

**CZECH TECHNICAL UNIVERSITY**

***EUA EVALUATION REPORT***

*January 2005*

## **TABLE OF CONTENTS**

Foreword: EUA Institutional Evaluation Programme .....	3
1. Introduction: .....	4
1.1 Aims of the 2004 Institutional Evaluation of Czech Technical University and Special Focus.....	4
1.2 Organisation of the Visit .....	4
2. The Context .....	6
2.1 The National Context .....	6
2.2 The International Context.....	8
3. The Strengths of CTU .....	9
4. The Constraints and Weaknesses of CTU.....	10
5. Threats which could harm CTU's medium and long term prospects .....	12
6. The Opportunities which CTU could exploit.....	14
7. Recommendations .....	16
7.1 General recommendations.....	16
7.2 Governance and leadership .....	17
7.3 Strategic plan.....	18
7.4 Human resources .....	18
7.5 Strategy regarding teaching and learning.....	18
7.6 Research policy .....	19
7.7 Exploitation regarding research results.....	19
7.8 Budgeting .....	20
7.9. Develop an institutional quality system .....	20
8. Conclusion.....	20
9. Annex: .....	21
1. Programme of the Preliminary Visit .....	21
2. Programme for the main visit to CTU in Prague .....	22

## **Foreword: EUA Institutional Evaluation Programme**

1. 10 years ago, the CRE, the predecessor organisation to the EUA, established the Institutional Evaluation Programme as a service to its members which was designed to contribute to the dynamic and capacity of change of a given university. In 10 years, the CRE (until 2001) and EUA (since 2002) have conducted 130 evaluations in 35 countries. In its focus on the overall institutional quality management and capacity to address change, each Institutional Evaluation (IE) takes as its point of departure the various aims, objectives and plan of the institution to then evaluate whether the ways it proposes to realise the aims are adequate to the stated purpose. Essentially the IE asks the institution what it is trying to do and how it is trying to do it. It then investigates how the institution establishes whether it is successful or not and how it organises the changes it deems necessary.

2. The methodology of each EUA institutional evaluation comprises a self-evaluation process which results in a report that is written and approved by the institution's leadership and relevant governance bodies, as well as an external review. The latter is conducted by a group of peers, composed of current or former rectors or vice-rectors and one academic with a background in higher education management who acts as the secretary of the team. The peer group undertakes two visits:

- a shorter preliminary visit where they get to know the institution and the main issues and problems which are in the foreground of current institutional development, taking note of the relevant information about the national context.
- a longer main visit where a wide array of different groups are interviewed to allow a multi-perspectival and more in-depth insight into the central processes and problems of institutional development.

Both the internal and the external review examine the short and long term objectives of the institution as well as the external and internal constraints under which it operates. Very importantly, major strengths and weaknesses are highlighted, opportunities and challenges are identified and strategies are recommended to improve the quality of the institution.

In addition, each institution may ask for a special focus on major concerns in its current development and relating to its capacity to change.

3. The EUA institutional evaluations do not seek to define or apply standardized solutions. Their proposals are also not put forward as imperative recipes but as a support of peers to help the institution improve itself. It is therefore essential that the evaluation is based on a voluntary process and conducted in an open spirit of self-critical discussion.

4. The Institutional Evaluation of the Czech Technical University in Prague was conducted by the following team of experts:

- Prof. Erdal Emel, Vice-rector, Uludag University, Turkey.
- Prof. Bente Kristensen, Vice-rector, Copenhagen Business School, Denmark.
- Dr. Sybille Reichert, (secretary of the team), Head of academic planning at ETH Zürich, Switzerland.
- Prof. Luc Weber (chair of the team), Rector emeritus of the University of Geneva and member of the EUA board.

## **1. Introduction:**

### ***1.1 Aims of the 2004 Institutional Evaluation of Czech Technical University and Special Focus***

5. Within the 10 year life span of the Institutional Evaluation Programme, the Czech Technical University in Prague (CTU) is the first institution which has asked for a second institutional evaluation (5 years after the follow-up visit). The first evaluation took place in 1996, still under the auspices of EUA's predecessor organisation, the CRE, with a follow-up visit in 1999. Both visits were regarded as successful by both parties in that the recommendations were reported to be taken very seriously and addressed wherever possible. However, it was also noted by the interviewees of the follow-up visit as well as by those of this second evaluation visit that key recommendations could not very easily be implemented in the given legal constraints.

6. The explicit aim of this second evaluation is to obtain the opinion and recommendations of external experts again on the present state and perspectives of the institution. Moreover, it is the explicit wish of the institutions to receive recommendations which address its ambition to become an equal partner to leading foreign engineering universities in the European system of education and research.

The CTU also asked for a particular focus for the visit, namely the cooperation between the CTU's central structures and leadership and the faculties.

7. The review team tried its best to do justice to these wishes and wants to draw attention to the fact that such an evaluation can always only result in informed impressions, rather than pretending to be the outcome of an in-depth institutional analysis. At the same time, the team feels confident about its judgements which were reached in full agreement among the peers and which in many cases coincide with the judgements of internal institutional actors. **Perhaps the chief difference between the view of the external peers and those of CTU representatives can be said to lie in the urgency which the peers attribute to the necessity to act soon in order to not lose the competitive battle over a visible European position in the European Higher Education and Research Area which this renowned technical university is still in a good position to work toward.**

### ***1.2 Organisation of the Visit***

8. The review was organised according to plan with a shorter preliminary visit of two days taking place a few weeks after submission of the self-evaluation report and a longer visit of three days a few months thereafter. In this case the preliminary visit took place from the 11<sup>th</sup> to the 13<sup>th</sup> of May 2004. For the main visit the team had to wait for the beginning of the semester in order to be able to interview all groups. The main visit thus began on Sunday afternoon, the 10<sup>th</sup> of October and lasted till the early afternoon of the 13<sup>th</sup> of October.

9. Both visits were reliably and diligently prepared by the contact person, Prof. Machacek, who is also the vice-rector for strategic planning of the institution.

The self-evaluation report was informative and helpful and reflected the input of a group of institutional leaders who had self-critically and carefully looked at the strengths and weaknesses of the institution. While the visits revealed that not so many people in the various faculties knew the contents of the self-evaluation report, the report had been

approved by the senate and many of the judgements it contained were confirmed and emphasised by a large number of interviewees.

10. In addition to the descriptions and data contained in the self-evaluation report and its data annex, the review asked for some additional documents which were duly provided by the institution. These comprised:

- An English translation of executive summary of the strategic plan and, if existing also of long term goals
- An electronic version of HE act
- The bylaws/ statutes in English
- The financial formula of budget allocated by state to institution but also of the allocation in the institution and in faculty
- The decision making powers of different bodies, with flow chart (e.g. senate as place of objection)
- The drop-out rates not just first to second year but also per year, per faculty, also per gender
- The plan for professorial replacement, human resources plan, international proportion of academic staff, criteria for professorial appointment
- The gender statistics for students and academic staff
- More information or written documents about quality management

11. During both visits, the interviewed university representatives displayed a remarkable degree of openness and a great willingness to address the central concerns of the institution. The team was thus provided with a good and multi-perspectival insight into the institution which, it feels, gave it as reliable a basis as possible for formulating the below analyses and judgements.

**12. The team would like to thank everyone they met for the warm hospitality, for the openness and frank atmosphere which are the most essential ingredient for any constructive evaluation. Again, it would like to express its sincere thanks to Prof. Machacek for the perfect organisation and the warm and meticulous support before and during its visit, all of which made the visit so agreeable and smooth.**

## **2. The Context**

### **2.1 The National Context**

13. As one of the oldest technical universities of the world, the CTU has seen and outlived many different national conditions. Recently, it had to reassert its resilience again in the radical transition from a centralized undemocratic system which did not value academic freedom, suppressed entrepreneurialism and stifled individual initiatives to a higher education law which guaranteed academic freedom and established university autonomy. Since the fall of the iron curtain, this first new law of 1990 was followed by two Higher Education Acts, one in 1993, then again in 1998. The latest Higher Education act was revised in 2001 to introduce the three cycle structure of Bachelor, Master, Ph.D., the cornerstone of the Bologna reforms, earlier than in most other European countries. The 1998 Act also extended opportunities for private financing.

14. Simultaneously, the push toward increasing the Higher Education participation rate was successfully furthered, increasing the number of HE students from 113 000 in 1989 to 201 000 in 2002 and the number of multi-field universities and technical universities from 5 in 1989 to 15 in 2002. At the same time, the number of academic staff has only increased by 30 %, which means that **the student/staff ratio has continuously declined and that the additional burden of the increased participation rate is mainly carried by the academic staff.**

15. The increasing strength of and support given to the other older Technical University at Brno as a major second technical university in the country and the addition of 3 more regional technical universities added to the pressures on CTU to recruit students from all over the country in accordance with its well established brand as the best institution for engineering education in the country.

16. Another vital change process concerned research, which had been focussed strongly on the academy of sciences before 1990, and was thereafter also expanded at universities (often in cooperation with the institutes of the academy of sciences). **Building up research capacity is of course a major endeavour and the energy and resourcefulness with which CTU has managed to pursue this aim reflects the enormous potential of its members. This effort thus deserves not only a strong applause but also further support to exploit this momentum further and realise the full potential of the university.**

17. In addition to building up research capacity and new facilities, the **back-log of long neglected infrastructural renewal** dating back to the communist era, **put Czech universities**, in particular those with strong natural sciences and engineering like CTU with concurrent scientific infrastructural needs, **under severe financial pressures.**

18. Another national phenomenon deserves mention which is also strongly reflected at CTU, namely the relatively high average age of academic staff and the relative lack of properly qualified younger personnel. The latter often leave the academic careers because of the comparatively low wages (compared to the private sector) and the relatively uncertain career prospects. **Nationally, the average age of professors is over 60, with slightly better averages in the associate and assistant professor categories. This grave problem also strongly affects the current situation at CTU and will be its most vulnerable spot in relation to its future prospects as a high quality technical university.**

19. Against this backdrop, one salient feature of the above-mentioned Higher Education Law deserves more focussed attention: Understandably, the current legal system and political culture strongly reflects a deep fear of suppression of democracy and academic freedom, therefore making sure that sufficient checks and balances are built into the governance structures of each public organisation in order to prevent any possible abuse of power. Hence the Higher Education Acts of 1993 and 1998 also take the idea of democracy very far into the governance structure of the university, **extending democratic principles to the organisational structure of every single level of any higher education institution in the country**. Thus the participatory and representative principles that normally characterise a democracy's governmental and parliamentary decision-making processes are not just extended to the institutional management but are also mirrored exactly at faculty and even department level (the departments being rather small entities in the institution which comprise only a few professors). **Ironically, the concern for democratic principles thus leads to unequal treatment of equals**: while students are supposed to be treated in the same way according to CTU statutes the different faculty standards and habits mean that students in some faculties have more opportunities or receive more support than those in other faculties, either with respect to student mobility (incl. credit recognition of study done abroad), or research project exposure, or even with respect to receiving more attention and advice from the teaching staff. Hence, **the institution cannot ensure common quality standards**.

20. This well-meaning legal prescription regarding internal university governance causes a number of problems with respect to the university's ability to develop and decide on institutional actions and thus to adapt to rapidly changing conditions. Even with the slight alleviation of this difficulty in the new university act of 1998, which has erased the previous status of the faculties as a legal entity in their own right, the university still has to duplicate extensive democratic decision-making procedures at all levels, central, faculty and departmental, frequently leading to blocking of necessary institutional actions which could have negative implications for one faculty. Each major change of action has to be decided upon by the senate of the faculty which (like the institutional one) is composed of at least a third to one half by students. Any possibility to develop a more long term familiarity with institutional problems and develop some identification with overall institutional perspectives is forestalled by the fact that no member's term can exceed three years. The deans who are likely to combine a faculty perspective with a good knowledge of overall institutional concerns are not even members of the faculty senate. **Thus the strong independence of faculties which had been put in place in the Communist era to prevent institutional coherence is still pertaining to this moment, preventing the institution from forming coherent approaches to overarching urgent problems**. Moreover, any decision or investment that is likely to benefit one faculty over the others is likely to be turned down by the academic senate of the institution.

21. It should be noted that Article 22 of the 1998 Act allows universities to have other units of internal partitioning than faculties, such as "institutes of higher education institutions" and "other workplaces focused on educational, scholarly, research [...] activity" so that any university could avoid the rigidly fixed governance structures of the faculties by creating other types of internal entities. But such other entities are more easily created for new units (as was the case recently in the creation of the "Institute of Biomedical Engineering " in Kladno) since it is rather difficult to convert the existing faculties into another type of unit. A decision to dissolve or merge existing faculties has to be made by the Academic Senate which is composed of representatives of each faculty so that a blockage of such a decision is likely to occur if the existing or other faculties associate some decrease of power or resources with such a change. A wide array of institutional representatives complained about

the constraints of the faculty structure. Accordingly, a few representatives of the Institute of Biomedical Engineering were dreading the rigidities of the faculty structure to which they were moving (apparently, in order to be able to be wholly responsible for their study programme - it was not entirely clear to the peers why the move toward the faculty structure was voluntarily undertaken since the HE Act, Art 34, does seem to allow institutes “to take part in providing accredited study programmes”.)

## ***2.2 The International Context***

22. The above mentioned constraints and rather rigid governance structures could be observed with more equanimity if one did not take account of international developments and competition. Given the fact that CTU does not want to limit its impact merely to a national setting however, but explicitly want to be part of the European Research Area and even be one of the set of leading European technical universities the following international developments cannot be ignored:

23. First of all it should be noted that all across Europe competition between research intense universities seems to be increasing in spite or even supported by an increase of cooperation between institutions. Even the richest and most well placed institutions in Europe are beginning to suffer from receding state support and are increasingly turning to third party funding for which previous work and thus previous success in a given field constitutes one of the most decisive criteria. Hence, the strong tend to be strengthened and the weaker tend to be weakened when bidding for grants from the same competitive research sources.

24. In addition to receding of stagnating state budgets, **the cost of research and research infrastructure is increasing significantly**, adding to the financial pressures. In light of the cost of research, some countries are even beginning to consider or push policies of “concentrating excellence”, i.e. of concentrating such investment on a smaller number of already well placed institutions, resulting in a reduced opportunities for others to catch up. While some governments, including the Czech one, have pledged to adopt the Lisbon objectives of bringing their overall research expenditure up to 3% of the GDP, only few nations have managed to bring about significant increases in research expenditure in the last few years. Nevertheless, the fact that the Czech government has signed onto the Lisbon objectives may be an opportunity for CTU which is well placed in the national context to be one of the leading houses for research training and research in the country.

25. Likewise **the competition for the best qualified researchers is becoming increasingly international and fierce**. A few well placed international research universities are recruiting talents from all over the world. Many are adapting recruitment procedures to widen the talent pool form which they can select and allow for more international influx of brain power. Again a pull function can be observed whereby those institutions with a significant body of internationally renowned researchers are more attractive to additional ones. Since many countries such as the US and the UK are reporting receding numbers of natural science and technical graduates, the competition for fresh talent is beginning to be just as tough as the one for already established internationally successful professors.

26. The above-mentioned increase of international competition among research universities is of course enhanced by the creation of a more transparent European Higher Education and Research Area which allows for more comparison and mobility across Europe. Moreover, to allow for optimal positioning in times of increasing costs and stagnating budgets many



institutions realise they have to focus their efforts more than before and have to complement their own portfolio through cross-border alliances which also allow access to additional markets.

27. Finally, there is an international trend which has already been talked about for decades but is now gaining an increasing importance for the advancement of science, namely the **need for more inter-disciplinarity to push the frontiers of science forward**. The required new forms of cooperation across the disciplines do not just pose a scientific challenge but are also quite a challenge for institutional development since they demand flexible communication and decision-making across the borders of internal institutional entities like faculties and departments. Hence, many institutions across Europe and the US are worrying about their processes of “horizontal communication” and are setting incentives for internal cross-departmental or cross-faculty cooperation.

28. The strengths and weaknesses of CTU which are described below should thus be seen in the light of these developments and constraints in order to be weighted accordingly.

### **3. The Strengths of CTU**

29. First and foremost, one should mention a fact that may be easily forgotten in a higher education environment but whose value is all the more known in the business world: **CTU has an established brand** name which is most renowned across the country and known across the borders. CTU is associated with a long tradition of producing the most successful engineers of the country and with a solid reliable education which its students and graduates can be proud of. It should be noted that this pride is obviously also still thriving as the peers could witness in the pride the students demonstrated of being CTU students.

30. Linked to this reputation is another strength of CTU, namely its ability to attract the brightest students in the country. While the student body may be mixed with respect to the quality of its qualifications (as is the case in most other European universities), it does seem to have a **high share of outstanding and highly motivated students** – a capital which cannot be overestimated.

31. Likewise CTU obviously can offer many good models of teaching and has strong teaching potential in many disciplines. The peers were particularly impressed in this respect by the examples shown at the faculty of transport engineering and the faculty of architecture which displayed a vibrant environment for students to engage in projects and team work, giving them an excellent preparation for their later professional lives. In the various discussions the peers had with students, they were impressed by the sense of motivation, resourcefulness and independence which these students displayed. Even if one can assume a certain bias in the composition of the student groups, given the fact that they were nominated by the CTU leadership, CTU should be proud to have so many bright enterprising students and should make sure it makes optimal use of their imagination and intelligence. This is obviously done in the three smaller faculties. The peers did not see similar examples in the other three faculties but assumes that they must exist too. Of course, the **exchange of the many models of good practice between the faculties would be an important ingredient of a high quality institution that prides itself in delivering excellent education** and training to future leaders in technologically based industry.

32. The peer team was also impressed by the rapid expansion of the institution’s research capacity, which as mentioned above dates back to only a little more than a decade. The high degree of specialization at CTU obviously also helps the quick definition of a research

profile that is complementary to the natural sciences at Charles University. Moreover, the entrepreneurial readiness of professors to search for external funds seems quite widespread all over CTU although some faculties seem to be much more active in this respect than other. Unfortunately, there are no mechanisms in place to reward such entrepreneurial activities and to move other part of the institution to the same level of initiative and competitiveness displayed by some individuals and parts of the institution. But the potential to revive and rebuild the old strong research tradition of CTU of the pre-communist era can be felt strongly and becomes alive again in the current research highlights of cybernetics, control engineering, robotics, automotive industry, man-machine interactions, AI and computer vision, biomedical engineering, telecommunications, mobile communications, new sensors, laser technology, smart buildings, industrial heritage, to name a few of the highlights we learnt about. CTU should attempt to **make use of the increasing opportunities to receive support for research from the EU**. While the research budget of the EU will become more competitive with the establishment of the European Research Council so that only the very best institutes are likely to receive grants there are also considerable research funding opportunities in the new conception of the regional budget of the EU which CTU should explore and exploit.

33. Finally, the peers were very positively taken by the initiatives to fund new cross-cutting centres and institutes, such as the Institute of Biomedical Engineering. If CTU took more of such initiatives and was able to **direct more of its investments to such trans-faculty centres of institutes it would greatly enhance its visibility and competitiveness**, nationally and internationally.

#### **4. The Constraints and Weaknesses of CTU**

34. Most of the weaknesses of CTU are strongly correlated to the national constraints which were mentioned in section 2.1. First and foremost, one should mention CTU's strong preference for democratic decisions through all levels of institutional decision-making. It is self-understood that a university in a democratic country and culture should cherish in its inner workings principles of shared governance and participation to make sure that as many of the new ideas can flow into new institutional development and that its society of bright current and future researchers are motivated to put forward their thoughts on new opportunities. However, it is less understandable that the procedures themselves should be as radically democratic at all levels as is currently the case at CTU. The governance structure is, as mentioned above, mostly imposed by the Higher Education Act of 1998, both with respect to the senate being the leading decision body at institutional and at faculty level, as well as with respect to the internal structure of the university with its clear prescriptions of faculties retaining a large degree of independent power inside the thus greatly decentralised universities.

35. The peers would urge CTU not only to convince legislators to allow for more autonomy to choose its internal governance structure, but also to do everything it can within the current constraints to develop more flexible models of shared governance in order to regain its capacity to adapt to and to position itself in an international environment. For such positioning naturally involves decisions which are controversial in that they strengthen strengths or vigorously address weaknesses in the institutional portfolio, both of which lead to an uneven distribution of efforts and resources across the institution. It is precisely those decisions which are important for the long term well-being of the institution that often require steps which may be difficult for some parties in the short run and that are therefore unlikely to be taken if all parties and groups have a possibility to veto them. To have the main decision-making power vested in the senates and scientific councils at institutional and

at faculty level, with few competences and resources remaining at institutional level to initiate and strengthen successful or up-rising units or initiatives, means that the institution has to essentially stay with the status quo. **Any re-distribution of resources which could set incentives for success and thus create some winners (and therefore also some non-winners) is unlikely to occur in such a governance structure.** Yet, CTU would benefit enormously from rewarding the initiatives of its many imaginative individuals and from not treating the less active in the same way as those who make a major effort to contribute to the future success to the institution.

36. The lack of flexibility of the institution and even the dean is also reflected in the bewildering fact that the institution has mirrored an already unsatisfactory funding formula which is imposed on it from the national ministry and which distributes funds predominantly on the basis of student numbers, in its own distribution of funds. Of course, nobody would dispute that student numbers reflect the volume of work of a given academic unit and therefore should be taken into account in the funding decisions. But **that student numbers are by far the most decisive parameter on the basis of which funds are calculated internally necessarily leads to an undervaluing of output and performance criteria as well as of the research efforts of university staff.** All over Europe such one-sided input funding formulae have been criticised for their distorting effects, including the incentive to attract more and more students without concurrent efforts to ensure the quality of their qualifications and the quality of the teaching and support which they require. CTU has also been pushed into this logic to some extent if one looks at the fact that student numbers have increased much more than graduate output. If CTU wants to aspire to the ranks of a high quality European technical university it cannot afford basing its internal funding distribution on such purely quantitative criteria.

37. Moreover, only 15% of the basic funding to the faculties is attributed on the basis of research (these 15% depend on the number of publications and grants). Even though a lot more money can be mobilised by way of competitive grants, **CTU and its faculties should greatly strengthen the internal weight and value attributed to research by distributing the government subsidy more strongly on the basis of research efforts.** At least if CTU wants to compete at international level it should increase the weight attributed to research in its internal funding distribution than it has been doing in the past. Of course it should be added that, if the Czech government is interested in fostering high quality research it should not fund its institutions through such a reductive formula based on student numbers.

38. In addition to the funding formula, **CTU has a problem with the overall level of funding:** Its budget of 2 435 Mill Czech crowns or 73.8 Mill € (of which 77% are public national subsidy) **amounts to at best a third to a seventh of what good research universities in Western Europe of that size would cost.** Even with lower salaries and somewhat lower living costs, such a discrepancy will disadvantage CTU in its competitive position, since more money always boils down to more projects, more researchers, more output, more impact. While CTU should continue and expand its efforts in bringing in project and other money from private sponsors and from the EU research and regional budgets, it will also need significantly more government support to transform into a full fledged research based university that is able to compete at European level. CTU shows good signs all over the institution that its competitive spirit is alive and can be counted on, but it will need more flexibility and encouragement to let this spirit pervade the whole institution and contribute to pulling the country's technological development and industry forward. CTU has the potential -- it just has to be given the chance. **It is up to the government to make sure that research and research based education in technical**

**fields get a chance to compete internationally and thus to attract more technology based industry into the country.**

39. In conjunction with the low budget, another weakness should be mentioned which puts CTU at a disadvantage in international competition: **its infrastructure (scientific and general) is not always up to international standards**, a problem that is not only common in Eastern European countries but also more and more often severely affecting Western European Higher Education institutions. For a university that wants to compete in the European research arena this problem has to be addressed with full force, since the quality of the scientific infrastructure at least is known to contribute very significantly to the competitiveness of an institution. After the quality of the professors it is even internationally judged to be the most important success factors for technical universities. (cf. SPINE Report: *Successful Practices in International Engineering*, Benchmarking Study of 10 International Technical Universities, Final Report, Zurich 2002).

40. Furthermore, the **low salaries** in international comparison and strong competition from private business in the country make it very difficult to attract promising young researchers into academia, especially from abroad.

41. Another serious weakness concerns the historically grown and partly imposed portfolio constraints. Most gravely, CTU still has to suffer from the fact that the faculty of chemistry was separated out to form an independent “university” (as strange as the term may appear given that the new creation it is a single subject institution). **For a technical university in today’s age of molecular research to not have chemistry as an integrated part of its portfolio constitutes a serious handicap.** CTU has been eagerly trying to address this problem but may need more help from the government to convince the younger small institution of the necessary merger. While most professors are bound to see the advantages of a merged institution, the leadership may need some additional arguments which the government should try to find as soon as possible. CTU has little chance to make full use of the biotechnological revolution in science without chemistry. To build up a separate chemistry department would be an insane waste of resources and to simply build on the cooperative good will of individuals will not be enough to make use of all the opportunities that closer alliance between chemistry and engineering would bring.

42. Finally one last weakness should be mentioned which aggravates the already noted independence of the faculties: the widely dispersed facilities of CTU add to the troubles of lacking coherence in the institution’s sense of “corporate” identity and make synergies in teaching and research very difficult to implement for students and staff.

## **5. Threats which could harm CTU’s medium and long term prospects**

43. Closely linked to the above described weaknesses some developments which pose serious threats to the future attractiveness and success of CTU should be addressed with policies and actions as soon as possible.

44. Having already pointed to the rapid expansion of the participation rate in Higher Education one should note that the expansion does not seem to affect the CTU positively. In addition to the declining interest of students for science and technical subjects in favour of social sciences and business, the Czech Republic, like many countries in Europe has a declining population which means that the overall number of students is likely to decrease rather than increase. This demographic fact and the increasing competition from newly established regional universities for those same students makes it difficult for CTU to

uphold its higher qualification standards and is therefore likely to contribute to a decrease of the quality of the students which, in turn, will harm the reputation of CTU internationally. The peers noted with great concern the extremely high drop-out rate which not only reflects that CTU has to filter to maintain its qualification standards but which will probably also harm the attractiveness of the institution in the eyes of potential students. **It would be a much more responsible treatment of the individuals and their outlook on success, if CTU were allowed to select those students who will best fit the expectations and profile of the institution and if the funding of the institution did not depend on the quantity of the students but on the quality of the output.**

45. Since many universities in Europe are in a similar situation regarding expanding participation in Higher Education and a decreasing population, the international competition for bright qualified students is becoming tougher and tougher. Especially at PhD and research levels the run for the best talents is already being noted by quality conscious universities all over Europe.

46. An even more serious threat regarding the age structure of CTU concerns the average age of the professors which is significantly higher than at competing institutions abroad, with more than two thirds of the professors (associate and full) being over 60 and a third of the full professors even over 65. While this seems to be a national phenomenon, the problem demands intelligent and immediate action. Currently, there seems to be no incentive for the over 65 year old professors to leave. In addition there is an insufficient pool of potential new professors to choose from, which implies that CTU has to look abroad for new talent. But for that, **recruitment procedures and conditions have to be made compatible with the markets which CTU wants to target abroad.** At the moment, one cannot be hired from being an assistant professor abroad to the position of an associated or full professor at CTU unless for a visiting professor post. Hiring of long term staff occurs mostly at the assistant level often from a smaller circle of familiar young scientists and recruitment procedures do not seem to involve external peers but are entirely based on internal agents. Later, the *venia legendi* or habilitation has to be petitioned internally through a procedure which is laid down in the Higher Education Act but enacted with somewhat in-transparent criteria regarding international quality standards. Hence, **CTU is denying itself access from a wide array of international markets and preventing itself from enhancing its awareness of the relevant international markets of bright young researchers. With this restriction to a national market, CTU is in some danger of becoming provincial or losing touch with the most exciting research developments,** continuing along familiar tracks rather than bringing in fresh winds and new lines of research. Indeed, at the moment the internationally incompatible hiring procedures may be said to foster inbreeding at CTU.

47. To be able to address the serious shortage of future academics, CTU may want to identify those parts of the institution where research and teaching environments are particularly attractive to external markets and then actively seek promising candidates. Given the limited financial situation, one could think of identifying areas which could be of particular interest to private donors and create attractive conditions around a new professorial appointment with their help. However, this will only be an attractive option for the donors and the candidates, if a whole set of targeted actions reflects that the institution is committed to fostering that domain. Of course, this would imply creating additional advantages for the given area that exceed the normal support and may even result in less money being available for other areas. But, unless there is a major increase of government support, such **strategic decisions will not be avoidable if CTU wants to target international markets of bright young scientists,** in competition with other good

institutions and research environments. If instead CTU continues to promote scientists mostly from its midst, it is unlikely to be able to compete internationally.

48. With rising costs of research and increasing competition, many research-intense universities all over the world feel more and more pressed to highlight particular areas in which they concentrate some attention, hiring and resources in order to be able to gain critical mass and become internationally outstanding and visible. Often these areas are defined across the traditional borders between the disciplines and thus between the established organisational units such as departments or faculties. The ability to organise such concerted efforts dynamically and concentrate some resources to strengthen international competitiveness in those areas becomes an important sign of the institution's competitiveness and agility. While CTU has shown its own willingness to make such concerted efforts in the establishment of the Institute of Biomedical Engineering, the peers were struck by the fact that this seemed to be an exception rather than part of a general strengths. To the contrary, the peers received the impression that CTU is generally hindered by its largely independent faculties -- which, in spite of some functioning contacts of individual groups, are not characterised by particularly dense networks of cooperation or solidarity -- from developing strong cross faculty initiatives and new competence centers. **Since the ability to develop critical mass and identify new areas of research often depends on well developed horizontal communication, this weakness may further threaten CTU's international competitiveness in the medium term.**

49. Due to the above-described verticalisation of CTU's organisational structure, the decision making processes of CTU are too slow and make it difficult to develop enthusiasm and momentum. The peers have spoken to quite a number of individuals who have displayed a remarkable degree of energy, ideas and willingness to invest their own personal time and resources in order to make something new happen. They also noted with concern the frustration of these individuals. These individuals are the greatest resource that CTU has, the people who would be able to propel CTU into international prowess. They therefore need all the support -- moral, emotional and financial -- that the institution has at its disposal. **The institution should not allow long established territories from hindering CTU strongest, most visionary and most engaged scientists to move forward at full speed.**

## **6. The Opportunities which CTU could exploit**

50. With all of the above threats, CTU is still in a good position to brace itself for international competition and to consolidate its position as the leading research based technical university of the country. Several opportunities can be identified which help or could help such positioning.

51. First of all, the peers noted with interest that **a critical mass of people has identified the strong decentralization and strong vertical structures with little horizontal communication or cross-cutting initiatives as a hindrance to innovation.** Both in the senate and in the faculties there seemed to be influential and vocal representatives who realised that CTU is foreclosing its own future by continuing along the beaten tracks of faculty self-perpetuation. To mobilise these individuals and make sure that their voices are not only heard but also followed obviously demands considerable leadership skills but does not seem to be impossible given the urgency of the situation.

52. While the staff age pyramid is a major threat, as mentioned above, it is also a great opportunity to renew education and research once new professors can be found. **The fact that two thirds of the professors can be replaced could present an enormous potential**

**for innovation provided it is handled with the utmost attention** and additionally mobilised resources from internal and external funds.

53. Globally, there is an increased demand for engineers which, if brought to the attention of students, parents, schools and young researchers, may unleash a greater demand for these subjects among students. **CTU should try to intensify its communication with teachers and heads of schools** to make sure these opportunities are seen by the general public and key multipliers.

54. The peers noted with great interest that the leadership of CTU is advised by a board of trustees which is composed of individuals in positions of influence as well as with a background which lets them identify strongly with the long term well-being of CTU. The trustees have recently helped considerably with advice on internal business management and professional accounting at CTU which helped it greatly in professionalizing internal processes in order to meet international auditing and accounting standards. **The peers feel the expertise and role of the trustees could be extended to help building up public-private partnerships** which CTU obviously needs, given the limited government funding and the major investments needs that have accumulated. To be able to spread the potential benefits to all parts of the institution, CTU's leadership should consider nominating more trustees from the as yet underrepresented fields of the institution.

55. Another opportunity has already been touched upon above, namely the more **systematic use of the little bit of freedom given by the law to create centres and institutes**. While the faculty governance structures are prescribed by the law, the latter is quite open as to the internal decision-making bodies and structures of other organisational units so that CTU could even seek to systematically increase those types of organisational units in order to optimise its internal flexibility. One could consider, e.g. to recruit new professors into new organisational units in accordance with strategic priorities, so as to maximise innovative potential.

56. Linked to the flexibility of the central management of CTU, it should be noted that there seems to be a **good degree of awareness of the importance of central discretionary funds in the institution**. Since the central means for innovative initiatives are still comparatively low, this awareness should also be seen as an opportunity which can be seized in order to extend the existing room for manoeuvre.

57. The quality of the engagement of students and of many members of the teaching staff should also be seen as a huge opportunity for institutional development. Many people seem to be willing to invest time and energy in developing CTU further – this is a capital that is increasingly scarce in many other parts of the research based academic environments. Moreover, **the awareness of a need for change seems to be very wide-spread** and should be recalled constantly in any process of deliberation about the exact contours of new structures, processes and emphases.

58. Another opportunity should be noted which concerns considerable savings: CTU has duplicated a large number of subjects and units due to its decentralised organisation. While some such duplications may be revealed to serve different aims and justify separate existences, others will clearly amount to a highly inefficient use of resources. Given the low amount of funding at CTU, the institutional leaders and the main decision-making body of the institution should take differentiated but firm action to avoid continuing the waste of resources by allowing all duplications to subsist simply because of strong faculty support. **Only few duplications should be allowed to be maintained.**

59. Finally, one should recall **that only few places in the world are as attractive as Prague**. This wonderful context **should be highlighted to potential students, candidates and professors as forcefully as it deserves**. Another marketing opportunity which CTU should always make ample use of, consists in its established brand which CTU should help outsiders to be reminded of: One should be helped to realise that associating oneself with CTU implies an integration of a long and sturdy tradition of quality education and research.

## **7. Recommendations**

### **7.1 General recommendations**

60. The CTU is an institution with a great tradition and an enormous potential to regain the full extent of its past international importance. In its current development it shows **great engagement in rebuilding its research capacities** and upholding academic standards in a rapidly expanding higher education market.

61. In order to live up to its own self-understanding and aspirations to be a prestigious technical university not only in the national arena but also in the wider European space of higher education and research, CTU has to gather its strength and make use of all the opportunities that are currently at its disposal.

62. First, **it should exploit the opportunities left open in the HE Act as systematically and proactively as possible**. Especially in high priority areas which are identified as being particularly innovative it should create more institutes which fall outside of the prescriptive intrusion of the HE Act. Since innovative potential becomes easily smothered in the current faculty governance structures, **CTU should begin to systematically weaken the rigidity of faculty boundaries** which do not seem to help its ability to adapt to change and to face increasing national and international competition. CTU should also **invest more in cross-cutting institutes**, to allow a maximum degree of freedom of movement. In addition, it should **reduce the number of departments** within each faculty in order to minimise administrative burden and further verticalisation inside the faculties.

63. Moreover, CTU should **review the efficiency of having several subdivisions of the same kind present in several faculties**, identifying courses that can be commonly offered and creating a common context of research and innovation for these subjects. This concerns the subjects of mathematics, architecture, and languages. For students and outside clients, the strengths of CTU in these subjects is too fragmented to appear clearly, hurting its quality and recognition.

64. Concurrently, CTU should be **proactive in exploiting additional degrees of freedom such as applying a different formula of financial allocation inside the institution from the one that is imposed on it by the ministry's funding formula**. There is no reason to apply the same degree of "normative" funding inside as is applied externally. Indeed many CTU representatives have pointed to the distorting disincentives which the current internal funding mechanisms imply. This awareness should be fully made use of by CTU's senate, in particular its economic committee, to make sure CTU can mobilise as much of its innovative potential as possible and thereby be able to face international competition.

65. To strengthen the internal identification with institutional perspectives and goals, the **CTU leadership and senate should identify themes of common concern which cut across faculties**. Once some such common themes of interest are selected, the leadership



should organise interaction between the deans and faculties around those themes. Examples could include the innovation of pedagogy and setting institutional standards of pedagogical innovation, the support for access to European research and structural funds, establishment of professional fund-raising and identification of promising fund-raising projects which would help to heighten the profile of the whole institution.

66. With respect to pedagogy, CTU should start a proactive initiative to **disseminate models of good practice** (e.g. **project based teaching in transportation sciences**), set incentives for innovation and to help the less innovative parts of the institution catch up. Given the manifold innovations in pedagogy in the last decades, the new opportunities for interactive learning offered by way of IT support for blended learning, **CTU should make a concerted effort to make its teaching offer more attractive, with more opportunities for interaction**, dynamic dialogue with staff and other students, guided independent learning, fostering of transferable and research skills. Some pockets of teaching innovation are not enough to determine the reputation of the whole of CTU as being an institution which offers the highest quality of up-to-date research-based education.

67. CTU should **build up more innovative fund raising at institutional level** to mobilise additional sources of private support which have some interest in the competitiveness of CTU or of the subjects it represents and the competitiveness of the Czech Republic in these areas.

## ***7.2 Governance and leadership***

68. Since many of CTU's constraints result from an overly prescriptive national law, **CTU should mobilise as many of its influential representatives as possible to lobby for changes of the higher education act in order to reduce the prescription on the internal bodies and governance structures**. While proclaiming the autonomy of higher education institutions, the Higher Education Act actually greatly restricts the autonomy of the universities through these prescriptions. It certainly contributes to weakening their competitiveness.

69. But even within the given constraints, the peers believe the leadership at the rectorate level could be strengthened, as could the interaction between the leadership at institutional and at deans' level. The institutional leadership should appeal to the deans to identify more strongly with the whole institution and mobilise their understanding that their own fate will depend vitally on the fate of the institution. After all, internationally, it is the institutions and not the faculties that are the visible entities which people recognise. **If the institutional and faculty leaders do not begin to pull on the same rope in order to make strategic decisions possible within a reasonable amount of time, CTU will undermine its own fundamentals and long cherished quality principles in the near future**. To mobilise the whole institution in the direction of greater competitiveness, especially in light of the imminent massive recruitment of future professors, clear incentives have to be set that highlight quality and innovative potential rather than distributing resources evenly to avoid controversy and conflict. Indeed, CTU should rethink the composition of its bodies in terms of reducing territorialism. Most importantly, it should mobilize the institutional identification of the Senate and in particular, its economic committee. As the main decision-making body of CTU, the senate should devise a forward looking solution for reducing territorialism and creating internal decision-making procedures which are speedy and allow for incentives for innovation and strategic priorities. The peers received the impression that the senate of CTU is capable of such a task. **Reducing territorialism is the biggest challenge that is lying ahead for CTU in the next years. It may well develop into CTU's**

**stumbling block if CTU does not take care to defeat it.** CTU would be well advised to apply the theory of federalism to its own internal workings, i.e. to implement subsidiarity under constraint.

### ***7.3 Strategic plan***

70. Within the old and new structures and decision-making processes, CTU should **develop a strategic plan which clearly sets priorities** instead of listing wishes. All of the goals that are currently set out in CTU's long term strategic plan are very appropriately formulated. But they should be linked clearly with measures and resources attached. Action plans should accompany the strategic priorities with milestones, a timetable and criteria for success. As emphasised before, the peers feel that it is high time for CTU to be courageous about priorities which favour one unit over another in view of long term institutional goals and opportunities. Generally, the financing should follow from the strategic priorities. **Mid term financial planning** (with different scenarios, given the changing extent of government subsidies) **should be defined in accordance with the mid term priorities and should be given more weight so that the yearly budgets derive from the strategy rather than being the final prevention tool for priorities to be implemented.**

### ***7.4 Human resources***

71. CTU should be aware that the present age pyramid is a serious barrier to the promotion of the next generation of scientists and teachers. In addition to seeking additional talent abroad, it has to make sure to **offer attractive perspectives and conditions to the talented scientists** that are already in the system.

72. CTU should **create a recruitment plan on the basis of the strategic plan**, to allow for concerted efforts especially in those areas which are of central importance to its future development.

73. To make sure that its tradition of excellence is continued, CTU should introduce **strong competitive selection procedures for new appointments and make recruitment more internationally compatible and attractive.** Most importantly, it should recruit pro-actively, i.e. seek and approach promising candidates that may be interested in joining CTU.

74. CTU should establish **targeted staff development** to make sure all staff is able to face new demands and increasing national and international competition. Such staff development should include leadership training which is needed at different levels within the institution. CTU should also better utilize the professional expertise of the administrative staff, which does not mean giving them more power.

### ***7.5 Strategy regarding teaching and learning***

75. CTU should **shift the focus from teaching to learning all over the institution**, i.e. shift from lecture based to competence based learning in order to prepare its students better for the diverse and fast changing working contexts in which they will want to excel. The Bologna reforms with the new curricular structures could offer an opportunity to rethink the teaching offer more fundamentally.

76. In order to foster attention to learner's needs and gear away from the teachers' supply side perspective, it should disseminate internal models of good practice such as project based learning. It should also strengthen IT based learning of which the peers did not note many examples. Finally, it should **not ignore the demand for lifelong learning** which could also be way to bind the business sector with its demand for continuing professional development to CTU. Especially in the rapidly outdated technical knowledge sectors CTU would have a lot to offer and could even mobilize additional resources by offering courses on a fee basis. A good example can be the MBA program at Masaryk Institute of Advanced Studies.

### ***7.6 Research policy***

77. CTU should **identify areas of excellence and strengthen these for international competitiveness**, even if it involves favouring these areas over others. Especially in these areas, it should try to mobilise additional funds from the EU research and regional budgets.

78. To heighten and deepen its research profile, **CTU should promote PhD studies**. Especially for those promising individuals who consider an academic career, CTU should provide career counselling and create incentives to stay.

### ***7.7 Exploitation regarding research results***

79. CTU should be **more pro-active regarding the transfer of knowledge** to industry and business. It could try to promote transfer of knowledge and research results to industry and business with the help of industrial partners by **identifying public-private partnerships in research training, patenting, incubators**. It may even consider the idea of establishing a technological park in partnership with private and government support. The board of trustees should be enlisted to network in order to offer more opportunities for such partnerships.

### **7.8 Budgeting**

80. CTU should avoid applying the same funding formula within the university that is applied at national level. Instead it should **move towards formulas which are output and performance based and in line with strategic goals.**

81. Most importantly, **CTU should fix priorities and posteriorities first and then make sure that its yearly budgeting reflects these decisions.** The budgeting should not be a separate process but be the final stage of a process that starts with strategic planning with a medium term perspective. Finally, the budgets should give the leadership room to manoeuvre in order to adapt to unforeseen developments and set incentives for innovations.

### **7.9. Develop an institutional quality system**

82. CTU should create **common quality tools and guidelines** to evaluate teaching and learning and apply the results systematically for improvement and close the feedback loop to the students. Its internal quality development should include other stakeholders in order to be able to identify and respond to societal needs.

83. CTU should **evaluate the quality of individual units** (research, teaching and management) in order to make sure that the same high standards are pursued across the whole institution. In order to increase the quality of teaching and research, **CTU should create rewards across the whole institution.**

## **8. Conclusion**

**84.** CTU has revealed itself to be acutely aware of its own problems and constraints. Both in the written self-evaluation and in the many interviews, the peers were impressed with the clarity and self-critical attitudes of many CTU representatives. Moreover, the CTU analysis in the self-evaluation report appears to the peers to be realistic and fair. Already in the past external evaluations, CTU has revealed good self-judgement. **But now it is time to strengthen the strengths and not only watch the weaknesses.** Such action should also include lobbying at the national level. If CTU does not draw consequences from its own realistic and fair self-analysis and the external reviews that it seems to agree with, it will soon lose the possibility of obtaining a good position in the European Higher Education and Research Areas. **If it wants to live up to its own aspiration of becoming one of the leading technical universities in Europe, it has to take courageous proactive steps now.**

## **9. Annex:**

### ***1. Programme of the Preliminary Visit***

#### **11 May (Tuesday)**

Time	Participants from CTU	What
Late afternoon	Welcome person with nameplates of Review team.	Welcome at Prague airport, transportation to Masarykova kolej, accommodation.
16:00-20:00	-	Briefing meeting at stateroom of Masarykova kolej.
20:00	Prof. Witzany – Rector, Prof. Machacek – Vice-Rector (liaison person), Vice-Rectors of CTU.	Dinner at stateroom of Masarykova kolej.

#### **12 May (Wednesday)**

Time	Participants from CTU	What
9:00-9:30	Prof. Witzany – Rector.	Meeting with Rector.
9:40-11:00	Prof. Machacek - liaison person, Prof. Vlcek – Vice-Rector.	Introduction to the CTU.
11:10-12:15	Steering committee: Prof. Machacek, Prof. Vrba, Prof. Hlavac, Mr Kriz, Prof. Vlcek, Prof. Musilek.	Self-evaluation process.
12:15-14:00	Prof. Machacek – liaison person, Prof. Vrba, Prof. Hlavac, Mr Kriz, Prof. Vlcek, Prof. Musilek.	Lunch.
14:15-14:50	Outside partners - Members of Board of Directors.	Meeting on relationship of CTU with external stakeholders.
15:15-16:30	Dean and academic staff representatives. Students (from 16:00).	1 <sup>st</sup> group: Visit to Faculty of Civil Engineering. 2 <sup>nd</sup> group: Visit to Faculty of Electrical Engineering.
16:40-18:00	Prof. Vrba, Prof. Machacek.	Tour of CTU main campus in Prague – Dejvice.
18:00-19:00	-	Debriefing meeting of Evaluation team.
20:00	-	Dinner at a restaurant in Prague.

#### **13 May (Thursday)**

Time	Participants from CTU	What
9:00-10:00	Dean and academic staff representatives. Students (from 9:40).	1 <sup>st</sup> group: Visit to Faculty of Mechanical Engineering. 2 <sup>nd</sup> group: Visit to Faculty of Transportation Sciences (away of Dejvice campus)
10:20-11:00	Vice-Rectors: Prof. Machacek, Prof. Hrdlicka, Prof. Musilek, Prof. Urlich, Prof. Vejrazka, Prof. Vlcek. Bursar: Prof. Vospel. Chairman of CTU Senate: Prof. Sodomka.	Meeting on quality and strategic management, decision making within the CTU.
11:10-11:30	-	Debriefing meeting of Evaluation team.
11:40-12:15	Prof. Machacek, Prof. Vrba (liaison persons).	Plan main visit schedule.
12:15-	Prof. Witzany – Rector. Vice-Rectors (some): Prof. Machacek, Prof. Hrdlicka, Prof. Musilek, Prof. Urlich, Prof. Vejrazka, Prof. Vlcek. Bursar: Prof. Vospel.	Lunch.

	Chairman of CTU Senate: Prof. Sodomka.	
Afternoon	Escort from CTU.	Departure of Evaluation team.

## ***2. Programme for the main visit to CTU in Prague***

### **10 October (Sunday)**

Time	What & Participants from CTU	Why?
9 or 10 October	<b>Arrival</b> Welcome person with nameplates.	Welcome at Prague airport, transportation to Masarykova kolej, accommodation.
90-120 minutes	<b>Briefing meeting</b> Evaluation team alone.	Division of tasks, preliminary discussion of evaluation report structures and issues.
19:30	<b>Dinner at Masarykova kolej's stateroom</b> Prof. Witzany – Rector, Prof. Machacek, Prof. Vrba – liaison persons, Vice-Rectors of CTU.	Welcome, renew acquaintance; go over evaluation visit programme.

### **11 October (Monday)**

Time	What & Participants from CTU	Why?
9:00-10:00	<b>Meeting with rector</b> Prof. Witzany – Rector.	Discuss privately the issues that need to be stressed in the team's visit and report.
10:15-11:15	<b>Meeting with Vice-Rectors</b>	Discussions.
11:30-12:30	<b>Meeting with the deans</b> Deans and directors of CTU that are members of the collegium.	Discuss relationship of faculties with university central level with respect to quality management; input in self-evaluation; special issues arising from self-evaluation parts one and two and/or from talk with rector.
12:45-14:45	<b>Lunch at Masarykova kolej's stateroom</b> Representative of Ministry, Representative of Accreditation Committee, Rector.	Reflect upon impression of the first meetings and complete information.
15:00-16:30	<b>Meeting with CTU senate</b> Representatives of senate.	Discuss relationship of senate/democratic representation body with rectorate regarding strategic and quality management.
16:45-18:00	<b>Meeting with central student delegation</b> Bachelor, master, doctoral students (10-12), randomly chosen.	Student's view on the university, on relations with rectorate, on student input in quality control and in decision (strategic) making.
18:00-19:00	<b>Debriefing meeting</b> Evaluation team alone.	Exchange impressions, review the day.
20:00	<b>Dinner</b> Evaluation team alone.	To reflect on impression and to start preparing the oral report.

### **12 October (Tuesday)**

Time	Participants from CTU	What
9:00-9:30	<b>1. Visit to Faculty of Nuclear Sciences and Physical Engineering (centre of Prague)</b> <b>2. Visit to Faculty of Architecture</b> Dean. Evaluation team split in pairs.	Discuss relationships of Faculty with CTU central level with respect to quality management; input in self-evaluation; role of quality control activities in the Faculty's teaching and research; special issues arising from self-evaluation parts one and two and/or from talk with rector.

9:30-10:10	<b>1. Visit to Faculty of Nuclear Sciences and Physical Engineering</b> (centre of Prague) <b>2. Visit to Faculty of Architecture</b> Staff representatives, young professors (several persons only). Evaluation team split in pairs.	Discuss relationships of Faculty with CTU central level with respect to quality management; input in self-evaluation; role of quality control activities in the Faculty's teaching and research; special issues arising from self-evaluation parts one and two and/or from talk with rector.
10:45-11:05	<b>1. Visit to Masaryk Institute of Advanced Studies</b> (centre of Prague) Director. <b>2. Visit to Institute of Biomedical Engineering</b> (in Kladno) Director. Evaluation team split in pairs.	Discuss relationships of Institute with CTU central level with respect to quality management; input in self-evaluation; role of quality control activities in the Institutes' teaching; special issues arising from self-evaluation parts one and two and/or from talk with rector.
11:05-11:40	<b>1. Visit to Masaryk Institute of Advanced Studies</b> (centre of Prague) <b>2. Visit to Institute of Biomedical Engineering</b> (in Kladno) Staff representatives, young professors (several persons only). Evaluation team split in pairs.	Discuss relationships of Institute with CTU central level with respect to quality management; input in self-evaluation; role of quality control activities in the Institutes' teaching; special issues arising from self-evaluation parts one and two and/or from talk with rector.
12:15-13:30	<b>Lunch at Masarykova kolej's stateroom</b> Members of Board of directors.	Discussion.
13:45-14:45	<b>Meeting with central office staff</b> Bursar: Prof. Vospel. Head of rectorate departments.	Discuss role of e.g. institutional strategic documents (development plans, etc.) in development of the university; special issues arising from self/evaluation part one and two and/or from talk with rector.
15:00-16:15	Meeting with teaching and research staff from various Faculties and Institutes involved in mathematics, physics, social sciences, management, languages (1 person/Faculty/subject)	Discuss the integrity of the Faculties within CTU.
16:15-18:30	<b>Debriefing meeting</b> Evaluation team alone	Exchange impressions, review the day.
18:30-20:00	<b>Dinner at Masarykova kolej's stateroom</b> Evaluation team alone	Continuation of debriefing meeting.
20:00	<b>Drafting oral report at Masarykova kolej's stateroom</b> Evaluation team alone	Continuation.

### **13 October (Wednesday)**

Time	Participants from CTU	What
9:00-10:00	<b>Meeting with Rector</b> Rector	Discuss draft oral report privately, to ensure it will reflect both the findings of the team and the needs of the rectorate for the CTU's further development
10:00-10:45	<b>Adapting oral report</b> Evaluation team alone	Adapt oral report according to discussion with rector.
11:00-12:30	<b>Presentation of oral report</b> Rector, liaison person, Vice-Rectors, self-evaluation steering group, Deans and Directors, academic staff (about 6 per Faculty/Institute).	
12:45-14:30	<b>Lunch</b> Rector and others.	
Late afternoon or 14 October	Escort from CTU.	Departure of Evaluation team.