. Also, in case new processes (or units) are set up, it is important to include a removal clause.

Student drop-out is a central topic, from bachelor's students to doctoral researchers, and VSB-TUO has started to work in this direction. The team encourages the university to take a firm step further, by radically changing its view from a programme- to a student-perspective. VSB-TUO has certainly good practice and experience on student-centred teaching and learning, but this lies somewhere in the faculties and should be made visible and shared with others. Also missing is a "centre of gravity" to support the faculties in making this shift, that is committed to and has the resources for driving change for all VSB-TUO. There also needs to be more student involvement in the overall development of the institution. During discussions, some students were referring to themselves as "clients", while others noted that they perceived some professors behaving as if they were the students 'bosses. Although of anecdotal nature within the limits of this evaluation, the team thinks that these are stances that illustrate some underlying views that need to be addressed.

The team congratulates VSB-TUO for having managed to define priority research areas, which is not an easy task to do. The team was impressed by the infrastructure and study environment the university has developed over the last years, with more developments coming in the near future, which opens up many opportunities. Similarly, the team appreciates that VSB-TUO has identified as a central topic the area of human resources in all its aspects, most prominently expressed through the process to obtain the HR award. The team found that the current approach is strong on evaluating staff performance and working with financial incentives, by and large for the individual. Instead, the team thinks, the university should focus on support for staff and in particular to younger staff. The way the team sees it, the university needs a more consistent approach to human resources, based on shared values and standards, from which all constituent parts would highly benefit.

Summary of the recommendations

Governance and institutional decision-making

1. Reflect on the position and involvement of the student chamber at faculty and institutional levels and in relation to the overall student community; think of ways to improve the work of

the student chamber in representing the student voice in the overall development of VSB-TUO.

2. "Break down the silos" should be an overarching theme for VSB-TUO in the future; it is recommended that the university strengthen communication and collaboration within and between faculties and research institutes as much as possible.

3. Reconsider and consolidate the structure within faculties in terms of the number of departments, the size of management teams (vice-deans) and related offices and services.

4. Continue with integrating / centralising services that are of key importance for VSB-TUO to reach its goals: research support services, services for developing student-centred teaching & learning, and training opportunities for all academic staff.

5. Put more emphasis on providing opportunities to grow.

6. Ensure that there is open, transparent, competitive and international advertisement for all academic and research positions. VSB-TUO needs consistent and clear HR policies, practices and procedures. Use the process of obtaining the HR Award as a good opportunity to think things over, moving towards more coherence and fairness within institutional HR policy.

7. Consider evaluation of research groups at university level for financial rewards. Further, consider how research is recognised in individual salaries and in career progression.

8. Consider whether guidance should be provided on research targets to inform the annual evaluations of each academic / research staff, ensuring a consistent ethos across the institution.

9. Focus on improving the scientific impact of publications and support staff by providing the means for high-quality publications, by ensuring a conducive research environment. VSB-TUO should concentrate less on rewards post-publishing and more on support towards a high-quality publication. Analyse the reasons for rejected publications, and mentor younger staff.

Quality culture

10. Consider the simple grid of the PDCA-cycle "Plan-Do-Check-Act", with emphasis on closing the loop from "check" to "act"; move towards a culture defined by pro-activeness to learn and improve.

11. Think of formats for reflection and exchange across the institution. VSB-TUO should work on its internal institution-wide quality culture, with an emphasis on discussion and action in particular in the fields of (a) teaching and learning – student involvement and feedback and (b) identifying support mechanisms for improving the research capacity of its staff (not in the form of personal financial means, but rather in accepting institutional responsibility for providing an environment that is conducive to research, including opportunities to improve research skills, publishing skills and transferring results) and (c) defining clear responsibilities and accountability lines for all involved in the process.

12. Think more outside the (Czech) box and pick one or two institutions for inspiration, to ensure an international perspective and benchmark practices and activities against practices of similar international peers, e.g., through the Urban Research and Education Knowledge Alliance (U!REKA) consortium of which VSB-TUO is a member since 2019. Use / leverage

mechanisms such as the recently created International Evaluation Panel for benchmarking with institutions outside the Czech Republic, to compare with peers, and for stock-taking of research output and the impact of research.

Management of research and use of research results

13. **F**urther centralise and integrate services around funding for research / managing of research results, their application outside the university and career development as much as possible, and keep support offers at faculty level to the minimum needed. Ensure that services are well known among the whole institution.
14. The IT4I as an integrated centre should serve as the governance model for CEET
15. Take another view on PhD students – regarding them as research colleagues at the beginning of their research career. Determine key reasons for the drop-out of doctoral researchers and the actions required to improve the situation.
16. Have fewer doctoral programmes, with more room for choice. Consider doctoral programmes as a means to foster interdisciplinary cooperation within / across faculties, and give as much room as possible to doctoral researchers. Consideration should be given to ensuring that university-wide PhD regulations give clear attention to the original research content.
17. Make improving doctoral programmes a strategic priority in the next years and consider placing doctoral studies under the VR for Science and Research, ideally with this reflected at faculty level.
18. Consider evolving the PhD Academy to a doctoral school – particularly in terms of open, transparent and competitive admission through a unified international call, progression and graduation.

Teaching and learning

19. Consider benchmarking with universities that have been or are in a similar situation to address challenges such as demographic decline, structural changes in the region, and low interest in STEM.
20. Broaden curricula, and give more freedom and options for students to choose from, including from other (technical) faculties.
21. Consider common teaching of general subjects such as mathematics or physics across faculties. Consider amalgamating study programmes, allowing for more choice and larger groups, making studies more interesting from a student point of view.
22. Switch from programme-perspective to student-perspective.
23. Facilitate communities of practice, consider training for new staff on teaching, learning and assessment, and consider making such training available free for all academic staff. This could be facilitated and coordinated by a university-wide centre for teaching and learning.
24. Consider the application of such good examples for supporting students with special needs across the university.

25. Look into ways to arrange the opening hours of the university library in a way that would facilitate independent study and see this also from the perspective of the library as a space for interaction between students from different faculties.

26. Consider the title and the role of the "Lifelong Learning Centre", and seek opportunities to create a joint roof under which VSB-TUO's portfolio can be presented and developed further.

Service to society

27. Continue to develop the strong links with industry, via the existing bodies (Industrial Board and Council for Commercialisation) and consider how best to use the university CRM for collaboration with industry.

28. Develop a culture for service to society, building on current examples and its links to industry, but not only. Consider the systematic application of the methodological concept of "service learning".

29. Continue to be strongly active in the popularisation of science and technology.

30. Ensure that the principles of sustainability and the green campus concept are enshrined in the curricula and campus life. Consider reducing individual car use among students and staff to improve environmental sustainability.

31. Work more closely with the city and the region in the context of a strategy/plan for regional development that encompasses education; complementarily, involve these major partners more in VSB-TUO strategic planning.

Internationalisation

32. Ensure consistency and clarity across the institution regarding practical recognition of credits from studies abroad.

33. Reflect on the overall role of the Institute of Languages in curriculum design and think of mechanisms to involve them more actively in these processes; reflect more in depth on forms and formats in which language learning can be organised and supported.

34. Consider the way services for the international community are organized also as a blueprint for student services in general, in the sense of pooling services offered to the student community at faculty level.

35. More actively approach students who have been abroad, to hear and learn from their experiences: how they have experienced teaching and learning, the study environment etc., and use this as food for thought for the university's own development in curriculum design, student services, and overall development.