

RIGA TECHNICAL UNIVERSITY

FOLLOW-UP EVALUATION REPORT

July 2017

Team:

Öktem Vardar, Chair

Ivan Leban

Simona Dimovska

Karen Willis, Team Coordinator

Contents

1. Introduction.....	3
2. Governance and institutional decision-making.....	6
3. Quality culture.....	9
4. Teaching and learning.....	11
5. Research.....	15
6. Service to society.....	17
7. Internationalisation.....	19
8. Conclusions.....	20

1. Introduction

This report is the result of a follow-up evaluation of Riga Technical University. European University Association's (EUA) Institutional Evaluation Programme (IEP) originally evaluated Riga Technical University in 2013 with the report submitted to the University in June 2013. In 2016 the University subsequently requested that IEP carry out a follow-up evaluation.

1.1 Institutional Evaluation Programme and follow-up evaluation process

IEP is an independent membership service of the 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).

In line with the IEP philosophy as a whole, the follow-up process is a supportive one. There is no prescribed procedure, and it is for the institution itself to set the agenda in the light of its experiences since the original evaluation. The institution is expected to submit its own self-evaluation report, which will describe the progress made, possibly indicating barriers to change.

The rationale is that the follow-up evaluation can assist the institution in evaluating the changes that have been made since the original evaluation: What was the impact of the original evaluation? What use has the institution made of the original evaluation report? How far has it been able to address the issues raised in the report? The follow-up evaluation is also an opportunity for the institution to take stock of its strategies for managing change in the context of internal and external constraints and opportunities.

As for the original evaluation, all aspects of the follow-up process are also 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?

1.2 Riga Technical University's profile

Riga Technical University (RTU) is the largest higher education institution in Latvia and the oldest technical university in the Baltic States. Its history dates back to 1862 when Riga Polytechnic Higher School was established. Over the years the university has grown and changed its name and language of instruction, being accredited as a university by the Council of Higher Education of the Republic of Latvia on 12 July 2001. In 2007, RTU was granted the status of publicly owned institution operating as a private entity, which means it is an autonomous public institution with the right to self-government, the right to decide its goals and strategy, hire academic staff, determine the content and forms of its study programmes, determine its budget and to own its property (2013 IEP report).

The Law on Higher Education (2011) emphasised the relevance of quality assurance to higher education and, in particular, the involvement of stakeholders in university governance and quality-related structures and processes; students have 20% representation in each committee and also have rights of veto. The Law provides for university autonomy in hiring staff, allocating its financial resources, changing study programmes, having its own regulations, taking loans and entering into partnerships with industry. However, universities cannot sell their real estate. There is a requirement for all staff to be able to speak the Latvian language, and classes are taught in Latvian or English. Economic recession and demographic shift, resulting in decreasing numbers of young people in the population, continue to pose serious challenges to the university's recruitment.

Today RTU consists of nine faculties, one more than at the time of the initial IEP evaluation in 2013: Faculty of Architecture and Urban Planning; Faculty of Civil Engineering; Faculty of Materials Science and Applied Chemistry; Faculty of Power and Electrical Engineering; Faculty of Electronics and Telecommunications; Faculty of Engineering Economics and Management; Faculty of Computer Science and Information Technology; Faculty of Mechanical Engineering, Transport and Aeronautics; and the Faculty of E-learning Technologies and Humanities which had been added since the previous evaluation. Additionally, RTU has four affiliate sites in other cities of Latvia: Liepaja, Cesis, Daugavpils and Ventspils, as well as Riga Business School.

The team was informed that RTU has approximately 15,000 students, 12% of whom are foreign, taking 140 study programmes, of which 48 are taught entirely in English. The number of students has remained fairly constant since 2012/13, when there were 14,891 students, but the proportion of home students has declined and numbers of international students increased from 205 in 2012 to 2230 in 2016. The university currently has 600 doctoral candidates and 1031 academic staff and researchers. RTU has also recently established an Engineering High School.

According to the RTU Strategy 2014-2020, the university's mission is *'To ensure internationally competitive high quality scientific research, tertiary education, technology transfer and innovation for Latvian national economy and the society'*. The vision is stated as: *'Riga Technical University – a modern and prestigious university, internationally recognised as the leading university of science and innovations in the Baltic States – a cornerstone of the development of Latvia'*. These statements highlight RTU's role as the nation's main provider of technological higher education and as a leading institution in the Baltic States. The strategy also sets out the three main strategic goals and priorities of RTU as 'high quality study process', 'excellence in research' and 'sustainable valorisation'. Against each of these strands a set of specific targets and performance measures is set.

Since the last IEP evaluation, extensive development on the main campus of Kipsala has continued, and it is planned to move further provision to this campus from other locations in

the city. In addition to new laboratories and study spaces, the campus also offers modern dormitory accommodation for students, shops, sports facilities and a green environment.

1.3 The evaluation process

The self-evaluation process was undertaken by a group of nine, comprising members of the senior management of the university and the President of the Student Parliament, with meetings coordinated by the Director of Quality Management and Document Processing Department. The self-evaluation team divided into smaller task groups, which also involved other colleagues on specific topics. The contents of the resulting report were also discussed at senior management meetings. The self-evaluation report (SER) was made available to both staff and students through publication on the RTU intranet ORTUS.

The self-evaluation report of RTU, together with the appendices, was sent to the evaluation team in late March 2017, with additional information supplied in early May. The visit of the evaluation team to RTU took place from 23 to 26 May 2017.

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

- Prof. Öktem Vardar, former Rector, TED University, Ankara, Turkey, team chair
- Prof. Ivan Leban, former Vice-Rector, University of Ljubljana, Slovenia
- Simona Dimovska, student, Ss. Cyril and Methodius University, Skopje, FYR Macedonia
- Dr Karen Willis, Dean of Academic Quality and Enhancement, University of Chester, UK, team coordinator

The team thanks the Rector, Prof. Dr Leonids Ribickis, and vice-rectors, faculty deans and vice-deans, and the self-evaluation group for their warm hospitality and for the open discussions. The team would like particularly to thank Mr Juris Iljins as the liaison person who, together with Ms Marta Megne, efficiently prepared and organised all arrangements and meetings for the visit. Thanks are also extended to all staff and student representatives whom the team met during their visit.

2. Governance and institutional decision-making

This and the following sections will follow up on the findings and recommendations from the initial evaluation as well as examine any new issues that have emerged in the meantime. In the 2013 report, a number of recommendations were raised relating to this heading, each of which is separately numbered below, with the team's follow-up observations.

1. The university should promote a wide discussion for optimising the use of the structures. (2013)

The team was impressed with the improvements to infrastructure achieved by the university, supported by European funding. The process of moving provision onto one campus, although inevitably spread over several years and resulting in an extended period of transition, was seen to be highly beneficial and to be increasing efficiencies and opportunities for greater collaboration between faculties. The overall environment and facilities were observed to be of an excellent standard.

The team congratulated RTU on its considerable efforts and accomplishments in improving its infrastructure and in uniting study and research on the large campus at Kipsala. These were found to be noteworthy achievements, of which the institution can be proud. The team acknowledged the major contribution of present Rector in progressing these developments.

2. The organisational structure ought to be revised and streamlined so that a lean structure is reached, enabling a better communication atmosphere at all levels. (2013)

The team was unclear as to the extent to which the university had accepted this recommendation. The team noted that there had been some simplification to the organisational structure over the last four years, including the consolidation of some previously independent research institutes into faculties, but felt that further work could be undertaken towards reaching a leaner, more efficient structure. There had been a strengthening of the senior management team from two to four vice-rectors. Whilst acknowledging the challenges of this type of change, **the team recommends that the university continue to keep its structures under review, with a view to further streamlining.**

The team affirmed the view that decision-making processes were still rather too complex. The team noted that student participation in decision-making was strong, due in part to the national requirement for 20% student representation on committees, and the strength of the RTU Students' Parliament. On the deliberative side, the team was told that Senate had been reduced from 80 members to 50. However, the team considered that involving numbers of academics in layers of decision-making, both within Senate sub-groups and elsewhere, was not necessarily a sign of greater transparency and accountability. Although, in historical terms, institutions had generally been highly collegial, global trends were towards more managerial structures, with transparency and accountability at all levels being important issues everywhere. **Therefore the team recommends that RTU consider leaner structures and fewer levels of decision-making in order to achieve more transparency and efficiency.**

3. RTU should find a way to reinforce the budget in a way that young researchers, doctoral students and postdoctoral fellows are attracted and motivated to stay. (2013)

The team found that RTU had recognised the need to attract and incentivise young and early career researchers to pursue their careers at the university, and to prevent them from leaving the country to seek more highly paid and better funded positions elsewhere. Some very positive initiatives have been introduced to start to address this, notably a Research Development Fund, grants for doctoral candidates, and post-doctoral fellowships. The team learned of the new RTU Research Excellency Grant, which had just been awarded to two researchers (one experienced, one new) and welcomed the introduction of this incentive and reward.

4. The team strongly recommends reviewing the model for internal distribution of the state budget. A more transparent model of internal distribution of the state budget should be discussed and adopted. For example, a budget allocation model should be devised that takes into consideration the number of academic staff positions needed (estimated on the basis of teaching hours, number of students and the appropriate method of teaching in different disciplines i.e., lecturing, laboratory work, seminars). The budget should also take into account the systems and standards used by other countries in estimating the numbers of academic staff and the costs of teaching staff, which is the costlier element of the operating budget of universities. (2013)

The team did not find evidence that this recommendation had been addressed. Although the team was told that improvements had been made, the methodology for internal distribution of funding appeared complex. Salaries varied greatly between academics and between departments, according to the number of students taught and the amount of project funding attracted. The team heard that RTU still considered the level and methodology of state funding of public higher education to present a major limitation.

5. Reducing budget allocation towards administration by detailed human resource planning, redefining job definitions and job specifications is needed. (2013)

The team heard differing views from staff on the balance of budget allocation between academic and central services. Although one perspective expressed to the team by academics was that too high a percentage of teaching funding was spent on central administration, the team also heard of savings being made in some central services and a reduction in the proportion of the budget spent on administration. The team took the view that this was a matter for internal management.

6. Defining priorities in the action plan should be a standard practice. (2013)

The team received details of action plans and noted that the institution recognised the need for priorities. However, the team did not find firm evidence that clear decisions about which activities were to be prioritised over others had either been taken or communicated to the wider institution.

New Observations

In considering the institution's mission and the Strategy for 2014-2020, the team noted that neither document prioritised any particular strand of activities of the university over any others. The functions of teaching and learning, research, service to society and innovation were all equally emphasised and excellence claimed in each. In the view of the team, this was quite difficult to achieve, especially if resources are limited. The team therefore recommends that RTU identify its priorities from amongst these main functions.

The team noticed that the 'decentralised' nature of arrangements was referred to several times in the SER and in meetings with staff as positive, and heard that faculties had a high level of autonomy and freedom regarding expenditure of their budget allocations and staffing. However, the team also heard in meetings of instances where institutional-level change had been slow to progress due to the time taken to reach a consensus. The team offered the view that, in the wider higher education context, collegial institutional structures were increasingly supported by central managerial approaches (whilst noting that this should not be taken as a financial allocation issue in the sense of giving more funding to central administration). **Therefore the team supports the institution's centralised arrangements for finance, study administration, research administration and human resource administration and recommends a move towards further centralisation of management and professional service functions.**

In terms of managing income sources, the team noted that government funding was carefully tracked and monitored, and that other sources of funding included tuition fees, dormitory fees and rents, and collaborations with industry. Research funding consisted of base funding and project monies. In line with the advice to prioritise particular strands of activity, **the team encourages RTU to follow trends in income sources, analyse these and act upon them, and maintain the separate handling of research project monies.**

3. Quality culture

1. RTU should continue to enhance quality culture in the institution and adopt a strategy for Quality Assurance in Teaching and Learning that takes the European Standards and Guidelines for Quality Assurance in Higher Education as a framework to be considered. (2013)

The team read in the SER that all sections of the Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG) had been addressed, although only Part 1 is relevant for institutions. The team heard that whilst all standards had been covered, not all guidelines had yet been completely enacted and that plans were in place to continue this ongoing work. The team found indications that ESG Part I of the standards had been addressed; but no evidence was provided to the team regarding RTU's own interpretation and procedures for enacting each and every guideline. The team was therefore unable to comment on how the institution addressed the guidelines, for example on student-centred learning, teaching and assessment, in terms of where these were discussed, interpreted and articulated within policy. The team was told that annual study direction self-evaluation reports ensured that implementation was in line with the guidelines, but was not able to check these. **The team advises that RTU should develop their processes for regularly checking the implementation of Part 1 of the ESG, and further embed these as part of the university culture.**

The team queried where systematic oversight of research was handled and heard that consideration was being given to extending annual quality assurance procedures to cover research, in cooperation with the research management structure of the university. This would provide quality assurance oversight of aspects such as publications, citations, projects, collaborations and agreements, and enable benchmarking between departments. **The team encourages RTU to establish mechanisms to systematically monitor, analyse, critically evaluate and share within the university its progress with research activities, to establish continuity and oversee performance over time.**

The team was informed that activity plans for faculties' study processes, derived from the goals in the strategic plan, were drawn up, agreed and reviewed on an annual basis with the Rector. The team also heard that recently-introduced government regulations for higher education had necessitated new internal audit processes to be established. Central processes for defining indicators relating to both study programmes and the full student life cycle, and for analysing and evaluating the general processes of the university, had been under development at RTU over the last year.

The team commends RTU's continuous tracking of various key performance indicators and recommends the extension of systematic and embedded use of data trends (for example, on student-staff ratios, and student drop-out rates) in routine evaluation and action planning of programmes, and in planning the institution's strategic direction.

The team was told that courses were evaluated through questionnaires, and that the accredited groups of study programmes known as 'study directions' were scrutinised through annual self-evaluation reports. However, from discussion with students, the team found that

the results of quality assurance processes, particularly student evaluation questionnaires, did not appear always to be consistently shared and transparent. **The team therefore recommends more consistent openness in sharing outcomes and responses to student questionnaires.**

4. Teaching and learning

1. Streamlining the programmes and enhancing cooperation between departments in teaching should be considered a priority. (2013)

The team heard that RTU offered both academic undergraduate programmes, delivered over three years, and professional undergraduate programmes driven by industry requirements, which included an internship and might run over four to five years. The team did not find evidence that the portfolio of programmes had been streamlined, but rather that the number of programmes had in fact increased since 2013. The team agrees with the previous recommendation.

2. Study programmes curricula should be reviewed regularly. (2013)

The team read in the SER and also heard during the site visit about new requirements approved by the Senate in 2016 for all study programmes at RTU to promote increased breadth and flexibility in the curriculum by adding some compulsory and elective small courses (modules). The SER explained that all undergraduate study programmes were therefore being reviewed and revised, with a new interdisciplinary course in entrepreneurship being introduced into all engineering programmes. The team heard that further consideration was being given as to how to create more interdisciplinarity within programmes. The team commends this development as a move in the right direction, but believes there to remain a risk of narrowness in current study curricula.

3. Students should be given adequate opportunities to carry out laboratory work as part of the courses together with practical training time outside the university. (2013)

The team was informed that at least one open access laboratory had been opened, and that plans were in place for others. The team heard of plans to increase investment to improve the standard and availability of laboratories and basic equipment for the use of students on undergraduate study programmes, as opposed to those undertaking research, and strongly welcomed these commitments.

4. ORTUS success should be used as an excellent example of rationalising and taking full advantage of the use of ICT at RTU. (2013)

The team agreed that RTU is doing well with developing its use of ORTUS, and heard examples of its use for communication with students, and for student surveys.

5. The team appreciated the way the central library is organised and run, and strongly supports the planned transfer of the dispersed branches in an expanded central library. (2013)

The team was informed that at least one faculty now had a library open 24 hours a day, seven days a week, and that this was greatly welcomed by the students.

New observations

The team was impressed by the general pride and confidence shown in the quality of learning and teaching, both by students and by lecturers. Students generally spoke highly of their teachers and mentioned instances where issues they had raised about teaching quality had been addressed. From meetings with staff, the team established that teaching staff were familiar with designing course and study programme learning outcomes, and students confirmed that they were familiarised with these at the start of each course.

The team commends RTU on its very good employment rates for graduates.

The team was informed that courses in subjects studied across different programmes (for example, mathematics, physics, chemistry and biology) were provided by the relevant specialist staff based in a home faculty but working across various faculties. Whilst this arrangement ensured the necessary specialist expertise was available for all courses, the team heard some suggestion that individuals delivering these courses were likely to have heavy teaching hours with little opportunity for research. The team reflected that one approach to alleviating this might be to establish a home faculty of Arts and Sciences as a collective home for the teaching of these common subjects.

The team examined and gave careful consideration to the curriculum structure of study programmes at RTU. From this, it appeared to the team that the proportion of major subject courses (or modules) and the contact hours per week (up to 20-25) were rather high, whereas the wider sector trend is towards lower contact hours. Furthermore, the team also heard from some students that topics were sometimes repeated in different courses or levels within their programmes.

The team was told that the Senate had recently introduced an internal regulation for 5-10% of engineering programmes to be spent in social studies or humanities, in addition to free electives, but that the introduction of this requirement had not been universally welcomed by staff or students.

The team suggested that there was an over-emphasis on teaching specialist subject courses in a programme, and the opportunities for interdisciplinarity were consequently minimised. The team considered that the traditional preference for developing “specialists” might be questioned in favour of adding some more “generalist” aspects to study programmes. With regard to funding limitations, more generalist programmes were less expensive to deliver. They also provided more flexibility in terms of preparing students to adapt to professional changes in the course of their careers, in the context of the global rate of change in jobs and professions. The team discussed with RTU staff the potential risks in training graduates too specifically for current local industry when they, and the nation, needed to be able to maintain the capacity to compete over time in the wider world. Specific industry would be different in ten years’ time, and graduates who had been raised as generalists were more likely to be better prepared to adapt and succeed in the context of global, as well as local, change. The team suggested that it was important for engineers to have breadth rather than just depth of

specialist subject knowledge, and that more knowledge of social science and the humanities would assist in developing students' capacity to become lifelong learners. The team considered that it was no longer feasible for students to learn all industry-specific knowledge in four years, and that this highlighted the importance of teaching students how to learn rather than over-emphasising subject content; some of the subject specialist material learned would quickly become outdated and irrelevant if students never worked in those particular areas, whilst their future jobs would train them in the specific industry requirements. Employers with which the team met also highlighted that once in employment graduates had to be trained in company-specific technology, and also commented on the need for them to have business skills. Opportunities to specialise and concentrate on studying specific aspects of a subject would continue to be available at masters and doctoral level.

The team found the senior management of the university to be very open to discussion of these ideas and to consideration of approaches to updating and rationalising the undergraduate curriculum structure. Possibilities suggested by the team included developing a common first year for students, who may prefer not to specialise until their second year, and to include more social science and humanities courses, which would also help to reduce duplication of specialist topics within programmes of study. Such changes could potentially be introduced within a relatively short timescale.

The team therefore recommends that RTU consider reducing the proportion of subject specific courses in the curriculum structure in favour of introducing more opportunities for interdisciplinarity within its study programmes.

The team heard that RTU has introduced some training seminars and courses on new pedagogical methods and promoting active and interactive learning, through the services of the Centre for Teaching and Learning (in the Faculty of E-learning technologies and Humanities), which developed academics' pedagogic skills and also provided support in technology-based learning. **The team commends the establishment of the Centre for Teaching and Learning and encourages the development of a system of seminars, both as induction for new teachers and as continuing professional development in new teaching methods for more established teachers.**

The team heard that for professors to be re-appointed they must now have participated in training. The team enquired about the links to teaching and learning in promotion criteria, suggesting as an example that there might be a requirement to submit a reflective teaching portfolio, with evidence of continuing professional development and updating, including developmental peer observation and feedback. **The team recommends that a fund be established to motivate and reward good teaching, for example through a small but prestigious annual award for 'the best teacher'. The team also recommends the introduction of a teaching innovation fund to support those wanting to improve their teaching for learning, by awarding small sums to support attendance at courses and seminars, or to enable teachers to carry out their own pedagogic research.**

Regarding the calculation of teaching loads and remuneration methods for academic staff, the team heard that the rates paid seemed not to be competitive with industry employment or to be sufficient to attract and retain younger members of staff. This was potentially a serious problem in the European and global contexts, and the issue was also noted as such with concern by students whom the team met. The team heard of cases where staff taught twenty hours per week and considered that, in such circumstances, it became extremely difficult to engage in research. The team suggested that the complex procedures for calculating remuneration based on numbers of students might be unnecessary and that the level of remuneration, combined with heavy teaching loads, presented a threat to retaining young, talented staff. **The team recommends that, so far as possible within the parameters of national policy, RTU review the arrangements for teaching allocations and calculating remuneration for teaching.**

5. Research

New observations

The team was informed about the progress made since the last IEP visit in developing the university's research profile and activities. The team heard that the senior management of RTU recognised the need to develop excellence in research and had taken steps to create mechanisms to promote this, primarily through establishing six research platforms in Energy and Environment; Urban Development; Information and Communication Technologies; Transport; Materials, Processes and Technologies; and Safety and Security Technologies. The team heard that the purpose of the research platforms was to enhance communication between faculties and with companies, creating opportunities for researchers from different fields to work on joint projects, but that they did not prioritise any particular research areas. RTU publishes its own Scientific Journal and, as well as Horizon 2020 activity, the university is engaged in prestigious external projects with CERN and the European Space Agency. The team heard that several independent research institutes had in the previous year been consolidated into the faculties within the university. In addition to RTU's base funding for research, some institutes and faculties were very active in successfully applying for external project funding, whilst others had less opportunity to do so in their disciplines.

The team read in the SER of RTU's planned activities in the area of research and noted particularly the statement, 'It is necessary to reassess research directions more carefully and focus on areas that can provide the greatest return, considering the competences of RTU and the needs of the economy.' (SER p.17). The team strongly agreed with this emphasis and would seek to highlight its importance. In the view of the team, research presented the main opportunity for RTU to develop and improve overall. Such a commitment to research as the main mission would create the potential for RTU to excel by competing successfully and increasing its international ranking, for the future benefit of both the university and the nation.

The team shared its opinion that this was a difficult area for the institution to address and that there were challenges to selecting one strand of activity as the main mission priority and then convincing everyone in the institution of this. However, the team thought that the timing was appropriate for this to be openly discussed and for the institution to move in the direction of increased strategic emphasis on research.

The team heard that the distribution of base research funding was already related to an extent to performance. In the view of the team, it would be advisable to go beyond this and select only the most promising and highly-performing areas of research to prioritise for funding and development, although this approach would present a significant change and would take time to introduce and establish. Staff in all areas of the university would still continue to undertake research, but the available funding would be allocated primarily to the selected areas of excellence. This would in time strengthen RTU's position in terms of publications in journals with high impact factors and competition for further funding, which would attract more researchers. Some of these priority areas might be very specific, others might be very large and

interdisciplinary; the team advised RTU to consider its capacity and potential and to start channelling funding in certain directions, thereby building a stronger basis for attracting postdoctoral researchers, and also doctoral candidates, in those areas.

In the two faculties visited, the team observed some high-quality equipment for research and doctoral studies, which they were informed had usually been resourced through project funding.

The team strongly encourages RTU to carry forward the planned activities on research as set out in its self-evaluation report. The team therefore recommends that RTU announce its main mission as research and select its main areas of focus.

6. Service to society

1. *The team recommends the university to evaluate the costs and benefits of the branch campuses offering courses outside Riga. The potential of RTU's distance learning programmes should be considered an alternative and complement for that kind of activities. (2013)*

The team was informed that the provision on branch campuses was valued by the Municipalities, who would like this to be maintained. RTU was making some changes to the provision, reducing the number of available programmes but moving towards offering full programmes (including professional programmes) rather than just the first two years, as previously. The programmes are overseen and partly delivered by the respective faculties, and the team was assured that there was regular contact and communication between the various points of delivery. There was no evidence that these arrangements raised any problems in terms of consistency of standards and quality of programmes. **The team recommends that RTU should make a cost/benefit analysis of the branch campus provision, whilst acknowledging that RTU may wish to continue these activities in the interests of social and community benefit.**

2. *RTU should facilitate access to educational programmes for socially vulnerable students as well as assure a gender-balanced study environment. (2013)*

The team heard very positive reports of the success and popularity of RTU's Engineering High School. This had been established partly in order to raise the standards in mathematics and science of high school graduates entering higher education in general, and RTU in particular. The Engineering High School aims to attract entrants with the highest achievements but also offers scholarships for those from socio-economically disadvantaged groups. Additionally, activities such as science workshops, competitions and public lectures were attracting a much wider range of school children than only those selected to attend the High School full-time (in grades 10, 11 and 12). The High School was therefore also seen as a platform for promoting a wider public understanding of scientific education. Employers have made awards in recognition of its success, and employer representatives whom the team met were very complimentary about this development.

New observations

Further to the points above, in the course of their visit the team was informed of a wide range of other services for companies undertaken in the context of wider society, including laboratory research; design and prototype consultative work and testing; start-up support; qualification courses; premises leasing; and equipment leasing. The team also heard very positive reports about the RTU Design Factory where students can actively work on their own science projects, the Innovation and Technology Transfer Centre and the Lifelong Learning Unit. Although the team did not have the opportunity to explore these units further, it was able to view success stories and evidence of patents and projects on the RTU website. The team noted that these

were important activities, but was not in a position on the basis of this visit to make judgements about them.

The team heard from employers and members of the Advisory Board examples of strong collaboration between faculty staff and industry, and of satisfaction with the standard of RTU graduates who were employed by their organisations.

7. Internationalisation

New Observations

The team heard and saw evidence of RTU's successful activities to increase numbers of foreign students in order to maintain overall numbers, and therefore income, by offsetting the decrease in population of home students. The team heard at its meeting with international researchers, students and staff of the excellent support provided, particularly by the Foreign Students' Office, which produced a clear and comprehensive *Student Guide to RTU*. The team were struck by the enthusiasm of this group in responding to the invitation to share their experiences and impressions, and students suggested that similar meetings occasionally with members of the senior management team would assist in increasing their integration at the university. **The team commends RTU's ambition to increase international recruitment but recommends further steps be taken to promote students' experience of integration.**

RTU students have the opportunity to study abroad through Erasmus+ mobility projects, with 276 agreements under which, the team was informed, there were over 200 outgoing students and over 500 incoming students entering studies or traineeships. The team heard evidence from a sample of students that their mobility programmes with other universities had worked out well. In some other cases, however, students mentioned issues with mapping programmes abroad to their own study programmes.

The team heard of various examples of productive international cooperation and collaborations between staff, both in research and, for example, in teaching summer schools for academic credit.

The team heard of positive moves to increase international mobility of staff for longer periods of research and collaboration and recommends RTU to explore further opportunities to promote international mobility.

8. Conclusions

In determining its overall conclusions, the team revisited the recommendations of the 2013 report and considered progress made against these.

The team found that the SER was thoroughly prepared and contained extensive information, although they considered that the report could have been more analytical and self-critical. It was not always initially clear to the team how the SER had addressed the previous recommendations, but a number of subsequent discussions during the visit assisted greatly in clarifying this.

The team was impressed by the leadership and commitment to progress at RTU but also observed some indications of a wider tendency in the university to caution in considering the possibilities for change within the institution. Despite the undoubted challenges of introducing innovation, the team would encourage the university to examine its existing traditional approaches and take confidence in its aspirations and potential to drive changes in teaching and learning, and in striving for excellence in the context of international competition in research.

In the view of the team, teaching and learning are generally characterised by local approaches, both institutional and national, in which changes are less influenced by global actors and trends. Research, on the other hand, is a global activity, driven by international players and standards. National or traditional approaches therefore exercise fewer constraints on institutions, since international collaborations, competitions and international funding are the major drivers of research. The team believes that RTU, as the leading technical university in the country, has the potential to improve its relative standing in the global higher education arena by emphasising research as its main mission and profiling institutional excellence areas.

Summary of the recommendations

Governance and institutional decision-making

The team

- recommends that the university continue to keep its structures under review, with a view to further streamlining.
- recommends that RTU consider leaner structures and fewer levels of decision-making in order to achieve more transparency and efficiency.
- supports the institution's centralised arrangements for finance, study administration, research administration and human resource administration and recommends a move towards further centralisation of management and professional service functions.

- encourages RTU to follow trends in income sources, analyse these and act upon them, and maintain the separate handling of research project monies.

Quality culture

The team

- advises that RTU should develop their processes for regularly checking the implementation of Part 1 of the ESG, and further embed these as part of the university culture.
- encourages RTU to establish mechanisms to systematically monitor, analyse, critically evaluate and share within the university its progress with research activities, to establish continuity and oversee performance over time.
- commends RTU's continuous tracking of various key performance indicators and recommends the extension of systematic and embedded use of data trends (for example, on student-staff ratios, and student drop-out rates) in routine evaluation and action planning of programmes, and in planning the institution's strategic direction.
- recommends more consistent openness in sharing outcomes and responses to student questionnaires.

Teaching and learning

The team

- recommends that RTU consider reducing the proportion of subject specific courses in the curriculum structure in favour of introducing more opportunities for interdisciplinarity within its study programmes.
- commends the establishment of the Centre for Teaching and Learning and encourages the development of a system of seminars, both as induction for new teachers and as continuing professional development in new teaching methods for more established teachers.
- recommends that a fund be established to motivate and reward good teaching, for example through a small but prestigious annual award for 'the best teacher'. The team also recommends the introduction of a teaching innovation fund to support those wanting to improve their teaching for learning, by awarding small sums to support attendance at courses and seminars, or to enable teachers to carry out their own pedagogic research.
- recommends that, so far as possible within the parameters of national policy, RTU review the arrangements for teaching allocations and calculating remuneration for teaching.

Research

- The team strongly encourages RTU to carry forward the planned activities on research as set out in its self-evaluation report. The team therefore recommends that RTU announce its main mission as research and select its main areas of focus.

Service to society

- The team recommends that RTU should make a cost/benefit analysis of the branch campus provision, whilst acknowledging that RTU may wish to continue these activities in the interests of social and community benefit.

Internationalisation

- The team commends RTU's ambition to increase international recruitment but recommends further steps be taken to promote students' experience of integration.
- The team heard of positive moves to increase international mobility of staff for longer periods of research and collaboration and recommends RTU to explore further opportunities to promote international mobility.

Concluding remarks

The team congratulates the university on its outstanding progress in developing an excellent study environment on the Kipsala campus, and would like to thank all at RTU for their warm hospitality.

The team wishes the university every success in taking forward its future strategic developments.