ACTIVITY REPORT

April 2014 – June 2017
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President Professor Dr. Christian Thomsen
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1 Interview about the Development of TU Berlin

Challenges for TU Berlin: New Topics and New Structures

Interview with Professor Dr. Christian Thomsen, president of TU Berlin, regarding lines of development and a special moment

You have been responsible for the development of the University since becoming president of TU Berlin in April 2014. In which areas or in which ways has TU Berlin changed the most during this period?

Christian Thomsen: In regard to our reputation, in my view. Unlike in the past, we are now an equal partner within the Berlin academic world of science. We have provided scientific impetuses such as the digitization offensive which achieved widespread notice. Digitization is no longer a purely technological topic, but rather a societal one. By turning out attention to this topic in Berlin, we are addressing one of the most essential societal questions of the present and are preparing our students and young researchers for the digital future. It acquires another dimension. However, we have also launched new academic models such as our professorships for innovation. This gave us a significant boost, not only as regards content but also in the public perception. The professorships for innovation were adopted as a model for all universities in the new contract negotiated between Berlin’s institutions of higher education and the State of Berlin regarding the provision of guaranteed state funding.

“An open university” – this has been your motto in recent years. What do you mean by this and what are the developments that TU Berlin has undergone in this regard?

To me, an open university is about the provision of study places for as many young people as possible –
limited only by the boundaries set by existing capacities. I am profoundly convinced that anybody who wishes to study must be given the opportunity to do so. However, openness, in my view, also pertains to subject-related openness. One example of this is our orientation course of studies called MINTgrün (STEMgreen), in which currently more than 500 first-semester students are enrolled. It gives young people the opportunity to start their studies with great open-mindedness towards different subjects. Many students take advantage of this option – the number has grown to around 10 percent of all those entering the University. Openness is also about being open-minded towards refugees. To us at TU Berlin, the situation in the fall of 2015 arose completely unexpectedly, and we reacted very quickly and in a very open manner, thanks also to the support from Berlin’s Senate Administration. With our program ‘in(2)TU Berlin’ we were among the first universities in Germany to come up with a sustainable concept. It is still effective, and proving highly successful. This is something I am particularly pleased about.

**How do you assess the external framework conditions in recent years?**

The financial support provided by the State of Berlin has increased. In the new university funding contracts with the State of Berlin we achieved an excellent result, the like of which we had not experienced before. The universities succeeded in winning the confidence of the Senate Administration, convincing it to increase its investment in them. We can also feel the benefit of the money that is flowing via the State of Berlin to the institutions of higher education from funds provided under the German Federal Training Assistance Act (BAföG) released by the Federal Government. In addition, we will participate in the Federal Government’s Tenure-Track Program that aims to create 1,000 professorial positions. All of this provides us with the financial scope to refurbish our buildings or create additional professorial positions. Ultimately, our students will benefit from both.

**Digitization has long ceased to be merely a buzzword, but is changing our society markedly. How does the University react to this?**

2017 is an important year for Berlin. We have just established the Einstein Center Digital Future with 38.5 million euros and – amazingly enough – 50 new professorial positions for Berlin. This is something that has not been witnessed before, either at this research location or – I would go so far as to say – anywhere else in Germany. An additional 50 million euros has been allocated to the German Internet Institute, which a Berlin consortium, in which TU Berlin is strongly involved, has managed to bring to the city. Together with the governing mayor of Berlin, I jointly launched the initiative for the Federal State’s digitization strategy in 2015. It is astonishing to see how things have developed – both through us and around us – in so short a period of time. At the Einstein Center, we deal with the question of how to implement digitization in an optimal, safe and beneficial manner. We also gain experience thereby in the interaction that takes place with society and with our partner institutions such as Freie Universität Berlin, Humboldt-Universität zu Berlin, the Berlin University of the Arts and the university hospital Charité or other interested external parties. We have shown that the partners for science in Berlin can transcend institutional vanity to apply jointly for major projects, succeed in having their applications accepted and then get the projects up and running, both with regard to content and organization. The trend-setting success of our Berlin model lies in the combination of top-level performance and the willingness of the institutions to enter into collaboration with each other.

**As of 2019, 553 million euros are expected to be provided for research as part of the Excellence Strategy. How is TU Berlin preparing for this important competition?**

We are preparing very intensively. In 2016, all faculties submitted drafts for possible clusters of excellence which were then evaluated by an academic advisory board for excellence at TU Berlin. Based on these submissions, six, in my opinion, very good clusters were drafted, one of which is in cooperation with the Berlin University of the Arts. These drafts were submitted externally by our researchers in April 2017. Furthermore, we want to be a party to the funding line for Universities or Associations of Excellence.
Universität Berlin, Humboldt-Universität zu Berlin, TU Berlin and Charité are also all collaborating now at an institutional level and are planning to enter the competition together. On several occasions in recent months, groups of researchers of various stripes came together for full days of closed meetings in which the key concepts for a joint application were discussed and advanced. Quite a novelty for Berlin! Almost in parallel, and thanks to the Einstein Foundation, among others, the further funding of the cluster of excellence UniCat, which has already existed for 10 years, and of the large research center Matheon, which was established 15 years ago, has been initiated.

What internal topics and lines of development have played a role at TU Berlin in recent years?

One of the major achievements is the provision of six professorial positions for innovation that emerged from our structure plan and which are also now working to our advantage with regard to the Excellence Strategy. However, the largest share of these positions is dedicated to the purpose of developing innovations at TU Berlin independently of the Excellence Strategy. By means of the professorships for innovation the faculties are enabled to move in directions that are not provided for in the long-term structure plans. As a result of this, a competition to find new issues to focus on has been initiated at TU Berlin, the like of which the University has never seen before. This is an invaluable advantage for our strategic development. A further internal development process is the introduction of SAP. This project has turned out to be more difficult and complicated than I had first imagined. However, despite the great effort involved, it was the right step to take. I am convinced that, using a modern electronic administrative system, the University will function better than has been the case in the past. This improvement will also benefit our competitiveness in comparison to institutions that have not taken this path.

A cultural change can also be detected with regard to the cross-cutting issue of internationalization. What can you report regarding this?

Internationalization@home, as we call it, is actually a novelty at TU Berlin. We have always been proud of the large number of students from abroad and our extensive international network; however, we didn’t pay much attention to the issue of internationalizing our academic and administrative staff. This has changed, with the effect that the University has become more diverse in a number of areas. To me, diversity is one of the most important societal concepts that the University should orient itself towards. We can see it in Berlin. The city is extremely diverse in many aspects. We have developed a whole range of measures for this change and will implement them in the future.

The issue of co-determination at TU Berlin, and, in particular, the turning of the Extended Academic Senate into a four-partite body, was discussed and resolved. Looking back, how would you describe this development, which attracted a lot of attention throughout the country? Where did this process lead the University?

You mentioned two factors: public perception, on the one hand, and the resulting internal consequences, on the other. The perception from outside was guided by the concern that the academic committee structures had become ossified and how this could lead ultimately to the University losing its capacity for action. Internally, the discussion did not lead to trench warfare, but rather to the generally accepted wish to strengthen a true, content-related participation by all groups. Consequently, the Participation Team was established. A serious, content-related participation by all status groups must be in the interest of all the involved parties. Personally, unlike some people outside of the University, I cannot detect at TU Berlin any sense of ossification or any division resulting from different status groups. We have managed to improve our ability to work together. However, we are still in the midst of the process and the path is not always easy.
How exactly has cooperation improved?

The different status groups take each other seriously. The members of the Participation Team communicate with complete confidence with each other. Not in the sense that they always have the same opinions, but more in the sense that they concern themselves with the question of how to advance even further the cultural change – as one can rightly term it and which has already become perceptible. The Academic Senate just recently adopted a Code of Practice. This also lays down rules for cooperation in the work sphere. Many at TU Berlin are open towards constructive changes. I am pleased about that. All those involved, regardless of their initial intentions, have jointly brought something into being in and for our University. Out of a difficult situation, we have established a positive development for TU Berlin. This is something I am proud of.

In the process of “opening the University” some of the hurdles related to the restricted-admissions policy have been removed, too. What impact did this have?

You are right. At the moment, a great many courses of study have no admissions restrictions. As a result, the number of students has increased noticeably. Now, in order to make systematic improvements to the student-teacher ratio, we have introduced various measures. For example, in the future, we will permanently assign 20 additional research assistants to the subject areas, namely 770 instead of the previous 750. Other comparable improvements are expected as a result of the additional professorial positions; these improvements will be effected, on the one hand, by the 24 new and additional professorial positions created to date by the Einstein Center Digital Future at TU Berlin alone and, on the other hand, by a similar number of new professors provided under the Federal Government’s Tenure-Track Program for 1,000 Professorial Positions. Therefore, our student-teacher ratio will improve considerably, provided that the number of students remains steady. This is part of our strategy. While, in the past, the number of first-semester students normally admitted to the University continually increased, we have now negotiated with our fund provider, the State of Berlin, that this number shall remain stable over the next five years. As a result, we are no longer required to keep increasing the number of first-semester students in order to secure our budget. In this situation we are now increasing the number of teachers by means of creating additional posts for academic assistants and professors, thereby achieving a sustainable improvement.

In recent years, TU Berlin dealt intensively with its own history – also in the context of the 70-year anniversary. What took place in this regard?

We have the obligation to look unsparingly at the University’s history, in particular, during the era of National Socialism, which we did, and we also examined the post-war personnel policy at the University. This was a matter of great importance to us. Two very-well-researched books were published in this regard and a much-noted exhibition was created in the forecourt of the Main Building, addressing the general public. We received a lot of feedback, including with regard to the two very interesting events that dealt with the issues.

A further historical topic “came to life” as a result of a resolution adopted by the German federal parliament, the Bundestag. 62 million euros will be provided to rebuild Berlin’s former building academy, the Bauakademie. In what ways is TU Berlin connected to the Bauakademie?

This is in actual fact a present to TU Berlin. The Bauakademie is our maternal home, since the roots of our University lie in this institution. Now there is the chance to rebuild the Bauakademie at its historical location in the very heart of Berlin. The focus of our attention is on the concept for running the institution. From the very beginning and with great interest, we have been heavily involved in the different forums dealing with the Bauakademie. The Bauakademie is far more than a building; it also represents a central point for architecture and building activities in the European context, also in the historical sense. If we were to become involved, we would be continuing Schinkel’s tradition and the international allure it once
possessed. The Bauakademie is intended to become part of the opening of the University towards, and its interaction with, the general public, as already described. It will be our spearhead. This building will provide us with a location in the core of the city, thus opening up new opportunities.

We’ve talked a lot about new structures, new lines of development and the measures taken in recent years. What was one of the most emotional moments for you over the preceding years?

Each morning, when I come to the University, I feel great and tell myself that “things can hardly become any better”. And I really mean it. An event that was very special to me was the visit of the Queen of England on the occasion of the 50th anniversary of the establishment of the Queen’s Lecture. For 50 years the queen has supported the Lecture, albeit with a few interruptions, which, however, always led to a new start, and she will continue to do so. The queen’s visit in the presence of the German chancellor and federal president was a particularly touching moment for me. A moment that will also be remembered because the preparations were a great joint project within the University. Everyone pulled together. You could clearly feel a strong sense of unity. Time and again, I am personally touched by seeing the many staff members who dedicate themselves with their hearts and souls to our great TU Berlin. I wish to express my deep-felt gratitude to them.

The interview was conducted by Stefanie Terp.
2 Structure and Strategy

2.1 The Executive Board: Members and Duties

At the beginning of the reporting period, the entire Executive Board was newly elected. The following overview indicates the respective officeholders and the areas of responsibility assigned to them:

Professor Dr. Christian Thomsen
President

Professor Dr. Eng. Christine Ahrend
First Vice President
Research, Faculty Appointment Matters and Promotion of Young Researchers

Professor Dr. Eng. Hans-Ulrich Heiß
Vice President
Education

Professor Dr. Angela Ittel
Vice President
International Relations and Teacher Education

Professor Dr. Ulrike Gutheil (until Sept. 2016)
Chancellor

Georg Borchert (since Sept. 2016)
Acting Chancellor

Concurrently with the election of the new Executive Board in 2014, the function of department head was adopted for the Central University Administration under the direction of the chancellor. In this regard, the responsible vice presidents continue to have the right and opportunity at all times, and in a direct and immediate way, to carry out consultations with, and to issue instructions to, the specialist departments – especially those pertaining to strategic control.

Furthermore, in preparation for the application for the Excellence Strategy tender of the Federal Government and the Federal States, the Task Force Excellence Strategy was established and assigned to the president.
In August 2015, the field of Patent and Exploitation Management, which, after the resolution of Berlin’s patent-exploitation agency, ipal GmbH, and during the tenure of the previous Executive Board, had temporarily been located at the President’s Office, was moved to the Research Department (Section V D).

Furthermore, TU Berlin’s international activities were brought together in a visible and effective unit. Since May 2016, the new Office of International Affairs has been a point of contact for issues pertaining to research and students. The new area of International Affairs brings together the sections Student Mobility and International Students (formerly International Office), International Scientific Cooperation and Strategic Partnerships (formerly Foreign Relations Office), International Projects (formerly Erasmus Mundus), and the Preparatory School.

Professor Gutheil’s departure in the fall of 2016 required a relocation of the project management for the ERM Project (a sub-project of the SAP implementation). Concurrently with the assignment of Mr. Oeverdieck as new ERM project manager, the related staff structure of the tukerp area was moved correspondingly from the chancellor’s to the president’s area of responsibility. Correspondingly, the steering committee is now headed by the president.

**Cooperation and Communication**

Since the Executive Board’s entry into office, open and constructive communication, as well as collaboration on a foundation of trust, with the members of all status groups at the University has been a matter of great importance.

Examples of these elements of open communication are:

- consultation hours offered, as well as open rounds of talk and round-table discussions hosted, by the president and the vice presidents;
- info letter from the Executive Board to inform university members at regular intervals about current projects of the Executive Board;
- establishment of work groups on specific topics that have jointly and constructively participated in, for instance, the drafting of the Internationalization Re-Audit, the Guideline for Appointment of Professors, the Concept for Young Researchers, the Statute on the Safeguarding of Good Academic Practice (2016), etc.;
- workshops held in Ziethen that give the members of TU Berlin a platform to develop new ideas and guidelines with regard to the issue of ‘Reconsidering Teaching and Learning’;
- closed meetings and follow-up meetings thematizing the concept ‘Sense of Belonging’ as an instrument for developing the University;
- the Summer Party and the awarding of the prize ‘We are TU Berlin’ to enhance the special sense of togetherness and honor dedicated staff members for their contributions towards advancing our University;
- provision of data, data tools and analyses compiled by the Office for Strategic Controlling.

**2.2 Strategic Developments**

**Einstein Center Digital Future (ECDF)**

The cooperation with other universities and non-university institutions has become increasingly important for the further strengthening of potentials in research and teaching and, in particular, the developing of
new high-profile research fields. With regard to the research conducted at TU Berlin, such strategic cooperation, both at institutional and individual levels of project collaboration, takes place with partners from different institutions, whereby the activities and successes in selected key application areas (or fields of competence) can serve as prime examples.

In the future-oriented field of digitization, one great success in TU Berlin’s sphere of research is to be recorded, namely the securing of the Einstein Center Digital Future.

Digitization is changing the very foundations of all areas of life and research. In this connection, the digital transformation opens up opportunities for a better quality of life, new business models, more efficient economic management and innovative research approaches. The ECDF provides excellent framework conditions for target-oriented research in this field.

Over the last two years of the reporting period, the application for the Einstein Center Digital Future, as well as its funding and establishment, were central issues. After the Einstein Foundation Berlin had conducted an intense scientific evaluation process with international involvement, the ECDF was approved in September 2016. With their successful initiatives for the Einstein Center Digital Future and the German Internet Institute, the Berlin universities have secured for themselves pole position when it comes to the issue of digital transformation in Germany. The official green light was given for the Einstein Center Digital Future on 3 April 2017 in the form of a launch event in the presence of the governing mayor of Berlin, the senator for health, care and equality, the state secretary for science, as well as 200 guests from the worlds of science, business, politics and the press.

Around 50 additional professorial positions, largely for junior professors, have been created – around half of them at TU Berlin – thus strengthening and focusing the science sector in Berlin in an unparalleled manner. Other institutions that have jointly applied with TU Berlin as their principal applicant are the university hospital Charité – Universitätsmedizin Berlin, Freie Universität Berlin, Humboldt-Universität zu Berlin and the Berlin University of the Arts. A large number of renowned non-university research institutions (Berlin Institute of Health, German Aerospace Center, Fraunhofer Institute FOKUS, Heinrich Hertz Institute, Fraunhofer Institute for Reliability and Microintegration, Max Delbrück Center for Molecular Medicine in the Helmholtz Association, PTB – National Metrology Institute of Germany, Zuse Institute Berlin), as well as the Beuth University of Applied Sciences and the HTW University of Applied Sciences are involved in the center, too.

Equally unique is the way in which this project is financed: about one third of the funds are provided by private enterprises, about one fifth by the non-university research institutions involved and the rest by the Federal State Government (the Senate Chancellery).

The Einstein Center has four focus areas of research: ‘Digital Algorithms, Methods and Infrastructure’, ‘Digital Industry and Services’, ‘Digital Humanities and Society’ and ‘Digital Health’. These focus areas are based on the existing cross-cutting competencies (Computer Science, Engineering, Humanities, Mathematics and Natural Sciences, Planning and Management) and areas of societal responsibility (Technological Innovation, Knowledge Management, Beneficial Processes and Products, Education and Creating New Job Areas, Competitive Qualification) at TU Berlin (source: Strategy for the Future of TU Berlin). The professorial positions to be filled are interdisciplinarily oriented and focus on digitization as an issue of increasing importance in all academic and science-related fields. The concept has found adherents both in Germany (Hamburg) and in neighboring countries (Vienna, Oslo) who are currently pursuing plans to establish similar centers.

Each faculty at TU Berlin is represented at the center through at least one professor and these professors drive forward in all core competencies the vision ‘Solutions for Societal Challenges’ of the Key Application Areas of TU Berlin’s Strategy for the Future. They use the entire range of disciplines to establish fields of future focus and promote cross-faculty and cross-university research activities in a strong network with external players (source: TU Berlin’s University Mission).
The 50 professors will commence their work at the Einstein Center Digital Future as part of an ongoing process, conducting interdisciplinary research into a wide variety of issues pertaining to digitization. The first professors have been appointed and have started their work, developing further the culture of cooperation.

A joint project in which all the city’s universities team up – reaching out additionally to numerous non-university research institutions of high standing – is a unique feature of Berlin that is otherwise unparalleled in Germany. The Berlin universities are building on the strong cooperation of recent years and are using this foundation for a joint application as part of the Excellence Strategy of the Federal Government and the Federal States, thereby aiming to strengthen the competencies visible at the local level in all areas relevant to digitization. The Einstein Center Digital Future and the German Internet Institute are helping to pool the competencies of different disciplines, thereby enabling Berlin to stand out – both nationally and internationally – as a leading research location for digitization.

**Tenure-Track Program for 1,000 Professorial Positions**

In late May 2017, TU Berlin submitted its application for participation in the Federal Government’s Tenure-Track Program for 1,000 Professorial Positions. By placing the focus on the cluster drafts submitted for participation in the Excellence Initiative, and based on a sequence set by the faculties, TU Berlin may have the opportunity to enhance its research and teaching potential by up to 25 additional professorial positions. Simultaneously – as a prerequisite for participating in this program to improve the prospects for establishing permanent work positions for young researchers – the State of Berlin and TU Berlin have reorganized the tenure-track procedure. In addition to the professorial positions provided under this program, in which the tenure-track procedure is mandatory, TU Berlin may also fill its future university-funded professorial positions in this manner. Assessing the suitability of this procedure for obtaining a full professorship, as well as the degree to which it is accepted by the faculties, will be a matter of time – especially if it is to become the principal appointment procedure for TU Berlin’s own professorial positions.

**Bauakademie**

After more than a decade of frequent discussions about the rebuilding of Schinkel’s Bauakademie (Building Academy), the German Bundestag (Federal Parliament) unexpectedly provided the funds for this purpose in November 2016. The further planning was assigned to the Federal Ministry of Environment, Nature Conservation, Building and Nuclear Safety, which organized three public consultation events from January to May 2017 for the purpose of developing usage scenarios. Prior to these events, TU Berlin’s Museum of Architecture had developed an independent usage concept that was presented at the first event and met with considerable interest. Proceeding from the historical connection of Technische Universität Berlin to its maternal home in the Bauakademie, the draft provides for the return to it of TU Berlin’s Museum of Architecture, which will organize the exhibitions side within the Bauakademie with its own projects and at the same time work together with other partners on exhibitions. Other components of the Neue Bauakademie include an event center to hold conferences and seminars related to construction and architecture, as well as a residence for fellows and scholars to carry out their own research and put forward new designs. For this component TU Berlin can also contribute its own research and teaching competencies.

In March 2017, TU Berlin’s president Professor Dr. Christian Thomsen secured the funding required for running the Bauakademie as part of the university contracts with the State of Berlin. In parallel, consultations with partners from the Ministry of Foreign Affairs (German Archaeological Institute and the Goethe-Institut) took place to top off the program. This advanced concept formed the basis for a brochure presented at the final consultation event on 3 May 2017 that will now (last update: June 2017) be incorporated in the further planning by the Federal Ministry of Environment, Nature Conservation, Building and Nuclear Safety.
Construction Work

At the beginning of the reporting period, major challenges related to the consolidation of sites and spaces had already been met. Giving up the building in Franklinstraße (about 40,000m² of rented space), and moving into buildings in Marchstraße and at other locations, enables TU Berlin to cut back its space by about 8,000m² and save leasing costs of around 2.5 million euros per year. Therefore, the years from 2014 to 2017 have been marked by the planning and funding of future-oriented projects. In 2015, TU Berlin received the confirmation for the realization of major construction projects, with funds amounting to more than 200 million euros being provided from the Federal State budget as part of an investment pact for university buildings pertaining to the decade from 2017 to 2027. In accordance with Article 91b of the Basic Law of the Federal Republic of Germany (GG), additional funds were approved by the Federal State and the Federal Government for the new building IMoS, with the period for completing the construction being limited to the end of 2021. In addition, we have managed to get off the ground a joint planning procedure for the proposed new building to replace the Mathematics Building and the research building IMoS, with the result that, over the next five years alone, new buildings with a total cost of at least 135 million euros are expected to be completed on the east side of Campus Charlottenburg.

Since 2015, TU Berlin has received an additional 5 million euros from the so-called BAföG Investment Pact providing funds originally appropriated for supporting students under the German Federal Training Assistance Act (BAföG). These funds provide the means for both urgently required refurbishment measures, such as the already completed refurbishment of the northern façade of the Extension Building, as well as prestigious construction work. Before the end of 2017, the new Centre for Entrepreneurship will be opened on the ground floor of the Building BH-N. The refurbishment of the historical lecture hall ER 270 is scheduled for 2018.

The circulation and cavitation tunnel UT2, designed by architect Ludwig Leo, is one of Berlin’s latest architectural monuments. Its refurbishment, funded by the charitable Wüstenrot Stiftung, will be completed by mid-2017.

From 2014 to 2017, numerous building measures were, and are, being realized due to staff appointments and the reorientation of subject areas. The renovation of the new premises for the subject area of biological psychology and neuroergonomics can be mentioned as an example in this regard. Within Building V, which has protection as a historical monument, a fully air-conditioned hall was developed to bring back a unique, specialized research laboratory.

TU Berlin’s Main Building was given a new face by means of introducing a sign system to help people orient themselves within the building. The fire-protection measures implemented in the reporting period enable the use of the Main Building’s circulation and hall spaces for conferences and exhibitions. With the completion of the construction work connected to the relocation of the sanitary facilities to the ground floor, the foundation has been laid for the remodeling of the Main Building’s foyer spaces (scheduled for 2018).

Although the construction budget has been increased by around 20 percent due to the BAföG Investment Pact, and although the major construction projects planned by the Federal State of Berlin offer encouraging prospects for the future, the backlog of TU Berlin buildings awaiting refurbishment is constantly growing. TU Berlin is in charge of preparing a specialist report by the eleven Berlin institutions of higher education that is to specify their funding requirements, calculated on the basis of a building-related and technical evaluation method. It is hoped that this specialist report, to be completed in collaboration with the Senate Administration by mid-2017, will form the basis of a program for refurbishing the institutions of higher education and that this program will be funded by the Federal State of Berlin.

In addition to the development of the eastern part of Campus Charlottenburg and the successful planning of major construction projects, the site planning in the years 2014 to 2017 was marked by continuous discussion about the Seestraße site. In 2015, the so-called Zuckerinstitut (Sugar Institute) was abandoned as
one of TU Berlin's external locations, with the building being sold for 3.5 million euros to the German Heart Center Berlin. Although subject areas that had previously been spread across the city could be successfully concentrated in fewer locations, it took as long as until 2017 to launch at Campus Seestraße a joint vision for the Departments of Food Engineering and Food Chemistry together with the Department of Biotechnology. In addition to the construction works connected to the Departments of Food Engineering and Food Chemistry, funded by the Federal State and expected to start in 2020, a further new building is planned on the campus in order to bring together all the subject areas of biotechnology at a single location in the long term. Furthermore, in accordance with Article 91b of the Basic Law of the Federal Republic of Germany, TU Berlin is currently planning to register a joint research building with the university hospital Charité at the site in Seestraße.

**Enterprise Resource Management System (ERM)**

The introduction of an Enterprise Resource Management System (abbreviated: ERM), as an integrated system to replace the individual IT solutions previously used within the departments, is a matter that has concerned TU Berlin for a number of years. After extensive preparatory work, the tender procedures to select the companies to be assigned both with regard to the ERM and the SLM (Student Lifecycle Management), as well as the decision made in favor of SAP, as the provider of the basic IT system in the future, the official green light was given for the concrete implementation at a launch event held in the Atrium on 27 January 2016.

Initial parts of the ERM system are scheduled to enter into operation on 1 January 2018. The phase leading to this stage was, and continues to be, marked by comprehensive planning and negotiations with SAP regarding changes to the standard system (change requests), the preparation of subject-specific concepts, completed in late 2016, as well as the obtaining of the relevant approvals from the staff councils, by means of which the first project phase was completed. The second phase, which is the current project phase, predominantly deals with so-called Cross Applications (such as identity management, roles and access rights, test management, interfaces and reporting system). Parallel to this, training sessions will begin, thus ensuring that all preparations are made to start operations on 1 January 2018. Further components of the overall system will take up operation later, for instance, those pertaining to the area of finance as of 1 January 2019.

The focus for the introduction of the ERM and SLM systems continues to lie on the development of a single integrated IT-based solution that will provide consistent data and facilitate administrative processes, even going beyond previously existing system boundaries. In this regard, particular attention has been paid to retaining, as far as possible, the strengths of the previous island systems, involving the faculties at every stage and picking up on their requirements, while initiating right now the planning for the update and expansion of the system (for instance with regard to research management).

By means of introducing both systems (ERM and SLM) at the same time, TU Berlin has launched a project that is unique in Germany and is regarded accordingly by our partner SAP as a lighthouse project to be treated preferentially.

Not only do we aim to replace 40 specialized IT procedures at TU Berlin with the new SAP software, but we also endeavor to improve the service offered as well as the quality of our work processes, to use our capacities more efficiently and to enable a consistent monitoring of the results of our processes.
Open Access

Academic publications constitute to a significant degree the output of a university. TU Berlin pursues as a strategic goal the provision of free access to academic publications and research data. The years from 2014 to 2017 have brought the University considerably closer to this goal: open access is provided for an impressive 78,000 works in the public domain of TU Berlin’s Museum of Architecture, for more than 1,000 retro-digitized volumes that are part of the Digitized Collections of the University Library, as well as for nearly 6,000 documents and publicly available research data contained in DepositOnce, TU Berlin’s repository for publications and research data.

In 2016, TU Berlin’s president Professor Dr. Christian Thomsen signed the Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities, thus confirming the strategic goal to anchor open access in the divergent publication cultures of academic disciplines and to make it a natural model for publications in the everyday world of research at the University. Open access is to increase the visibility of TU Berlin’s academic output, facilitate access to research results as well as enable the re-use of research results in digital teaching and the application of new methods such as text and data mining. In 2016, Professor Dr. Vera Meyer (Faculty III, Department of Molecular and Applied Microbiology) was appointed open access officer in order to support the Executive Board in the strategic decisions required in connection with free access to academic publications.

In 2015, 2,025 papers by TU Berlin members appeared in peer-reviewed academic journals, 150 of them in genuine open access journals. The Open Access Strategy proclaimed by the Berlin Senate Administration has set a goal of 60 percent to be reached by 2020. Much remains to be done in this regard. Supported by the German Research Foundation, TU Berlin has established a Publication Fund, from which fees related to open access publications can be reimbursed. The Publication fund is managed by the University Library. The open access team at the University Library is the contact partner for all operative issues pertaining to open access publishing, such as questions regarding the Publication Fund and secondary publications.

In the fields of open access and research data, TU Berlin collaborates closely with other institutions in Berlin, in particular, with Freie Universität Berlin and Humboldt-Universität zu Berlin.

Centre for Entrepreneurship

The transfer of knowledge and technologies by means of spin-offs is a matter of great importance at TU Berlin. The Centre for Entrepreneurship (CfE), jointly managed by Professor Dr. Jan Kratzer (subject area of Entrepreneurship and Innovation Management – EIM, Faculty VII) and Dr. Florian Hoos (Business Start-up Service, Section within the Research Department), successfully pools the knowledge acquired from the research into, and teaching of, the topic of entrepreneurship, as well as the experience made in advising entrepreneurs.

In recent years, the CfE has positioned itself as one of the leading centers for entrepreneurs within the German academic landscape. Only recently, in 2016, the Investitionsbank Berlin-Brandenburg once again honored the center with the ‘Ideenschmiede’ award that is annually bestowed on the best university think tank. In the annual evaluation ‘Gründungsradar 2016’ TU Berlin came first in the category relating to the support it provides to its spin-offs. The great potential for innovation and the economic importance of university spin-offs for the region have been proven in the context of TU Berlin’s survey of entrepreneurs in 2016, in which 302 companies participated. In 2015, these companies (n = 253) with a total of 18,400 employees generated a turnover of 2.6 billion euros. Since 2014, the CfE has also distinguished itself in the following ways:

- successful acquisition of millions of euros in external funding (Federal Ministry of Economic Affairs and Energy, Federal Ministry of Education and Research, German Academic Exchange Service, Chamber of Commerce and Industry of Berlin, Senate Administration for Education, Youth and
Families, as well as private fund providers and partners);

- participation in lighthouse projects such as ‘EXIST Start-up Germany–Israel’ (Federal Ministry of Economic Affairs and Energy), Climate-KIC, EIT digital (EIT), INKULAB (workspace in containers provided to startups in the life sciences by the Chamber of Commerce and Industry of Berlin), Euref Research Campus Mobility2Grid;

- membership in the Berlin startup network B!GRÜNDET as well as organization of several demo days to connect startups with the industry;

- hosting of events with international guest speakers such as Eric Schmidt (Alphabet/Google), Chris Cox (Facebook), Florian Heinemann (Project A Ventures), Klaus Hommels (Lakestar);

- development of a network of top-class investors and establishment of the TU Berlin Investors’ Club (an exclusive circle of so-called ‘angel’ investors);

- The number of applicants for the MSc program in Innovation Management and Entrepreneurship climbed from 180 in 2011 to 529 in 2016.

- From 2014 to 2016, eleven doctoral theses were completed; currently, 19 doctoral candidates and five candidates for Habilitation are being supervised within the subject area of ‘EIM’.

For the second half of 2017, a co-working space with around 1,000m² is scheduled to open at the central location of Ernst-Reuter-Platz 1, thereby increasing the space available for the provision of advisory services to startups (currently 20 per year) and enabling a broader range of teaching and continuing-education options in impressive quarters.

In detail, the CFE offers a variety of awareness-raising events and supports at every stage of their startup projects those interested in becoming entrepreneurs. At the very beginning of their studies, students are introduced to the topic of entrepreneurship by means of the Startup Slam that has been taking place on the First Semester Day since 2015. Practice-oriented courses dealing with the topic of self-employment, information days, lectures and workshops as well as the individual advisory service contribute to the further spreading of entrepreneurial ideas and activities at the University. In addition to strengthening an environment that is friendly towards startups and entrepreneurs, the CFE systematically develops the knowledge- and technology-based potential for startups. As an incubator for startups, the CFE provides a safe space for developing ideas and bringing them to the point where they are ready for the market. The focus in this regard is placed on the support of high-tech startups.

2.3 Budget and Staff

Budget

From 2014 to 2017, consumptive grants have increased by an average 2.9 percent per year. In the same period the estimates for staff expenses (excluding externally funded staff) and material expenses have risen by an average of 2.9 percent, too.

Taken by itself, such a parallel development of grants and expenditures is not at all unusual. However, in this development it has not been factored in that TU Berlin’s budget displays a funding gap in the form of a so-called PMA (Pauschale Minderausgabe) shortfall (that is, an across-the-board reduction in expenditure). In 2014 to 2016, the latter amounted to around 9.4 million euros annually. However, this sum did not come into existence in this reporting period alone, but had also been recorded as a PMA shortfall in TU Berlin’s budgets for the years prior to 2014.
The funding gap in TU Berlin’s budget is a structural deficit for which TU Berlin is not responsible. It is the result of rising material expenses that had been considered inadequately in the negotiations for previous university contracts for the provision of guaranteed state funding.

In the 2017 budget, the PMA shortfall was almost halved and reduced to 5.3 million euros. This was achieved by a combination of different measures that ensure that this reduction is not merely a one-off. The structural deficit was therefore sustainably reduced. The combination of measures included, among other things, an expenditure cutback for leases, a higher rate for overhead costs in the budget as well as the reduction of the number of subject areas to the number envisioned in the structural plan.

The measures were extensively and, at times, very emotionally discussed in the Academic Senate. In the end, however, the entire University will benefit from the reduction of the PMA shortfall. For instance, in 2017, unlike in 2013, the faculties are no longer required to generate 5.9 million euros from their budgets, but only 2.8 million euros instead.

During the negotiations with the State of Berlin for the university contracts for the period from 2018 to 2022, TU Berlin achieved a result that will support the efforts made with regard to the budget consolidation.

**Staff**

In the context of the Campus Management Program and the ERM Project, in particular, the Sub-Project Staff deals with the implementation of staff-relevant processes such as staff administration, salary accounting, management of travel expenses, personnel development, advertising of vacancies and hiring (e-recruiting), as well as with the related integrative procedures in the future SAP system (HCM Module – Human Capital Management).

So far, different project phases have taken place in preparation for the planned implementation of the SAP system in 2019 – the feasibility analysis (2013/2014), the tendering phase for selection of the service provider (2014/2015) and the first conception phase (2016/2017). The realization phase has just started. As part of the feasibility analysis, staff-related processes that are of particular relevance and critical importance to TU Berlin were analyzed and, based on the respective results, organizational and technical target processes were adapted and developed. The teams dealing with the issues of ‘travel expenses’ and ‘advertising of vacancies and hiring’, in collaboration with staff members from throughout the University, both from the centralized and the decentralized levels, have achieved constructive results. During the tendering phase, these results were included in the performance specifications to be fulfilled by the implementer as mandatory requirements for the new system. After the selection of the implementing partner and the determination of the internal and external tasks to be carried out in collaboration with the SAP consultants, special training sessions and workshops on the preparation of specialized concepts took place during the conception phase. The requirements resulting from the feasibility analysis and the performance specification were defined and included in the respective specialized concepts pertaining to individual staff-related processes, thus enabling the implementation partner to reproduce them technically within the HCM Module of the SAP system. The goal of the recently started realization phase lies in the technical implementation, thereby ensuring that the sub-project for testing the system and, in particular, the HCM Module can begin in the first quarter of 2019.

The staff-administration process is scheduled to be implemented, together with the organizational management, as early as 1 January 2018, with initial testing starting in August 2017, as the realization of this process is considerably advanced. The experience acquired from this implementation will be helpful for the upcoming tasks of the entire Sub-Project Staff.

With the entry into force of the Act on the Amendment of the Rules Regarding the Salaries for Professors Remunerated According to Schedule W in the Federal State of Berlin (BerlProfBesAndG) of 7 April 2015, which was promulgated on 20 April 2015, the alimentation principle has been taken into account in the
Federal State of Berlin by means of an increase, with retroactive effect from 1 January 2013, in the basic salary rates for Salary Grades W 2 and W 3. At the same time, the BerlProfBesÄndG provided for a partial decrease in the monthly appointment and retention payments, special salary increments related to performance as well as salary increments related to offices held by full-time university presidents, provided that they had been due to the recipients on 1 January 2013 or had been granted for the first or a repeated time during the period from (including) 1 January 2013 to 20 April 2015, to half of the respective increased amount of remuneration. The corresponding implementation of the legal requirements by means of a review of any payment adjustments to be made with retroactive effect from 1 January 2013, particularly with regard to incentive earnings, as well as the issuance of a corresponding notification including a comparison in tabular form of the salary components prior to, and after, entry into force of the BerlProfBesÄndG to the professors remunerated according to Schedules W 2 or W 3, and the adaption to be made to payments, was effected in a timely manner. The final implementation of the requirements took place by means of the salary payments for the month of August 2015.

The Act on Temporary Employment Contracts in Science (WissZeitVG), in force since 2007, underwent substantial amendments that took effect on 11 March 2016. Fundamental changes were made, in particular, to the relevant provisions regarding limitations in contracts for temporarily employed academic staff. According to Section 2 (1) of the Act on Temporary Employment Contracts in Science (pertaining to posts financed by means of the university budget and not by means of project-related third-party funds), the legislator stipulates that an employment of limited duration must support the purpose of enabling young researchers and artists to gain a personal academic or artistic qualification. In this regard, the period of limitation should be determined in such a way as to enable the achievement of the qualification objective within the contract term. Amendments were also made to the statutory provisions for the limited employment of academic or artistic assistants for posts mainly funded by third-party funds in accordance with Section 2 (2) of the Act on Temporary Employment Contracts in Science (WissZeitVG). The period of limitation shall now correspond to the approved duration of a project. All changes made in the Amendment were announced by means of the Circular on the Act on Temporary Employment Contracts in Science (WissZeitVG) of 8 March 2016. In addition, a Declaration Regarding the Qualification Objective has been provided, which includes by way of example a listing of qualification options besides doctoral and postdoctoral degrees.

To TU Berlin, certified as a family-friendly university, it was a matter of particular importance to breathe life into the extension of the overall admissible period of limitation of twelve years that is stipulated in the Act on Temporary Employment Contracts in Science (WissZeitVG) in the context of the so-called family-policy component. After a productive discussion process, this provision was implemented by means of the publication of the Circular on the Availment of the Family-Policy Component on 9 May 2017.

2.4 Infrastructure and Service

Health Management

The Health Management Steering Committee has set itself the goal to retain and promote the health and wellbeing of TU Berlin’s staff members by means of systematic health management. In order to be able to offer TU Berlin’s staff health-promoting measures tailored to the needs of specific target groups it is important to know how staff members assess their working and organizational conditions at the University and where they see a need for action.

For this purpose, in 2016, the Health Management Steering Committee decided to carry out a university-wide survey together with the health insurance company Techniker Krankenkasse. The two-year project was initiated by Professor Dr. Gutheil. In November 2016, staff members were given the opportunity to
participate in the survey, either online or per mail. 19.9 percent of TU Berlin’s 7,547 employees participated in the survey. Taking the project further, the Health Management Steering Committee will be responsible for ensuring the development of health-promoting and need-based options, as well as their implementation and testing for effectiveness, based on the results of the survey.

Furthermore, effective as of 1 March 2016, TU Berlin entered into a contract with Techniker Krankenkasse (TK) on the joint execution of a project for the promotion of workplace health. The goals of the project include, among other things, the promotion of a healthy work and organizational structure as well as the support of behavior patterns that are beneficial to staff health. Based on the Prevention Act (Section 20 of Social Code V – SGB V), TK supports institutions of higher education during the introduction and further development of a program for the promotion of workplace health. The project is scheduled to take two years.

For the period of the project, a work group, composed of members of the Health Management Steering Committee, has been put together for the purpose of organizing and steering, in close collaboration with the other members of the Steering Committee, the content-related aspects of the project. The committee consists of TU Berlin staff members and an external process advisor, qualified psychologist Inken Riese, who represents TK and moderates the process.

**IT Infrastructure**

In 2013, TU Berlin was one of the first universities in Germany to offer its staff members and all of its students a cloud storage service based on the ownCloud software; each university member is currently provided with 20 to 100GB of personal storage space. Today, the service is being used by more than 20,000 university members. The independent provision of storage space that may be accessed around the clock from all kinds of mobile and desk-top devices anywhere in the world, and which is in compliance with European and German regulations, is one of the most essential infrastructure-related tasks of a modern university data center. The service is being continually developed and in the meantime also provides 250GB in non-personal storage space to all organizational units at the University. Storage space can easily be extended.

The more than 100 million files and folders currently saved in the tubCloud can be shared in a controlled manner, both internally and externally. By means of federated sharing at the national and international level, data can also be exchanged with cloud services at other institutions. Due to a standardized design, an exchange between different cloud products is already possible.

In order to absorb synergy effects, reduce procurement costs and strengthen the University’s position towards producers and providers, TU Berlin, against payment of a fee to cover costs, provides other institutions that are also part of the German Research Network (Deutsches Forschungsnetz – DFN) with access to the DFN Cloud service. Currently, fourteen DFN institutions – the Berlin University of the Arts and Freie Universität Berlin among them – take advantage of the service offered by TU Berlin.

tubIT is currently working on integrating the service into traditional file services (Samba, NFSv4, RSYNC, SFTP, etc.), expanding the options for cooperative working within the tubCloud (chat, audio/video chat) and enabling the joint processing of Office documents. In addition, more resource-saving basic infrastructures are being tested (OpenStack and Container are to replace virtual machines in the future).

**Vocational Training Section**

With up to 170 trainees, TU Berlin is one of the largest providers of vocational training in Berlin’s inner city, currently educating trainees in 15 different professions that require vocational training. Since 2015, the applications of all applicants have been recorded in an applicant database designed by the Vocational Training Section (II AB).
In the following, please find the applicant figures for the years 2015 to 2017; for each year, the three vocational-training professions with the most applications are listed (see Table 1).

<table>
<thead>
<tr>
<th>Year</th>
<th>Total number of applications</th>
<th>Vocational training applications as mechatronic technician</th>
<th>Vocational training applications as chemical laboratory assistants</th>
<th>Vocational training applications as administrative assistant</th>
<th>Vocational training applications as carpenter</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>1,362</td>
<td>180</td>
<td>185</td>
<td>327</td>
<td>151</td>
</tr>
<tr>
<td>2016</td>
<td>1,278</td>
<td>158</td>
<td>189</td>
<td>396</td>
<td>194</td>
</tr>
<tr>
<td>2017</td>
<td>1,451</td>
<td>189</td>
<td>189</td>
<td>370</td>
<td>194</td>
</tr>
</tbody>
</table>

**Table 1** Applications 2015–2017 Professions Requiring Vocational Training TU Berlin

The application documents are viewed by the administrative staff from II AB before eligible candidates are invited for selection tests and, if applicable, for interview or a structured selection process with assessment-center elements. In each of the years from 2015 to 2017, an average of 46 trainees was hired.

In order to ensure the quality of the training, the Vocational Training Section chooses workplaces suitable for practical training that familiarize trainees with the tasks of their respective professions. Unfortunately, TU Berlin is unable to guarantee that trainees will be employed at the University after the completion of their vocational training. In the years from 2015 to 2017, TU Berlin signed employment contracts with 13 (2015), 22 (2016) and 9 trainees (2017).

2.5 Public Image

**Public Relations Activities**

In the reporting period, TU Berlin’s Office for Press, Public Relations and Alumni – honored by Germany’s largest professional association of public relations specialists in a nationwide competition for its concept for communicating scientific knowledge – was able continuously to improve the University’s public image (see Table 2). This improvement is based on new topics (such as the successes in digitization), prominent guests, exciting event formats for the communication of science, and also on new and additional channels of communication.

<table>
<thead>
<tr>
<th>Year</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Until February 2017</td>
<td>425</td>
</tr>
<tr>
<td>2016</td>
<td>3,530 (change in the selection policy with regard to press articles)</td>
</tr>
<tr>
<td>2015</td>
<td>4,120</td>
</tr>
<tr>
<td>2014</td>
<td>4,240</td>
</tr>
</tbody>
</table>

**Table 2** Press Articles Mentioning TU Berlin

In recent years, the University’s public relations activities have expanded to cover several communication channels and have come to reach a large number of other people and target groups beyond those addressed by the long-established university newspaper *TU intern* with a circulation of 16,000 copies and the homepage at www.tu-berlin.de with an average of one million hits per month (last updated in June 2017):
Facebook page Technische Universität Berlin: 26,324 ‘Likes’
Twitter profile TU Berlin: 5,865 followers
Instagram profile Technische Universität Berlin: 3,724 subscribers
YouTube channel TU Berlin TV: 941 subscribers

Also TU Berlin’s alumni are addressed in multiple ways (last updated in March 2017):
LinkedIn university page Technische Universität Berlin: 44,651 alumni
LinkedIn group Technische Universität Berlin: 3,638 members
www.xing.com/communities/groups/alumni-tu-berlin-fec4-1068802: 5,449 members in the Xing Alumni Group

Traditional media activities have also been expanded (see Table 3 in this regard). To give just a few examples: large press conferences were held with the federal minister of education and research, the president of the German Academic Exchange Service, the governing mayor of Berlin and on the occasion of the launch of the Einstein Center Digital Future. Between 2014 and 2016 alone, the president appeared four times as a studio guest in the TV news show Abendschau, speaking about current developments at TU Berlin. Since 2014, his column devoted to current developments in the world of learning, titled ‘Wissen, was bewegt’, appears fortnightly in the daily regional newspaper Berliner Morgenpost.

Table 3  Media Information Issued by TU Berlin

<table>
<thead>
<tr>
<th>Year</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Until Feb 2017</td>
<td>34</td>
</tr>
<tr>
<td>2016</td>
<td>209</td>
</tr>
<tr>
<td>2015</td>
<td>242</td>
</tr>
<tr>
<td>2014</td>
<td>261</td>
</tr>
</tbody>
</table>

Each year, events hosted by the president attract between 17,000 and 20,000 visitors. These events include the annual New Year’s Reception and the Long Night of the Sciences – with TU Berlin repeatedly being the institution in Berlin that attracts the largest number of visitors – or discussion rounds with prominent players from the worlds of business or politics. Guests include executives from Google, Microsoft, Skype or the NASA, as well as the presidents of Bolivia and Ecuador. The highlight was the visit by the Queen of England on 24 June 2015 in the presence of the German Chancellor Angela Merkel and Federal President Joachim Gauck. The occasion for this visit was the 50th anniversary of the establishment of the Queen’s Lecture.

In 2012, the national and international alumni programs were merged and found a new home at the Office for Press, Public Relations and Alumni. Between 2014 and 2017 (reference date: 27 March 2017), the alumni program registered 3,745 new members. It attracted external funds amounting to 784,974 euros that were used to organize 31 workshops and seminars of one to twelve days’ duration, both in Berlin and abroad. The international seminars took place in nine different countries in Asia, Europe, North Africa, North America and South America. In the EXTERNES MENTORING plus program, jointly organized by the Career Service and the Alumni Program, committed TU Berlin alumni act as mentors for students. In the period from 2014 to 2017, 72 of these mentoring tandems existed.

University Rankings

In the 2017 issue of the Times Higher Education World University Ranking (THE, Great Britain), TU Berlin
ascended to the rank of one of the best 100 universities in the world for the first time, coming 82nd overall (significantly up from 2015 when it reached only the 226–250 ranking group). In the national ranking, TU Berlin achieved seventh place; and in a comparison of Germany’s major technical universities, TU Berlin ranks third. In the specialized rankings TU Berlin even managed to find itself among the world’s 50 best universities: 36th place in information science and 40th place in engineering sciences. The yearly ranking of the British journal *Times Higher Education* (THE) is based on the five pillars of teaching, international matters, third-party funding, research and citations in academic publications.

The current issue of the QS World University Ranking 2018 (Quacquarelli Symonds, GB; published in June 2017) also confirms that TU Berlin has continued to improve its position, now occupying 144th place in a global comparison (up from 164th place in the previous year and 178th place prior to that). In the nationwide comparison, TU Berlin came 8th; among the large technical universities in Germany it retained its 4th place.

Moreover, the subject-specific **QS World University Ranking by Subject** acknowledges TU Berlin’s top performance, especially in the fields of technology and engineering sciences. In the respective subject group, TU Berlin came 35th internationally and third in the German comparison, with all assessed subjects in this group being among the top ten. Furthermore, four out of these five subjects made it into the international top 100. The subject group of the natural sciences performed very well to reach 75th place in the international comparison (sixth place in Germany), with four of the assessed subjects in this group being numbered among the national top ten and the international top 100. The subjects of architecture (42nd place internationally) and mathematics (50th place) achieved the best individual ratings. In the Germany-wide comparison, each of the subjects came second place.

In the new international ranking formats TU Berlin could also convince the evaluators. In the **QS Graduate Employability Ranking 2017**, for instance, TU Berlin reached the ranking group 51–60 in the international comparison, and 5th place in Germany. In the **The Global University Employability Ranking 2017** TU Berlin’s graduates did very well, too, helping their alma mater to secure 96th place in the global comparison. In Europe, TU Berlin came 46th, in Germany ninth.

In the reporting period TU Berlin took part in the CHE University Ranking, insofar as the departments and institutes involved consented to the participation. Unlike in the above-mentioned rankings, an overall assessment and rating in the individual areas does not take place, instead four different rating scales are applied in which TU Berlin is compared to other universities by means of a traffic light rating system based on specific data and a students’ survey. In addition, differentiated individual information on the study programs involved is provided for use by students in choosing their courses or fields of study. Every three years the respective subject areas are reassessed. The most recent study guide issued by the weekly newspaper *DIE ZEIT* contains a reassessment of the subject area of economic sciences including industrial engineering and management. With regard to most ranking criteria, TU Berlin is represented in the middle group, occupying, however, a place in the top group in respect of some individual research indicators as well as in international affairs, while finding itself among the poorest performers with regard to the supervision of students. These assessments also reflect the results achieved for the disciplines evaluated in previous years.

**Germany Scholarship and Fundraising**

The office responsible for matters related to the Deutschlandstipendium (Germany Scholarship) is attributed to the Career Service (in this regard, see 6.7). After a pilot stage in the reporting period, the continuation of the Germany Scholarship, as decided by the previous Executive Board, was successfully implemented in conjunction with a further increase to around 120 per year in the number of scholarships granted (first place in Berlin; absolute number of scholarships). The amount donated for the 457 scholarships awarded so far is 1.6 million euros. The instrument is successfully applied for the purpose of promoting young researchers on the grounds of diversity elements by means of awarding the scholarship to
high-performing students whose biographical challenges are taken into account (migration, first family member to study, children, health issues, care of relatives, refugee background, etc.). For TU Berlin, the Germany Scholarship is an important tool to test and establish partnerships and collaborations in the field of education fundraising, for instance, with numerous companies, foundations, alumni and private persons, as well as different political and societal stakeholders (Third Mission). As one of the members of the ‘Berliner MINT Verbund Deutschlandstipendium’, an association of six Berlin universities to secure Germany Scholarships for students of STEM subjects (education project by the Chamber of Commerce and Industry of Berlin), TU Berlin’s Career Service submitted a joint contribution for the 2017 competition for the best initiative to attract donors for the Deutschlandstipendium by the Donors’ Association for the Promotion of Humanities and Sciences in Germany. As one of three winners, the ‘Berliner MINT Verbund Deutschlandstipendium’ received prize money of 10,000 euros from the Federal Minister of Education and Research.

Further successes in fundraising were achieved through the charitable Association of Friends of TU Berlin as well as the Alumni Program (member donations). Among the donations that deserve special mention here are those for refugee students by Mr. Jürgen Reuning, a member of the Association of Friends of TU Berlin. TU Berlin was honored with the Alumni Award 2014, involving prize money of 10,000 euros, for raising enough money in 2014 to fund 30 scholarships through one-off donations made in the process of collecting re-registration fees.

Among the special means developed in the reporting period to bind donors to the University are a donors’ magazine and the chance for selected donors for the year in question to have a preliminary talk with the president in the context of the ceremony for presenting students with their scholarships.

**Campus Charlottenburg**

Since 2015, Campus Charlottenburg / City West has been one of ten Berlin Future Locations that stand out through their dense networks of science institutions and companies and which are expected to promote the regional economy. TU Berlin and the Berlin University of the Arts are the only universities honored with this label. The Campus Charlottenburg Office successfully initiated the joint project for the structural implementation of the redevelopment of Hertzallee on Campus Charlottenburg. 1 million euros in funding were secured for this purpose.

An application as ‘Location of Encounters’ was submitted to the charitable foundation Stiftung Deutsche Klassenlotterie in May 2017. The application was the result of a joint students’ semester project with the Berlin University of the Arts on the topic of ‘Orientation and Identity on Campus Charlottenburg’. In the planned scheme, it is intended that three selected architectural and artistic objects be restored to a presentable condition and fitted with informative signs.

A feasibility analysis drawn up together with the Regional Management City West was submitted as part of the application for several millions in development funds from GRW (Gemeinschaftsaufgabe ‘Verbesserung der regionalen Wirtschaftsstruktur’), which provides money for improving the regional economic structure. The goal is to upvalue and develop the campus area by means of structural and infrastructural measures.
3 Research, Appointment & Promotion of Young Researchers

3.1 Successes in Raising Third-Party Funds

Since 2014, expenditure of external funding has been at a more or less consistently high level, with the amount for 2015 being 177 million euros (see Diagram 1). This stable development is also based on the successful securing of funds from the German Research Foundation for joint lighthouse projects. For instance, in the reporting period, several collaborative research centers, with TU Berlin speaking on their behalf as their representative, have been extended for a second or third funding phase. In 2016, the German Research Foundation gave the go-ahead to Research Unit 2402 for its research into ‘Rough Paths, Stochastic Partial Differential Equations and Related Topics’ (Professor Dr. Peter K. Friz) and will fund it until the end of 2018. Furthermore, in 2016, Professor Dr. Heike Rauer successfully established a priority program, funded by the German Research Foundation and titled ‘Exploring the Diversity of Extrasolar Planets’, for which she functions as the coordinator. In addition to the renowned joint research projects in the field of fundamental research that are financed by the German Research Foundation, further activities have taken place, with the funding provided by different federal government ministries.

With regard to research cooperation groups funded by the European Institute of Innovation and Technology (EIT) and EU research cooperation groups coordinated by TU Berlin, please see Chapter 3.4; for successfully secured funding for research training groups, please refer to Chapter 3.7.

In addition to the activities related to research cooperation groups, numerous externally funded individual projects that constitute the basis for the major joint projects are evidence of the broad scope of our University’s research profile.
TU-Internal Research Support

TU Berlin equally supports the securing of external funding for both joint and individual projects through the existing mechanisms for promoting internal research: in the period from April 2014 to March 2017, internal startup funding was approved for a total of 83 externally funded projects. So far, these funding lines have led to 19 successful applications for third-party funding, with 15 further applications having been submitted to the fund providers in April 2017 and a further 37 applications in preparation.

These funding lines are supplemented by targeted calls for proposals related to the focus areas of TU Berlin’s scientific profile. In this way, in the context of a strategic call that resulted in 41 proposals, six annual concepts for 2017 with innovative ideas that contribute to the image of TU Berlin’s Key Application Areas were chosen for funding. As part of a call for proposals regarding infrastructure projects in 2016, nine out of 36 submitted proposals were supported. The latter were deemed to contribute to an improvement and modernization of basic equipment and were chosen in order to increase the chances of success for research proposals submitted by TU Berlin and thereby enable the University to continue to improve its competitiveness in the securing of third-party funds.

In addition, since 2013, TU Berlin has operated the Dialogue Platform as a tool for internal research support that accompanies researchers on their paths to finding ideas and helps them review new ideas with regard to their potential for concrete research projects. The platform offers advice to projects and joint projects with regard to the organization of their internal processes, and supports and strengthens the creation of new and existing networks. As part of a comprehensive strategy process, scheduled to be completed in the summer of 2017, the goals and tasks of the Dialogue Platform are being given a sharper focus.
3.2 Excellence Strategy

TU Berlin is intensively preparing the submission of proposals for the Excellence Strategy by the Federal Government and the Federal States. The internal competition for ideas to identify high-profile and promising initiatives for proposals was started in the spring of 2015. The process of internal quality assurance at TU Berlin is supervised by an Academic Advisory Board that advises the Executive Board. The former consists of highly qualified professors who have already proven themselves in projects funded by the German Research Foundation. As a result of these top-down and bottom-up processes, the University was able to motivate fifteen consortia to submit a concept sketch for a top-level joint research project. In the further process, and in the context of the Excellence Strategy, six initiatives were selected, further developed and finally submitted in 2017 for consideration as part of the German Research Foundation’s first Cluster of Excellence funding line.

In the summer of 2016, the three major Berlin universities and the university hospital Charité decided to pursue a joint proposal for the second funding line pertaining to Universities of Excellence / Associations of Excellence. This proposal has been in preparation since then and is scheduled for submission after the approval of the clusters of excellence in late 2018.

Funding for the graduate school Berlin Mathematical School (BMS) and the cluster of excellence Unifying Concepts in Catalysis (UniCat) – both of which have already been supported in the first and second funding phases of the Excellence Initiative – has initially been secured until the end of 2018.

3.3 Selected Research Prizes and Awards

In the reporting period, top-class research prizes and awards have been secured for TU Berlin, for example one Alexander von Humboldt Professorship, two Einstein Professorships, one Heisenberg Professorship, one Gottfried Wilhelm Leibniz Prize, the Science Award of the Governing Mayor of Berlin, two high-level junior research groups, 13 memberships in German academies of science, as well as nine ERC Grants.

In order to thrive in the highly competitive international contest, the Executive Board resolved in the spring of 2017 upon an ERC strategy that involves, among other measures, financial incentives for the submission of a proposal for an ERC project or that make it attractive to bring ERC grantees to TU Berlin. This strategy serves the purpose of remaining attractive in the international competition for the brightest minds and improving TU Berlin’s reputation.

3.4 Collaborations and Networks

Interdisciplinary Cooperation

Like almost no other institution in the region, TU Berlin collaborates with the wide range of institutes run by the four major non-university research institutions, namely the Fraunhofer-Gesellschaft, the Helmholtz Association, the Leibniz Association and the Max Planck Society, as well as with further research institutions including the departmental research institutions of the German federal ministries. As a result, more than 70 contracts concerning joint appointments with these institutions were in place in early 2017 to promote institutional cooperation with TU Berlin in the field of research and teaching, with nearly 60 of the posts being occupied by top-level researchers.
As a mechanism for creating networks with universities, the president of the Gottfried Wilhelm Leibniz Association has established the Leibniz ScienceCampi. Leibniz ScienceCampi promote cooperation on an equal footing between Leibniz institutions and universities in the form of thematically-focused and complementary regional partnerships. The goal is to create networks in order to further develop the respective research fields and strengthen the scientific environments with regard to this issue. TU Berlin is involved in two of these Leibniz ScienceCampi:

- the ScienceCampus Berlin Centre for Consumer Policies in cooperation with the German Institute for Economic Research (DIW Berlin), the Berlin Social Science Research Center (WZB Berlin), Freie Universität Berlin and Humboldt-Universität zu Berlin;
- the ScienceCampus Growth and Fundamentals of Oxides for Electronic Applications in cooperation with the Paul Drude Institute for Solid State Electronics (PDI), the Leibniz Institute for Crystal Growth, the Fritz Haber Institute of the Max Planck Society and Humboldt-Universität zu Berlin.

Furthermore, in collaboration with international commercial enterprises such as Deutsche Telekom AG or cooperation networks of small and medium-sized enterprises, TU Berlin has established foundation professorships at the University (currently numbering twelve).

As one of the core partners, and together with more than 200 partner organizations, TU Berlin is also successfully interconnected at the European level in the Knowledge and Innovation Communities (KICs) ‘EIT Climate-KIC’ and ‘EIT Digital’ (formerly ‘EIT ICT Labs’), being actively involved in up to 50 projects per year. In the period from 2014 to the end of 2017, TU Berlin will have procured approximately 11 million euros from Climate-KIC and 8.6 million euros from EIT Digital for projects in the fields of education, startup funding and innovation-oriented research.

During the reporting period, in addition to the KICs, TU Berlin researchers were also very active and successful in procuring coordinated research networks at the EU level: in addition to twelve coordinated research projects, TU Berlin scientists have also led European consortia in the fields of education (Erasmus+, Tempus) and doctoral training (ITN). Their research is concerned with, for instance, zero-carbon life in major cities (Urban Transitions’ Smart Sustainable Districts) or therapeutic and diagnostic wound care for chronic wounds (Medi-Light).

The Hybrid Platform can serve as a unique example of interdisciplinary networking. It is a joint project platform operated by the Berlin University of the Arts and TU Berlin as part of Campus Charlottenburg. It serves the institutional and interdisciplinary exchange between art, science and technology, and is therefore one of the most important strategic projects on Campus Charlottenburg. Since the expiry of the funding from the Berlin Senate Department of Economic Affairs, Technology and Research in 2015, the Hybrid Platform has been financed by means of central funds provided by the two universities, initially until the end of 2019. Since April 2014, the Hybrid Platform has initiated and supported around 40 cooperative projects with nearly 170 project participants from more than 40 institutions. The projects raised around 3.7 million euros in third-party funding. More than 40 scientific publications were produced.

In May 2016, the Hybrid Office was honored with the ‘Land of Ideas’ award. On the part of TU Berlin, the platform was managed by Professor Dr. Marc Alexa, subject area of Computer Graphics, until 2015. Currently, Professor Dr. Stefan Weinzierl, subject area of Audio Communication, and Ms. Barbara Stark, Head of the Research Department, are in charge of the platform.

3.5 Development and Promotion of Transdisciplinarity

As a technical university, TU Berlin sees its challenges as lying above all in the area of future-related topics of social relevance in the engineering sciences. For TU Berlin it is particularly promising to focus, as a
separate topic, on implications that research results have for society.

The transdisciplinary research principle requires interdisciplinary science to come up with solutions for complex societal challenges – from the definition of the research question to the testing of solutions – by means of cooperation and “on an equal footing” with experts from practice. The knowledge enhancement gained by means of dealing with methodological specialties, as well as with non-university bodies and forms of knowledge, helps in the more precise posing of research questions and in the improvement of the usability of basic research and research projects.

Main strategic objectives:

1. Research to address societal challenges
2. Development of a transformative scientific competence / Third Mission
3. Promotion of disciplinary reflexivity and innovative capacity

Since 2014, TU Berlin has therefore pursued a multi-track strategy for the purpose of expanding the transdisciplinary principle in science, with regard to the self-image of the entire University and for the development of solutions to some of the city’s major societal challenges. After conducting a scientific review and benchmarking, as well as a series of university-internal workshops on the issue of chances and challenges related to the expansion of the transdisciplinary principle at TU Berlin, a four-part trialogy series was carried out in 2016. Under the motto of ‘Emergence of the City – for Future Infrastructures’, the topics of immigration, mobility, growth and intelligent city were investigated, and approaches for joint pilot projects devised, with a total of 200 representatives from the spheres of politics and business and Berlin’s organized civil society.

The strategic process to establish transdisciplinary research at TU Berlin has increasingly attracted positive interest from non-scientific institutions as well as from federal and state ministries.

3.6 Transfer of Knowledge and Technology

As a technical university, TU Berlin attaches particular importance to promoting the transfer of knowledge and technology between the University, scientific institutions, business enterprises and society as a whole. In this regard, knowledge and technology transfer at TU Berlin takes place via different paths. The transfer by means of spin-offs established with the support of the Centre for Entrepreneurship is described in Chapter 2.2. With regard to the exploitation of patent and intellectual property rights, TU Berlin has further expanded its activities and increased its attractiveness for innovation-oriented students, lecturers and researchers.

In the autumn of 2014, for example, the vice president for research, appointment matters and promotion of young researchers, in collaboration with relevant managers from various work fields and subject areas, launched an initiative as part of which the status quo of the entire value chain at the University, from the generation of ideas to the exploitation of research results, was subjected to review. An important result of this initiative was the drafting of an exploitation strategy for dealing with intellectual property rights (Patent Strategy) owned by TU Berlin, which was adopted in 2015 and since then has meaningfully interlinked the various exploitation options, making the best possible use of the expanded staff resources. In the Patent Strategy the Executive Board has formulated its guideline for dealing with TU Berlin’s intellectual property. On the one hand, TU Berlin gives preference to the sustainable sale of patents to third parties at standard market conditions and to the licensing of patents to third parties. On the other hand, the University expedites the exploitation of patents by means of startups, giving them priority over third parties, where possible. In doing so, TU Berlin combines its entrepreneurial strengths with its great potential for inventions that are of relevance to society.
As a further measure to improve TU Berlin’s image in the field of intellectual property, the Center for Intellectual Property was established. The Center for Intellectual Property provides under one roof a platform for the academic analysis of issues related to intellectual property and for the practical handling of intellectual property rights. As is the case with the Centre of Entrepreneurship (CfE), the focus is placed on generating synergies and pooling competences in research and practice. With this orientation, the Center contributes to a scientifically sound and internationally visible profiling of TU Berlin in the field of intellectual property, thus strengthening its position as a university providing excellent opportunities for inventors. At the end of 2016, TU Berlin’s active patent portfolio consisted of more than 400 patent applications or granted patents. The following table provides an overview of the figures and indicates the number of notices of invention utilized or released, as well as the development of patent applications.

<table>
<thead>
<tr>
<th>Year</th>
<th>Total number of notices</th>
<th>Of which: freely available</th>
<th>Advance notices</th>
<th>Utilizations¹</th>
<th>Releases¹</th>
<th>Priority applications</th>
<th>National &amp; international patent applications</th>
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<tbody>
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<td>9</td>
<td>42</td>
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<td>29</td>
<td>28</td>
<td>13</td>
<td>14</td>
<td>37</td>
</tr>
</tbody>
</table>

Table 4 TU Berlin Statistics Regarding Notices of Invention in the Years 2014–2016

¹ Since all utilizations/releases actually made between 1 January and 31 December of each year are counted here, these figures do not correspond to the respective number of notices of invention from that year. The reason for this being, in the case of inventions that are not reported until the end of a year, that a recommendation is usually not made until the following year.

In addition to numerous R&D contracts, which already emphasize the importance of an optimal regulation for handling inventions and patents, TU Berlin also concluded 30 sustainable exploitation contracts during the reporting period. This mainly concerns the conclusion of sustainable purchase contracts with national and international industrial partners as well as option contracts with spin-offs of TU Berlin.

Due to the large number of contracts concluded, TU Berlin’s earnings from the patent exploitation have also developed positively. While the University earned 124,549 euros in 2014 and 178,072 euros in 2015, the amount increased significantly to 308,912 euros in 2016. Therefore, the 2016 revenues almost entirely cover the costs related to the filing and maintaining of the patents (353,870 euros). This expenditure has remained at about the same level as that of 2015 (386,916 euros).

Knowledge exchange and transfer mean that TU Berlin makes its knowledge and expertise available to the general public, initiates collaborations and fosters cooperation, thus creating a permanent benefit both for society and the University. Only by the close interlinking of university and society is an appropriate exchange of knowledge, resources and skills facilitated, thus enabling TU Berlin to rise to current and future challenges. For this reason, TU Berlin maintains numerous cooperation agreements with small, medium-sized and leading technology companies. In cooperation with these partners, developed technologies are applied in a large number of products and plants all over the world. Since 2014, around 800 contracts have been concluded each year to the equal benefit of industry and science.
3.7 Promotion of Young Researchers

The promotion of young researchers is one of the central pillars of a successful research university such as TU Berlin. An important contribution to this success is made by the doctoral and postdoctoral supervisors as well as by the managers of projects for which young researchers are employed, because they have a decisive impact on the acquisition of skills and competencies, the independence of research and the further career paths of young researchers. In 2015, at the request of the German Rectors’ Conference, and as one of very few universities so asked, TU Berlin conducted a self-evaluation of the programs and measures it implements for the purpose of structuring the career paths of, and employment relationships with, young researchers. Based on this self-evaluation, the vice president for research, appointment matters and promotion of young researchers initiated the development of a concept for young researchers at all career stages, irrespective of the ways in which their positions are funded. The goal of the concept is to firmly lay the cornerstones that will guide the actions taken for the future-oriented promotion of young researchers at TU Berlin. The work on the concept for young researchers is scheduled to be completed during the summer of 2017 by means of a corresponding resolution by the Academic Senate.

For the fourth time, a ‘Research Assistant Survey’ was carried out during the reporting period. Following a methodologically optimized revision of the questionnaire, research assistants were surveyed in the first quarter of 2017. The results are expected to be available by the end of 2017. Topical issues are to be taken into account by means of expanding the survey to questions pertaining to the reconciliation of professional and family life, as well as to internationalization. In this way TU Berlin has created a continuous basis for self-observation with regard to the working conditions of its young researchers.

Looking at the strengthening of the framework conditions, the revisions of the procedural rules for doctoral studies should be emphasized: at the beginning of 2014, amendments to the Joint Doctoral Regulations were adopted that pertain to the equal treatment of Master’s degrees acquired from universities of applied sciences and universities, a regulation on authorship within the meaning of the German Research Foundation’s definition, and a recommendation for the conclusion of supervision agreements. In 2014, the Academic Senate also adopted a model supervision agreement that provides support for determining the mutual rights and obligations of doctoral candidates and supervisors.

In addition, the procedures and rules relating to academic misconduct were revised and in March 2017 incorporated into the new Statute on the Safeguarding of Good Academic Practice. A resolution on the incompatibility of non-disclosure agreements for doctoral studies, passed by the Executive Board in 2015, will be incorporated into the Code of Conduct, which itself stipulates further quality standards for the execution of so-called enterprise-sponsored Doctorates and is scheduled to be submitted to the Academic Senate in the summer of 2017.

Since 2016, applications for the Elsa Neumann Scholarship granted by the State of Berlin must be submitted to TU Berlin’s Doctoral and Postdoctoral Services Office. Doctoral students may apply either for a scholarship for their doctoral studies or for a scholarship to complete their doctoral projects that are in an advanced state of completion.

Graduate Programs

TU Berlin enjoys continued success in the securing of research training groups and other doctoral programs, sometimes in cooperation with other universities and research institutions. In the reporting period, TU Berlin acted as spokesperson for eight research training groups funded by the German Research Foundation, with TU Berlin professors being involved in five further research training groups.
Most Transregional Collaborative Research Centers for which TU Berlin acts as spokesperson (see Chapter 3.1), and also the UniCat cluster, include moreover integrated graduate programs. Similarly, the Berlin Mathematical School (BMS), a joint project of Freie Universität Berlin, Humboldt-Universität zu Berlin and TU Berlin, has run as part of the Federal Government’s Excellence Initiative since 2006, with funds initially having been provided until the end of 2018.

With the Berlin International Graduate School in Model and Simulation Based Research (BIMoS), TU Berlin established an interdisciplinary and transdisciplinary graduate program in 2014 that aims to build a bridge between modeling, simulating and optimizing sub-areas within the natural and engineering sciences. All core faculties at TU Berlin are involved in this regard.

**Postgraduate Program for Young Researchers**

The postgraduate program at the Center for Continued Academic Education and Cooperation offers tailor-made programs that address didactic issues in basic and advanced courses. The range of options also includes seminars and workshops in which participants can be trained in important competencies in research management, in areas of scientific communication and also in work and management techniques. In cooperation with the Service Office for Personnel Development and Continuing Education, the options are constantly updated, expanded and adapted to current needs.

### 3.8 Appointments and Planning of Appointments

TU Berlin has created the basis for appointing outstanding national and international researchers through focusing on relevant innovative research fields, continuously optimizing the appointment processes and establishing a broad range of services, including the Dual Career Service.

In the reporting period, a total of 60 new professors commenced their duties at TU Berlin, 30 percent of whom were women. One Alexander von Humboldt Professorship and two Einstein Professorships have been secured for TU Berlin; 12 professor posts have been filled with researchers from abroad. By means of 13 successful retention negotiations, TU Berlin warded off eight attempts by foreign universities to poach professors.

Through the renewal of the LinF Statutes (LinF is a system for the annual recording of performance indicators) the performance-oriented salary system has been optimized. At the same time, TU Berlin was also involved in amending the Act on Higher Education Institutions in the State of Berlin (BerlHG). In order to improve and flexibilize appointment procedures, a Tenure Track Statute, an Appointment Regulation and a new version of the Appointment Guideline are currently being draft
4 Studies and Teaching

4.1 Better Quality as Part of the Quality Pact for Teaching

Since 2012, various sub-projects at TU Berlin have been funded as part of the ‘Federal Government’s and State Governments’ Program for Better Study Conditions and More Quality in Teaching’ (Quality Pact for Teaching – Qualitätspakt Lehre) (see Diagram 2). The second funding phase began in 2016 and will end on 31 December 2020.

Diagram 2  Overview of the sub-projects as part of the Quality Pact for Teaching at TU Berlin and the main fields of action (Graphics: TU Berlin | SC | Janina Göbel). Translation: Quality Pact for Teaching at TU Berlin continued education & qualification – better staffing & study conditions – increase the importance of teaching.
**MINTgrün - Orientation Course of Studies**

The MINTgrün orientation course of studies takes two semesters and involves courses mainly in the subject areas of mathematics, information science, natural sciences and technology. The goal is to give prospective students the opportunity to acquaint themselves with different issues, working techniques and methods, mainly from the STEM subjects, thereby enabling them to make a well-founded choice of study after the end of the year. The compulsory part of the course includes the ‘Science Window’ lecture series and an orientation module. Students are formally enrolled in the Bachelor’s degree program in Physics, in which admission is not restricted. Examinations may be taken and are later recognized when students change to another program. In special MINTgrün tutorials students can expand their knowledge, before putting it into practice in MINTgrün project laboratories. The ‘Science Window’ module focuses on current research topics in the STEM area, which are discussed under the aspect of sustainable development. The orientation module gives students the opportunity to reflect on their experiences.

Project laboratories have been a special feature of the MINTgrün program since the beginning, including: the Robotics Laboratory, the ‘Mathesis’ Laboratory (a mathematical-scientific laboratory), the Environmental Laboratory as well as the Creativity and Technology Laboratory. Since the winter semester of 2015/16, additional laboratories have been offered on the issues of ‘Gender in Natural and Technological Sciences’, ‘Artifacts of the History of Science and Technology’, ‘Chemistry’ and the ‘Fluid Power Project’. Furthermore, an extra mathematics tutorial gives students the opportunity to ask specific questions about mathematics.

The number of participants in the MINTgrün program rose from 81 students in the winter semester of 2012/2013 to 490 in the winter semester of 2016/2017. This means that almost 10 percent of our Bachelor beginners now choose this option. The proportion of women is currently at 38 percent and therefore above both TU Berlin’s overall average of 33 percent and the 28-percent average in the engineering sciences. Survey data show that, after completing the MINTgrün program, approximately 74 percent of students aspire to study a STEM course. The academic success of former MINTgrün students is a research topic to be investigated in the second funding phase of the Quality Pact. The hypothesis is that the well-founded choice of study, and the examinations already taken, improve both the success and duration of the studies.

**tu inspire: Ziethen Process – The Shift from Teaching to Learning**

The aspiration and vision of the Quality Pact for Teaching Project is to initiate a cultural change in teaching. Annual strategy workshops held in Ziethen (a conference venue in the vicinity of Berlin) as part of the sub-project ‘tu inspire’ make a significant contribution to this end. Under the motto of ‘The Shift from Teaching to Learning’, TU Berlin teachers and students discuss ways to improve the quality of teaching and learning.

The initial impetus for the desired cultural change in studies and teaching at TU Berlin was the Ziethen Manifesto, which was formulated at the first Strategy Workshop in 2012. In 2012, this manifesto, signed by 26 university members, articulated the programmatic change in perspective with regard to teaching. The aim is to initiate and promote a cultural change in the minds of university members by means of establishing various open work groups and implementing measures by the participants. The topics of the follow-up workshops were:

- 2013: Consolidation of ‘Ziethen 1’ in the topic areas of communication, learning spaces, examinations and pilot projects
- 2014: Further development of the orientation course of studies for all faculties
- 2015: ‘Reconsidering Learning’: current issues in learning research, conditions for good learning
- 2016: TU Berlin in the Future: What will learning and teaching look like in 2040?

In addition, open work groups have been established in the context of the workshops, which are dedicated to different aspects in order to improve the teaching and studying situation at TU Berlin. For instance, as a
result of the activities of the open work group ‘Learning Spaces’, the first specially equipped learning room for students was opened in the Main Building on 3 June 2014. The study room is open to students of all faculties from 06:00 to 24:00, providing them with the opportunity to work in a quiet atmosphere. Group work is also possible. A second study room was opened in Room E027 next to Café Shila. Further learning spaces are to follow.

**A Day Dedicated to Teaching at TU Berlin**

Since 2013, once every semester, a ‘Day of Teaching’ has been held during which students and teachers discuss in-depth various issues concerning good teaching and successful learning (competence orientation, examinations, etc.). The vice president for education Professor Dr. Heiß is responsible for organizing the Day of Teaching (which has taken place seven times so far). The previous events dealt with the following focus areas: development of study programs, e-learning, examinations, learning (Quality Pact for Teaching & Ziethen work groups), project-oriented teaching, cooperation with companies, as well as digital teaching and learning.

**Online Teaching / tu digit: Further Development of E-Learning**

By means of the additional funds available to TU Berlin from the Quality Pact for Teaching, the Center for Continued Academic Education and Cooperation was able to significantly increase its support for the subject areas with regard to the use of digital elements in university teaching. Both the number of training courses and topics offered, as well as the quality and quantity of the counseling service have been expanded. Teachers have been provided with experienced student assistants who support them in their digital teaching. In addition, a small studio has been set up for the production of instructional videos and screencasts. In 2016, initial support was provided for the conception, production and implementation of Massive Open Online Courses (MOOCs). So far, six MOOCs have been realized, three of which (‘Communication Acoustics’, ‘On the Political Ecology of Urban Mobility’ and ‘World = City’) as part of a TU9 joint project.

**Further Sub-Projects as Part of the Quality Pact for Teaching at TU Berlin**

The ‘tu wimi plus’ sub-project enabled TU Berlin to expand its support for innovations in teaching by means of providing individual advice to the project participants from individual faculties. As part of this project, the framework was created for an interdisciplinary, collegial and interlinked manner of conducting joint work on didactic projects in specific disciplines and its application in other areas.

The Quality Pact for Teaching has also facilitated an increase in the number of student-organized project workshops – running under the name of ‘tu projects’ – thereby expanding self-organized, tutor-supported and sustainability-oriented teaching with a focus on the relevance to research and practice. Here, too, activating teaching/learning formats (for instance, project-oriented learning, work in small groups, interdisciplinary work groups) are implemented on a larger scale.

Finally, the Quality Pact for Teaching facilitated the expansion of cross-faculty introductory courses for new tutors (Train the Tutor) by subject-specific qualification courses (sub-project ‘tu tutor plus’). Currently, five to six parallel tutors’ courses are offered per semester, as opposed to only two to three courses in the past.

The sub-projects in the context of the Quality Pact for Teaching mentioned so far are located at the Center for Continued Academic Education and Cooperation and are well interlinked with each other, thus creating additional synergy effects.

Another focus of the support provided under the Quality Pact for Teaching at TU Berlin has been the
strengthening of mentoring programs for students as part of the ‘tu study & buddy’ sub-project: TU Tandem (see Chapter 6.5), Externes Mentoring plus (see Chapter 2.5), Alumni Mentoring (in Chapters 4.5 and 6.7) and Buddy International (see Chapter 5.8). These measures are designed for students in special study situations and based at the Family Services Office, the Career Service or the International Office.

4.2 Impetus for Continued Academic Training from the Center for Continued Academic Education and Cooperation

The program of courses offered for the continued education of the academic staff at TU Berlin appears each semester, thus imparting new impetus to the topic on a regular basis. Since 2016, the number of courses offered has increased. In 2014 and 2015, an average of 16 courses was offered; the current program provides for 30 courses. The program of courses regularly includes three to five courses in English.

The concept of the ‘University-Didactic Lecture Series’, established in 2008, was revised and transformed into the ‘Lunch for Good Teaching’ in the summer semester of 2016. Meanwhile, four of these lunches have taken place and were well-attended with between 25 to 40 participants. Three further dates have already been scheduled. In preparation for the conference under the patronage of Vice President Professor Ittel in February 2018, the topic of ‘Internationalization in Studies and Teaching’ has also been included for the 2017 events, accompanied, in addition, by intercultural and English-language workshops.

In 2015, the concept for the ‘Research Management’ curriculum was fundamentally redesigned on the basis of the evaluation results from recent years. Likewise, the concept for the ‘Teaching and Learning’ curriculum underwent an expansion in order to facilitate the accreditation of the program scheduled for 2017.

Together with Section II PE/WB and the Berlin Centre for Higher Education, a concept for a workshop addressing newly appointed professors was developed and carried out for the first time in 2016. This workshop is now offered once per year and might be included in a concept for ‘professionals in science’ that, on behalf of the vice president for research, appointment matters and promotion of young researchers, Professor Ahrend, is currently being worked out by the Center for Continued Academic Education and Cooperation together with Section II for Personnel Development and Continued Education.

4.3 Student Lifecycle Management (SLM)

Since the beginning of the reporting period, preparations have been underway for the introduction of a Student Lifecycle Management (SLM) system to improve the quality of the service provided with regard to studies and teaching. Within the entire body of study-related administrative processes, TU Berlin attaches top priority to the student lifecycle in order to optimize all study and teaching processes and adapt them to the reality of students’ lives. Together with all those involved (students, faculties, administration and Executive Board), the quality of service is being sustainably improved and expanded in line with demand. The student lifecycle is derived from the core processes for the management of applications, admission, students, courses, examinations and events.

The improvement is based on the organization-related preparation of the SLM system, as well as the support for its implementation and the supervision of its introduction. The main phases and tasks of the SLM project are as follows:

- 1. Feasibility analysis: project establishment, procedure models, process map
- 2. Conception: process analyses, target concept, framework conditions
3. Call for tenders: requirements, call for tenders, decision, implementation plan

4. Rollout: support for the introduction of an SLM, organization, training

5. Continuation: support for the transition to regular operation, evaluation

The technical basis for the implementation is provided by SAP software that is also used in the parallel project pertaining to the introduction of an ERM. In this way the integration at the level of data and processing within a homogeneous system and application landscape can be promoted, so that ultimately the quality of the administrative processes related to studies and teaching will be further improved. For this purpose, in 2014/2015, the implementation partner was determined in a Europe-wide tendering procedure and an implementation contract concluded in Q2/2015. Since autumn 2016, pilot operations have been running in selected courses of study for the sub-project ‘Examination Management’.

4.4 Establishment and Further Development of the Quality Management for Teaching / System Accreditation

From 1999 to 2013, TU Berlin successfully received 78 program accreditations and four re-accreditations. As early as 2008, the development of a quality management system (QMS) for teaching was started with the intention of creating the prerequisites for a later system accreditation. The introduction of the system accreditation procedure carried out by the Accreditation Council enables universities to reduce the high staff-related and financial expenditure resulting from the program accreditation procedure and, once they have received the seal, universities are entitled to internally accredit their own courses of study.

As of the entry into force of both the Regulations Governing General Study and Examination Procedures (AllgStuPO) in the spring of 2014 and the QMS processes, the responsibilities and procedures for university-internal quality assurance have been laid down and implemented throughout the University. Once the internal structural prerequisites had been set, the selection committee (Workgroup QM) agreed to cooperate with the Central Evaluation and Accreditation Agency (ZEvA). In January 2015, a majority of the Academic Senate voted in favor of the conversion from program to system accreditation, following thereby the recommendation of the Executive Board. In March 2015, the president signed the contract with the Central Evaluation and Accreditation Agency; in June 2015, the preliminary application for the system accreditation procedure was submitted, followed by the main application in November 2015. This application was approved by experts from the Central Evaluation and Accreditation Agency, who thereby cleared the way for the first on-site visit to take place in January 2016 as part of the system accreditation procedure. Currently, the second visit is being prepared; this will take into account the requirements imposed during the first visit. As a consequence, as of 2017, TU Berlin has provided the funding for staff working in externally financed projects, while creating new positions, scheduled to be filled by the end of July 2017, to carry out review procedures related to courses of study (that is, the internal accreditation). The second on-site visit is scheduled to take place during or after September 2017.

4.5 Shaping Transitions: School – University – World of Work

An informed and thought-out choice of study is a prerequisite for the swift and successful completion of studies. For this reason, TU Berlin offers prospective students qualified advice and orientation for the transition from school to university. Age-appropriate options are provided in various formats for pupils from elementary school to the upper secondary grades, with the information shared on TU Berlin’s School Portal. In addition, special offers are provided for particular target groups such as students with vocational qualifications, (prospective) students with children, highly talented pupils or prospective students with a
refugee background. General and interdisciplinary academic advising take place centrally, while the faculties offer advice on specific subjects and subject-related matters. The Academic Advising Service offers a wide range of support and counseling options for every stage of the student lifecycle. Naturally, also the MINT orientation course contributes to an informed and thought-out choice of study (see Chapter 4.1).

The Career Service offers a wide range of different successful formats addressing issues concerning the transition from university to the world of work. For instance, in the reporting period, the financial responsibility for two important programs previously funded by the ESF was transferred to the Teaching Department, in the course of which the programs were also brought in line with TU Berlin’s overall teaching strategy. The Alumni Mentoring Program (offering individual support for the career start) is represented in the long term by the sub-line ‘tu study & buddy’ provided under the Quality Pact for Teaching (see Chapter 4.1). The interdisciplinary course ‘PREPARE plus’ that qualifies students for entry to a profession was integrated into the master plan for the Quality Pact for Teaching as well as into university-internal study programs. The initial phase of the Germany Scholarship was successfully completed, in the course of which, among other results, a very active network between the participating Berlin universities and, in addition, a project consortium in the MINT area were established.

New priorities lie in the development and expansion of e-learning formats that focus on addressing target groups via social media channels as well as in the conception of pre-vocational coaching.

4.6 In(2)TU Berlin

In September 2015, with the program ‘In(2)TU Berlin’, TU Berlin was one of the first universities in Germany to set up a special program for refugees that prepares the participants in a targeted manner for studying at university. Following a counseling session at the General Academic Advising Service, which is the first point of contact for refugees at TU Berlin, the participants are entitled to attend regular seminars and lectures, take module examinations and acquire credits for course work. The program also prepares participants in a targeted manner for studies in STEM subjects. In(2)TU Berlin as a whole combines the technical and language-related preparation for studies with the social and cultural integration of refugees at the University. The various activities are centrally recorded and coordinated by the newly created post of refugee officer at the General Academic Advising Service. In early 2016, the program was further expanded by means of financial support from the State of Berlin. This includes the further development of individual counseling and support options for refugees, the possibility of visiting a second STEM language course at the International Preparatory School as well as the establishment of an online bridging course in mathematics that is taught in English. Furthermore, TU Berlin has secured funding from the Federal Ministry of Education and Research via the German Academic Exchange Service for the purpose of integrating refugees. Language courses, student counseling and the online bridging course in mathematics are supported by the Berlin Senate Administration. By means of the programs ‘Welcome’ and ‘Integra’, funded by the German Academic Exchange Service, further language courses were established at TU Berlin, together with the hiring of additional student assistants, who primarily support the faculties’ academic advising services. TU Berlin’s activities in support of refugee researchers are funded by the Alexander von Humboldt Foundation as part of the Philipp Schwartz Initiative. In 2016, refugees made around 1,800 inquiries to the student assistants at the clearing division of the General Academic advising Service, while the student counselors conducted around 1,400 individual counseling sessions with refugees.

In the winter semester of 2016/2017, 220 refugees, including 24 women, were officially registered for, and supervised in, the guest student program ‘In (2)TU Berlin’. The participants in the guest student program are distributed among the faculties as follows:
<table>
<thead>
<tr>
<th>Faculty</th>
<th>Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Faculty I</td>
<td>2</td>
</tr>
<tr>
<td>Faculty II</td>
<td>18</td>
</tr>
<tr>
<td>Faculty III</td>
<td>13</td>
</tr>
<tr>
<td>Faculty IV</td>
<td>77</td>
</tr>
<tr>
<td>Faculty V</td>
<td>50</td>
</tr>
<tr>
<td>Faculty VI</td>
<td>55</td>
</tr>
<tr>
<td>Faculty VII</td>
<td>9</td>
</tr>
</tbody>
</table>

**Table 5** Distribution of Participants in the Guest Student Program ‘In(2)TU Berlin’ among the Faculties in the Winter Semester of 2016/2017

In the winter semester of 2016/2017, 133 refugees took part in the preparatory language courses offered by TU Berlin’s Preparatory School. 81 of the participants are preparing for entry into a Bachelor’s degree program, 49 for a Master’s degree program, and three participants are pursuing doctoral studies. About 100 participants of the language courses wish to study engineering sciences and 33 natural sciences.

As of the winter semester of 2016/2017, about 30 refugees who previously attended the language course and/or guest student program have started their regular specialized studies. This number is expected to increase significantly in the coming semesters. By the winter semester of 2017/2018 alone, 75 refugees are expected to complete their language course at TU Berlin.

### 4.7 Postgraduate Programs

It is to be noted that the increasing diversity of educational backgrounds is presenting us with challenges with regard to teaching at the University (for instance with respect to synergies in the acquisition of skills and competencies by teachers). A growing demand for options of “lifelong learning” is to be expected.

Currently, 16 postgraduate Master’s programs have been developed and established at TU Berlin. In order to better support the postgraduate Master’s programs, to make use of synergies, and to standardize and simplify administrative processes, a new model is currently in preparation. In the reporting period, for example, TUBS GmbH (a company that promotes science marketing) was entrusted with the organizational supervision of the EUREF study courses.

Important aspects in this regard are, among others, a participant-oriented management of the study programs as well as the finding of a solution to the issue of limited employment contracts for staff members, since tuition fees cannot be classified as third-party funding. Another problem is the stipulation that further training courses must be fee-based, although they are defined as a statutory duty in the Act on Higher Education Institutions in the State of Berlin (BerlHG).

### 4.8 Overview of New Courses of Study and Subject Groups

During the reporting period, in the winter semester of 2016/2017, the Master’s courses in Biological Chemistry and Patent Engineering were launched. With regard to teacher education, new Bachelor’s
courses in Automotive Engineering, Media Technology and Information Technology were launched to train prospective vocational school teachers. For the first time, students have been given the opportunity to study these courses as minor subjects, which has also increased the attractiveness of the other courses of study. Another program worth mentioning is the lateral-entry Master’s course in Information Technology / Electrical Engineering that is aimed at graduates of undergraduate courses in Electrical Engineering who wish to become teachers (for the distribution of students among the subject groups, see Diagrams 3 and 4).

![Diagram 3](image)

**Diagram 3**
Distribution of students (excluding doctoral students as well as exchange and scholarship students) among the subject groups according to the official statistics in the winter semester of 2016/2017.

![Diagram 4](image)

**Diagram 4**
Distribution of students (excluding doctoral students as well as exchange and scholarship students) among the subject groups according to the official statistics in the respective winter semester. As of the winter semester of 2015/2016, Information Science, for instance, has been newly classified as belonging to the Engineering Sciences.

In the winter semester of 2017/2018, a new Bachelor’s course in Brewing Technology and Master’s courses in Architecture Typology, Ecology and Environmental Planning, Media Informatics as well as a postgraduate Master’s course in Sustainable Mobility Management’ will be launched. The Master’s courses in Municipal Infrastructure Management’ and Environmental Policy and Planning have been discontinued.
4.9 Opening of the University

In the reporting period, TU Berlin significantly increased the number of its students from 31,427 in the winter semester of 2013/2014 to 33,933 in the winter semester of 2015/2016 and to 34,078 in the winter semester of 2016/2017 (see Diagrams 5 and 6, figures excluding doctoral students).

**Diagram 5**  Total number of students in the respective winter semester (excluding doctoral students as well as exchange and scholarship students). Female and international (= non-German) students are indicated separately.

**Diagram 6**  First-year students per academic year in their first regular study semester and first university semester (including doctoral students as well as students in postgraduate Master’s programs)
One of the reasons for this increase is the policy of an open university pursued by the University management; this has led to the continuing removal of admissions restrictions as well as to an increase in first-year students. In the winter semester of 2013/2014, 15 percent of the Bachelor’s courses (7 out of 47) and 38 percent (24 out of 63) of the Master’s courses had free admission. In the winter semester of 2016/2017, 23 out of 50 Bachelor’s courses (46 percent) and 44 percent of the Master’s courses (31 out of 70 Master’s degree programs that are considered in the calculation of the admissions capacity, that is, excluding postgraduate Master’s programs) had a policy of free admission (see Diagrams 7 and 8).

![Diagram 7](image1)

**Diagram 7**  Number of students in Bachelor’s and Master’s programs in the respective winter semester (excluding exchange and scholarship students, excluding courses of study about to expire)

![Diagram 8](image2)

**Diagram 8**  Number of courses of study with free and restricted admission in the respective winter semester for the first regular study semester (excluding postgraduate programs)

The increasing number of first-year students was also a result of TU Berlin’s participation in the Dialog-Oriented Service Procedure, which made students more likely to accept study places at TU Berlin during the admissions procedure. As a result, the University’s legal obligation to retain 5,440 study places for students in the first university semester was fulfilled in 2015 and 2016. In order to ensure an adequate supervision of students at TU Berlin, in the future, 20 additional research assistants will be permanently assigned to the subject areas. The additional professorships expected to be established by the Einstein Center Digital Future and due to the Federal Government’s Tenure-Track Program for 1,000 new professorial positions are also expected to improve the student-teacher ratio.
5 International Relations and Teacher Education

5.1 Internationalization Strategy – Establishment of the Office of International Affairs

In order to strategically develop the internationalization of TU Berlin, the post of vice president for international relations and teacher Training was created and filled in April 2014. The guiding principles of the internationalization strategy are the maintenance of active and successful international collaborations in research and teaching, as well as their targeted expansion. Special emphasis in this regard is placed on the cooperation with strategic and important partners of TU Berlin, as well as on the internal promotion of a diverse and international environment that provides optimal conditions for learning, teaching, working and research (Internationalization@home).

An important internal measure for the internationalization of TU Berlin was the establishment of the Office of International Affairs on 1 October 2016. It unites the previously independent Foreign Relations Office, the International Office, the Erasmus Mundus Office and the Preparatory School. As a result, the visibility of TU Berlin’s international activities has been increased both internally and externally, cooperation between individual divisions promoted, and a contact point established for all TU members. Furthermore, in January 2017, an ‘Advisory Board for Internationalization’ addressing interested university members, the ‘Panel of Experts for International Teaching’ and the ‘Panel of (Vice) Deans for Internationalization’ were established.

Re-Audit by the German Rectors’ Conference

In 2010/11, TU Berlin successfully participated in the audit ‘Internationalisation of Universities’ by the German Rectors’ Conference (HRK), and, to this end, developed an internationalization strategy. To ensure the latter’s continuous development, TU Berlin has been carrying out the internationalization re-audit since the beginning of 2015.

In the course of numerous workshops and discussion rounds with a large number of university members from the faculties, academic departments at central level and the Central University Administration, an implementation plan was formulated that included a strategy as well as an action plan consisting of a total of 79 individual measures. These include, among others, the establishment of the Office of International Affairs, the expansion of the range of (further) training courses offered to all status groups for the acquisition of language and intercultural skills, an initiative for the promotion of staff mobility, as well as the establishment and further development of the TU Berlin Summer University.

The implementation plan was ratified by TU Berlin’s Executive Board and Academic Senate in October 2016, and thereby became binding. At the end of March 2017, the interim report on the implementation of the agreed measures was submitted to the German Rectors’ Conference within the period stipulated. Once TU Berlin has submitted the final report in 2018, the HRK’s team of advisors will carry out a further on-site auditing visit in the summer of 2018, after which it will decide whether TU Berlin is to receive its official seal.
5.2 Visibility through International Networking

TU Berlin maintains a large number of active research alliances with partners all over the world. There are currently strategic partnerships with five universities that are based on sustainable and long-term cooperation: Warsaw University of Technology, Norwegian University of Science and Technology, Politecnico di Milano, Vienna University of Technology and St. Petersburg State Polytechnical University.

TU Berlin is globally networked by means of scientific, contractually regulated alliances with 109 international partners, mobility programs with 252 European and 81 non-European universities, and as a member of other global networks. Examples to be mentioned in this regard are, firstly, the university network TIME (Top Industrial Managers of Europe), a network of high-end European technical universities dedicated to developing sophisticated curricula in engineering education, and, secondly, the WC2 University Network (World Cities – World Class Universities) that was founded in 2010 by TU Berlin and others. The aim of this network is to bring together top universities from major world cities, creating thereby a forum that deals with the specific issues and perspectives of metropolises worldwide. In doing so, particular attention is paid to the highly relevant societal issues of transport and mobility, sustainability and business, but also health and global culture.

Within the framework of ‘TU9’, TU Berlin was able to further professionalize its external image at trade fairs abroad, thereby improving its international visibility.

TU Berlin currently maintains three liaison offices. In November 2012 – initially for a limited period until December 2017 – TU Berlin opened a branch office at the German Science Centre in Cairo with the aim of promoting TU Berlin’s Campus El Gouna and Campus Berlin within Egypt and interlinking them with other research institutions. Since February 2015, TU Berlin has had a temporary representative office in Brussels. In this way TU Berlin ensures that funding priorities are identified at an early stage, application advice is improved through better knowledge of the funding philosophy/philosophies, and that its own research priorities, such as the topic of Big Data, are brought into correct focus in Brussels. Since 2015, TU Berlin has also maintained a joint liaison office with Freie Universität Berlin in Sao Paulo, Brazil.

These partnerships, networks and international activities, all of which have been successfully developed further in the reporting period, are an essential component of TU Berlin’s sustainable internationalization strategy and contribute to increasing the University’s visibility and attractiveness at all levels.

5.3 Internationalization@home

The University’s successful internationalization is also reflected in its internal structures: in the winter semester of 2015/2016, TU Berlin had a total of 6,792 international students. In 2015, more than 8 percent of the professors and 14 percent of the research assistants were foreign citizens.

In order to offer all its members optimal conditions for studies, work, teaching and research – both nationally and internationally – TU Berlin has implemented various internal measures in the reporting period:

- Provision of online and offline information and forms in English. This has been facilitated by the establishment of an in-house translation service and the acquisition of the translation software TRADOS 2015. In December 2015 and spring 2017, calls for submission of documents, websites, forms and texts to be translated were made to all members of TU Berlin. In the future, teachers are to be provided with even better support by means of establishing a correction service for teaching materials drafted in English.
- At an annual reception the president welcomes visiting researchers and their hosting professors.
The profiles of visiting researchers at TU Berlin are made available online at the International Researchers Gallery that is published by the Press Office. Since 2015, the online newsletter ‘Newsflash’ has regularly presented scientific projects carried out at TU Berlin to a broad readership, thereby keeping researcher alumni abroad informed about scientific research results and important events.

- The TU Berlin Intercultural Club (TUBIC) has existed since 2014 and is open to all TU Berlin’s members. It aims to promote exchange between international and domestic students, on the one hand, and the University’s administrative level, on the other. The club organizes various events such as World Cafés, Street Food Markets, the International and Local Student Lounge at TU Berlin’s Summer Party and at the First Semester Day, as well as International Dinners. The club is part of a network with, among others, the International Regular’s Table for newly enrolled students from abroad. In 2017, the TUBIC plans to elect a board of directors in order to enable its registration as a listed association at TU Berlin.

- Since 2015, the Berlin Centre for Higher Education has offered teachers at various Berlin universities the opportunity to acquire the Berlin Certificate of Teaching Internationally.

- Since August 2016, TU Berlin employees have obtained the Intercultural Knowledge and Competence certificate after completing a training program to enhance their international and intercultural skills. The certificate is issued by the Service Office for Personnel Development and Continuing Education, following an assessment of whether the prerequisites are fulfilled. Intercultural training, language courses, participation in the mobility program or other individual professional experiences abroad are recognized in this regard.

- The International Week for students is held once a year, providing them with information on stays abroad. Supplementary International Days have been held since 2015, presenting all members of TU Berlin with a comprehensive range of events and knowledge – from sample courses to information about Campus El Gouna and details of what TU Berlin has to offer refugees.

- Future plans include the development of an Intercultural Module worth six ECTS credits, which participants can opt to have recognized as part of their study programs or which they can acquire as an additional qualification.

5.4 Internationalization in Research

TU Berlin’s research activities are characterized by close cooperation with partners in Europe and around the globe. In the context of the audit (completed in 2011) and re-audit (2015–2018) ‘Internationalisation of Universities’ by the German Rectors’ Conference, TU Berlin’s international activities and existing relationships were subjected to a review, as part of which the priorities and objectives of the internationalization strategy – including with regard to research – were systematically developed.

In order to promote the internationalization of young researchers, and for the second time since its initial application in 2012, TU Berlin secured STIBET funds (amounting to a total of 118,000 euros for the funding period of 2016–2018) from the German Academic Exchange Service to support international doctoral candidates and postdoctoral researchers as well as those from abroad interested in doctoral studies. The ProMotion course for international doctoral students, previously funded by means of the first STIBET program, is now funded by the vice president for research, appointment matters and promotion of young researchers.
Another component in the internationalization process is the implementation of joint doctoral procedures with foreign universities. In 2015, twelve so-called Cotutelle agreements were concluded, two of which are general cooperation agreements (with the University of Technology Sydney and the St. Petersburg Polytechnic University).

5.5 Internationalization in Studies and Teaching

With regard to making studies and teaching more international, the further development of courses taught in English and the increased visibility of existing options are the most important fields of action. As part of the re-audit by the German Rectors’ Conference, tailor-made support options for the preparation of teaching materials in English as well as didactics training courses on issues related to foreign languages and interculturality were coordinated and worked out with the faculties. In addition, a university-wide program was set up for the purpose of internationalizing the curricula. One measure that has proven itself useful in improving the academic success of international students at TU Berlin is the specialized mentoring program for the supervision of students from abroad.

‘Internationalization’ has become a key concept for numerous efforts made in order to align TU Berlin in its research and teaching with the tasks arising from globalization. In this context, guidelines have been formulated for the further development of courses of study; these serve as a basis for the drafting of agreements on teaching objectives as well as for the future evaluation of courses. The following three objectives are to be achieved by means of a better integration of international elements in the studies:

- 1. Simplify the switch to international universities for TU Berlin’s students and provide TU Berlin’s graduates with better access to the international labor market.
- 2. Increase TU Berlin’s attractiveness for high-performing students from abroad.
- 3. Give students at TU Berlin the opportunity to experience internationality during their studies.

In the reporting period, international courses of study, aimed specifically at students from around the world or students from a certain region of the world, have successfully been further developed (twelve consecutive and twelve postgraduate Master’s programs). The establishment of dual degree programs has been further advanced. The ERASMUS+ program is used as an opportunity to integrate a European or international dimension into teaching and studies in as many areas as possible. The expansion of student and staff mobility are two main objectives of the ERASMUS+ program.

With 6,611 students from abroad (20.3 percent) in 2016, TU Berlin has continued to occupy a leading position in Germany. In numerical terms, international students mainly came from China (810), Turkey (524) and Poland (331). In 2016, electrical engineering (512) ranked first among the courses of study with the highest number of international students, followed by information science (462) and mechanical engineering (422).

In the context of increasing internationalization, the mobility of students – especially in and from non-European countries – entails a growing need for clarification with regard to the recognition of international degrees, credit points and credit systems, as well as the possibilities for their evaluation and conversion. The Recognition Office is responsible for evaluating credits and degrees acquired from (international) universities other than TU Berlin (around 800 applications in 2016) and for drawing up equivalence reports for the purpose of taking up doctoral studies or jobs. There has been a significant increase in demand for degrees recognized by TU Berlin (about 150 applications in 2016).

Furthermore, TU Berlin is the leading university in the establishment of the Faculty of Engineering at the Turkish-German University in Istanbul. Currently, Bachelor’s programs in Technology of Mechatronic Systems with the focus on ‘Industry 4.0’ and in Industrial Engineering and Management with the focus on sustainable production are offered in this context. Since 2016, Bachelor’s programs in Civil Engineering,
Electrical Engineering, Computer Science and Mechanical Engineering have been offered in cooperation with TU Berlin's faculties of Electrical Engineering and Computer Science, Planning – Building – Environment and Mechanical Engineering and Transport Systems.

5.6 The International Preparatory School

Each semester, a total of twelve parallel courses are offered at the Preparatory School (six in the first and six in the second semester) that are attended on average by 20 to 25 students. Of these twelve courses, four start with an engineering specialization (T courses), one with an economics specialization (W course) and one with a focus on medicine (M course), the latter run on behalf of Charité International (as part of a program for government scholarship holders from Saudi Arabia). In these twelve courses the students prepare for the assessment examination, which, in conjunction with the certificates from their home countries, enables them to access higher education. Accordingly, the assessment examination can be taken on two occasions per year (December/January and June/July).

Each semester, two preparatory courses are offered for applicants possessing a direct university entrance qualification, but no language certificate. Course participants obtain a qualification by passing the German language exam ‘Einzelfachprüfung Deutsch’.

Furthermore, in accordance with Section 11 of the Act on Higher Education Institutions in the State of Berlin (BerlHG), the Preparatory School also conducts examinations for those possessing vocational qualifications.

The Preparatory School cooperates with the following partner institutions: Charité International, Beuth University of Applied Sciences, the university of applied sciences HTW Berlin, German schools in Latin America as well as the Central Agency for German Schools Abroad (ZfA), particularly with regard to the regions Russia, China and Morocco.

Since November 2015, courses have also been offered for refugees who are starting their studies with varying levels of qualification. These courses are financed by the Berlin Senate and the Federal Ministry of Education and Research / German Academic Exchange Service (Integra). Currently, five courses, each with about 25 participants, are being conducted in parallel, with the demand for advanced courses remaining at a high level. So far, two examination rounds with refugees have been successfully completed. Those who completed the course have been enrolled at TU Berlin since the winter semester of 2016/2017 or the summer semester of 2017.

Since 2014, the demand for places at the Preparatory School has risen substantially, leading thereby to a disparity between the high number of applicants and the limited capacity at the Preparatory School (for each winter semester in recent years, 600–800 applications were submitted for around 160 places on the various courses). Because the number of rejected applicants is so high, these applicants prepare on their own for the Preparatory School’s assessment examination, which they can take as “external” candidates.

5.7 Modern Language Center / Language and Cultural Exchange

During the period mentioned above, the range of language courses offered to students at TU Berlin has been expanded, while resources have remained unchanged. The number of students taking courses has been constantly improved. On average, only half of those interested receive a place on a course. Students’ demand is particularly high for courses in English, Spanish (currently, only 28 percent of those interested receive a place) and, since the winter semester of 2016/2017, German as a foreign language. Since the summer semester of 2016, the range of English courses has been expanded, thereby considerably
improving the ratio of required and provided places (in the winter semester of 2015/2016, 46 percent of the students received a place, while this number was increased to 75 percent in the winter semester of 2016/2017).

Since the summer of 2014, the Modern Language Center has hosted the international Summer Language School, which has been conducting courses in German for Science, Engineering, Planning, Building and Environment with great success. Numerous scholarships have been secured for this purpose, including from the German Academic Exchange Service and from various doctoral programs. The Summer Language School is the only program in the Berlin academic landscape that is aimed specifically at learners of German from the STEM field, imparting German as a technical language for STEM subjects.

Since September 2012, cooperation agreements have been in place with the Berlin School of Economics and Law as well as with Beuth University of Applied Sciences. Prior to the beginning of each semester, the Modern Language Center organizes a comprehensive and continuously expanded range of German crash courses at the partner universities (about twelve courses with >200 participants per semester). This cooperation has also been profitable for the Modern Language Center from an economic point of view and could be constantly expanded.

The Modern Language Center also issues certificates of language proficiency in English, French, Spanish, Portuguese and Italian for TU Berlin students planning to go abroad. Here, too, demand has grown steadily, especially with regard to English. Since the winter semester of 2013/2014, group examinations have been offered for the language proficiency certificate in English.

The Modern Language Center is an accredited and certified examination center for the university entrance examination TestDaF (for German as a foreign language) and for the onSET (formerly OnDaF) placement tests in German and English.

Since the winter semester of 2015/2016, the Modern Language Center and the Preparatory School at TU Berlin have jointly been developing intensive German language courses for refugees wishing to take up STEM studies.

During the reporting period, the Modern Language Center has expanded its range of services, with the resources remaining the same, and has been actively involved in the development and implementation of measures as part of TU Berlin’s internationalization strategy. In line with this strategy, the Modern Language Center’s range will be further developed, including in terms of the setting of priorities and the ongoing debate about language policy.

The Language and Cultural Exchange is an institution at TU Berlin where students from all over the world work together. Around 100 members from more than 40 countries are dedicated to promoting cultural and language exchange in Berlin, offering events and educational opportunities in the field of culture and language for all students and staff at Berlin’s universities as well as for TU Berlin’s alumni.

5.8 International Mobility Programs

Staff Mobility

The scholarships granted and financed under the action title of ‘Ich bin dann mal weg!’ (‘Bye for now!’) for stays at TU Berlin’s partner institutions abroad serve the purpose of promoting the professional exchange, maintaining networks, brushing up language skills and broadening the (work-related) cultural horizons of our non-academic staff. The option for non-academic staff to spend time abroad at one of TU Berlin’s partner institutions had been little known prior to 2015. Therefore, since 2015, the administrative staff, in particular, has been specifically approached in this regard. The funding for mobility scholarships is covered
by university-internal funds for Strategic Partnerships as well as by Erasmus mobility funds.

In the first call for applications in 2015, 76 applications were submitted and 10 scholarships granted. Following this, the first round was evaluated and the application criteria adjusted for the second round. As a result, the application requirements were raised, which has led not only to a decline in the number of applications, but also on average to a substantial increase in their quality. In the second application round in 2016, 33 applications were submitted and 17 scholarships granted. In 2017, the range of possible target universities will be expanded, with up to 24 scholarships granted.

**Mobility Programs for Students**

In 2016, in the framework of 340 cooperation agreements, TU Berlin exchanged around 1,000 students with international universities (260 in Europe and 80 overseas). Regarding the distribution of students by destination country, students heading for Spain have in the meantime come to outnumber those heading for Great Britain, France and the USA. In the context of exchange programs, the number of partner universities and students in Scandinavia and Southern Europe has continued to grow steadily, while Eastern European countries (33 ERASMUS+ partnerships) and Turkey (11 ERASMUS+ partnerships) have only been catching up slowly. The structure of the subject-related participation in studies abroad has hardly changed in the reporting period. The participation rate in the natural and engineering sciences continues to lag behind that of the economic sciences and humanities; however, even in these subjects, the number of students going abroad has been increasing. Nevertheless, further efforts are required to motivate engineering students, in particular, to study abroad. As one measure in this regard, the Buddy International program was established with former exchange students as role models to provide, among other things, flexible counseling, motivation and support.

In cooperation with partners in Europe, Chile and Asia, dual degree programs have been further expanded so that they currently include 36 programs (22 in Europe and 14 overseas) in the fields of engineering and economic sciences. Two dual degree programs are specifically funded by the Franco-German University.

Key indicators for the quality of studies abroad are the recognition procedures for credits earned and examinations taken. In order to create more transparency and facilitate better documentation and clarity, a concept has been developed for the establishment of an interactive recognition database, which is also freely accessible to students. It contains the courses and modules that students have completed abroad as part of their exchange and dual degree programs insofar as they have been recognized for modules (particularly as compulsory and compulsory-elective modules) at TU Berlin.

An initiative launched in 2015 enabled TU Berlin to participate in a new mobility program. The Alliance4Tech (A4Tech) consists of four member universities: Centrale Supélec (Paris), Politecnico di Milano (Milan), UCL University College London and TU Berlin. By means of their membership in the A4Tech network, the partner universities offer their students the opportunity to study their course at three of the four different universities and in three different countries, graduating with a recognized degree from their home university as well as an ‘A4Tech Joint Programme Certificate’. Further joint degree programs are planned to be established within the alliance. In the context of the alliance, TU Berlin is currently participating in a Mechanical Engineering Partnership Proposal, a dual Master’s program in Industrial Engineering and a Free Mobility Program in Industrial and Management Engineering.

**Campus and Central Institute El Gouna**

The Central Institute El Gouna is an institution of TU Berlin that runs an academic outpost in the form of a satellite campus in El Gouna, Egypt. At Campus El Gouna, teaching, research and continuing education are focused on the challenges and developments of the Middle East and North Africa (MENA region) – thereby advancing the internationalization of TU Berlin, while promoting intercultural dialog between the region
and Germany. In each winter semester, the five Master’s programs start with a maximum of 30 students each at TU Berlin’s Campus El Gouna (Egypt), whereas studies in the summer semesters take place at Campus Berlin. For the two-year duration of the program, the campus has a maximum capacity of 300 students.

With the first day of class in the winter semester on 12 October 2015, the Master’s program started for the fourth time at the Central Institute El Gouna. As of the winter semester of 2015/2016, five Master’s programs have been offered in the engineering sciences, conducted exclusively by TU Berlin staff and in accordance with German quality criteria, enabling students to obtain a degree that is 100-percent a TU Berlin degree. All courses are taught in English. In addition to the previously existing programs in Energy Engineering (EE), Urban Development (UD) and Water Engineering (WE), the range of courses has been expanded by two further Master’s programs funded by the German Academic Exchange Service: Information Technology for Energy (ITE) and Business Engineering Energy (MBE).

The courses of study are internationally conceived and therefore open to applicants from all over the world. The German Academic Exchange Service also provided funds for the admission of refugees to the Master’s programs offered at Campus El Gouna. Since the beginning, the number of applicants has been increasing continuously. In 2014, 227 applicants applied for a study place. In 2016, 368 applicants from 48 countries applied, most of them coming from Egypt, India and Bangladesh. Due to the two new courses of study, the number of applications rose to 470 for the academic year of 2016/2017.

5.9 Teacher Education

Establishment of a Central Institute for Teacher Education (SETUB)

In October 2015, the Board of Trustees decided to establish the School of Education at TU Berlin in order to make teacher training more visible at the University and to pool responsibilities. In 2016, the committees were constituted and the grand opening was celebrated. The SETUB is involved in the process of the re-audit 'Internationalisation'.

In March 2017, a meeting was held with one of TU Berlin’s Strategic Partners, the Norwegian University of Science and Technology in Trondheim, to discuss the exchange of teacher trainees. Internationalization as an area of responsibility has been firmly anchored in the newly formed SETUB Executive Board.

In the context of the Quality Offensive for Teacher Training by the Federal Ministry of Research and Educations, TU Berlin’s SETUB successfully secured 1.7 million euros in funding for the TUB Teaching project, as well as additional funding for the PlanvoLL-D project. These projects aim to get more students interested in becoming teachers.

Development of Teacher Education Programs

In the winter semester of 2015/2016, all teacher education programs were fundamentally revised and optimized in order to adapt them to the amended Teacher Training Act. Among other issues, the topic of inclusion was introduced into the modules; and the Master of Education program in Work Studies was extended by two semesters.

In the winter semester of 2016/2017, three new courses of study were established in the field of Professional Specializations (Media Technology, Information Technology and Automotive Engineering). In addition, a special “lateral-entry” Master of Education program has been established for graduates of engineering courses, enabling them for the first time to gain quick access to a teacher education program. In coordination with schools and Berlin’s Senate Administration, an internship semester was introduced in
the Master’s program that enables prospective teachers to gain practical experience at an early stage of their studies. To facilitate good mentoring by the mentors (teachers) at the internship schools, a mentoring qualification program was established at the SETUB.
6 Equality, Diversity and Equal Opportunities

As of 1 October 2016, the thematic responsibility for equality, diversity and equal opportunities within the Executive Board was transferred from the chancellor to the vice president for international relations and teacher education, who initiated the process of developing a diversity concept for TU Berlin. Within the framework of the contracts on the provision of guaranteed state funding, TU Berlin is obliged to develop such a concept.

Guiding principles of fundamental importance in this regard are the understanding of diversity as a resource for all areas of our institution as well as for TU Berlin’s self-image, according to which the University should enable equal access to education, information and support – which is why an equality (instead of a diversity) concept is currently being discussed (see Diagram 9 for the development of selected dimensions of diversity). The university-wide discussion process is structured by a series of events that enable the active participation of all TU Berlin’s members. Particularly with regard to the gender dimension, the successful work in the field of gender equality and advancement of women, with a special focus on STEM subjects, will be continued, evaluated and adapted to current needs. The (cross-cutting) structures that have been anchored in a sustainable way are an essential factor for success in this regard.

<table>
<thead>
<tr>
<th>Year</th>
<th>Women (Bachelor)</th>
<th>Average Age (Bachelor)</th>
<th>Women (Master)</th>
<th>Average Age (Master)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>29.6%</td>
<td>12.2%</td>
<td>38.0%</td>
<td>27.0%</td>
</tr>
<tr>
<td>2012</td>
<td>29.7%</td>
<td>12.2%</td>
<td>35.8%</td>
<td>27.0%</td>
</tr>
<tr>
<td>2013</td>
<td>30.2%</td>
<td>12.4%</td>
<td>35.9%</td>
<td>27.0%</td>
</tr>
<tr>
<td>2014</td>
<td>31.1%</td>
<td>12.9%</td>
<td>35.1%</td>
<td>27.0%</td>
</tr>
<tr>
<td>2015</td>
<td>32.0%</td>
<td>13.8%</td>
<td>34.5%</td>
<td>27.0%</td>
</tr>
<tr>
<td>2016</td>
<td>32.1%</td>
<td>14.6%</td>
<td>34.5%</td>
<td>27.8%</td>
</tr>
</tbody>
</table>

Diagram 9 Development of the proportion of women, average age and proportion of international students for Bachelor’s and Master’s programs per academic year (excluding exchange and scholarship students) Translation: Students total (Bachelor) – Students total (Master) – First regular study semester (Bachelor) – NEW
6.1 Main Women’s Representative

On 1 May 2017, Ms. Antje Bahnik took over the post of main women’s representative at TU Berlin. She succeeded Dr. Petra Brzank, who had held the post since 22 April 2014. Within the scope of her statutory duty to ensure equal opportunities, the main women's representative is responsible for matters related to women in all status groups at TU Berlin. In fulfilling her mandate, she is supported by her deputies and the office staff. On the one hand, she is responsible for a number of structural measures to promote women. In the reporting period, this included, in particular, the involvement in the redesigning of the procedure for the women’s promotion plans, in the development of a concept for young researchers and in the revision of the Guideline for Appointment of Professors. A further major focus of activities was the coordination of the application for the Berlin Equal Opportunities Program.

On the other hand, the Office of the Main Women’s Representative has implemented a series of individual measures for the targeted advancement of women at TU Berlin. These measures include the programs ProScience, ProMotion and IPODI, as well as the Joint Programmes for Female Scientists & Professionals. Furthermore, each year, outstanding female students are granted scholarships to complete their doctoral studies or are honored with the Clara von Simson Award. As a further measure carried out in the context of the Berlin Equal Opportunities Program during the reporting period, TU Berlin, in conjunction with Berlin’s other state universities, applied for a new Graduate Program in Digitization (feedback on the successful securing is expected by the end of June 2017). Through the activities of the Office of the Main Women’s Representative a number of excellent (young) female researchers have joined TU Berlin. Supplementary networking and further training opportunities help female researchers to get started at TU Berlin, while increasing the chances of their remaining at the University.

In addition to initiatives that promote the academic careers of women, the Office of the Main Women’s Representative also supports the many women among the technical and administrative staff. Following the event on ‘Personnel Development for Female Administrative and Technical Staff’ (2015), the network com.TUgether was formed in order to exchange information and promote communication across institutions.

The main women’s representative, her deputies and staff are also involved in a number of committees, bodies and work groups to which they actively contribute the gender-equality perspective. In the future, it is planned to intensify the monitoring of existing measures as well as redesign the cooperation between gender-equality players, both within TU Berlin and at state level.

In the context of several open-topic calls for proposals between 2013 and 2018, the International Post-Doc Initiative (IPODI) fellowship program, co-financed by the EU as part of the Marie Curie Actions (COFUND), awards two-year postdoctoral fellowships to excellent and experienced international female researchers. IPODI thus combines TU Berlin’s internationalization and equality strategies. By means of targeted measures, it prepares participating female researchers for leading positions in the science sector. Following the program’s development and establishment, an initial call for proposals was made in 2013, with further calls made in 2014, 2015 and 2016. The very high number and quality of applications submitted due to the calls for proposals testify to the program’s acceptance. The average funding rate has been 13 percent. As a result of the great success (securing of one Research Unit funded by the German Research Foundation, preparation of one application for an ERC Grant, application for a cluster of excellence by two IPODI Fellows, participation of one researcher in the Falling Walls Lab 2017), TU Berlin has extended IPODI until 2019, ensuring the funding from its own university budget, while increasing the total number of fellowships by five to a total of 26. An application for a follow-up program is currently in preparation and scheduled to be submitted to the EU in the autumn of 2017.

The project ‘Joint Programmes for Female Scientists & Professionals’ is funded as a gender-equality measure by the Program for Women Professors. The project aims to open up alternative career paths for women and promote inter-sectoral mobility between science and industry. Visiting professorships give
female talents and managers from business enterprises the opportunity to form networks with the academic world and pass on their experience to female students and young researchers at TU Berlin. The Joint Programmes Office was established in September 2014 and is located at the Office of TU Berlin’s Main Women’s Representative. Collaborations with companies and women’s networks have been established in an ongoing way. Further tasks performed by the office included the active recruitment of female applicants for visiting professorships as well as the conception and organization of the selection procedure. Since 2015, four visiting professorships have been advertised for female talents from business enterprises. The applicants were selected in a multi-stage procedure, with the involvement of representatives from all faculties as well as members of the Advisory Board to the Office of the Main Women’s Representative at TU Berlin. In the winter semester of 2016, the first visiting professor took up her post at Faculty I; in the summer semester of 2017, two further visiting professors started at Faculties VI and VII. With its Joint Programmes, TU Berlin is the first German university to pursue alternative paths to recruit female talent. In February 2017, the Donors’ Association for the Promotion of Humanities and Sciences in Germany honored the Joint Programmes as ‘Hochschulperle’ of the month (a prize for innovative projects that bring together universities and external partners).

6.2 Gender Equality Monitoring

New planning and management processes have been established during the reporting period. These include the implementation of gender-equality aspects in the context of structural plans and faculty development plans (2014), the development of a new procedure for women’s promotion plans (new aspects: duration increased to six years, annual interim reports, new templates and standards; 2014–2015), the annual supply of data regarding the proportion of women in faculties and central institutions (since 2015) as well as their transparent presentation (from 2017), the development of a new process for calculating and determining target figures at decentralized level (2015), as well as the preparation of a gender-equality concept (2015) for 2016 to 2020 that includes measures and target figures.

Furthermore, during the reporting period, TU Berlin’s equality concept and its measures were further developed, an implementation process was prepared for the family-policy component, the Act on Temporary Employment Contracts in Science (WissZeitVG) has been introduced, and gender-equality consulting established for research cooperation groups (including collaborative research centers and research training groups). In 2017, the pilot project Pooling of Gender-Equality Funds for Research Cooperation Groups was initiated, whereas the centralized website concerning issues of gender equality is currently being developed. As part of the Guideline for Appointment of Professors, recommendations are also being prepared regarding active recruitment. Furthermore, TU Berlin’s Diversity/Equality Strategy including Diversity Policies (2017) is being prepared under the overall control of the vice president for international relations and teacher education.

6.3 Platform for the Implementation of Research-Oriented Standards on Gender Equality

One instrument for the promotion of gender equality at TU Berlin is the ‘Platform for the Implementation of the German Research Foundation’s Research-Oriented Standards on Gender Equality’. Originally, the platform had been instituted under the leadership of the chancellor as an advisory body to the Executive Board. The committee, headed by the vice president for international relations and teacher education, has provided, and will continue to provide, important impetus for the implementation of TU Berlin’s successful
gender-equality strategy. Current examples in this regard are the committee’s involvement in matters pertaining to the Excellence Strategy and applications for clusters of excellence.

6.4 Center for Interdisciplinary Women’s and Gender Studies

In the reporting period, the Gender Pro MINT program (for gender studies in the STEM subjects) has been further developed and consolidated. One temporary W2 professorship, funded under the Berlin Equal Opportunities Program, was created for the program. In addition, international cooperation was initiated and established between TU Berlin’s Center for Interdisciplinary Women’s and Gender Studies and the UTS Sydney.

6.5 Family Services Office

The Family Services Office is the central service-oriented contact point for all issues related to the ‘compatibility of work/studies with family life’. It offers professional advice for all status groups, designs, develops and organizes demand-oriented family support services, manages and organizes public relations activities on the topic of compatibility, while being responsible for coordinating projects in the context of the ‘audit familiengerechte hochschule’ (a certificate for family-friendly universities) and being involved in the development of implementation strategies for promoting compatibility at TU Berlin. In the reporting period, a series of new measures was implemented with the aim of advancing cultural change. In the employee survey conducted for the purpose of promoting workplace health, the services provided by the Family Services Office were assessed very positively.

The Executive Board’s competition ‘Fair für Familie’ (‘Fair for Families’) generates new ideas and solutions to support the compatibility of family life with studies or career at TU Berlin. The prize money is to be used to implement the competition’s winning ideas, such as the provision of holiday care for the children of TU Berlin’s staff and students. The annual Family Action Days increase the visibility of the topic of compatibility at TU Berlin.

Since 2015, in order to further improve the compatibility of family with studies and career at the University, students and staff members have been able to take advantage of flexible childcare / emergency care on an hourly basis to help them perform their duties and keep their appointments at TU Berlin. In 2016, the parent-children room in EB 328 was refurbished. Further measures include the purchase of mobile toy boxes and other items for children that can be borrowed for childcare and events.

Since April 2017, a work group has concerned itself with ways to make the workplace more flexible by means of amplifying the scope of the Internal Agreement on Telework between TU Berlin and its Staff Council, thus enabling mobile work on a case-by-case basis. In parallel, a uniform procedure for dealing with applications for the so-called family-policy component for research assistants is currently being developed and about to be implemented.

In the reporting period, the TU Tandem project has been continued with corresponding third-party funding as part of the Quality Pact for Teaching (2012–2016, new: 2017–2020). The mentoring program interlinks students who have family obligations, while also strengthening the welcome culture. As part of the project, students can attend Service Learning Modules and earn ECTS credits for them.
6.6 Educational Outreach Coordination Office

In recent years, the Educational Outreach Coordination Office at the General Academic Advising Service has firmly established itself, while steadily consolidating and expanding the communication on the services offered at TU Berlin to pupils who are at the interface between school and university.

New projects such as the ‘Pupil Reporters’, who report about TU events and post user-generated content on school blogs, TU Berlin’s School Portal and other social media channels involve prospective students from the region in TU Berlin’s activities, even before they begin their studies.

Since 2015, a further project has dedicated itself to the production of audio podcasts for the MINTgrün orientation course of study (in STEM subjects), documenting the path prospective students need to take in order to choose their subjects, thereby building a bridge from school to university.

The network of Pupil’s Laboratories at TU Berlin has grown in the reporting period; each year, around 10,000 pupils attend these laboratories and various major events at TU Berlin. The range of offers for pupils forms the basis for the organization of major events for the promotion of girls and STEM subjects, for instance, in the context of the Girls’ Day, Green Day and, since 2016, Boys’ Day.

By means of targeted networking with secondary schools in the Berlin-Brandenburg region, the Educational Outreach Coordination Office supports the School of Education (SETUB) in its efforts to get pupils interested in TU Berlin’s study programs for prospective teachers at vocational schools. As part of the 2017 Boys’ Day, a project dealing with the profession of teacher at vocational schools was carried out for the first time.

TU Berlin’s network with partner schools had grown to 18 schools by 2017. The cooperation agreement formed in 2016 with TU Berlin’s latest partner school, the Deutsche Schule der Borromäerinnen (German School of the Sisters of Mercy of St. Borromeo) in Cairo, is a further step towards the systematic expansion of international cooperation at school level in order to recruit new talent, both for the Berlin location and Campus El Gouna. For international students, courses are also offered in English.

6.7 Career Service

In 2015, the Career Service celebrated its 15th anniversary, making it one of the oldest institutions of its kind in the German academic landscape. Its core business in each semester is the provision of a comprehensive range of events and training courses on the topic of career entry. The communication channels have been supplemented by a social-media presentation and an extensive magazine for donors contributing towards the financing of Germany Scholarships. After many years of successfully secured third-party funding, permanent posts were created for the Germany Scholarship and the PREPARE course.

The successful activities of the Career Service are supported by the large number of institutional alliances, for example with the Confederation of Employers and Business Associations of Berlin and Brandenburg (UVB e.V.) for the preparation of a joint brochure containing the offers of all universities in the States of Berlin and Brandenburg as well as the creation of a website in 2014/2015. Another important public-private partnership exists with the TU Berlin spin-off Stellenticket GmbH for the online publication of a comprehensive range of job advertisements for academic vacancies at the platform Stellenticket TU Berlin.

Third-party funds have been secured for: 1. The PREPARE Module that contributes to qualifying participants for entry to a profession, with funds initially provided under the Master Plan for Teaching (Masterplan Lehre); following the successful application, the project has been extended, with the funds being provided under the Berlin Quality and Innovation Offensive (QIO) (both funding programs by the Berlin Senate Administration for Education). 2. The ‘Alumni Mentoring’ program for students in the final phase of their studies in cooperation with the Alumni Program, for which funds have been secured both under the Higher
Education Pact III and, after a successful internal audit, under the Quality Pact for Teaching. 3. Scholarship programs related to the interface between university and the professional world. Examples to be mentioned in this regard are the Germany Scholarship, financed by donations (see Chapter 2.3), and, at international level, the scholarship programs Erasmus+ and Promos that aim to increase students’ international mobility with regard to internships (see Chapters 5.5 and 5.8).

The Career Service’s activities also cover various diversity aspects, one example in this regard being the event titled ‘Coming-out in the Workplace’ that has been established as a regular event in cooperation with the Queer Unit of the General Student’s Committee (ASTA). Furthermore, the explicit opening of the Alumni Mentoring program towards students facing special challenges when entering the professional environment – including international program students, students with children, students with immigrant backgrounds, students from non-academic parental homes and competitive athletes – also contributes to the opening of the University as a whole.

6.8 Dual Career Service

The Dual Career Service (DCS) at TU Berlin was founded in 2012 as an instrument for the strategic recruitment of staff members and the advancement of women and families. Its background lay in the realization that the recruitment and retention of top-class researchers increasingly requires an active consideration of their family lives and work situations. Most professors and executive staff live together with partners who are equally high qualified and career-oriented. Therefore, one person’s career decisions often depend on the other’s career opportunities. For top executives to decide in favor of a new employer, their partners must have attractive options for pursuing their own careers at the new location. International mobility as a biographical normality for highly qualified people is a further factor to be taken into account in the recruiting process. Getting settled in a new city with the entire family, especially for those coming from abroad, is facilitated and expedited thanks to the provision of support that is both highly individual and intense.

The DCS’s range of offers therefore includes, in particular, support for the partner’s professional integration in Berlin, creating thereby equal opportunities for the partners of researchers and senior staff members. Attracting researchers and highly qualified staff from abroad also serves the purpose of promoting diversity at TU Berlin. In order to facilitate the settling process for families in Berlin, the Dual Career Service also provides information on how to find suitable accommodation, childcare options and schools and how to adjust to everyday life in Berlin, as well as information pertaining to matters of recognition and entry requirements for foreign clients.

From 2014 to 2017, professional infrastructure and public relations activities were implemented at the DCS, together with the promotion of networking activities, both within the University and with external partners (as the most important selling point for clients). In the future, the focus will be on further expanding the network, linking dual-career topics and newly appointed professors more closely to the Personnel Development Section, and, possibly, on approaching further target groups (for instance, postdoctoral researchers and members of academic councils).

6.9 Audits and Awards

Family-Friendly Higher Education Audit

Since 2008, TU Berlin has been certified as a family-friendly university and is therefore entitled to carry the
quality seal (logo) ‘audit familiengerechte hochschule’ from berufundfamilie Service GmbH. Thus far, the University has undergone a re-auditing process every three years (most recently in the autumn/winter of 2014). In the three-year implementation phase (currently 01/2015–01/2018) following the re-auditing process, the University undertakes to implement the measures that have already been agreed upon in an agreement setting out objectives.

**Total Equality Award**

TU Berlin’s success in raising funds to finance gender-equality measures and the consistently very good assessment of its internal gender-equality activities are evidence of the fact that TU Berlin is on the right track. For instance, TU Berlin has so far received three ‘Total E-Quality Awards’ (in 2008, 2011 and 2014). With regard to the most recent application, the jury acknowledged TU Berlin’s dense network of innovative and coordinated measures relating to compatibility, qualification and support that set standards by means of consistently integrating equality into newly developed instruments for steering the relevant processes. The follow-up application is due in the spring of 2018. In this application, diversity will be one of the priorities.
7 Prospects

Over the last three years, the open-university policy pursued, with its commitment to social justice, has helped to create a distinct image in society. On the one hand, the reduction of admissions restrictions with the simultaneous establishment of an attractive orientation course of study has also resulted in a considerable increase in the workload for the University’s teaching staff. As a result, the student-teacher ratio has officially become less favorable. On the other hand, for the first time in many years, the reaching, or indeed exceeding, of the mandatory targets set for the number of first-semester students resulted in a correspondingly high allocation amount from the State of Berlin to TU Berlin, and this also benefited the faculties because the so-called PMA – the across-the-board expenditure shortfall – was reduced. In the future, the reduction of the PMA shortfall to half in 2017 – with a realistic perspective of retaining this level in the long term – in conjunction with the limitation of faculty reserves for contingencies, also agreed in 2017, will enable each university division equally and fairly to fulfill its tasks. Furthermore, the number of academic staff members will be increased by 20 positions from 2018, while 25 W1 and W2 professorships (at TU Berlin) will be created as part of the Einstein Center Digital Future, with 25 additional W1 and W2 professorships having been applied for in the context of the Federal Government’s Tenure-Track Program for 1,000 Professorial Positions. Therefore, despite a stable number of students, these measures are expected to significantly improve the student-teacher ratio in the next reporting period, even more so considering the fact that the funding contracts with the Senate of Berlin do not oblige TU Berlin to further increase the number of students (except with regard to teacher education).

We will resume our cooperation with the governing mayor of Berlin – which focused on digitization and resulted in a 10-point agenda in 2015 – thereby living up to our conviction that a university has obligations towards society. Following the securing of the Einstein Center Digital Future, the Berlin consortium, with the heavy involvement of TU Berlin, succeeded following a competitive contest in bringing the German Internet Institute to Berlin. Over the coming years, TU Berlin will focus, in particular, on sustainability in research, teaching and university management. TU Berlin’s Sustainability Council, founded in 2016, is the organizational starting point for this future focus area, and the solar systems installed on our roofs at the initiative of students are evidence of its first practical effect. Modern science transfer and transdisciplinarity will accompany our research and teaching more than ever and send their waves out into society. By means of an Open Science Strategy including Open Access, Open Data and Open Projects, TU Berlin will not only share with the general public the findings of its publicly funded science, but also enable and promote public participation in the academic sphere. With its consistent involvement in matters pertaining to our original maternal home, the Bauakademie, TU Berlin will enter into a societal dialog on architecture and urban development in the historical center of Berlin. Just as it has in other European metropolises, this discourse will spark a tremendous emission of light in this field.

Our internationalization strategy focuses more on the Berlin location than has been the case in previous periods of office. Internationalization@home has become a trademark for TU Berlin; and the diversity of the research community will become even more visible – in Berlin, in our teaching staff, in our research assistants and other staff, and in the central administration.

We will continue to further develop our sense of community at the University, along with the cultural change it entails. The Participation Team, which develops new ways of involving all status groups in University processes, as well as the recently adopted Code of the Academic Senate are visible signs in this regard. The digitization of the University’s administrative processes continues to present us with major
challenges. Complex processes, more work or the duplication of work for many employees in the administration require that a lot of resources flow into this project. Nevertheless, with the introduction of a digital Campus Management system TU Berlin has chosen to take a pioneering path.

Furthermore, we will also continue to pursue the cultural change in studies and teaching that began in 2012 with the Ziethen Manifesto that emerged from the Ziethen strategy workshops. This programmatic change in perspectives with regard to teaching, articulated in the Manifesto and signed by 26 university members in 2012, has been further developed annually since then in changing teams involving all status groups and focusing on different topics. The Ziethen Process enjoys great trust among TU Berlin’s members and will also continue to stand in the future for innovative forms of teaching and learning.

With our concept for the advancement and recruitment of young researchers at TU Berlin, the promotion of young researchers will be given an even clearer profile. In addition to the academic supervision in the faculties, we teach young researchers professional skills and open up perspectives, thus involving them even stronger in the University’s strategic development.

Communication about science and with the scientific community will become another focus at TU Berlin. The looming restrictions on academic freedom, such as have become reality in other countries, present universities with a new challenge that even a few years ago would have been inconceivable. We are committed to the unconditional preservation of academic freedom and have demonstrated this in great concord, for example, by means of our speedily conceived and well-attended programs for refugees as well as by the statements we have issued on the situation in Turkey. Our systematic analysis of the topic of academic freedom will include an initiative on academic communication that places the validity and importance of academic work in the foreground and makes it visible to society. With the support of our Humanities Departments, part of this communication will focus on language in the age of technology and science.

Our participation in the Excellence Strategy by the Federal Government and the Federal States is characterized by great dedication on the part of the researchers. Gender and diversity will be among the priorities in the joint proposal. We hope that the German Research Foundation will provide the funding for our proposed clusters and for a joint and successful alliance consisting of the Berlin universities and the university hospital Charité. A success in this regard, particularly in Funding Line B (Universities or Alliances of Excellence), will boost TU Berlin’s visibility in the scientific world and its international reputation in ways hitherto unknown. On the sound basis of a service-oriented administration under the direction of the new chancellor and a consolidated overall budget, and considering the prospect of the extensive construction and renovation measures to be conducted, TU Berlin is looking forward to further successful years containing many possibilities for shaping our University. With your support, the present Executive Board would like to continue along the path of renewal that it has consistently pursued over the last three years.
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