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**THEMATIC REVIEW
OF TERTIARY EDUCATION**



CZECH REPUBLIC

COUNTRY NOTE

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The views expressed are those of the authors and not necessarily those of the Czech Republic, the OECD or its member states

Towards a Competitive, Highly Diversified Czech Higher Education System

“The objective of the Ministry is to create a competitive, highly diversified system fulfilling all three principal functions of higher education institutions.

- In the area of education, the system should develop and make full use of the potential of individuals, prepare young people for entering the labour market and provide for their employability over the long term, educate active citizens who strive to build democratic society, encourage graduates to pursue continuing education and learn throughout their lives, and further develop knowledge in a wide variety of disciplines.
- In the area of research and development the role of higher education institutions is gaining in importance. Higher education institutions are increasingly expected to establish appropriate conditions for the development of R&D of top standards, and to communicate the results of research and development or to apply them in practice as an important source of innovation.
- The third area of the operations of higher education institutions, in no way less important, is their co-operation with the business sector (enterprises, employers and other clients), and their contribution to the establishment of innovative and technological partnerships and involvement in the development of the region where the higher education institution operates.”

(Long-Term Plan 2006 – 2010, p. 2)

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CHAPTER ONE: INTRODUCTION

Purposes of the OECD Review

1. This Country Note on the Czech Republic forms part of the OECD Thematic Review of Tertiary Education. This is a collaborative project to assist countries in the design and implementation of tertiary education policies which contribute to the realisation of their social and economic objectives.

2. The tertiary education systems of many OECD countries have experienced rapid growth over the last decade, and are experiencing new pressures as the result of a globalising economy and labour market. In this context, the OECD Education Committee agreed, in late 2003, to carry out a major thematic review of tertiary education. The principal objective of the review is to help countries understand how the organisation, management and delivery of tertiary education can help them to achieve their economic and social objectives. The focus of the review is upon tertiary education policies and systems, rather than upon the detailed management and operation of institutions, although clearly the effectiveness of the latter is influenced by the former.

3. The project's purposes, methodology and guidelines are detailed in OECD (2004).¹ The purposes of the review are:

- To synthesise research-based evidence on the impact of tertiary education policies and disseminate this knowledge among participating countries;
- To identify innovative and successful policy initiatives and practices;
- To facilitate exchanges of lessons and experiences among countries; and
- To identify policy options.

4. The review encompasses the full range of tertiary programmes and institutions. International statistical conventions define tertiary education in terms of programme levels: those programmes at ISCED² levels 5B, 5A and 6 are treated as tertiary education, and programmes below ISCED level 5B are not. In some countries the term higher education is used more commonly than tertiary education, at times to refer to all programmes at levels 5B, 5A and 6, at times to refer only to those programmes at levels 5A and 6. An additional complication is presented by the practice, in some countries, of defining higher education or tertiary education in terms of the institution, rather than the programme. For example, it is common to use higher education to refer to programmes offered by universities, and tertiary education to refer to programmes offered by institutions that extend beyond universities. The OECD thematic review

¹ Reports and updates are available from www.oecd.org/edu/tertiary/review

² The International Standard Classification of Education (ISCED) provides the foundation for internationally comparative education statistics and sets out the definitions and classifications that apply to educational programmes within it.

follows standard international conventions in using tertiary education to refer to all programmes at ISCED levels 5B, 5A and 6, regardless of the institutions in which they are offered.

5. The project involves two complementary approaches: an *Analytical Review strand*; and a *Country Review strand*. The Analytical Review strand uses several means – country background reports, literature reviews, data analyses and commissioned papers – to analyse the factors that shape the outcomes in tertiary education systems, and possible policy responses. All of the 24 countries involved in the Review are taking part in this strand. In addition, 13 of the tertiary education systems have chosen to participate in a Country Review, which involves external review teams analysing tertiary education policies in those countries.

6. The Czech Republic was one of the countries which opted to participate in the Country Reviews and hosted a review visit in March 2006. The reviewers comprised an OECD Secretariat member, and academics and policy-makers who reside in the Netherlands, Austria, the United States and Denmark. The team is listed in Appendix 1.

The Participation of the Czech Republic

7. The Czech Republic's participation in the OECD Review was co-ordinated by Helena Šebková, Director of the Centre for Higher Education Studies (CHES) in Prague. The Country Background Report (CBR) for the OECD Review was prepared by CHES and was supported by the National Advisory Committee and various stakeholders of the tertiary education system (details are provided in Appendix 2).

8. The review team is grateful to the authors of the CBR, and to all those who assisted them for providing an informative and policy-oriented document. The CBR covered themes such as the background and content of tertiary education reforms; the structure of the tertiary education system; the role of tertiary education in regional development, the research effort of the country; the shaping of labour markets; and the challenges faced in resourcing, governing, achieving equity in and assuring the quality of the tertiary education system.

9. The Czech CBR forms a valuable input to the overall OECD project and the review team found it to be very useful in relation to its work. The analysis and points raised in the CBR are cited frequently in this Country Note.³ In this sense, the documents complement each other and, for a more comprehensive view of tertiary education policy in the Czech Republic, are best read in conjunction.

10. The review visit took place from March 20 to 28, 2006. The detailed itinerary is provided in Appendix 3. The review team held discussions with a wide range of educational authorities and relevant agencies and visited many institutions of tertiary education in the country. Discussions were held with representatives of Ministries such as education and finance; tertiary education institutions; student organisations; representatives of academic staff; the business and industry community; agencies responsible for quality assurance; and researchers with an interest in tertiary education policy. This allowed the team to obtain a wide cross-section of perspectives from key stakeholders in the system on the strengths, weaknesses, and policy priorities regarding tertiary education in the Czech Republic.

11. This Country Note draws together the review team's observations and background materials. The present report on the Czech Republic will be an input into the final OECD report on the overall project. The review team trusts that the Country Note will also contribute to discussions within the Czech Republic,

³ Unless indicated otherwise, the data in this Country Note are taken from the Czech Country Background Report.

and inform the international education community about Czech developments that may hold lessons for their own systems.

12. The review team wishes to record its grateful appreciation to the many people who gave time from their busy schedules to assist in its work. A special word of thanks is due to the Czech National Co-ordinator, Helena Šebková, who coordinated the preparation of the Country Background Report, planned our visit, and provided ongoing support for the review team after the country visit. In this work she was ably assisted by the staff of the CHES, including Mr. Vladimír Roskovec and others. Mr. Petr Kolář, Vice-Minister for Research and Higher Education, and Mr. Josef Beneš, Director of the Higher Education Department offered excellent support to the planning and execution of the review. The review team is grateful also for the informative and frank meetings that were held during the visit, and the helpful documentation provided by our hosts. The courtesy and hospitality extended throughout its stay in the Czech Republic made the task of the review team as pleasant and enjoyable as it was stimulating and challenging. The review team also benefited from the work on OECD colleagues in the Economics Department, whose working paper on Czech education provided a helpful resource for the review team.

13. This Country Note is the responsibility of the review team. While the team benefited greatly from the Czech CBR and other documents, as well as the many discussions with a wide range of Czech experts, any errors or misinterpretations in this Country Note are its responsibility.

Structure of the Country Note

14. The remainder of the report is organised into ten chapters that focus on key issues within the scope of the review. Chapter Two lays out the context and background of tertiary education in the Czech Republic, Chapter Three reviews the structure of the tertiary system and Chapter Four the governance of the tertiary system and its institutions. Chapters Five and Six examine the financing of the tertiary system and questions of equity, respectively. Chapter Seven considers the linkages between tertiary education and labour markets in the Czech Republic. Chapter Eight examines the role of tertiary education in research and innovation, while Chapter Nine examines Czech policies and practices with respect to assuring and improving the quality of tertiary education. The internationalisation of tertiary education is examined in Chapter Ten. Chapter Eleven offers a brief conclusion. This is followed by a set of appendices.

CHAPTER TWO: THE CONTEXT AND BACKGROUND OF TERTIARY EDUCATION POLICY IN THE CZECH REPUBLIC

“The Czech tertiary education system has experienced a number of deep, dynamic changes and extensive development in the last fifteen years. From a strictly uniform highly centralised and ideologically-bound system under the communist regime, it has been changed into the much more diversified and decentralised system with full academic freedom and self-governing bodies, open to Europe and the world.”

(Background Report, p. 87)⁴

15. There is a long and proud tradition of higher education in the Czech lands. Charles University was a key institution in what might be described as the “medieval European higher educational area,” and before World War II the former Czechoslovakia was among the ten most developed countries in the world with a strong network of high quality schools and universities. The communist takeover in 1948 signalled the start of four decades of “Babylonian exile” (Neave, 2003).⁵

16. If the collapse of the communist regime and the fall of the Berlin Wall constitute the single most important aspect of the context of Czech tertiary education policy over the past decade and a half, then the return from exile to a fundamentally changed Europe to join the “European project” constitutes the second. Western European higher education had by then almost completed the transition from elite to mass higher education and had been grappling with a sequence of multiple challenges for nearly a decade: new modes of funding, efficiency and effectiveness measures, governance reform, and a greater emphasis on accountability and quality assurance.

17. After the Velvet Revolution Czech higher education institutions, like institutions across Central and Eastern Europe, soon found themselves confronting these same issues – but simultaneously and not in succession - as well as the challenges to:

- “change their governance and management structures to more democratic ones that would allow more autonomous behaviour;
- change their curricula to match the transformation from socialist economies to market economies;
- change their mission from mainly teaching oriented to incorporate research; and

⁴ Centre for Higher Education Studies, Ministry of Education, Youth and Sports, Czech Republic: “*Country Background Report for Czech Republic*”. OECD Thematic Review of Tertiary Education, February 2006.

⁵ Neave, Guy (2003) *On the Return from Babylon: A long voyage around history, ideology and systems change* in Jon File and Leo Goedegebuure, *Real-Time Systems: Reflections on Higher Education in the Czech Republic, Hungary, Poland and Slovenia* (pp. 15-37), Vutium, Brno.

- compete with a new sector of private higher education institutions of varying kinds.”⁶

18. In Czechoslovakia a consensus swiftly emerged around the desirability of restoring a traditional Humboldtian model of higher education. In June 1990 the Higher Education Act explicitly restored academic freedom and university autonomy in ways that went well beyond their scope in much of Western Europe. “The passing of this Act enshrined a conscious symbolism that spread far beyond the groves of academe. Bringing freedom back to the university was not simply a technical measure applied to academia alone. Its significance went further – both an earnest and a clear demonstration of freedom’s restoration to society at large.” (Neave, 2003, p. 22)

19. Over the past fifteen years the European dimension to Czech tertiary education policy has grown in importance as the country participated in a range of EU programmes, passed through the pre-accession phase, joined the European Union in 2004, and has been part of the Bologna process from 1999. Today tertiary education policy discussions at European level are focussed on the “Knowledge-Triangle” and its contribution to the knowledge-based economy.

20. The rest of this chapter outlines how these two major sets of challenges – the transformation from communism and the European dimension - have been tackled in Czech tertiary education.⁷

Institutional Landscape

21. One of the most immediate consequences of the collapse of the communist system was a growth in the demand for higher education which was no longer restrained by central manpower planning. Within a short period of time six new universities were established in different regions, mainly on the basis of existing faculties of education. The resulting 24 public universities have absorbed the major share of the three-fold growth in student numbers since 1989 and enrol over 80 percent of Czech students today.⁸

22. In 1992 the Ministry approved the establishment of some 20 tertiary professional schools as a pilot project aimed to establish a new non-university higher education sector. However the process of establishing a new sector of higher education proved to be too cumbersome legally so in 1995 their legal basis was clarified as a special type of school and the process of establishing new schools was simplified. The number of tertiary professional schools grew rapidly to over 170 (157 were established in 1996 alone) but they enrol only 30,000 students or 9 percent of the total number of students in the country.

23. The Higher Education Act of 1998 made provision for the establishment of private higher education institutions of both the university and non-university type. Since then 39 private higher education institutions - all of the non-university type - have been founded. Together they enrol more than 20,000 students or some 6 to 7 percent of the total student body. It was not envisaged that universities would be established “from scratch” but in time it is expected that some of the non-university institutions will qualify as universities.

24. The basis for the distinction between the three types of institutions was the level of programmes offered. With the exception of the tertiary professional schools that are clearly vocationally oriented, there

⁶ Westerheijden, D. F., & Sorensen, K. (1999). *People on a Bridge: Central European higher education institutions in a storm of reform*. In B. W. A. Jongbloed, P. A. M. Maassen & G. Neave (Eds.), *From the Eye of the storm: Higher education's changing institution* (pp. 13-38). Dordrecht: Kluwer Academic Publishers.

⁷ The rest of this chapter draws heavily on the Background Report.

⁸ In addition to these 24 public universities there are two state HEIs (Military and Police) and two public non-university HEIs.

is no attempt to differentiate the university and non-university sectors on the basis of a distinction between “academic” and “professional” orientation. Both sectors offer both types of programme. Universities offer Bachelors (primarily since the introduction of the two-cycle structure), Masters and Doctoral degrees; non-university HEIs offer Bachelors and some Masters degrees; while tertiary professional schools offer three year specialist diplomas. The Accreditation Commission established in 1990 plays a key role in the assessment of proposals for new programmes, including whether institutions have the capacity to offer a higher level of qualification. The latter determines whether tertiary professional schools can obtain HEI status,⁹ and whether non-university HEIs can become universities.

Institutional Autonomy and Management¹⁰

25. The Higher Education Act of 1990 made a decisive break with the communist period and granted full academic freedom and autonomy to the universities. At the same time it vested this power firmly in the hands of scholars and students at both the level of the faculties, which it established as legal entities, and the institution as a whole. The Academic Senates introduced by the Act are a particular form of academic self-governance quite different from the traditional academic oligarchy: not professorial rule but self-governance by democratically elected representatives of academics and students. The Academic Senates nominate the Rector and Deans (for appointment by the President and the Rector respectively) and determine university/faculty plans and budgets.

26. Despite an unsuccessful attempt in 1995 to introduce a new Act with a different balance between institutional autonomy and the co-ordinating role of the state, the 1998 Act made no fundamental changes in this regard. It did strengthen the role of the institution in relation to its faculties, from which the status of legal entity was withdrawn. It also introduced Boards of Trustees composed of external members. However, the responsibilities of these Boards were sharply limited: their primary function was to assume responsibility for real estate transactions in the context of the transfer of the ownership of land and buildings from the state to the universities.

27. This system of high autonomy coupled with academic self-governance has considerable implications for forms and mechanisms of system steering and co-ordination. The steering mechanisms available to the Ministry are primarily indirect. The major steering instrument for the Ministry is the state funding allocation mechanism and the increasing component of state funding that is made up of development contracts linked to the institutions’ contributions to priority areas consistent with the long-term development plan for the system.¹¹ Distinctive to the Czech Republic is a statutorily-based system of compulsory and exclusive consultation: the Ministry is required to consult with two higher education bodies – the Czech Rectors Conference and the Council of Higher Education Institutions¹² on proposals and measures that have a significant impact on HEIs. This consultative process establishes a policymaking process that is strongly oriented towards developing and adopting proposals that result in a consensus among higher education institutions.

⁹ The establishment of new public HEIs requires an Act of Parliament which is a lengthy process. This has inhibited the growth of the public non-university HEIs as envisaged in the Development Strategy.

¹⁰ Tertiary Professional Schools operate within the framework of the 2004 Education Act and this section does not apply to them.

¹¹ *Long Term Plan for Educational, Scientific, Research, Development, Artistic and other Creative Activities of Higher Education Institutions for 2006-2010*. This is annually up-dated and is the second plan following that for 2000 – 2005.

¹² A body made up of elected representatives of the staff and students of HEIs.

Resourcing Tertiary Education

28. The policies for allocating public higher education expenditure can be categorized as progressive when judged against European or international standards. The adoption of a funding system in the 1990's that replaced incremental funding with formula funding (based upon the number of students and the use of coefficients for different study fields)¹³ placed the Czech system in the vanguard of countries around the world. The subsequent introduction of development programmes in the late 1990s and the more recent decision to allocate a portion of funds based on the number of graduates rather than the number of students can also be regarded as very progressive and innovative measures when viewed in an international context. However, the effectiveness of this approach of allocating funds as a means of establishing broad policy direction is sharply diminished by a university governance structure in which rectors and central administrators have exercised little or no strategic direction over the allocation of funds among various faculties.

29. The pattern of financing Czech tertiary education over the past decade has been one of marked contrasts. In the second half of the 1990s, public funds allocated to universities and other tertiary institutions did not keep pace with the rapid growth in enrolments. Resources and spending per student fell considerably so that had the Czech Republic then been part of the OECD, it would have ranked at the bottom of OECD countries in terms of its commitment of public resources per student. Over the past five years, however, the pattern has been remarkably different. A commitment by the government to fuel growth in the system has meant that public resources for tertiary education have grown at a rate of nearly 90 percent between 2000 and 2005. As a result, real spending per student has increased considerably even as overall enrolments have continued to grow reflecting continued high levels of demand despite a decline in the population of traditional university age. Despite this growth in spending per student, the Czech Republic still ranks near the bottom of OECD countries in terms of how much is spent per tertiary student.¹⁴ Annual expenditures on educational institutions per tertiary student *relative to GDP per capita*, which takes into account of the comparative wealth of countries, reveals that tertiary expenditure in the Czech Republic is modestly below the OECD average. The Czech Republic's annual expenditure per student is equivalent to 39 percent of GDP per capita, as compared to the OECD average annual expenditure per student of 43 percent of GDP per capita.

30. This pattern over the previous decade highlights one of the major challenges facing Czech tertiary education - how to bring more private resources into the system. Although public resources per student have grown very rapidly in the past five years—probably more rapidly than can be sustained given other claims on the Czech budget—tertiary expenditure remains modestly below average OECD levels, indicating the difficulty of adequately funding tertiary education without relying more on private resources. Two statistics from the *Education at a Glance 2006* clearly make this point. First, private resources constitute only about 16.7 percent of expenditures on tertiary institutions, as compared to 23.6 percent for all OECD countries. Second, the Czech Republic was one of only four OECD countries in which public resources grew as a share of total resources allocated to tertiary education, from 71.5 to 83.3 percent.

Student Access and Equity

31. The issue of equity in tertiary education in the Czech Republic appears to be a fairly low priority for most government and university officials. This appears to be based upon a view of Czech society as a comparatively equitable society, and a system of financing in which direct study costs are borne largely by

¹³ The coefficients for different study fields reflect normative (as opposed to actual) costs of providing instruction.

¹⁴ When measured in equivalent US dollars converted using purchasing power parities.

taxpayers, rather than students and families. This low priority is reflected in the relatively modest commitment to student financial aid through small programmes for Roma students and those with disabilities. Most of the equity effort in the Czech tertiary system is carried out through the provision of general social services benefits on a non-contributory basis to students in tertiary institutions who are between the ages of 18 and 26. The recent modification in how financial support is provided to students for accommodation in which funds are allocated to students principally on the basis of distance from the university replaces the previous system of subsidised housing for all student residents, and is an example of the recognition of the need for reform. A more equitable step, however, would be to award this support for housing based on the financial need of students as well as the location of their family residence.

32. Equity in tertiary education needs to be taken more seriously than it has been, and to be addressed through the continued widening of opportunities to study at the academic secondary tertiary levels; through better funded and targeted student support; and through policy interventions that spur motivation and aspiration among young people whose families have not studied at the upper secondary or tertiary level.

Research and Innovation

33. The major changes that have taken place in the Czech Republic since 1989 have also had a significant impact on the conduct of research, the dissemination of knowledge, and the research-based stimulation of innovation. The distribution of tasks under the communist regime, with higher education institutions in charge of teaching, basic research performed at the Academy of Sciences and applied research taking place at research institutions came to an end. Universities were restructured following Humboldt's vision of combining teaching and research, while modern co-ordinating structures have been set up in an impressively short period of time.

34. Higher education institutions around the world are increasingly expected to take a strong position in the "Knowledge-Triangle" of research, education and innovation. In the Czech Republic -- and all over Europe -- the capacity of institutions to meet this challenge is under discussion. As the European Commission noted in its recent document, *Delivering on the Modernisation Agenda for Universities: Education, Research and Innovation*, universities throughout Europe are faced with the challenge of restructuring and modernisation. These demands require change both from public authorities and from universities.

- Member States need to take the necessary measures with respect to universities, including aspects such as management, granting real autonomy and accountability to universities, innovation capacities, access to higher education, and adapting higher education systems to new competence requirements.
- Universities, for their part, need to make strategic choices and conduct internal reforms to extend their funding base, enhance their areas of excellence and develop their competitive position; structured partnerships with the business community and other potential partners will be indispensable for these transformations.¹⁵

35. Though major changes have taken place in Czech higher education, further changes must be embraced, both by government authorities and universities, if it is to effectively adapt to the demands of a knowledge-based economy. In particular, these changes involve increasing the competitiveness of research and simplicity of public research funding; increasing the capacity of higher education institutions

¹⁵ The term "universities" in this document is taken to mean all higher education institutions, irrespective of their name and status in the Member States.

to operate within an international project funding environment; and improving the national policy framework for knowledge transfer.

Quality Assurance

36. After the fall of communism in 1989 and the development of a new higher education system, the Higher Education Acts of 1990 and 1998 aimed to establish a balance between academic autonomy and accountability. The general model for quality assurance in Central and Eastern European countries was that of state-controlled accreditation of all programmes and/or institutions in the country, in which institutions themselves played a leading role. Accreditation was used, in various situations, as a wall to keep out “rogue” provision of higher education.¹⁶ In the Czech Republic an Accreditation Commission was established in 1990 as an independent body consisting of 21 members to take care of the quality of Czech higher education. The Act of 1998 gave the Commission an extended mandate combining its control-functions with improvement-oriented evaluations of higher education institutions, faculties, and programmes. In 2005, a second Accreditation Commission was established by the Ministry with responsibility for Tertiary Professional Schools.

37. While the accreditation system has permitted the development of a private higher education sector without quality problems that have arisen elsewhere, we note that the system of accreditation needs now to be reoriented, so that it supports national policy goals – including the diversification of tertiary education, strengthening of professionally-oriented bachelor degree education, and the engagement of higher education institutions with the wider society.

Regional Development

38. Czech higher education has traditionally been concentrated in “university cities” - primarily Prague and Brno. One of the early post-1989 achievements was the development of six new universities in different cities across the country. The subsequent growth of these institutions has had a significant impact on the geographical distribution of study places: the share of all study places in Prague and Brno has been reduced from 79 to 59 percent. In addition, a number of public and private institutions have established regional branch faculties, particularly in those fields of study where they have experienced declining enrolments.

39. The tertiary professional schools are more widely dispersed. 114 of the 174 schools have been established by regional authorities although Prague remains relatively over-provided with 36 schools. Nevertheless “the numbers of schools, their composition, size and educational programme structure do not fully match the needs of the regions.” (*Background Report*, p. 28). In each region a development strategy for tertiary professional education forms part of its overall Long-Term Plan for education.

40. In the Long-Term Plan 2000 – 2005 one of the strategic goals was to establish a public HEI of the non-university type in each region. Only two such institutions have been established. As noted earlier an underlying problem is the stringent criteria that have to be met to establish such institutions, including the need for an Act of Parliament.

41. One of the expectations concerning private tertiary education providers was that they would meet excess demand in programmes and locations not adequately served by the public sector. This has happened

¹⁶ Marijk van der Wende & Don Westerheijden (2003) *Degrees Of Trust Or Trust Of Degrees? Quality Assurance And Recognition* in Jon File and Leo Goedegebuure, *Real-Time Systems: Reflections on Higher Education in the Czech Republic, Hungary, Poland and Slovenia*, Vutium, Brno.

to some extent although once again a disproportionate share of private institutions (21 of the 40) is located in Prague.

42. The experience since 1990 suggests that while the regional distribution of tertiary educational places is recognised to be skewed in favour of major cities this has not been a top policy priority for the Ministry -- or the bodies that represent higher education -- although some development funding has been allocated to projects with a regional focus. Regional factors and needs have had more of a role in the tertiary professional school sector. Nevertheless, it is expected that the regional role of tertiary education will become more important as the efforts to attract direct investment in the regions bear fruit, and through the use of European structural funding.

Internationalisation

43. Internationalisation can be seen from various perspectives. From the student perspective issues include strengthening the international mindset of Czech graduates. From a programme perspective questions arise over offering more programmes in a foreign language, not only attractive to Czech students but also attractive to foreign students looking for a high quality programme. A research perspective focuses on the importance of publishing more peer-reviewed articles in top international journals and enhancing participation in European framework programmes. An institutional perspective is linked to being a preferred Czech partner for international co-operation at both a European and international level. Finally, a resource perspective entails issues such as hiring more foreign faculty and generating international funding. All of these perspectives have become increasingly important within Czech higher education over the past decade.

44. What is more, there are two distinct facets to internationalisation: Europeanisation, represented by the Bologna and Lisbon processes and the development of the European Higher Education and Research Areas; and Globalisation linked to other agendas such as the growing trade in academic services, worldwide student flows and the drive to create world-class research universities. These processes involve different combinations of (European) co-operation and (international) competition.¹⁷

45. The challenge of international engagement demands of higher education institutions that they search for partners, identify competitors, form strategic alliances, and expand the tasks, responsibilities, and professionalisation of their international offices. Below we explore to what extent Czech higher education institutions are prepared to meet this challenge, and the Ministry is prepared to assist them in this.

¹⁷ Scott, Peter (2005) *The global dimension: internationalising higher education* in Internationalisation in higher education: European responses to the global perspective (pp. 8-22) EAIE and EAIR, Amsterdam.

CHAPTER THREE: SYSTEM STRUCTURE AND THE INSTITUTIONAL LANDSCAPE

“The aims underlying the formation of the tertiary education sector in the Czech Republic are as follows:

- The main purpose is to create a richly diversified education sector, with sufficient capacity, openness and opportunities for transfer, enabling students to change or continue their studies at any age or time...
- In accordance with one of the main goals of Czech education policy, it is necessary to enable half the 19-year olds in any year to enter some type of tertiary education by 2005...”

(White Paper On The Development Of Education, 2001, p. 67)

46. The authors of the *White Paper* were explicit about the important link between system diversity and the expansion of tertiary education to accommodate a wider spectrum of students.¹⁸ They envisaged a programme structure for tertiary education that included (short-cycle) extension technical studies, post-secondary technical education, Bachelors studies (“a varied set of programmes with a more or less applied orientation, which prepare students for the labour market as well as for further education studying for a Masters degree”), Masters programmes, Doctoral Studies and life-long learning courses.

47. The quantitative forecast underlying the *White Paper* anticipated a tertiary student enrolment of 250,000 in the 2005/6 academic year: 195,000 in Bachelors and Masters programmes (50 percent entering the labour market with a Bachelors qualification), 15,000 Doctoral candidates, 10,000 in private institutions and 30,000 in post-secondary technical schools (now tertiary professional schools). By 2004/5 these forecasts had been exceeded by enrolments in most areas: 274,000 Bachelors and Masters (including 20,000 in private institutions), 25,000 Doctoral candidates and, as expected, 30,000 in tertiary professional schools. The *Long-Term Plan 2006-2010* expects the higher education system to grow by an additional 50,000 students before stabilising given demographic changes. It envisages that most of this increase will be accommodated by higher education institutions of the non-university type.

48. What is striking is that both the forecast and the reality demonstrate the continued dominance of (public) university programmes within the tertiary education sector: short-cycle pre-Bachelor, non-university, tertiary professional and life-long learning programmes are all relatively underdeveloped.

¹⁸

According to OECD calculations, the Czech Republic has a 38 percent enrolment rate in ISCED 5A, and a 10 percent enrolment rate in ISCED 5B, as compared to the 2004 OECD average of 53 and 16 percent respectively (*Education At A Glance, 2006, Table C2.1, p. 277*). New data from the Ministry indicate that for 2005/6 these enrolment rates have risen to 45% and 9% respectively. The *Long-Term Plan* notes that in the 2004/5 academic year almost 50% of the relevant age groups were enrolled in tertiary education. It appears to reach this estimate by summing these two rates (*Long-Term Plan, pp. 4-5*). As the OECD notes in its presentation of these data, “not all OECD countries can distinguish between students entering a tertiary programme for the first time and those transferring between different levels of education or repeating or re-entering a level after an absence. Thus, first-time entry rates for each level can not be added up to a total tertiary-level entrance rate because it would result in counting entrants twice.” *Education At A Glance, 2006, p. 276*.

Within the large Bachelor/Master component higher numbers of students are continuing to Masters programmes than the 50 percent goal.¹⁹ Both trends create serious challenges for the goal of creating a “richly diversified tertiary education sector.”

Achievements In Diversifying The System

49. The number of universities has been increased with an improved regional spread. While there is no formal differentiation between, for example, research-intensive universities, regionally-oriented universities, professionally-orientated teaching universities *etc.* there are clearly differences in profile, capacity and mission across the public university sector.

50. The concept of higher education institutions of a non-university type has been introduced, legislated and implemented for both the public and the private sectors. Private higher education has been permitted but carefully regulated and at present is limited to non-university higher education and tertiary education. Private universities are expected in the future as private HEIs develop experience and greater capacity. Two public non-university HEIs have been established and others are in the planning stages.

51. A tertiary professional school sector has been developed following a pilot scheme involving co-operation with the Dutch polytechnic (HBO) sector. The 170 schools (public and private) offer vocationally oriented programmes of 3 or 3.5 years duration leading to the award of specialist diplomas in fields such as business, health services, engineering, agriculture and forestry. The introduction of three year Bachelors degrees in university and non-university institutions has created a particular challenge for these schools as they are not authorised to offer programmes at this level; where their programmes have been accredited at Bachelors level these are offered in partnership with a higher education institution.

52. The two-cycle Bachelor-Master degree structure has been introduced (in most cases – the exceptions being determined by the Accreditation Commission) in place of the traditional long Masters degree. Czech policy follows the Bologna principle that Bachelors degrees prepare students for the labour market as well as for Masters degrees.

Challenges In Realising A Richly Diverse System

53. Despite the achievements noted above, the Czech tertiary system remains dominated by the public university sector, with non-university and tertiary professional institutions each accounting for less than 10 percent of enrolments. This university sector is formally undifferentiated, driven by a traditional Humboldtian vision, highly autonomous, self-governing and characterised by strenuous academic career requirements – in this context Bachelors programmes primarily aimed at graduate entry to the labour market have not found it easy to take root and flourish.

54. The tertiary professional schools (VOS) are a sector that is not part of the higher education system, but is managed as part of the regional secondary education system. The implications for the schools of the change to Bachelors programmes within universities and the possible upgrading of some of their programmes from specialist diplomas to Bachelors degrees have not yet been resolved. VOS institutions, which offer 3 year diplomas, will find themselves in a very difficult competitive position if higher education institutions begin to offer significant numbers of 3 year Bachelor programmes which are comparatively more attractive to prospective students.

55. The government has expressed its intention to “launch the development of a national qualifications framework before 2007.” Its development is critical in terms of short-cycle pre-bachelors

¹⁹ This is a partial explanation for the enrolments exceeding those forecasts.

qualifications which were offered by the predecessors of the tertiary schools but are now offered by selected secondary professional schools. The successful articulation of programmes and credit transfer across the professional school-HEI division requires such a framework, since it would (or, should) set out the framework for the recognition of short-cycle certificate and diploma work towards a bachelor degree. In its absence, the transfer of credit between tertiary professional schools and higher education institutions is irregular and unpredictable, dependent upon local and voluntary agreements between tertiary and higher education institutions.²⁰

56. Another indication of the need to diversify tertiary education is that its pool of prospective students in the secondary system is larger and more diverse than it was in 1990—more varied with respect to social backgrounds, academic preparation, and aims. For example, the number of upper secondary students who study at secondary technical schools (38 percent) is about half again as large as the share enrolled in upper secondary institutions oriented solely towards university preparation, the *gymnazia* and *lycea* (23 percent). Continued enrolment growth in the years ahead will widen the spectrum of the student intake still further. Those with whom we met expressed concern about the readiness of school leavers who have not studied at *gymnasia* for traditional academic degree programmes. Perhaps not surprisingly, the drop-out rates from higher education programmes particularly amongst first year students are significant.

57. Finally, Czech demographic forecasts show a sharply aging population—which implies a *potential* demand for much more extensive and varied lifelong learning that is presently being provided by Czech tertiary institutions. The review team sees relatively modest capacity for its development in the current configuration of higher education institutions.

Policy Options for Increasing Diversity

58. The review team does not believe that it makes sense for the Czech Republic—or any country—to have fifty percent of an age cohort take a five year university degree in a highly traditional Humboldtian university system. Such a policy choice would be an inefficient use of public resources, and ill-suited to the aspirations of learners in the 21st century. While none of the Czech policy documents suggest this as a goal, the key question is whether tertiary education programme offerings have diversified enough to provide “fitness for purpose” with the 50 percent tertiary participation target. The review team does not think that they have.

59. As indicated earlier, short-cycle, non-university, tertiary professional and life-long learning programmes are all relatively underdeveloped.²¹ Within the university sector the review team has concerns about the limited range of professional Bachelors programmes on offer and the extent to which traditional Masters programmes have been restructured into two cycles with serious attention given to curriculum re-orientation to prepare first cycle graduates for the labour market. It is clear from submissions to the review team that students, academics and employers continue to favour the completion of a Masters degree before graduates enter the labour market.

60. This is not surprising: international experience suggests that systems characterised by strong academic norms and values, limited influence from external stakeholders and uniform policy/funding environments tend to display low levels of diversity as institutions all favour activities perceived to carry the highest prestige and rewards. Thus, tertiary professional schools aim at Bachelors programmes and HEI

²⁰ *Background Report*, section 8.4, *Linkages Inside the Tertiary Education System*.

²¹ Those between the ages of 25 and 64 in the Czech Republic are substantially less likely to engage in non-formal job-related education and training than comparable workers in other countries. Only 11 percent do so in the Czech Republic, as compared to 18 percent in all OECD member countries. *Education At A Glance*, 2006, Table C5.1a.

status, non-university HEIs aspire to be universities, and universities concentrate on research, doctoral training and Masters programmes that prepare students for research careers.

61. What is needed in the Czech Republic are institutions that understand their mission and core business to be the provision of high quality professional Bachelors programmes aimed primarily at preparing students for employment. Such institutions would also be active in short-cycle and life long learning programmes. Staff would be professionals in these fields many of whom would not have PhDs but would have experience in business, industry and the public sector. Individuals and institutions would be rewarded for their success in accomplishing this mission. Given the broad goals of the *Long-Term Plan*, these institutions should enrol around 50 percent of the student intake. Three strategic options suggest themselves as ways of achieving this: refocus a number of existing universities; upgrade the tertiary professional schools; create new public and private HEIs with this as a clear mission (without Masters and PhD aspirations); or a mixture of these approaches.

62. The review team does not believe that any of these options are viable, singularly or in combination. Refocusing existing public universities would entail removing the right to award the doctorate, excluding them from most research funding and curtailing Masters programmes. Given high levels of autonomy and strong academic self-governance it would be a very brave Ministry that opted for this strategy.

63. The entry of 170 small professional schools into the higher education system as autonomous institutions would create an enormous management capacity challenge, lead to very high diseconomies of scale and probably render the entire system ungovernable. A “merge into larger institutions first and then enter the higher education system” strategy²² would still create enormous logistical and capacity challenges as 170 predominantly small schools with limited planning and strategic capacity (given their lack of autonomy) struggle to form themselves into (say) 10 institutions of 3000 students each. Creating new public non-university HEIs from scratch would be expensive (and require Acts of Parliament for each).

64. It is doubtful whether the private non-university higher education sector would grow rapidly without significant incentives: with about 19,000 study places in 2004/2005, its total size was less than half of the growth forecast in the Ministry’s plan. Moreover, it is not clear that it can provide the range of study programmes that might be required: nearly all of its study programmes are in the fields of business, finance, and social sciences. Finally, even if all 50,000 new study places were located in new HEIs, this would still leave an oversupply of traditional university places.

65. A new dedicated sector charged with responsibility for professional Bachelors level education is not a viable option for the Czech Republic in 2006.²³ However, creating more professional education in universities and resolving the structural location of the tertiary professional schools are still policy priorities. The solution will need to be found within the framework of current Czech policy – universities offer both academic and professional programmes – but with new structural and financial arrangements to ensure a significant change in the balance of programmes offered. In this context the experience and the

²² This strategy was adopted in the 1980s in Australia to create the unified national system and in the Netherlands to create larger comprehensive polytechnics. See Leo Goedegebuure, *Mergers in Higher Education*, Lemma/CHEPS, 1992. Finland also went through a similar restructuring exercise in the late 1990s to create 30 polytechnics from nearly 500 vocational training institutions. Despite these “precedents” the review panel does not favour this option. A key part of the challenge in the Czech Republic is the programme mix within universities, which the consolidation of tertiary professional schools would not address.

²³ Whether it would have been in 1990 is an interesting question.

staff of the tertiary professional schools are a potential resource for the universities, while the universities are a potential structural home for the programmes of (part of) the tertiary professional school sector.

A New Sector Within Universities

66. The review team recommends the creation within (most) universities of a “University College of Professional Studies”²⁴ with a mission to focus on “professional” Bachelors and short-cycle programmes, including life-long learning. Such colleges would draw on the academic expertise of faculty staff but would have their own educational expertise in such areas as curriculum development; adult education; “soft, people and transferable skills”; ICT; foreign languages; career guidance; and job placement/work experience.

67. To provide the financial incentives for the development of such programmes the Ministry should earmark (at minimum) all of the five percent of growth in student enrolments and the full 50,000 new places planned to 2010 to programmes offered by such colleges. College activities should also be strongly supported via development and project funding.

68. The future location and role of the existing 170 tertiary professional schools should be considered by an appropriate high level commission or body established for this purpose. This commission should consult widely with interested parties. It would conduct a review of all professional schools and recommend to the Minister a division between those that should operate primarily at a secondary level (offering limited parts of tertiary programmes in co-operation with HEIs) and those with significant tertiary/higher education capacity. The first group should continue to be part of the regional secondary school system²⁵ while the latter would be integrated into University Colleges for Professional Studies at universities on a geographical basis. (With the possible exception of those few that are large and competent enough to be self-standing non-university HEIs.) One of the commission’s tasks would be to recommend at which universities the colleges should be established.²⁶ This in turn provides an opportunity to begin to clarify the distinct missions of each university.

69. The new governance arrangements for University Colleges should include an important role for external stakeholders including regional authorities, who currently manage many of the tertiary professional schools. This will link an important component of most universities to the region in a structural way and will be a concrete way of realising one of the important aims of the *Long-Term Plan*: “Co-operation between higher education institutions and regional bodies, potential employers and the consumers of R&D results ... will lead to increased attractiveness of higher education institutions and opportunities for further funding particularly from the private sector. This co-operation will also facilitate the transfer of graduates from the academic environment to industry. The objective is to reinforce co-operation with regional institutions and potential employers...” (p. 10).

A Supporting Policy Framework for Diversification

70. Achieving a successfully diversified system will require more than creating this new college sector within universities; it will also require a set supporting changes to accreditation, human resource

²⁴ This is an illustrative title only – the crucial point is that it needs to be attractive in Czech.

²⁵ The review team recommends that the option of such schools developing into higher education institutions in the future should be ruled out to avoid another period of academic drift. Consideration should also be given to a similar policy on existing non-university HEIs striving for university status – the Czech Republic’s long term plans do not require additional capacity at the university level.

²⁶ Integrating schools into universities does not necessarily imply the closure of their facilities – the advantages and viability of distributed teaching sites need to be considered on a case by case basis.

management, and governance structures and policies for these colleges that reflect their distinct mission. Here we briefly note some characteristics of this framework; the chapters that follow develop these at greater length.

Human Resource Management

71. The Humboldtian-style career system with habilitation and long and strenuous career requirements is increasingly out of line with the needs of a developing highly diversified system. In the Czech Republic one reaches the position of full professor, on average, by the age of 55, while the average full professor is 63 years old. In other European countries where similar models exist there is increasing discussion about whether this career structure is appropriate any longer to the needs of the modern research university, and changes to the career system are being considered.

72. Setting aside whether this career model is fit for the purpose of developing and sustaining world-class research institutions, it is surely not suited to a tertiary system that is more strongly diversified, with a major emphasis on professionally-oriented bachelor degree, shorter-cycle vocational programmes and life-long learning. The existing career system does not encourage a strong engagement in bachelor degree education, the cultivation of professional skills in young students, or towards working and professional life. The Background Report notes that there have been attempts to bridge the gap between professional practice and higher education. However, external professionals who teach at public higher education institutions remain indefinitely in the position of assistants.

73. This stringent career system - when combined with the restriction that only some faculties at public universities have the right of habilitation - has the effect of placing sharp limits on the supply of available professors and associate professors. This sharply limited supply when coupled with an accreditation system that places great emphasis on the number of full and associate professors results in a *structural* imbalance between supply and demand and fuels the phenomenon of “flying professors.” This practice of holding multiple appointments may have many deleterious effects—one of which is to retard the development of a professoriate that is fully engaged in and committed to the development of professionally-oriented bachelor degree education.

74. The review team recommends that a more diverse academic career structure be developed for Czech tertiary education where persons with appointments in the proposed university colleges and non-university HEIs (public and private) who are holders of PhDs²⁷ are able to advance to the rank of associate and full professor on the basis of a tenure system, rather than the existing system of habilitation; and where business/industry/public professionals who teach in such institutions are granted appropriate compensation, advancement, and status.

75. The review team further recommends that a commission be established to assess the continued suitability of the existing habilitation system for Czech public research universities, including studying reform initiatives under consideration in other countries that have followed this career system. Such a commission should include university leaders, employers, graduates, international academics, and others.

Quality Assurance

76. As we indicate in Chapter Nine, the tertiary system of the Czech Republic has a set of accreditation institutions and policies that have served capably to ensure an acceptable level of provision in new programmes and higher education institutions. However, they have hampered the development of a

²⁷ The review team recommends that a PhD should be the standard academic pre-requisite but that provision should be made for exceptions to this rule where persons have demonstrated equivalent standing.

diversified system by bringing a single set of evaluative criteria to bear, rather than developing a system of accreditation that is oriented towards fitness for purpose, and distinctive criteria of quality and expert participants appropriate to education that is oriented toward working life.

Qualifications Framework

77. The Ministry should develop clear articulation paths between all types of qualifications to be included on the new National Qualifications Framework. This is of crucial importance to the area of short-cycle pre-Bachelors programmes, life-long learning programmes (where the current restrictions on using these credits towards degrees need to be reviewed) and the transfer from professional Bachelors degrees to Masters degrees, particularly after a period of employment.

78. The review team was struck by the negative public perception of Bachelors programmes. In retrospect it is unfortunate that the 1990 Act gave rise to the view of a Bachelors degree as an unfinished Masters degree. The transformation from the long Masters programmes to a two-cycle structure in most fields of study, if done conscientiously with a focus on learning outcomes and employability, is an enormous curriculum reform. It is imperative that this effort is not undermined by negative perceptions – especially when there is no factual basis for these perceptions. *The Ministry and the representative bodies need to take decisive action to ensure that Bachelors degrees are given the status they deserve.* This is both a “change management” challenge (identify and publicise success stories) and an area where the public sector should take the lead in its employment practices.

CHAPTER FOUR: SYSTEM AND INSTITUTIONAL GOVERNANCE

“Whatever the differences in scale and technology, there is a hard core of perennial problems which have taxed the minds and ingenuity of university legislators from the thirteenth century to the present day. Matters of organisational form and democratic procedures ... are just some of the issues which reveal the strands of continuity linking the medieval *studium generale* and the universities of the modern world.”

(Cobban, 1988)²⁸

79. In the area of governance the period since 1989 has also been one of considerable change and achievement. The Ministry of Education, Youth and Sport has developed a higher education department with considerable skill and capacity. The department has a strong working partnership with the higher education institutions and national consultative structures -- the Rectors Conference and Council of HEIs. The results of this capacity and working relationship are evident in the series of important policy documents on higher education and indeed in the excellent *Background Report* prepared for the OECD review team.

80. The Higher Education Act, White Paper, Development Strategy of Tertiary Education, Higher Education Reform Policy and the Long-Term Development Plans of the Ministry provide a clear policy framework for the system. There appears to be a cross-party political consensus on the importance of higher education for socio-economic development in the Czech Republic and for the need to increase funding to the sector on a sustained basis. The mechanisms for distributing this state funding to institutions have been developed as the primary steering instrument for the Ministry in realising its long-term plans for the system.

81. At the institutional level a robust system of academic self-governance has taken root firmly at both institutional and faculty levels (in place of the previous over centralised and party dominated system) within the framework of the 1990 and 1998 Higher Education Acts. As indicated in chapter two, this system is in essence self-governance by elected representatives of staff and students who constitute the Academic Senates at faculty and institutional levels.

Limitations Of Academic Self-Governance

82. While internal higher education representatives have an important role in system and institutional governance, external stakeholders are largely absent from policymaking with respect to higher education in the Czech Republic. The Ministry is obliged to consult with representative bodies drawn from the institutions on matters of policy. These representative bodies (in particular the Council of HEIs) have an important role in the appointment of members of the Accreditation Commission. Extensive institutional and faculty autonomy can make it difficult to implement system level policies and can inhibit some policy directions even being attempted.

²⁸ Cobban, A. B., Ed. (1988). *The medieval English universities: Oxford and Cambridge to c. 1500*. Berkeley, University of California Press.

83. At the institutional level, although the establishment of Boards of Trustees has introduced external stakeholders into internal governance structures their role is sharply limited: the function of the boards is primarily related to real estate transactions, although they do have the right to comment on institutional plans and budgets. The *Higher Education Reform Policy* stresses the importance (and some of the difficulties) of increased collaboration with the private sector, noting that professionals from the business sector are increasingly being appointed to the scientific councils of institutions and faculties and co-operating in the development of new study programmes. Nevertheless, compared with most other European systems the level of academic self-governance at system and institutional levels is very high, and the role of external stakeholders very low.

84. The negative consequence of this governance system is that institutions are inwardly-focused and do not engage productively with the needs of Czech society.

85. The ability of Rectors and Deans to lead effectively is also constrained by democratic academic self-governance and by their being elected by Academic Senates (for appointment by the President or Rector respectively). High levels of faculty autonomy result in a structural tendency to limit central university resources in favour of maximising faculty income and to adopt a path of least resistance rather than to take strategic decisions that involve making choices between faculties or giving different priorities to their plans. The fact that most institutions pass on state funds and growth limits to faculties without modification is a good example of this tendency. The review team also heard that institutions find it very difficult to set research priorities. This puts Czech universities in a weak position to meet the challenge of competing internationally and for European Framework funding when they cannot identify areas of high priority and move resources there. The decisive role of students in decision-making can be problematic in the election of leadership, and in the determination of priorities and budgets between issues of immediate relevance to students (teaching, social services) and those with less direct impact (research and innovation). Finally, in comparison with Western European universities, internal management systems are relatively underdeveloped and a strong professional support staff ethos has yet to take root.

86. Many of these limitations and deficiencies are recognised by the broad group of experts, representatives and stakeholders that authored and approved the *Background Report*:

Although the highly democratic steering combined with the significant autonomy of HEIs, not often seen internationally, undoubtedly strengthens the independence of higher education from the state, it, on the other hand, results in the cumbersome and often less flexible system steering of public HEIs. The similar characteristic holds true for institutional steering. The pursuit of democratic steering principles in terms of large-scale decision-making powers of the academic senates, retention of significant influence of scientific councils on research, development and student agenda, granting of the overseeing of estate and property maintenance to the board of trustees, while keeping the responsibility for the running of institution in the hands of the rector all make the institutional steering rather cumbersome, though with the significant involvement of the academic community.²⁹

Developing an Effective Czech Higher Education Governance System

87. The review team does not believe that there is a single model of effective higher education governance, or a global (or even OECD) best practice that should be proposed for the Czech Republic. Good governance practices need to be developed drawing on national traditions and models. Nevertheless, the review team is firmly of the view that - 16 years after the post-Velvet Revolution Higher Education Act

²⁹ *Background Report*, p. 92.

- higher education governance reform is needed. The recommendations do not enter the domain of designing new governance structures but identify the fundamental directions of reform. This approach recognises the need to find Czech solutions to the governance challenge and allows for the possibility that “one size fits all” governance models may not be the best solution, particularly at the institutional and faculty levels. In other words, internal governance structures may be most effective if they vary from institution to institution, and from faculty to faculty, within a common general framework. For example, Faculties of Medicine, Humanities and Business have very different relationships to very different groups of stakeholders. This should be reflected in their governance structures rather than to develop a standard national governance model for all faculties although national policy guidelines for such governance structures remain important.

88. *There is a need to strengthen the steering and co-ordination capacity at a system level.* The Ministry needs to be able to use the full range of steering possibilities offered by the funding system, including direct steering by specifying the number of publicly funded student places it is willing to support at each institution and within each institution in broad subject fields. It must be able to do this without first having to negotiate a consensus with institutional representatives – for this will inevitably favour sticking with, or close to, the *status quo*. The Ministry and the sector should consider the benefits of moving towards multi-year funding contracts linked to agreed performance targets (for enrolments and graduates in different subject groupings and at different qualification levels etc.) that recognise the distinct contribution of each institution to the long-term goals of the system.³⁰

89. *A broader range of stakeholders need to be included in strategic (not scientific) system and institutional level governance.* In higher education making an absolute distinction between strategic and scientific decisions is always difficult. Yet, most reasonable people can accept that the decision to introduce a new faculty or programme, or to reduce or increase the size of a faculty or programme is primarily a strategic decision that involves judgements about relevance, demand, competition and capacity. That it also involves scientific questions related to quality is clear. In contrast, the content of a new programme is primarily a scientific decision although the interests of potential students and employers are clearly relevant. Including a broader range of stakeholders in strategic decisions will alter the balance in the current model of academic self-governance to make it less inwardly focused. The involvement of public and private sector employers is essential given the *Long-Term Plan's* emphasis on greater financial support for research and innovation, and on Bachelors graduates entering employment. The Ministry and the institutions should explore ways of doing this. One approach would be to expand the role of the Board of Trustees in strategic (not scientific) decisions as a first step in the direction of a single senior university governance body including internal and external stakeholders – this allows for the strategic and scientific dimensions of issues to be brought together in a single forum. At the system level similar considerations suggest that the Council of Higher Education Institutions might be reformed, streamlined and broadened to include a chamber of external stakeholders.

90. *The ability of Rectors and Deans to lead their institutions needs to be strengthened.* They need greater freedom from the restraints imposed by governing structures representing faculty/departmental interests. Institutions cannot be strong and successful if it is impossible for them to determine strategy, set priorities, identify teaching and research portfolios, and adapt their organisational structure to adjust to a changing environment. The current internal governance structures make the latter task almost impossible, and reduce the outcomes of the first three processes to aggregations of faculty ambitions. Furthermore, the full value of including external stakeholders in strategic decision making will not be realised unless institutional leadership has the ability to ensure that strategies are implemented. The Ministry and institutions should explore ways of reforming internal governance, including methods of appointing

³⁰ The funding allocation mechanisms are discussed in more detail in the following chapter, but these performance contracts would still allow for “project based” competitive development funding.

Rectors and Deans that continue to involve an important - but not as decisive - role for internal stakeholders.

91. The review team was impressed by the willingness of student leaders to consider alternatives to the current governance model. The key point is that the role of students should vary depending on the issue at stake. In some cases (quality assurance) students should have a greater role than they have at present, in others (student services) a similar role to now, and in others (strategy, setting priorities, and the appointment of university leadership) a lesser role. The role of students in different sorts of decisions should be a specific focus of this review.

Capacity Development

92. Apart from these three major areas of reform the review team has two specific recommendations concerning capacity development and training.

93. Firstly, *the Ministry should encourage universities to design projects to professionalise university administrations* (university registrars, faculty secretaries and their staffs), and identify an appropriate funding source for such projects.

94. Secondly, the Ministry should continue to support the current programme to train student leadership for their important role in university governance. This is an area where many systems could learn from the Czech Republic.

CHAPTER FIVE: RESOURCING TERTIARY EDUCATION

“The higher education institutions are still trying to deal with the problems accumulated from past decades, while at the same time they have to confront the rapid developments taking place throughout Europe and elsewhere in the world. They must also keep up with these developments under economic conditions that are (as of now) not even remotely comparable to the conditions that exist in the countries with which we are trying to compete.”

“Our tool...for the implementation of the individual measures that are part of the reform is the distribution of state funding and the adjustments to the rules and mechanisms used for such distribution...The basic idea that will permeate all of such changes is the notion to promote excellence and focus on the exceptional capabilities of each institution in general, the overcoming of weaknesses and, most importantly, the furthering of the government’s objectives as outlined in the *Long-Term Plan* of the Ministry.”

(Higher Education Reform Policy in the Czech Republic, 2004, pp. 49 & 56)

95. The Czech system of higher education faces a number of major challenges related to the financing and funding of the system. These include whether the current number of study places is adequate to meet ‘reasonable’ demand expectations; whether the current arrangements are financially sustainable over the medium to long term; whether greater reliance on tuition fees and other private resources will be necessary to achieve system sustainability; and finally, whether the system of student support should be expanded and modified to ensure a greater degree of accessibility.

96. To address these issues, this chapter considers the trends in financing over the past ten years, identifies the strengths and weaknesses of the current financing structure, and makes a series of recommendations that would make the system more sustainable and more equitable³¹ in the future.

A review of trends: the story of two half-decades

97. An examination of the past ten years of experience in financing Czech higher education reveals a remarkable contrast over the past decade. In the second half of the 1990s, slow growth in public funding for higher education combined with very rapid growth in enrolments led to a substantial reduction in the spending per student. As Table 5-1 shows, from 1997 through 2000 public funds for higher education increased by 15 percent, which was a real decrease of 12 percent when price inflation of more than 30 percent is taken into account. During that same time, the number of students grew by 19 percent, meaning that spending per student fell by 3 percent in nominal terms -- and 26 percent in real terms.

³¹ A number of related issues are considered in the following chapter on access and equity.

Table 5.1 Public Funds for Higher Education, Enrolments, and Spending per Student in Czech Republic, 1997-2005

Year	Public Funds (billions CZK)	% change from previous year	Inflation Rate	Number of students (000)	% change from previous year	Spending per student (CZK)	% change from previous year
1997	7.8		8.8%	162.4		48030	
1998	7.8	0%	8.5%	173.8	7%	44879	-7%
1999	9.5	22%	10.7%	182.7	5%	51998	16%
2000	9.0	-5%	2.1%	193.5	6%	46512	-11%
2001	9.6	7%	3.9%	207.7	7%	46221	-1%
2002	11.3	18%	2.6%	219.2	6%	51551	12%
2003	12.5	11%	1.5%	236.7	8%	52809	2%
2004	14.5	16%	3.2%	259.7	10%	55834	6%
2005	16.8	16%	4.4%	279.8	8%	60043	8%

98. It was a very different story in the first half of the 2000's. Increases in public funding for higher education were substantial. Higher education spending grew by nearly 90% between 2000 and 2005, from 9.0 to 16.8 billion Czech crowns, a real increase of 60%. These increases in spending outstripped a robust growth in enrolments as the number of students enrolled in Czech tertiary institutions grew by 45% from 2000 to 2005. As a result, nominal public spending per student grew by 29%, and real spending per student increased by 11%. But spending per student is not yet back to 1995 levels in real terms, and spending on tertiary education has returned, after a period of enormous public investment, to a share of GDP per student that is modestly below the OECD average.

99. Trends over the past ten years in the funding of Czech higher education are instructive for the future in at least one important respect: large sustained increases in public funding appear to be insufficient to allow Czech higher education reach or exceed international averages when other countries are depending on a mix of public and private resources to fuel the growth of their higher education systems. To underscore this point, despite large increases in public funding over the past five years, the Czech Republic still lags behind other OECD countries in spending per student, and in the percentage of GDP devoted to higher education.

Strengths of the Current System of Financing

100. An examination of the mechanisms through which Czech higher education is financed indicates a number of important strengths, including the following characteristics:

- The use of normative costs (coefficients) in the funding formula follows international best practice. In the first half of the 1990s, as part of a series of important reforms in a range of public policies in the emerging Czech Republic, a new funding process for higher education was implemented. This funding process includes the use of normative costs in the form of funding coefficients that vary with fields of study. Normative costs, by calculating what programmes ought to cost using optimal student/faculty ratios and other indices, represent an important

improvement over the more traditional approach of using actual costs per student and are regarded as a form of best practice internationally.³²

- Providing a component of state funding based on the number of graduates is also in line with best practice internationally. One of the more pronounced trends in higher education around the world over the past decade or more has been the shift to allocation mechanisms that are performance-based. This shift can take several forms including setting aside a portion of funds to be paid on a performance basis; establishing performance contracts between government and institutions; creating competitive funds to stimulate greater innovation, higher quality, and the better management of institutions; and implementing processes in which institutions are paid on the basis of results, not inputs. The decision to allocate part of the funding on the basis of the number of graduates thus represents an important step in the direction of making the system more performance-based.
- The establishment of the development programmes and their growth over the years provides much needed flexibility to adjust to contingencies and changing priorities. These programmes that began providing funds in 2001 now account for roughly 10 percent of total public expenditures on higher education and are still another example of international best practice. Experience in a number of countries over the past several decades indicates that competitive funds typically tend to be more effective than funding formulas as a means for governments to encourage innovation, improve quality, or strengthen management.

The Case for Reforming the Current Financing System

Financing mechanisms

101. While the current system of funding higher education in the Czech Republic has a number of strengths and the commitment over the past half decade to increase funding is commendable, the financing mechanisms also have several key weaknesses that limit the ability of the higher education system to sustain itself and to maintain or improve its quality.

102. The numerous changes to the funding system over the past ten years have made it more complex and less transparent. There have been many changes in the funding mechanisms since the funding coefficients were established in the mid-1990s. These changes were intended to address weaknesses or gaps in the coefficient structure including the establishment of development programmes in the late 1990s and the more recent creation of incentives for institutions based on the number of graduates. While each modification may have produced improvements, the net result of the cumulative changes is a funding regime in which institutional officials and students find it increasingly difficult to understand the signals that they are being sent. This lack of transparency reduces the effectiveness of the funding system in achieving key policy objectives.

103. Too little attention is paid to using funding processes to address concerns about the relevance of higher education. For the funding policies now in place, there is relatively little emphasis on meeting the emerging societal and economic needs of the Czech Republic: the current system seems more geared to meeting institutional needs. The funding coefficients have changed only slightly since they were first established more than a decade ago and they remain primarily based on cost differentials between fields of study that existed in the 1990s rather than reflecting changing societal priorities such as estimated labour

³² See Salmi, J. and Hauptman, A. (2006) *Innovations in Tertiary Education Financing: A Comparative Evaluation of Allocation Mechanisms*, World Bank (forthcoming).

force needs. These are examples of the tendency of the existing funding system to downplay relevance as a policy priority.

104. While the use of normative costs (coefficients) in the funding formula for higher education is an example of international best practice, other aspects of the current financing model detract from system efficiency. Institutional governance arrangements prevent the strategic allocation of funds within the institution: the effective control of budgets by deans and academic senates means that the signals contained in the government funding formula frequently are not being effectively translated into the internal allocation process within the universities.

Over-reliance on public resources

105. There is too much reliance on public resources to fund needed growth in the future. In 2001, one-eighth of total revenues for Czech higher education were derived from private sources, compared to more than one-fifth for all OECD countries (OECD education indicators, 2005). Even with some increased reliance on private resources in recent years, the Czech share of funding derived from private resources still remains well below the OECD average. In the 2006 OECD *Education at a Glance*, the Czech Republic was one of only four countries in which public resources had grown as a share of all resources for tertiary education in recent years. In terms of fees alone, these represent less than one-tenth of the total resources for Czech higher education, which is once again low by international standards even among countries that have not embraced cost sharing enthusiastically.

106. The level of private resources devoted to tertiary education in the Czech Republic needs to be increased for it to keep up with the continued growth in demand, to meet economic and social imperatives, to enhance quality and to make a greater contribution to research and innovation. The high level of dependence on public resources to fund higher education in the Czech Republic serves as a real constraint on how fast the system can grow and develop in the future. Comparing the experience of OECD and other countries reveals that countries which utilise more of a mix of public and private resources are able to sustain greater growth in higher education than countries which rely solely on public resources. Countries that rely more on a mix of resources are also in a better position to maintain or improve quality in higher education, research and innovation than those that rely solely on public resources to fund their systems.

107. Financing systems also create powerful incentives for behaviour on the part of students and families, on the one hand, and institutions, on the other. Systems of financing in which students do not bear study costs tend to encourage inefficient behaviour on the part of students, such as extended study times. Likewise, public higher education institutions dependent almost exclusively upon public financing have very weak incentives to behave efficiently. Conversely, an element of cost sharing by students alerts them to the economic consequences of their study choices, and fosters a sense of engagement and heightened expectation among students *qua* consumers—as we were consistently told by Czech students enrolled in the fee-paying sector of tertiary education. And, higher institutions that are forced to obtain private resources are subject to a competitive and disciplining environment—one that may be more effective than national funding bodies in creating incentives for productivity gains, flexibility in provision, and innovation.

108. The primary means for increasing the share of private resources is to increase cost sharing in the system through higher fees combined with more student financial aid such as grants and loans to offset the impact of higher fees on students who cannot afford them. Introducing or raising tuition fees for students in state-funded study places is the traditional and most frequently used means for increasing cost sharing: but in a number of countries other fees are introduced or increased in lieu of tuition fees. In Ireland, for example, much is made of not having tuition fees for undergraduates, but there is a registration fee of €800 which most undergraduate students must pay.

109. While debates over fees in most countries tend to revolve around whether fees should be introduced or increased for students in state-funded study places, a number of other fee frameworks exist that might be more relevant to the Czech situation.

Differential fees by level of study

110. It is a common practice in many countries to have fee structures in which groups of students pay different levels of fees: very low or no fees for undergraduates; higher fees for graduate students, international students, and in some instances adult learners. Again, Ireland is a good example of a country that (ostensibly) does not charge tuition fees for undergraduates, but that charges fees for students enrolled in graduate programmes. The introduction of two-cycle Bachelors and Masters programmes across Europe has led many countries to discuss this option. A no or low tuition fee policy for Bachelors programmes could be maintained while charging fees for students enrolled in the new second-cycle Masters programmes (with a mechanism being designed to translate this principle to those disciplines where long Masters programmes continue.)

Expansion of the private sector of higher education

111. A number of countries have encouraged the establishment or growth of a private sector of higher education as a way to reduce dependence on public funds. In some countries in the Middle East and Asia the number of private sector institutions and students has grown particularly in vocational programmes although private universities have been established as well. What is common is that most of the growth in enrolments in these countries has occurred in the private sector while public sector enrolments often remain stable or grow very slowly because additional public funds are not made available. One way to encourage more enrolments in the private sector is to make students enrolling in these institutions eligible for student financial assistance and student loans. Another way to encourage or allow more enrolment growth in the private sector is to facilitate the approval of programmes that meet quality standards.

A dual system of fees

112. A number of countries are moving to systems of dual fees in which most students continue to qualify for highly subsidised places with no or modest fees, while higher 'market-based' fees that are closer or equal to the full costs of study are charged in high demand fields such as business or law. Australia is a prime example of a country that has moved to a dual fee structure in which students participating in the Higher Education Contribution Scheme (HECS) pay (or repay through loans) according to government set fees, whereas all foreign students and a growing number of domestic students pay at much higher rates. Institutions in a number of other countries charge more for market-based programmes than other programmes of study. Many European countries utilise a system of dual fees for students from non-EU countries. A dual system of fees could also be based on the social relevance and priority of different fields of study with high priority fields attracting greater tuition subsidies.

113. Parallel fees are one form of dual fees in which some students qualify for state subsidised tuition fees while other students enrolled in the same classes and fields of study are charged fees that are more cost-based or market-based.

114. These parallel fee structures exist or have existed in a number of Central and Eastern European countries; in many instances, these parallel fees flow directly to and are retained by institutions whereas whatever fees are charged to students in state-funded seats flow back to the government. This explains their popularity with institutional officials as they represent one of the few viable means available for institutions to increase their revenues and retain these increases. This kind of parallel fee structure is in place in the Czech Republic as 7000 life-long learning students pay higher fees than the day students they

share classrooms with. These parallel fee structures, however, are inherently inequitable as they charge different fees to students enrolled in the same courses. For this reason, the review team does not recommend parallel fees.³³

115. These options for increasing private revenues through the introduction of tuition fees are not mutually exclusive. For example, a country could introduce a system in which students in Masters programmes are charged higher fees than students in Bachelor's programmes; students in high demand/lower priority fields of study are charged fees while students in higher priority/lower demand fields of study are charged lower or no fees at all; and in which policies are introduced to encourage increased enrolments at private institutions that meet quality standards.

116. A final mechanism – largely unrelated to tuition fees - for increasing private financing of higher education that is used in a number of countries is to provide incentives for industry to increase support of university research and employment-related training. This represents an important source of private resources for higher education in a number of countries, one which the Czech Republic should emulate to the maximum extent possible. This important avenue for increasing private resources is further explored in the section of this report devoted to improving research and innovation.

The use of funding to stimulate equitable access

117. One of the key objectives in most countries is to use financing mechanisms to stimulate both higher levels of participation in higher education and to improve the equity of access among different groups of students. In the Czech Republic, less priority seems to have been placed on these objectives than in many other countries. This challenge is addressed in the following chapter on access and equity.

Reforms of Financing Mechanisms

118. The review team believes that the weaknesses of the existing financing mechanisms as described above can best be addressed through reforms to three key aspects of the funding system: updating and streamlining the institutional funding mechanism; increasing the contribution from private resources; and increased funding for and commitment to student financial aid.³⁴

1. Updating and streamlining the institutional funding mechanism

119. The overall institutional funding mechanism should be modified and streamlined to make it more transparent and more relevant. While the current financing mechanism has a number of strong components that are in line with international best practice, these improvements have been achieved at a cost of higher levels of complexity and less transparency. The current financing mechanism is also not well designed to recognise issues of relevance and to make the system more responsive to emerging societal and economic needs. One way to improve and strengthen the existing financing arrangement is to streamline certain features and to make it clearer to various stakeholders how the model is intended to work. This would require the following changes.

- Update and modify the funding coefficients to reflect changes in normative costs since they were first established in the early 1990s and to reflect the emerging societal and economic needs of the Czech Republic. This will require areas of study determined to be of high priority to be funded at

³³ The review team hopes that its recommendations on private contributions will result in a reduced reliance on parallel fees in the Czech Republic in the future.

³⁴ It is beyond the scope of this Country Note to specify in detail how these reforms might be implemented. In these recommendations the review team focuses on broad principles and directions of change.

higher levels through a process of consultation with key stakeholders that is based on data collected on current and emerging labour force needs and other critical societal indicators.

- Reform of institutional governance that gives rectors and institutional governing bodies greater authority to set priorities and to allocate public funds according to institution-wide priorities rather than merely to pass the funds on to faculties using the same set of criteria as in the formula (see the recommendations in Chapter Four).
- Consolidate the component that funds institutions on the basis of the number of graduates into the overall funding formula. The graduate-based component is currently separate from the basic funding formula and consolidating it with the rest of the funding formula will increase transparency and reduce complexity.

2. Increasing the contribution from private resources

120. The Czech higher education system simply cannot afford to continue to rely on such a high proportion of its income being allocated from public resources if it is to meet the long-term goals that the Czech Republic expects it to. One of the major recommendations of the review team is that the proportion of higher education expenditure financed from private resources should increase progressively over time. Two key mechanisms are proposed: a broadening of the range of students who make a private contribution towards the costs of study; and increased support from business and industry for higher education. The additional resources generated in these ways should be used to facilitate continued growth,³⁵ to improve equity, to enhance quality, and to improve performance in research and innovation within Czech higher education.

121. All students in public higher education, insofar as they are able, should make some contribution towards the costs of their study.³⁶ This contribution should vary on the basis of the following criteria:

- the contribution should be lowest for students enrolled in short-cycle and specialist diplomas, be higher for Bachelors degrees, and be highest for students in Masters programmes³⁷;
- within programmes at the same academic level, a range of private contributions should apply with the lowest contribution set for study programmes identified by the Ministry as being in priority fields of high relevance, and the highest contribution set for study programmes identified by the Ministry as high demand programmes where the economic returns to graduates are high;
- the contribution at all academic levels should vary according to the socio-economic position of students through the operation of a significantly improved and expanded student financial aid system (see below and in the following chapter).

³⁵ The *Background Report* indicates that a significant reduction in the size of the traditional university age cohort is expected over the next decade. At the same time all of the key policy documents stress the importance of adult and life-long learning. In this context the review team is convinced that the increased funding it proposes is essential for growth as well as for the other factors mentioned.

³⁶ Students from the poorest families and disadvantaged target groups will have their private contribution met from public sources (see the following chapter).

³⁷ As indicated earlier the review team can not provide detailed implementation guidelines – the questions of long Masters degrees and PhDs need to be addressed.

122. The review panel recommends that these personal contributions be phased in progressively as new cohorts of students enrol, and that decisions on the starting and final contribution levels, as well as on the name to be given to these contributions, should be taken by the appropriate level of government after wide consultation.

123. Enrolments in private higher education institutions also should be encouraged. This should be done through streamlined and appropriate programme accreditation and planning approval procedures (see Chapters Three and Nine) and through the provision of student financial aid to eligible students at private institutions (see Chapter Six).

124. To assist in the wider use of private funding, tuition fees paid to private institutions should be given beneficial tax treatment (through tax deductions or credits), as should charitable contributions to these institutions.

125. Incentives should be provided to encourage business and industry to increase their support of university research and employment-related training. The proportion of Czech higher education research supported by industry and other private sector organisations (5.1 percent) is low relative to that of its highest performing neighbours (10.3 percent). The Ministry should therefore give priority to its discussions with the Ministry of Finance (see *Higher Education Reform Policy*, 2004) on employing policy mechanisms that encourage business and industry to increase their support of basic and applied research as well as other commercial revenue producing activities. These mechanisms could include matching grants, tax incentives and accelerated regulatory procedures.³⁸

3. Increased funding for student financial aid

126. The proportion of public funds devoted to student financial aid should be increased to enhance access and improve equity. While a primary recommendation of the review team is to increase the private resources for higher education by broadening the range of students who make a private contribution towards the costs of study, an equally important recommendation is to expand substantially the student financial aid available to Czech students to offset the adverse effects for students who cannot afford this. This recommendation is discussed in greater detail in the following chapter on improving access and equity.

³⁸ This approach to greater reliance on private resources is also addressed in the chapter on Research and Innovation.

CHAPTER SIX: ACCESS AND EQUITY

“The social composition of students still constitutes a major problem in terms of access to education in the Czech Republic, as rates of participation of children from various social groups vary significantly. This is why, along with continued expansion of higher education opportunities, additional measures will be adopted aiming to increase the proportion of students from non-traditional social groups so as to ensure that the composition of students is brought more in line with that common in developed West-European countries.”

(Long-Term Plan 2006-2010)

Introduction

127. Access and equity of access can be important issues of public policy in almost every country. The issue of access typically is described in terms of what percentage of the relevant population participates in higher education. The question of equity of access relates more to the question of differences in participation rates among groups of students – by gender, ethnicity, and most frequently, socio-economic status of students and their families.

128. Czech participation rates in tertiary education have lagged behind most OECD countries. Despite rapid increases in enrolments in the second half of the 1990s of roughly 6 percent per year, the Czech Republic ranked well below the average participation for OECD countries at the turn of the century. For example, of Czechs 25-64 years of age, only 12 percent had tertiary education qualifications in 2001 (*OECD Education Indicators, 2005*). This was half the rate for OECD countries with the Czech Republic ranked 26th of 30 OECD countries reporting this statistic. For the population 25-34 years of age, 12 percent of Czechs had tertiary qualifications, compared to 29 percent for OECD countries (29th of 30). Even with rapid increases in student enrolments since 2001 -- with average annual increases of roughly 8 percent -- Czech participation rates still lag behind those in most other OECD countries.

129. Given the comparatively limited participation in tertiary education, how equitable or inequitable is the Czech tertiary education system? Data from the 1998 Second International Survey of Adult Literacy, which permitted examination of the relationship between father's occupation and tertiary study, show that persons with fathers from a professional background were 3.1 times more likely to have participated in tertiary education by the age of 35—a disparity lower than that of Poland (4.0) or Hungary (3.9), but substantially higher than that of either the US (2.0) or Finland (1.4).³⁹ More recent data from the European Social Survey (ESS 2) confirm the persisting inequality of the Czech educational system.

130. Notwithstanding the substantial expansion of enrolments in Czech tertiary education over the past decade, the relationship between social background and tertiary enrolment remains strong. For example:

³⁹ Mateju, Rehakova, and Simonova, *Transition from Secondary to Tertiary Education: Communist and Post-Communist Patterns in Inequality*, 2004.

- About six out of seven upper secondary graduates whose parents are also upper secondary graduates aspire to tertiary study, while only one out of two whose parents did not obtain a secondary school certificate shares this study aspiration.
- The rate at which applicants gain entry to tertiary education is also highly correlated to social background. Among students of “high aptitude,” 80 percent of those whose parents had completed higher education were admitted, while 62 percent of those whose parents had less than a secondary school leaving examination were successful.
- Those who are from the lowest socio-economic quintile comprise less than 10 percent of higher education students, while those from the highest socio-economic quintile comprise 35 percent of all higher education students.⁴⁰

131. In addition to concerns about equity with respect to social background, concerns about equity have also been raised with respect to persons with physical disabilities, young persons from Roma families, and women. While the government has funded projects with respect to physically disabled students, it is not possible to characterise the state of access, or analyse or evaluate these initiatives, given the absence of data and research with respect to physically disabled students.⁴¹ Only a trace of those students enrolled in the Czech higher education system - an estimated two hundredths of one percent of total enrolment - is comprised of Roma students.⁴² The near-absence of Roma students from tertiary education is rooted in the fact that less than 5 percent are estimated to complete secondary studies. Finally, equity with respect to gender in the Czech Republic presents a mixed picture. Female participation rates in upper secondary and tertiary study are higher than those of males. However, women’s advancement into senior academic ranks and into higher education administration is quite limited when compared to that of many OECD member countries.⁴³ However, the bulk of attention has focused on equity with respect to social class, to which we now turn.

132. Inequity with respect to social background has been rooted in two characteristics of educational policy in the Czech Republic: 1) limited opportunities, relative to both ability and social demand, to enter both secondary courses that qualify students for tertiary entry and to tertiary study itself; and 2) the limited financial and social support systems that are currently available for students from underrepresented groups who seek to enrol in tertiary study.

133. Looking *forward*, it is apparent that the Czech tertiary system is approaching a mass system of education—but with persisting inequality. The Czech Republic is not alone in this; many tertiary systems have undergone significant expansion without narrowing inequities in participation. This is the case because much of the inequity found in tertiary systems is rooted in social and cultural factors experienced early in life, and deeply rooted by the point of secondary and upper secondary education. The amelioration of the inequities cannot be addressed simply by actions taken within the scope of tertiary education, but also needs to be addressed through other interventions that aim, for example, to shape the aspirations and expectation of young people whose parents have not themselves completed upper secondary or tertiary education.

⁴⁰ *Background Report*, Table 6.4, from Mateju *et al.*, 2004.

⁴¹ *Background Report*, paragraph 210, p. 49.

⁴² *Background Report*, paragraph 208, p. 49.

⁴³ About ten percent of full professors in the Czech Republic are women, a rate comparable to that of Japan, and far lower than that of the Sweden (16), the United States (18) and Finland (22 percent). Likewise, in the important role of dean, 0.05 of those holding this appointment in the Czech Republic are women.

Study Opportunities

134. International comparisons show a clear relationship between access and equity: the fewer the number of study places relative to the size of an age cohort, the less likely young people from disadvantaged family backgrounds are to be included among the student population. Thus, systems that meet demand for tertiary study places - whether through public financing, largely private financing, or mixed funding - are more equitable than those that do not meet demand.⁴⁴ Put another way, international experience suggests that expansion of tertiary education opportunities through the expansion of supply tends to benefit all groups of students.

135. As the OECD has noted in its recent work on the Czech Republic,⁴⁵ the Czech system of secondary education provides a limited set of study places in its secondary education system that ready students for entry to tertiary education. The supply of gymnasias and secondary technical study places that provide the bulk of opportunities for entry to tertiary education is constrained - relative to student demand and to student ability. As Koucky (2004) and Munich (2005) show, access to multi-year *gymnasia*, viewed as a privileged vehicle to university access, appears to be more closely linked to family background than academic ability. Detailed analysis of PISA results by Munich (2006) reveals that the mismatch between the preferences and abilities of secondary students and the supply of study places that would prepare upper secondary students for higher education has both a strong gender and regional dimension.

136. The proportion of secondary graduates holding a secondary school leaving certificate, the *maturita*, has increased from less than 45 percent in 1995 to more than two-thirds in 2005. However, for those who do obtain the *maturita* a study place in tertiary education may not be available. While both study places at public and private higher education institutions have expanded in recent years, the Czech system of tertiary education is different to that of some OECD member states, such as Japan, the United States or the Nordic countries, in which the supply of study places is roughly equivalent to demand. In the Czech Republic the rate of admission to higher education institutions is approximately 58 percent. The rate for public universities - 55 percent - is much lower than that for private higher education institutions - 88 percent. Equally important, the rate varies widely by field, ranging from less than 20 percent (e.g. law) to 72 percent (in technical fields). The rate of admission to tertiary professional schools (*vyssi odborné školy*) is about 65 percent. Whether the expansion of study places in private higher education institutions and tertiary professional schools, in combination with the expansion of public university enrolment capacity, fully meets demand cannot be answered. This requires integrated student-level application and admission data for all public and private higher education institutions and tertiary professional schools, which are presently unavailable.

Financial and social support systems for students

137. Young persons may not aspire to study, may choose not apply to study, or may begin their studies but fail to complete them because they expect to be (or, are) unable to meet the costs of study. Thus, one of the major mechanisms for countries to enhance access and increase the enrolment of under-represented groups is the provision of financial and social support to students. Current state support to students in the Czech Republic includes:

- Modest levels of financial support are provided to students who attend institutions far from their homes, doctoral students, and some others. In 2005, the government spent roughly one billion CZK to subsidise student accommodation and meals, some 6 percent of the nearly 17 billion

⁴⁴ Mateju, *Tertiary Education: Models of Financing, Opportunity, and Participation in International Comparative Perspective*.

⁴⁵ *Getting Education Right for Long-Term Growth in the Czech Republic*, OECD Working Paper 497, 2006.

CZK state budget for HEIs (Background Report, Table 7.9). Similarly, in 2002, 7 percent of public funding for higher education in the Czech Republic was provided in the form of scholarships and other grants to households, compared to the OECD average of 9.2 percent. This placed the Czech Republic 17th of 26 OECD countries.

- The principal source of support for students in the Czech Republic is the system of social welfare available to the general population, which provides health care, basic income maintenance and other services on a non-contributory basis to young persons enrolled in tertiary study until they reach the age of 26.
- Public support of meals and accommodation has traditionally been provided in the Czech Republic in the form of subsidised charges for all students who used these services. Beginning in 2005, however, that support system was modified so that these subsidies for accommodation will now be primarily available on the basis of the distance away from the family residence of the student.
- No student loan programme of any magnitude exists in the Czech Republic, perhaps reflecting the tradition of no or low fees being charged at most HEIs. But there are active discussions and recommendations for implementing a student loan programme as part of any effort to introduce or expand tuition fees in the Czech Republic.

Strengths of the Tertiary System Concerning Access and Equity

138. As we note elsewhere in this report, there has been a substantial widening of tertiary study opportunities in the Czech Republic: the number of students enrolled in Czech tertiary institutions grew *by nearly 50% from 2000 to 2005 and roughly doubled from 1995 to 2005*, and for this substantial expansion of study opportunities, the Czech Republic is to be commended.

139. Although the proportion of public funding devoted to student support is relatively modest by international standards, the current financing structure contains a number of features that are positive for improving access and equity.

140. The recent decisions to modify housing support to reflect travel distances represent a positive step to target assistance more at those who need it. Many international observers would view the traditional Czech approach of the government subsidising the price of all students living in government provided housing as inequitable in that students from families of all income levels receive the same degree of subsidy. Thus, the recent decision to make these subsidies more available with students travelling the furthest receiving the highest priority is a positive development.

141. The recent creation of a scholarship programme for low-income students also represents a big step forward on the equity front. The fact that public support for scholarships has been modest in the Czech Republic and that little effort was made to target these scholarship funds at the students with the greatest financial need were weaknesses in terms of equity.

142. The social support system provides a broad safety net for students enrolled in higher education. A primary reason that Czech policy makers may have felt justified to limit the amount of resources devoted to scholarships is that the social support system is made fully and freely available to Czech higher education students between the ages of 18 and 26.

Weaknesses of the Tertiary System Concerning Access and Equity

143. While the features described above represent important strengths and recent improvements in the Czech effort to promote access and equity, there are also several features of the system that may merit improvement.

144. First, the review team is struck by the weak integration of planning, policy, and analysis between systems of secondary and tertiary education—an observation, we should note, that is shared by the Ministry itself (in its SWOT analysis prepared for its *Long-Term Plan*), and a characteristic that is shared by many other OECD member countries.

145. Despite the fact that improving equity is a high priority in the *Long-Term Plan 2006-2010*, the level of financial commitment to improving equity in Czech higher education appears to be low. A relatively small share of public funds is set aside for grants and scholarships, and this is low by international standards. This low level of commitment may be in part a function of the low level of inequality in the Czech Republic when compared to many other countries in the region and throughout the world.⁴⁶ The recent decisions to modify housing support to reflect travel differences of students and to increase funding of scholarships are both positive steps, but much more needs to be done to achieve greater equity.

146. The institutional commitment to improving equity also appears to be low. With little or no incentive to do so, institutions provide relatively little in the form of student support. The equity issue does not seem to be on the radar screen of most institutional representatives. In discussions with senior institutional staff during the OECD visit, the issue of improving equity was rarely raised. Even when asked whether equity was a major concern in Czech higher education, there was little interest in discussing the issue or in recognising the lack of equity as a problem.

147. The absence of a student loan programme makes it difficult to contemplate greater reliance on private contributions towards the costs of tertiary education in the Czech Republic. If a decision is taken to extend private contributions to a broader range of students it is essential that a student loan programme is in place to help students and their families meet these additional costs.

148. The weaknesses of current efforts to address access and equity concerns should be addressed by the government providing a higher proportion of public funding for student support and by taking concrete steps that encourage institutions to do more to improve equity as well. The review team recommends that this be done through the following six mechanisms.

Recommendations

1) Focus on Raising Aspirations

149. Draw upon international experience with interventions aimed at raising academic aspirations among young people whose families have no history of tertiary education, such as the United Kingdom's Aim Higher initiative, to develop a similar intervention strategy in the Czech Republic. Track changes in motivation and aspirations through social surveys, and make this work part of the larger portfolio of the coordinating body, described below.

⁴⁶ The Czech Republic has one of the lowest Gini coefficients in Europe.

2) Strengthen Coordination between Secondary and Tertiary Education

150. The Czech Long-Term Plan for Higher Education Institutions for 2006-2010 calls for the reinforcement of cooperation between secondary schools and higher education institutions. To this we would add a recommendation that representative bodies and policy officials from both sectors engage one another to jointly address key equity questions of common concern to both secondary and tertiary education. These might include, for example:

- (a) are the *number* of study places in tertiary education sufficient to meet the demand among those who seek to study, and are qualified to do so?
- (b) has the tertiary system created the *right kinds* of study places to meet the needs and aspirations of secondary graduates as well as critical labour force needs?
- (c) to what extent does the country's secondary curricula and assessment provide a basis for successful tertiary study?

Supported by a small secretariat and MEYS development funds, such a collaborative body might be able to identify key opportunities for equity improvements through improved coordination.

3) Need-Based Scholarships

151. A scholarship programme for living expenses should be established for students with both high need and high merit, and for groups of students identified as most at-risk such as Roma students. The criteria for determining both need and merit should be developed by the Ministry in consultation with relevant stakeholders. The most direct way to increase the commitment to equity in the Czech Republic under the existing financing structure is to increase the public funding for scholarships for targeted groups of students. Students enrolled in both private and public institutions should be eligible for these need-based scholarships.⁴⁷

152. Alternatively, the recently established need-based scholarship programme could be substantially expanded. At present, only about five percent of Czech students are eligible for support under programme eligibility rules. Eligibility for the programme could be linked to a much higher level of social benefits, doubling the scope of the present programme. This expansion could be supported out of new revenues, or economies achieved elsewhere in the higher education budget, e.g. through improved targeting of meal and accommodation subsidies.

4) Increase Institutional Waivers of Private Contributions from High Need Students

153. The introduction of private contributions for all students at public HEIs (see Chapter Five) should be accompanied by a government requirement that institutions waive all or a portion of these contributions for students who can not afford these. In many countries, it is often not recognized that increasing private contributions can be an engine for equity by creating more resources and more study places at a wide range of public HEIs: but this strategy only works if sufficient aid is provided to offset the effects of higher costs for students who cannot afford them. In many countries, student loans are presented as the primary means for helping students and their families pay for higher contributions under greater cost sharing

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These scholarships would need to meet all of the living costs not currently covered by social security benefits and vouchers for accommodation and meals. They would not cover the proposed private contributions to the cost of study at public institutions which are dealt with in the following recommendation.

arrangements, but the most effective way to combine greater cost sharing with more financial aid is to require HEIs to waive these private contributions for targeted groups of students. To help ensure that sufficient waivers are provided, the government should set aside funds to reimburse HEIs for the costs of the waivers for designated students. As in the national scholarship programme described above, the criteria for which students qualify for contribution waivers should be developed by the Ministry in consultation with relevant stakeholders. The eligibility criteria should be broad enough to ensure that students who legitimately need or deserve such assistance will benefit but narrow enough to ensure that sufficient net revenues are produced to allow for growth and improvement in the tertiary education sector.

5) Create Graduate Equity Incentives

154. To promote greater levels of success among disadvantaged groups of students, incentives should also be made available to institutions to increase the numbers of graduates from disadvantaged groups eligible for the scholarships and private contribution waivers proposed above. As noted in Chapter Five, the government has already made a commitment to promote success by funding HEIs in part on the basis of the number of students who graduate. To ensure that this funding incentive has an equity component, it should be modified to encourage institutions to graduate more disadvantaged students by increasing the graduation premium for such students.

6) Develop a Plan for Implementing a Student Loan Programme

155. A student loan programme should be established that would provide the broader range of students who will be expected to contribute to the costs of tertiary education the option to borrow these funds. Most countries that expect significant private contributions to tertiary education have a student loan programme to help students and families meet these costs. But student loan programmes typically take much time to implement and often suffer from low repayment rates or high subsidy levels that reduce their cost effectiveness. A system of contribution waivers as described above at least in the short term can be a more effective way to implement cost sharing strategies than student loans by allowing for increased resources to flow to institutions without waiting for loan programmes to take effect.

156. It would nevertheless be desirable for the Czech Republic to assess the possibility of establishing a loan programme to help meet the needs of students and families who do not qualify for contribution waivers but still need help in meeting the cash flow requirements arising from higher private contributions to the costs of study. Students studying at both public and private tertiary education institutions should be eligible for such means-tested loans.

157. International experience should be carefully considered in the development of the student loan programme in the Czech Republic. One model is that of the Australian Higher Education Contribution Scheme (HECS). There is much to recommend the Australian approach to student loans. It allows introduction of tuition fees without imposing up-front fees on students and families. Instead, the government finances the tuition fees by paying institutions out of public funds at the time students enrol, and the government being repaid through the tax system once students have completed their education. Australia has successfully used HECS to become a mass system of higher education with more than half of recent cohorts of high school graduates participating in some form of tertiary education.

158. But the Australian approach has its limitations, and it is appropriate in certain circumstances. For one, it requires a tax system with a relatively high degree of compliance. Without such a tax system, the repayments are unlikely to achieve necessary levels to be credible and financially sustainable. Perhaps more importantly, it is very expensive for governments to take on the responsibility of paying fees initially until repayments are made — while at the same time providing teaching and research funding to public higher education institutions. Even a country as wealthy as Australia has discovered how much strain such

a system places on government funds, and it has had to reduce the level of subsidy provided both by increasing the level of fees and reducing the level of income exempted from making repayments.

159. Czech officials should factor this Australian experience into their consideration of what kind of student loan programme makes the most sense and is most sustainable in the Czech context. They should also consider other student loan models that may be more appropriate. The experience with student loans in New Zealand is one such possibility. It has gone from a system at the beginning of the 1990's that effectively charged no tuition fees to one in which fees now represent about one-third of the costs of educating students, roughly the same level as in Australia. New Zealand is also like Australia in that it relies on the tax system to collect student loan repayments as a percentage of the borrowers' income after completing their education. But unlike Australia, students in New Zealand or their families pay the fees initially and then have the option to borrow if they choose. While there are many concerns with the New Zealand student loan programme – including that debt burdens have mushroomed over the past two decades and that it creates incentives for borrowers to work abroad to avoid making student loan repayments – its many strengths have much to recommend it to the Czech Republic, especially if the tax system is robust enough to collect a significant portion of scheduled repayments.

CHAPTER SEVEN: LABOUR MARKETS AND TERTIARY EDUCATION IN THE CZECH REPUBLIC

“The employability of graduates of higher education institutions is considered to be one of the most important indicators of the quality of the institutions’ academic performance... (.) The Ministry...will monitor trends in the unemployment of graduates and the supply of jobs... (.) Based on this data an overview of degree programmes will be continuously updated focusing on the employability of graduates and trends in employers’ requirements for graduate profiles. The aim is to help higher education institutions respond to labour market needs.”

(Long-Term Plan 2006 – 2010, p.17)

Background

160. Education and training systems are linked to working life in two principal ways. First, they are linked by wages, which provide signals to students and families that shape their human capital investment decisions. They are linked, additionally, by public policies toward education and training institutions. Public authorities create, fund, and regulate educational institutions, and through their policy choices shape the supply of workers with tertiary qualifications; the kinds of skills and capacities that tertiary institutions aim to provide graduates; and the links among tertiary institutions, firms, professional associations, and other labour market institutions.

161. In the Czech Republic both public policies towards education and training institutions and the role of labour markets have undergone fundamental changes since 1989. Prior to 1989, education was a state monopoly shaped by central planning. Study places, particularly in general upper secondary education and tertiary education, were quite limited relative to demand, and the allocation of students to study places was the result of quotas set in central plans, student abilities, and political considerations—rather than parental and student preferences.

162. These characteristics of the Czech system reflected not only the legacy of central economic planning, but also an older vision of education-labour market linkages rooted in a central European model of learning and work, shared with neighbouring states including Austria, Switzerland, Germany, and Hungary. Common to these systems was the selection of students for academic or vocational education at an early age, the prevalence of vocational rather than general or academic education at the secondary level, a combination of school and work-based learning as a key feature of this education, and an occupational labour market (as distinct from an internal labour market). Upper secondary academic education—and entry to tertiary education—were characteristically the preserve of a comparatively small number of elite students who were thought to display a special aptitude for the rigours of education in a Humboldtian university.

163. Wages, in turn, were typically set according to a centrally planned wage grid, and earning distributions were highly compressed. During the era of central economic planning, the allocation of labour and the education system were not linked as might be the case in a market economy, where human

capital investments are shaped according to signals provided by wages. In large part, the education system was “decouple[ed] from education-related pecuniary rewards.”⁴⁸

164. After the Velvet Revolution important changes were introduced to the education system, into the institutions of labour allocation, and in the relationship between them. Owing to the emergence of labour markets, highly compressed wage distributions widened significantly. By one estimate the rate of return to one year of tertiary education rose from 2.7 percent in 1989 to 5.8 percent in 1996.⁴⁹ Other estimates of the increasing rate of return show similar results for the Czech Republic during the period. Rising pecuniary rewards to tertiary schooling and increasing social demand for study places in upper secondary academic programmes and at the tertiary level were not fully met by increased supply; rather, both remained limited. As recently as 1995, 16 percent of upper secondary students were enrolled in academic study programmes, as compared to the OECD average of 47 percent. Moreover, though rates of entry to tertiary education rose, they remained well below those of the OECD average.

165. Throughout the 1990’s the persistent imbalance between demand for and supply of tertiary study places was keenly debated, and linked to arguments over the role of private financing and private institutions in Czech tertiary education.⁵⁰ The policy issues at the heart of this debate were not fully resolved. However, demographic change and policy choices have altered somewhat the balance between demand and supply.

166. A large decline in the absolute size of school-age youth age cohorts has permitted a much larger percentage of students to obtain the *maturita* certificate. Between 1995 and 2000 the share of students completing secondary education with a *maturita* rose from 39 percent to 49 percent, while the proportion of students completing their studies with a vocational qualification (*vyucenim*) fell significantly. Policy choices have increased the number of enrolment places in public university institutions that expanded from 89,000 in 1990 to 236,000 in 2003 (exclusive of distance learning programmes). Moreover, some further enrolment capacity was added through the development of non-university private tertiary institutions.

167. Falling age cohorts and expanding enrolment capacity have resulted in an increase in the proportion of applicants who succeed in enrolling in a tertiary institution: the rate rose from less than 50 percent in 1991/1992 to nearly 60 percent one decade later.⁵¹ The Czech tertiary participation rate has also risen. Between 1995 and 2004 the Czech Republic experienced the fourth swiftest rate of increase in tertiary participation among OECD member countries, an increase of nearly 200 percent.⁵²

168. In spite of an increase in student numbers and participation rates, employment rates and the wage premium associated with tertiary study have remained quite strong. New graduates do take a bit longer than peers elsewhere to find work, though this appears to be the result of labour market rules that require new graduates to be given indefinite employment contracts. Rates of employment among male tertiary type A graduates (ages 25-64) are higher than the OECD average, and among females equal to the OECD average. Wages of tertiary graduates relative to those with secondary qualifications are higher than in any other OECD member country, save Hungary. Among those between the ages of 30 and 44, graduates of tertiary type A programmes earn 191 percent of the wages of upper secondary graduates, while those with

⁴⁸ *Human Capital in Transition, Czech Students and Workers Adapting to the Market*, CERGE-EI, p. 60.

⁴⁹ *Ibid*, pp. 25-26.

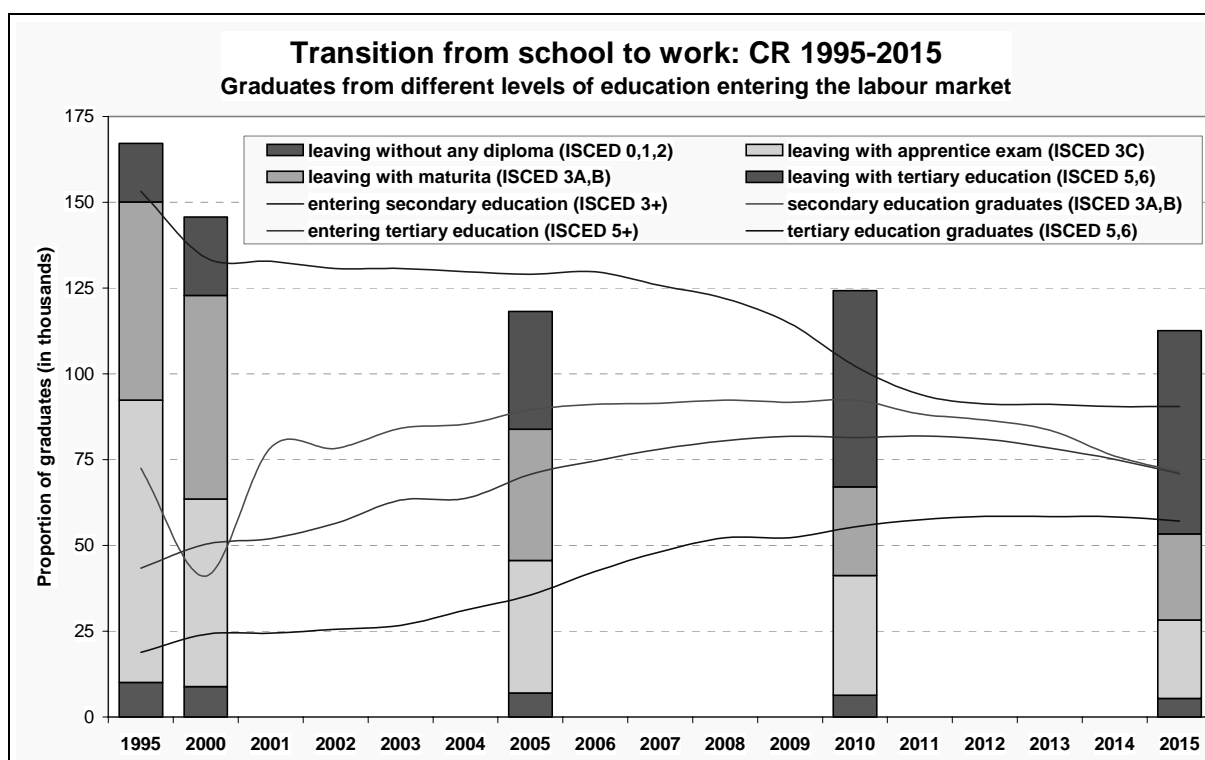
⁵⁰ See, for example, “The system of tertiary education and the causes of its current crisis,” in *On the Road to the Knowledge Society*, ISEA, Prague, 2005.

⁵¹ Figure 1, p. 3, *Tertiary Education in the Czech Republic: Main Trends and the Causes of the Current Crisis*, 2006.

⁵² *Education At A Glance*, 2006, Chart C2.2, p. 275.

tertiary type B qualifications earn 145 percent of upper secondary graduates. Estimates of the private internal rate of return to tertiary qualifications calculated for 2002 point to a return of approximately 9 percent for men and 10 percent for women.⁵³ This compares to an EU-14 average rate of return of 8.78 percent, according to recent calculations.⁵⁴

169. The tertiary system is now fundamentally different in scope from the elite Humboldtian system of decades past, and it is fundamentally different in its relation to the labour market, since it is no longer simply a supplier of an elite who occupy a small number of learned professions. Rather, as the figure below shows, by the end of this decade a majority of those who transition from education and training to work will be moving from tertiary education to the labour market, making the Czech tertiary system the principal supplier of training for the Czech workforce. We question whether the supply of tertiary graduates is fitted to the demands of the Czech economy, and whether the tertiary system provides graduates with an education that is suited to working life.



Source: Education Policy Centre, Charles University.

Tertiary Connections to the Labour Market: Strengths

170. The institutional and policy framework linking Czech tertiary institutions to labour markets has key strengths at the institutional and at the national policy level that need clearly to be acknowledged.

⁵³ Earnings in the Czech Republic 1988-2002: Changing Disparities and Their Structure, Jiri Vecernik, GDN Research Project RRC V-37.

⁵⁴ De la Fuente, A., and J.F. Jimineo, "The Private and Fiscal Returns to Schooling and the Effects of Public Policies on Private Incentives to Invest in Education: A General Framework and Some Results for the EU," CESifo Working Paper No. 1392, 2005.

171. First, some of the Czech Republic's public higher education institutions—or individual faculties within institutions—contain academic programmes in which teaching and research are deeply and closely connected to working life. The Institute of Chemical Technology in Prague, for example, exemplifies the combination of research-led teaching and close connections to professional life characteristics of Europe's best technical universities. Research collaboration between the Institute's Faculty of Environmental Technology and Unipetrol has permitted its Masters and PhD students to join thesis and dissertation topics to consulting opportunities. Likewise, in implementing the Bologna 3-cycle degree structure, the Institute worked closely with industry in identifying the kinds of training and competencies that should be characteristic of Bachelor degree graduates. Its Faculty of Food and Biochemical Technology, for example, collaborated with Unilever in the development of its Bachelor degree programme, now offered both in Prague and Most.

172. More difficult, of course, is the development of similar links between academic programmes and working life in fields outside of engineering or other study fields that are intrinsically vocational in orientation, or where large research-intensive firms do not exist. Nonetheless, robust connections mark programs in other institutions and faculties. For example, the Faculty of Philosophy at the University of Jan Evangelista Purkyně has developed a Bachelor study programme in historical sciences that features collaboration with regional and national institutions of historical research, archives (in Prague and Litoměřice), museums and institutes (e.g. in the City Museum and the National Institute for Cultural Heritage in Ústí nad Labem), and the Academy of Sciences of the Czech Republic.

173. A stronger orientation towards employability and the labour market outcomes of graduates is typically found outside the public university sector, both in the Czech Republic's private non-university higher education institutions (*vysoká škola*) and in its tertiary professional schools, which together comprised 16 percent of all enrolments in 2005-2006. Those visited by the review team have developed a quite explicit focus on the provision of education oriented toward working life, close working relationships with small to medium-sized employers and service sector partners, and detailed (though informal) knowledge of the labour market outcomes of graduates.

174. The national policy framework developed by the Ministry of Education, Youth, and Sports over the past two decades contains some elements that steer tertiary education institutions towards greater engagement with employability and labour market outcomes.

- The Czech Ministry of Education, Youth, and Sports has clearly signalled its concern in the Long-Term Plan. It has identified “the employment of higher education graduates, collaboration between HEI and their regions and various employers, and the interconnection of theory and practice in higher education studies as priorities of major importance.” In addition, it states that the employability of graduates is one of the main indicators of quality in higher education.⁵⁵
- The Ministry has given concrete support to concerns of employability through its use of financial support provided through its Development Programmes. For example, the Ministry has funded a project led by the Centre for Higher Education Studies, Cooperation between Higher Education Institutions and Industrial and Service Enterprises, which brought HEIs and industry representatives together to focus on the employability of graduates from bachelor degree study programmes in natural sciences, engineering, and business programmes (Background Report, p.24). Moreover, it has established standing priorities for the use of the Development funds that focus on student training, regional collaboration, and enterprise collaboration.

⁵⁵ *Background Report*, p. 25.

- The Ministry has reviewed—though not adopted—the use of labour market outcomes as a parameter in its funding methodology for public university institutions. Its willingness to consider this shift indicates the seriousness with which the Ministry is reviewing the labour market linkages of its tertiary system.
- The Ministry has initiated a project “Employability Of Higher Education Graduates On The Labour Market”, covering both the position of all university graduates and the position of new graduates just entering the labour market, and offering data on graduate unemployment by HE institutions and faculties. The project has also included the Czech participation in the new international survey “The Flexible Professional in the Knowledge Society, New Demands on Higher Education in Europe (REFLEX)” conducted for the European Commission (in 2005-2007).

Tertiary Connections to the Labour Market: Weaknesses

175. In spite of these commendable strengths, both the institutional structure of Czech tertiary education and its policy framework are marked by important shortcomings with respect to labour market engagement.

Institutional Structure

Insufficient Quantity

176. There remains the question of the balance between demand and supply in tertiary education. While this has been muted by the combined effects of expanding study places and shrinking age cohorts, it merits continued attention. Based upon the evidence of student applicants who are ostensibly qualified for study (i.e. who hold a *maturita*) and fail to obtain a study place—and the continued strong wages of those who complete tertiary studies—there is reason to believe that expansion of supply may not yet be fully sufficient to meet the demand of students or employers.

Fitness for Purpose

177. The institutions that make up the Czech tertiary system are not yet fully suited to the challenge of providing its students with education and training suited to working life. As indicated elsewhere in this report, Czech public universities are rooted in a strongly Humboldtian tradition, and the careers of Czech academics are characterised by “strenuous career requirements” typical of this university tradition. The combined effect of the two is to create a set of university institutions that are typically—though not always—strongly inward-looking in focus, rather than facing outward toward the wider society, including working life. It must be acknowledged that some Czech public universities with a strongly regional and technical orientation appear to have strong connections with working life. However, meetings with administrators, professors, and students at public university institutions left the review team with the impression that some areas of study and some faculties have much weaker engagement with employers - e.g. in the development of study programmes - than is commonly found in other university systems. While other tertiary institutions exist, including tertiary professional schools and non-university higher education institutions, they are not yet sufficiently developed to meet the needs of the Czech society and economy.

178. Viewed in their entirety, the tertiary system of the Czech Republic has a comparatively limited set of institutions engaged in producing graduates who are fitted to the demands of working life—limited in student numbers, social standing, and institutional capacity. This is the case whether one compares the Czech Republic to systems that have a formal binary division between university and polytechnic institutions, such as Finland or the Netherlands, or to formally unitary university systems, such as the

United Kingdom. In Finland and the Netherlands about 47 percent and 67 percent of students, respectively, study at institutions which have the remit of providing professionally-oriented education with work-based learning opportunities. In the UK and other formally unitary systems, university institutions which focus primarily upon professionally-oriented education appear also to account for the majority of enrolments.

179. Conversely, viewed in comparison to other OECD member countries, it appears that too many Czech students enrolled at public universities may be studying for too long, and doing so in study programmes that are not well-adapted to preparing them for working life. This is inefficient with respect to the use of public resources and student time (since continued study has opportunity costs), and it risks providing many students with an education that is poorly suited to working life. Students enrolled at public universities who are preparing to sell agricultural machinery or manage a small retail firm do not need a programme of theoretical study to the Masters degree level. In tertiary systems such as the US and UK where the bachelor degree is long established, it appears that about 20 to 25 percent of bachelor graduates will continue to advanced degree study. These levels of continuation to advanced study will vary from one country to the next depending upon many factors, particularly what sort of qualifications for professional practice can be obtained at the first (bachelor) degree cycle. These comparisons suggest, however, what a maturing system of professional education in the Czech Republic might look like. The review team acknowledges that the Ministry has recognised this, and has sought to steer enrolment to Bachelor degree programmes through its funding of public universities, and rationing the funding of study places at the Masters level. However, the development of Bachelor degree education, closely linked to working life, has not yet found a sufficient institutional home in the Czech Republic's system of tertiary education.

Policy Framework

180. Throughout OECD member countries, the national policy framework of tertiary education - policies with respect to institutional governance, funding systems, performance indicators and accountability measures, and schemes of regulation and quality assurance - may be used to support the development of tertiary systems that are closely connected to labour markets. In the Czech Republic comparatively few of these policies are designed with this goal in mind.

Institutional Governance

181. In many tertiary systems, the engagement of tertiary institutions with labour market institutions (firms, unions, and professional associations) is grounded in the role that these stakeholders play on the governing boards of tertiary institutions. In the Czech Republic, Boards of Trustees have modest representation of wider stakeholders, and Boards also play a comparatively limited role in setting strategic directions for Czech university (see Chapter Four). There are comparatively few opportunities for those who might bring these considerations to bear to find a voice in the governance of Czech institutions.

Performance Indicators

182. In some countries the national data systems make it possible to develop a comprehensive and longitudinal picture of labour market outcomes by linking student level data on schooling to the wage and employment records of graduates. In others each tertiary institution has an obligation to monitor and publish information about the employment outcomes of their graduates. In the Czech Republic tertiary institutions are not obligated to systematically monitor and report on labour market outcomes. The Ministry has recently supported analysis of labour market outcomes by programme and institution through the award of project funds; however, whether it will continue to generate this information—and make it available to potential students—remains uncertain.

Programme Approval and Quality Assurance

183. Ministries may bring labour market considerations to bear in reviewing proposals for the creation of new study programmes (i.e. will there be labour market demands for graduates from the proposed programme?), or in assessing the quality of study programmes (does the programme focus on the development of employability?). In the Czech Republic accreditation and re-accreditation centre on “institutional capability to provide programmes of required quality” - particularly the academic staffing of programmes - rather than either labour market needs or graduate employability.⁵⁶

Institutional Funding

184. It is possible to include labour market outcomes as a parameter in institutional funding methodologies. The Czech Republic has an especially well-designed funding methodology for institutions, but it is one in which labour market outcomes are not included as a funding parameter.

Policy Recommendations

185. In light of the preceding observations, the review team recommends consideration of the following measures.

Institutional Structure

186. Continue the policy of expanding the supply of tertiary study places, carefully monitoring both student demand for study places and employer demand for graduates.

187. Significantly expand the capacity of tertiary institutions to provide high quality education and training for working life at the Bachelor degree level. As is proposed in Chapter Three, this can be achieved through the development of a new sector within universities.

Policy Framework

188. Revise the legal framework for institutional governance. As is proposed in Chapter Four, authorise the governing boards of tertiary institutions to set strategic directions for their institutions, and obligate institutions to include on their governing boards key labour market stakeholders, whether from firms, not-for profit organisations, professions, or public sector organisations (e.g. directors of schools or hospitals).

189. Revise the quality assurance system to incorporate labour market institutions and information about the performance of institutions with respect to labour market outcomes. Membership of the Accreditation Commission for Higher Education Institutions should be revised to include experts who do not hold academic appointments. These new members should include those who will bring questions of working life and employability to bear in its deliberations, such as key members of professional associations, chief technology officers of research-intensive firms operating in the Czech Republic, and those who play an important role in the recruitment and hiring of higher education graduates. The criteria used by an expanded Accreditation Commission for Higher Education should also be revised to incorporate labour market considerations, rather than focusing on educational inputs (e.g. library

⁵⁶ *Background Report*, p. 25.

collections, faculty publications and rank, and so on).⁵⁷ These same observations hold - with greater force - with respect to the accreditation of tertiary professional schools.

190. While it is possible to include labour market outcomes as a parameter in public university funding methodologies, there may be important drawbacks to this, since the inclusion of additional parameters in funding methodology leads to increased complexity, diminished predictability of funding levels, and excessive policy steering by public authorities. Far preferable, in our estimation, is a demand-driven system in which students are provided information about labour market outcomes, and take this information into account in making choices among institutions and study programmes.

191. In light of the preceding observation, we support the development of better information about labour market outcomes, and make this information available both to prospective students, accrediting bodies, and the wider public. The Ministry could assume responsibility for developing a comprehensive and longitudinal picture of labour market outcomes by linking student level data on schooling to the wage and employment records of graduates. Alternatively, it could obligate all tertiary institutions to monitor and publish information about the employment outcomes of their graduates. Because this second alternative may be too burdensome for institutions, a third alternative may be most appropriate: the Ministry could provide institutions with data about the labour market outcomes of their graduates based upon the centralised linking of records, and institutions could augment this information according to their own capabilities and institutional profile, and be responsible for disseminating the combined picture of institutional outcomes.

⁵⁷ *Background Report*, section 9.2.

CHAPTER EIGHT: RESEARCH AND INNOVATION

“The countries with a greater percentage of private financing for R&D are currently at the highest levels of scientific and technical advancement. Historical data shows that long-term and very substantial support for research and development and for higher levels of professional education, coming from public resources, is necessary until a sufficiently high level of research potential (critical mass) is achieved. This level of achievement has to be able to attract private resources and guarantee these resources a return on their relatively risky investment into the area of research and development. Hence, the amount of public resources allocated to the research and development projects carried out by our higher educational institutions should be increased significantly in the long-term, even if such a move would require cutbacks in other areas.”

(Higher Education Reform Policy, 2004, p.55)

192. Since the end of the communist regime in 1989, sweeping changes have taken place in higher education institutions and in their role as research institutions. The communist era division between teaching-only higher education institutions and state-directed public research institutes (including the Czech Academy of Sciences) was ended by the Higher Education Act of 1990, which re-established the principle that higher education institutions would be scientific institutions. The actual reconstruction of higher education-based research is a much more complex process than a simple statutory enactment. Much of this work, such as the development of research funding arrangements, has been carried out.

193. Now, however, a new challenge faces the Czech Republic: how to fully integrate the research capacities of its higher institutions into a knowledge-based society and economy, and into a research environment that is increasingly internationalised. This involves continuing changes to the policymaking institutions for research and innovation, changes in research funding methodologies and other research policies--and, not least, a change in the culture and worldview of higher education institutions. Knowledge and technology transfer demand that higher education institutions work actively with the research results they generate, protect them in an adequate way and transfer them for exploitation either to outside businesses active in the field or to initiate new businesses (spin-off companies) themselves. Hence, this challenges higher education institutions to develop an entrepreneurial culture, and to develop and implement a pro-active policy towards their contribution to innovation.

Higher Education Research Within the National Research and Innovation Setting

194. With respect to total R and D spending in the Czech Republic, gross expenditure on research and development grew annually during the second half of the 1990's at the rate of 6 percent, and by 2004 total R and D spending reached 1.3 percent of GDP. Although this level of R&D spending was substantially lower than the OECD average of 2.2 percent, it was significantly higher than that of neighbouring Hungary, Poland, and Slovakia (which ranged between 0.6 and 1.0 percent of GDP). Much of the comparative strength of Czech spending levels vis-à-vis its neighbours is the result of business R&D spending, which accounts for just over half (51.4 percent), while another 41.8 percent was spent by government.

195. Government R and D spending comprised 0.55 percent of GDP in 2005. Of this public expenditure on R&D, a modest 33 percent took place within higher education institutions. This level of spending is less than the OECD average, and lower than that of its highest spending neighbours.

Year	R&D expenditures			
	State budget – total (thousands CZK)	% GDP	allocated to HEIs	% of the total to HEIs
2004	14 663 876	0,53	4 162 346	28,39%
2005	16 374 407	0,55	5 413 997	33,06%
2006	18 167 883	0,60	6 590 145	36,27%

196. MEYS funding of research within public higher education institutions is principally carried out through two channels: (a) subsidies to institutions based chiefly upon the number of master and PhD students, and full and associate professors, and upon external research funding awarded through competition; and (b) institutional support, for 5 to 7 years' duration, which is based upon research plans submitted to the MEYS, and subject to peer evaluation. Taken together, these two institutional funding streams accounted in 2005 for 3,478 billion Czech crowns, or approximately 50-60 percent of all public support for R and D at public higher education institutions.

197. Research funding is available to public higher education institutions on the basis of so-called targeted support, i.e. grants awarded by a host of other public bodies, including the Czech Science Foundation (CSF), the Ministry of Health, the Ministry of Agriculture, the Ministry of Trade and Industry, and others. Of these funding bodies the CSF is the most important, awarding 510 million Czech crowns (18 million euros) in 2004, or 42 percent of all targeted support.

198. International funds (chiefly through the EU Framework Programme) and private funds account for the remaining funding streams of primary importance, though both are modest in size in comparison to state support. Czech teams have participated in all European R&D initiatives and programmes and in particular in the Framework Programmes (FP) since 1993. Starting with the fifth FP in 1998, Czech teams participated under similar conditions as EU member states. The Czech Republic achieved a 4.2 percent share of the participation in all fifth framework projects with 890 teams involved in 701 projects. The total value of these projects amounted to EUR 1,653 million. Czech Republic researchers received EUR 65 million or 95 percent of the Czech financial contribution to the FP.

The Challenges Facing Higher Education Research and Innovation

199. The Czech system of tertiary education has made great strides in re-establishing its universities as scientific organisations. This accomplishment is reflected in its growing body of outputs, as measured by scientific publications. In our judgment, though, there are four key challenges ahead that must be addressed if the Czech Republic is to integrate its higher education-based research into a knowledge-based society and economy, and into a research environment that is increasingly internationalised.

Strengthening the Public Research Funding System

200. There are 22 state authorities with research and development budgets in the Czech Republic, and they apply different criteria and procedures in handling grant and tender proposals. The result of this appears to be considerable uncertainty and confusion amongst university-based researchers seeking to use state funding for research.

201. State research funding in general and MEYS research funding in particular remain heavily oriented towards institutional as distinct from project-specific funding. Of all public funding provided to the Czech Academy of Science, 13 percent is allocated to specific projects, while for the public university system 29 percent of R and D expenditure is provided through project funding.⁵⁸

202. To the extent that project-based funding is used, project evaluation for purposes of funding appears to be based upon citations, rather than indicators that measure (and reward) the intensity of cooperation between firms and researchers, such as patents granted, patents commercially exploited, licenses sold, or other indicators.

203. We lack sufficient evidence to make a firm assessment of the peer-review process used to award research funds. However, we note that the peer review process is subject to criticism on two grounds. First, that it has relied too heavily on *ex ante* evaluations of research promises and plans, and gives insufficient weight to past research performance, thus generating weak incentives for performance and dispersing research funding too widely. Second, there are concerns that new procedures that do give weight to past research performance do not sufficiently discriminate with respect to quality, and create incentives for quantity over quality, and distribute resources too widely to be effective.

Strengthening the Capacity of Higher Education Institutions to Operate Within A National and International Project Funding Environment

204. The capacity of higher education institutions to maximise the potential benefits of competitive project-specific funding is relatively weak. There appears to be a lack of a systematic approach and strategy on how to deal with the challenge of the successful acquisition of competitive grant funding. At the institutional level, comprehensive concepts of competitive grant acquisition as quality assurance measures for research, the evaluation of research results, and output oriented incentive systems have not yet been implemented.

205. The opportunities created by the new legislation are not fully exploited at the institutional level as a result of complex decision making structures, conservative attitudes, and low levels of pro-active change management amongst leadership. As a result HEIs do not develop their research profiles or strengthen their competitiveness in research and innovation. The review team was also struck by the absence of balanced (developed through bottom-up and top-down approaches) research and innovation strategies at the institutional level and pro-active research and innovation management.

Building Critical Mass

206. While much progress has been made in developing the research capacities of Czech higher education institutions, we do have concerns about the extent to which the system has (or can) reach critical mass—i.e. sufficiently concentrate research capacity to ensure that graduate student training and scientific activities are carried out at the highest international levels, and to attract international researchers. Achieving a critical mass within the higher education system faces a set of important constraints, including the weakness of strategic leadership capacities at public higher education institutions (that prevent the internal reallocation to support excellence), and enduring effects of the separation between public research institutes and public universities. For example, while Czech researchers are important participants in the competition for European Union Framework funds, fewer than 30 percent of all funding requests in the last round of competition were from Czech *higher education institutions*, indicating the continuing pre-eminence of non-university based public research institutes in many areas of scientific endeavour.

⁵⁸ OECD 2006 *Economic Review, Czech Republic*, p. 122.

Improving Knowledge Transfer And Partnerships With Business

207. As we have observed throughout the Country Note, Czech universities are distinguished by a set of governing and funding arrangements, career policies, and quality practices that encourage a strongly inward orientation. Predictably, potential collaborators outside of Czech universities are sometimes frustrated with this inward orientation. For example, the multinational firm Honeywell is one of the largest knowledge-intensive investors in the Czech Republic, employing about one thousand workers, many of whom work in research and design facilities in Prague and Brno. While acknowledging the country's developed system of university technical education, its senior officials nonetheless describes the relationship between public universities and the private sector as "weak, inflexible, and unresponsive."⁵⁹ This criticism is acknowledged by some of those with whom we met inside higher education institutions, and by the MEYS itself in its Higher Education Long-Term Plan for 2006-2010.

Policy Recommendations

Strengthening the Public Research Funding System

208. The Ministry should alter the balance between the funding of research through general university funding and through competitive project-based funding in favour of the latter. It should also ensure the implementation of peer review procedures for the evaluation of competitive grant proposals at minimum at a national, but preferably international level. It should encourage, where possible, the introduction of evaluation criteria for project-based funding that reward cooperation between firms and researchers.

209. The government should reduce the number of granting agencies and transfer funding programmes to a specific agency that is charged with managing these according to common standards. This new agency could be combined with the Technology Agency envisaged in the *National Innovation Policy 2005 – 2010*. It should also provide a tailor-made service that financially supports researchers in the preparation of international, competitive grant proposals. This service should be easy to access and use.⁶⁰

Strengthening the Capacity of Higher Education Institutions to Operate Within A Project Funding Environment, Both National and International

210. HEI leadership should increase awareness among researchers of the importance of competitive research grant funding as a mechanism to support quality assurance in research and the development of research excellence. This should include the development of targeted incentives at the institutional level that reward researchers for the successful acquisition of international research grants.

211. The review team recommends that improvement be made to the support and management of research and innovation at the institutional level. As a first step the Ministry should ensure that the implementation of governmental strategies on research and innovation is systematically monitored by external experts and that the results of such monitoring processes form the basis for the development of further strategy. Institutions also need to be supported in the development of research and innovation strategy and in management capacity in this area at leadership, management and student levels. Two specific reforms that would help develop capacity would be to create the possibility of appointing external experts at Rectorate level, and a more flexible academic career model that includes a broader recognition of research and innovation achievements.

⁵⁹ *Honeywell, R&D Intensive Investor in the Czech Republic*, World Bank Knowledge Economy Forum presentation by Jaroslav Dolezal, Honeywell National Executive for the Czech Republic, March 29, 2006.

⁶⁰ Two of these recommendations are also relevant to the international dimension of research and are repeated in that section of the chapter.

212. International co-operation in research and development is a driver of excellence for the national research “community” and contributes to strengthening the potential for competition. This is one of the main targets of European Framework Programmes (FP) for research, technological development and demonstration. The programmes are the largest trans-national competitive research programmes in the world. New approaches under preparation for the seventh FP (with a budget of around €50 billion) stress the importance of “frontier research” - research at the forefront of science - as a key instrument to promote further research excellence in Europe.

213. To be able to position themselves with a strong internationally recognised profile, it is essential for HEIs to develop a clear strategy towards international co-operation. If there is no strategy in place, international co-operation as an important field for the profile development of a HEI depends more or less on coincidence.

214. Structure follows strategy. Adequate structural approaches need to be put in place in order to implement strategies effectively. Structures such as research service offices should have the capacity to provide pro-active support to researchers competing for framework projects.

215. Good practice examples demonstrate that effective research service offices should provide systematic support in at least the following areas: awareness raising; provision of information on the FP, calls for proposals and requirements for participation; help in proposal development; advice on consortium building; and assistance in conducting awarded projects. Further successful measures at the institutional level are incentives for participation in international co-operation and in competitive international research programmes.

216. At governmental level, programmes that provide financial support for the preparation of competitive international grant proposals have proved to be an effective method of signalling the importance of participation in international R&D programmes. Good practice examples exist.

217. To strengthen the participation of Czech researchers in international R&D activities, the review team recommends that higher education institutions develop clear strategies for positioning themselves in the international R&D arena, establish adequate structures (such as a research service office) with the capacity to implement these strategies effectively, and provide adequate training for research service offices in order for them to be able to fully use their potential in supporting researchers in international cooperation. In addition, as recommended earlier in the chapter, institutions should develop targeted incentives rewarding the successful acquisition of international research grants, while the government should provide a tailor-made service that financially supports researchers in the preparation of international, competitive grant proposals. This type of competition for international R&D grants goes far beyond the “regular” scientific competition in the context of publications, peer-reviews and impact points. To some extent the latter is the prerequisite of the ability to successfully acquire international R&D grants.

Improving Innovation, Knowledge Transfer, And Partnerships With Business

218. Developing and strengthening an entrepreneurial culture is an important prerequisite for successful knowledge and technology transfer and innovation. Measures that have been taken by European universities successful in this field include joining international networks for entrepreneurship that have extensive experience in nurturing an entrepreneurial culture at HEIs; the development of adequate training measures for students and staff; and the establishment of chairs in entrepreneurship.

219. The Austrian programme *Uni:Invent* is an example of good practice in supporting HEIs in the development of an active innovation policy and related approaches. The programme assists the development of a knowledge transfer culture by setting up effective structures that provide:

- financial support toward IPR and technology transfer capacity building (implementing “Innovation Scouts”),
- training programmes for innovation scouts,
- support and expert assistance for the development of successful exploitation routes.

220. The programme has been initiated by the Austrian Ministries of Education, Science & Culture and Economics and Labour for an initial period of three years with the possibility of extension for another three. In two years, the number of disclosed inventions, filed patents and negotiated contracts with companies by Austrian HEIs has increased significantly.⁶¹

221. A strong foundation for Intellectual Property Rights (IPR) at HEIs is essential for successful knowledge and technology transfer. This requires an adequate legal framework for IPR management that allows companies to acquire exclusive licences from higher education institutions that conduct publicly funded research.

222. To help create an enabling environment in which Czech HEIs can make a major contribution to the country’s innovation system, the review team recommends that the Ministry give high priority to the targeted implementation of the measures outlined in the *Long-Term Plan 2006-2010* and the *National Innovation Policy 2005-2010*. In addition, it should ensure an adequate legal framework for companies to be able to in-licence results from publicly funded research, thus enabling effective knowledge and technology transfer. The Ministry should also explore ways of supporting the development of an entrepreneurial culture at the institutional level including a programme along the lines of *Uni:Invent* in Austria.

Developing Critical Mass At Regional And Institutional Levels

223. It is of high strategic importance for the Czech Republic to build institutional and regional critical mass to enable it to realise its goals in the area of R&D. The review team recommends that the Ministry encourage and stimulate initiatives aimed at strengthening regional co-operation including the development of clear visions, goals and strategies toward fostering R&D. This and a number of other proposals in this chapter should be strong candidates for development funding. The development of regional critical mass has to build on existing expertise and should follow the principle commitment to strengthen competitiveness. Particularly in basic research and development spending, the criterion of support should be excellence in a competitive system—rather than regional balancing of public spending.

224. Regional clusters and incubators have been proven to be effective in supporting HEIs and businesses in knowledge transfer and innovation. Convincing models exist that build on common cluster and incubator knowledge and experience. The Ministry should study successful international clusters and incubators and consider them as examples for further developing existing incubators and setting up effective clusters in the Czech Republic.

225. The Ministry should also develop a strategy to co-ordinate the research and innovation efforts and capacities of higher education institutions and the Academy of Sciences. The key criterion here should be to *strengthen interdependence* between research centres and university-based teaching, so that teaching (especially at the advanced level) can genuinely be research-led, while research centres have sufficient access to student researchers. Proposals to diminish interdependence—by, for example, extending degree-

⁶¹ For more details see the Austrian *Research and Technology Report 2005*, an extract from which can be found as Appendix 5.

awarding powers to public research institutes, should be rejected. Rather, we recommend intensified coordination through:

- “Light” co-operation on the basis of co-operation agreements,
- Joint new centres (e.g. following the Research Centres Programme),
- Mergers between the Academy of Sciences and HEIs on the basis of specific institutes.

CHAPTER NINE: QUALITY ASSURANCE AND QUALITY ENHANCEMENT

“The pursuit of quality and excellence will be evident in all major activities of higher education institutions, particularly in education, research and development, and creative and artistic activities. Emphasis will be placed on outputs and measurable outcomes which will constitute an important criterion for funding of higher education institutions’ operations. Major quality indicators will include co-operation between higher education institutions, partnership with the relevant region, promotion of links to the private sector and co-operation with clients...The principle objective is to support all higher education institutions so that they may pursue top quality in activities where the future lies for them and where they are capable of achieving excellence.”

(*Long-Term Plan 2006 – 2010, p. 13*)

Background

226. *Quality assurance* in the Czech Republic is carried out by the Accreditation Commission for Higher Education Institutions, and the Accreditation Commission for Tertiary Professional Schools, which advise the Ministry of Education, Youth, and Sports on whether the study programmes of higher education institutions and tertiary professional schools should be accredited or re-accredited. Responsibility for *quality enhancement through internal assessment* rests with higher education institutions themselves. Though obligated by law to implement a regular internal evaluation system and make the results public, institutions may develop whatever procedures they deem suitable to meet this obligation.

Quality Assurance through External Accreditation

227. Accreditation was introduced with the adoption of the Higher Education Act of 1990, which established the first accreditation commission for higher education institutions in Central and Eastern Europe, and its scope of responsibility was substantially widened in 1998. The Chair, vice-chair and members of the Accreditation Commission are appointed by the Government upon a nomination of the Minister. Prior to making a nomination, the Minister is obligated to request references from the representatives of the Czech Rector’s Conference and Council of Higher Education Institutions, the Governing Board of the Czech Republic Research and Development Council, and the Academy of Sciences of the Czech Republic; and to discuss the nominations with these institutions.

228. Of the Commission’s 21 members, 1 member is currently external to higher education; 3 members are from Academy of Science of the Czech Republic (i.e. researchers who typically hold part-time appointments at higher education institutions); 3 members are academics from abroad (Germany); and the remaining 14 members are academics from Czech higher education institutions. All of the latter are drawn from public university institutions, rather than private non-university institutions.

229. In 2005, a separate Accreditation Commission was established by the Ministry to be responsible for Tertiary Professional Schools. This body is similar to the Accreditation Commission for Higher Education Institutions (AC/HEI) in its methods of operation and aims, though it differs significantly in its membership. Also comprised of 21 members, it contains 10 members who are representatives of particular tertiary professional schools (including its chair), one member who represents higher education institutions

(currently from the Czech Technical University), while its remaining 10 members come from outside education, from firms, labour unions, and professional groups.

230. Both bodies have the authority to refuse accreditation, a decision with which the Ministry must comply; or to recommend in favour of accreditation, which the Ministry may choose either to accept or reject. Institutions are forbidden to admit any applicants, hold lectures and examinations or award academic degrees in non-accredited study programmes.

231. The AC/HEI has a wide range of complementary quality assurance responsibilities in addition to providing advice with respect to study programmes. The AC/HEI also has the authority to recommend to the Ministry:

- Whether state permission for the establishment of private higher education institutions should be given;
- Whether a faculty of a university should be established, merged, divided, or dissolved;
- Whether a higher education institution should be recognised as a university or as a non-university higher education institution;
- Whether a higher education institution should be authorised to carry out habilitation procedures;
- The procedures for the appointment of professors.

232. To carry out its activities the AC/HEI establishes permanent and special working groups, organised by disciplinary grouping (e.g. Physics, Geography, History, and Mathematics and Informatics). There is also one working group responsible for the review of proposals for the recognition of non-university institutions. In 2004 there were 17 working groups in which 211 experts participated, including 176 from public universities, 21 from the Czech Academy of Sciences, 14 from other institutions, and 5 foreign academics. Virtually all members of disciplinary committees were drawn from public university institutions, while those serving on the committee for the recognition of non-university institutions came from already-recognised private non-university higher education institutions.

233. Recommendations from the working groups used to formulate recommendations to the AC/HEI are based upon working procedures that involve, sequentially: an institutional self-evaluation, a site visit, a draft report prepared by a working group and reviewed by the HEI's institutional leadership, a presentation of the working group's findings to the Accreditation Commission, and publication of the conclusions and recommendations. The chief focus of programme review is "the content of the study programme and the state of preparation (human and physical resources) of the HEI to deliver the study programme."⁶² In the event that the Accreditation Commission has concerns about a programme under re-accreditation review, it can recommend that accreditation be awarded for a shorter time than the legally stipulated maximum, or other measures.

Internal Assessment for Quality Enhancement

234. Accreditation and re-accreditation procedures effectively guarantee that programmes and institutions meet threshold quality standards. However, they are ineffective in providing incentives to programmes already complying with those standards to further improve their quality. Therefore, many

⁶² Processes of Internationalisation of the Quality Assurance and Accreditation in Higher Education in the Czech Republic, at http://www.msmt.cz/_DOMEK/default.asp?CAI=3425

OECD member countries have introduced evaluation procedures that go beyond binary pass/fail judgements, and aim to support quality enhancement.

235. The Czech Republic has endeavoured to do this by obligating higher education institutions to engage in regular internal evaluation, and to publish the results of this. Czech institutions meet this obligation in three ways. First, they implement student evaluations of instruction. Second, Czech higher education institutions have also sought peer review and advice to promote quality improvement. Six Czech higher education institutions have participated in the European University Association (EUA) Institutional Evaluation Programme. This programme is based on a self-evaluation and peer-review conducted by senior international institutional leaders, and its stated aims are to strengthen the strategic capacity and internal quality culture of universities.⁶³ Two other public universities have been able to participate in a project led by Czech Centre for Higher Education Studies which aims to contribute to the development of the quality culture of the higher education system in general, and to provide a comprehensive methodology for improvement-oriented quality assessment usable in the national context.

236. The chief challenge facing internal assessment is one of incentives. Institutions carefully evaluate their performance when they face strong incentives to get better: the necessity for improvement generates the habits and culture of assessment. Hence, the key challenge in generating internal evaluation is discovering what incentives might drive institutional behaviour. One way that policymakers may choose to do this is to use published student reports—such as student evaluations of their learning experience—as a way of generating incentives for improvement, such as the CHE (Centrum für Hochschulentwicklung) ranking.

Strengths of the Current System

237. The Czech system of quality assurance through accreditation has a number of important strengths.

- It is a mature system with widespread participation among Czech academics.
- The Accreditation Commission for Higher Education is able to undertake a regular and recurring review of programmes.
- The accreditation activities of the AC/HEI have permitted the Czech Republic to introduce private higher education institutions without experiencing some of the serious problems of academic quality and integrity that seem to have beset other countries in Central and Eastern Europe.
- The creation of an accreditation body for Tertiary Professional Schools provides a more suitable basis for quality assurance than reliance upon secondary school quality assurance procedures, and its membership is appropriately adapted to the mission of these institutions.

238. In addition, higher education institutions are beginning to develop, albeit in very preliminary ways, a capacity for internal assessment for quality enhancement, as evidenced by their participation in the EUA Institutional Evaluation Programme, and their participation in the CHES project *Evaluation of Quality in HEIs*.

⁶³ http://www.eua.be/eua/en/membership_evaluation.jsp

239. This project is itself evidence of one final strength of quality assurance and enhancement in the Czech Republic: the Ministry itself has clearly signalled in its Long Term Plan and through the use of its Higher Education Institutions' Development Fund that this is a key policy priority.

Weaknesses of the Current System

External Accreditation of Quality

240. While the Czech system of quality assurance for higher education institutions is in many respects a model worthy of emulation, it contains some shortcomings that merit attention.

241. First, the Accreditation Commission for Higher Education is too inward-looking in its membership. Although the Ministry wishes to promote “co-operation between higher education institutions, partnership with the relevant region, [and] promotion of links to the private sector and co-operation with clients,” the membership of the Accreditation Commission has the opposite effect. Only academic representatives are assigned a statutory role in the selection of members, and, predictably, of its 21 members, only one is drawn from the world outside of higher education institutions or public research institutes. None of the 211 experts who participated in the working groups of the AC/HEI in 2004 appears to have come from outside academic life.

242. Second, the criteria, evidence base, and working methods of the Commission compound this inward orientation. The criteria against which programmes and institutions are judged focus on inputs (faculty and physical resources) rather than outputs - including learning outcomes or labour market outcomes for graduates. A review of the 1999-2004 annual reports from the Accreditation Commission using as search terms *labour, employ, employment, labour market, employability* and *job* reveals one reference to working life (2004, p. 14). This compares unfavourably with examples of best practice developed in other OECD member countries, such as the (US-based) Accreditation Board for Engineering and Technology (ABET) Engineering Criteria 2000 (EC2000), which focus on accreditation based on the ability of students to apply skills, solve problems, and work in teams.

243. Additionally, the focus of the accreditation process is on instruction and on resources that are inputs to instruction, such as professors and instructional facilities (e.g. libraries, computers). However, the wider scope of institutional performance—such as institutional management and governance and student support services—are beyond its purview.

244. The focus on inputs - particularly on the use of senior academic rank (status as full or associate professor) as a proxy for quality - is, when coupled with the habilitation system, a contributing factor to the “flying professor” phenomenon. The first requirement has the effect of generating a high level of demand for full and associate professors, without whom accreditation cannot be obtained. The Czech career system of habilitation results in a very limited supply of those who hold this rank. With keen demand and limited supply - and a system in which rank inheres in the person, not the position - professors fly from one institution to another, lending their qualifications, though perhaps not their full abilities, to many higher education institutions. When combined with low faculty compensation, this imbalance between demand and supply fuels the flying professor phenomenon. (The review team has recommended changes to the academic career system in Chapter Three.) The review team questions, and urges the Ministry to question, whether rank constitutes a suitable proxy for quality - and, if it does, whether quality as recognised by the process of habilitation is necessary or sufficient for teaching excellence in those higher education programmes that focus primarily on professional education for working life.

245. The Ministry has expressed its desire to see clearer differentiation within Czech higher education. This is reflected in Ministry documents, including the *Long-Term Plan 2006-2010*, which announces that

“the principle objective is to support all higher education institutions so that they may pursue top quality in activities where the future lies for them and where they are capable of achieving excellence.” To support this focus on diversification, the Accreditation Commission for Higher Education Institutions must make quality judgments that focus on the relationship between means and ends, or fitness for purpose, without which diversification will be limited, and programme and resource allocation standards will converge.

246. Additionally, during the review team’s visits to campuses it was told with some regularity that the structure of Accreditation Commission working groups stymied innovation, flexibility and creativity in the development of study programmes: that novel and interdisciplinary programmes -such as landscape architecture - were poorly accommodated by its disciplinary structure.

247. At present the criteria used by the Accreditation Commission to judge proposals for new study programmes focus on “quality”, the “competence” of the institution to offer the programme and whether it meets the formal legal requirements. These criteria for new study programmes do not limit unproductive competition/duplication in programme offerings in the public sector.

248. Finally, while the Accreditation Commission for Higher Education Institutions has protected the Czech Republic from a multitude of unscrupulous and poor quality higher education institutions, it is possible that it has done so at a high price. In reviewing applications for new private institutions, public bodies such as the Accreditation Commission run two risks: the risk of *approving* an institution as being of sufficient quality when in fact it is not, and the risk of *rejecting* an institution as lacking in quality when in fact it is of satisfactory quality. If the Czech government wishes to widen private financing and private provision, it will wish to be sure that the Commission gives equal consideration to both risks. Moreover, the Ministry may wish to consider whether the risk of the second outcome is heightened if those who assess institutional applications are predominantly representatives of institutions already in operation.

Internal Assessment for Quality Enhancement

249. Czech public higher educational institutions are obligated to implement a regular internal evaluation system - according to their own guidelines and criteria - and to make the results public. How these internal evaluations are performed and used are matters of concern.

250. As the Czech Republic *Background Report* and the review team’s institutional visits make clear, internal evaluation for quality enhancement is not yet a well-developed feature of Czech higher education. There is a prevailing mistrust with respect to quality enhancement, and institutions often adopt a purely formal approach to complying with the requirement that they implement a regular internal evaluation system. Internal evaluation is often seen to be a burden, rather than an asset or a tool embedded in the overall strategy of the institution. In many institutions it appears that the primary instrument for internal quality evaluation is student evaluation of teaching, and this is often marked by weak feedback mechanisms and low impact.

251. International experience suggests that internal evaluations are likely to be particularly useful in enhancing quality. Internal motivation for change and engagement of the staff with the desired objectives, without which quality cannot be enhanced, are more likely to be achieved in internal procedures -- procedures which also would be in accordance with the ENQA Guidelines and Principles. As a member of ENQA and as one of the signatories to the Bologna Process and the Communiqué of the European Ministers Responsible for Higher Education (Bergen, 2005) the Czech Republic has adopted these standards and guidelines.

Recommendations

252. In light of the observations above, the review team offers the following recommendations with respect to quality assurance and enhancement in the Czech Republic.

253. *The location of the responsible for quality within Czech higher education should be clarified.* According to the Act, the Accreditation Commission for Higher Education Institutions takes care of quality in Czech higher education. However, the key actors within quality assurance and quality enhancement in Czech higher education are the Ministry, the Accreditation Commission – *and the institutions themselves.* Given the high levels of autonomy and academic freedom in Czech higher education, it is very important that the responsibility of the institutions is made clear in law: first and foremost, institutions have to take care of the quality of their academic activities. This shift in focus is necessary to raise the awareness of the responsibility borne by institutions themselves, and it is a prerequisite for the development of a quality culture in Czech higher education institutions.

254. *Internal assessment for quality enhancement should be supported—while remaining independent of external assessment.* International experience suggests that self-evaluation is most effective in achieving improvement if institutions are not required to publish self-review reports (and self-review reports cannot be used by those outside to make judgements on the institution). The Ministry should consider eliminating the requirement that the outcomes of self-evaluation are published, and reconsider the advisability of seeking to strengthen the link between internal and external evaluation.⁶⁴ At the same time, the Ministry should continue its support of internal assessment for quality enhancement, either by supporting the participation of Czech institutions in EUA Institutional Reviews, or by supporting work such as The Evaluation of Quality in HEIs, which aims to build local assessment capacities.

255. Further, the Ministry should review how additional incentives for internal improvement might be generated by external stakeholders, e.g. by the use of student-based, externally available assessments, such as the CHE. While now in use in Germany, Dutch and Flemish higher education institutions are also being coupled to the CHE web ranking, and Czech institutions might, for example, join in this with them.

256. The system of quality assurance should be reformed so that it supports, rather than restricts, the diversification of Czech tertiary education. The Ministry has the diversification of Czech tertiary education as one of its key policy goals. The system of quality assurance in the Czech Republic should support the key policy goals laid out in the Long-Term Plan, rather than inhibit their realisation. In keeping with the recommendation in Chapter Three, that a new sector be introduced within universities focusing on professional Bachelor degree education, it is recommended that the institutional arrangements for accreditation be revised to support this. In particular:

- The AC/HEI selection procedures, membership and quality criteria should be revised to focus on stakeholders and outcome-oriented quality criteria relevant to professional Bachelor degree education.
- AC/HEI selection procedures should be revised so that a range of stakeholders outside of higher education are consulted in the selection of Commission members, and not only representatives of higher education institutions.
- A significantly larger share of the members of the AC/HEI - perhaps one-quarter - should be drawn from this wider set of stakeholders. In addition, working groups should be open to

⁶⁴ As it proposes in the Annex to the Long-Term Plan of the Ministry for 2006-2010, p. 36.

participation by those who do not hold academic appointments, such as representatives from working life, private research laboratories, and others.

- The criteria used to assess the quality of study programmes should be appropriately differentiated, so that the programmes themselves can be properly differentiated. The training and experience of those teaching in professional Bachelor degree programmes may be very different to those teaching in highly theoretical programmes at the Master degree level. Moreover, the kinds of evidence that should be brought to bear in accreditation should be fitted to the purpose of the programme. Professional Bachelor degree programmes undergoing re-accreditation should be expected to furnish evidence of graduate skills and labour market outcomes.
- Once this system is fully revised to encompass the new sector of university-based professional education, the existing Accreditation Commission for Tertiary Professional Schools should be discontinued.
- The review team recommends that the Ministry of Education should also employ planning criteria so that new public programmes are not introduced where there is already sufficient capacity within the system (geographical spread would obviously be part of this consideration).

CHAPTER TEN: THE INTERNATIONAL DIMENSION

“Internationalisation is present in all major areas of higher education institutions’ activities – education, research and development, creative and artistic activities and all other activities which, in general, contribute to the development of society. Internationalisation will be more evident in specific sub-areas such as innovation, human resources development and co-operation as part of international programmes. The capacity to take part in international competitions and tenders constitutes a fundamental pillar for building competitive higher education institutions, and it is closely linked to the possible use of resources from the European Union.”

(Long-Term Plan 2006 – 2010, p.17)

257. The Czech Republic has a strong and consistent record of policy-level engagement in international higher education cooperation focused on student mobility. It has been a very active participant in the international scene since the beginning of the 1990s. With the TEMPUS programme, new relationships were established between Czech and Western European higher education institutions; this programme was followed by *SOCRATES*, *LEONARDO DA VINCI* and *YOUTH*.

258. Likewise, national policymakers have demonstrated a keen engagement with the creation of European Higher Educational Area—by hosting a 2001 Ministerial meeting following up to Bologna, and by working to implement the core policies of the Bologna process, including the ECTS, the three-cycle degree structure, and the diploma supplement. As the Country Background Report notes, “the stocktaking regarding the main cornerstones of the Bologna Process implementation...prepared for the meeting of the [European] ministers in 2005 in Bergen found the Czech progress to be very good and even, in some cases excellent”(p. 82).

259. Evidence of continuing Ministerial commitment both to the EHEA and to wider cooperative internationalisation can be found in the 2006-2010 *Long-Term Plan*, in which internationalisation is identified as one of the three main priorities in the development of Czech higher education. International activities in the institutional annual plans of higher education institutions that are in accordance with the priorities stipulated by the Ministry will be eligible for additional state funding.

260. Internationalisation also has its competitive dimensions, both in competition for research funding (through Framework funds) and in seeking to attract international students and researchers to higher education institutions in the Czech Republic. Here, as well, national authorities have shown a commitment to supporting the participation of Czech higher education institutions in these endeavours through the use of public funding.

261. The most important work of internationalisation is done not at a Ministerial level, but instead results from the activities of higher education institutions. Higher education institutions are responsible—among other things—for making use of the EU programmes, obtaining resources from the Ministry’s Development Programmes, establishing bilateral institutional agreements, and cultivating the international orientation of students. It is here, perhaps, that engagement in internationalisation has sometimes proceeded more slowly than might be in the best interests of the Czech Republic.

262. As we indicated in Chapter Eight, the participation in Framework fund competitions of researchers based at Czech higher education institutions is still comparatively limited, due both to the inability of higher education institutions to strategically identify and support centres of research excellence, and due to the infrequency with which institutions have a systematic approach and strategy on how to deal with the challenge of the successful acquisition of competitive grant funding.

263. There are a relatively limited number of study programmes accredited in foreign languages – notwithstanding examples of good practice that can be found in Czech HEIs. For example, most faculties of medicine, arts and some faculties of engineering offer individual courses in two languages (usually Czech and English) in parallel for incoming international students.

264. Most universities have no strategy for attracting foreign students which is very often due to the insufficient number of study programmes accredited in foreign languages (in particular English). Additionally, they have not developed a proactive policy for international marketing. The initiative taken by the Socrates National Agency and various HEIs to develop marketing approaches and materials is promising, but not yet comparable to that characteristic of other European nations.

265. The barriers for studying abroad (outgoing mobility) are primarily: low levels of student interest in mobility (in particular at technical HEIs), recognition problems, and language problems. The serious lack of interest in student mobility is exacerbated by the lack of encouragement to go abroad on behalf of the teachers. Recognition problems are mentioned in the *Background Report* as one of the main obstacles for institutions not promoting the mobility of students. Many HEIs still tend to insist that a foreign study programme must be identical with their own rather than evaluate the learning outcomes as a whole. The lack of foreign language proficiency was emphasised strongly by the Czech students interviewed by the review team and is a serious obstacle to going abroad.

Enhancing The International Dimensions Of Czech Higher Education

266. How might the international engagement of Czech higher education institutions be strengthened? Many of the changes we think conducive to wider internationalisation are contained in the preceding chapters, since many of the underlying constraints that it faces are rooted in conditions previously described. For example:

- We have previously noted that the accreditation of study programmes is much too focused on inputs (facilities and professors), and weakly oriented towards the skills and capabilities of graduates. We think it likely that an accreditation process that succeeds in refocusing study programmes on the competencies of students will be much more receptive to academic work undertaken outside of a student's home institution.
- Permitting Czech public higher education institutions to diversify their funding sources through the use of student fees opens the way to scholarship for promising international students, and salaries that strengthen their ability to compete for researchers whether from inside or outside the Czech Republic.
- Strengthening the capacities and the professionalisation of institutional leadership should increase the capacity of institutions to identify and support centres of research excellence capable of competing successfully for international research funding, commercial partnerships, and international graduate students. Shifting the balance of research funding from institutional to project-based support should have a like effect.

267. We would note, additionally, that wider internationalisation might be pursued by *revising the governance of tertiary education at the system and institutional levels*. At the system level the streamlined and expanded Council of HEIs should include a “cross-chamber” focus group on internationalisation, while at the institutional level an invigorated Boards of Trustees should include members who have international connections and/or experience.

268. Lastly, the Ministry should give priority attention to implementing the Czech National Qualifications Framework as part of the Bologna process, and to acquiring the official certification for the utilisation of the “ECTS Label” and “Diploma Supplement Label”. The former will encourage more attention to be paid to the employability of students, a shift of focus from teaching to learning (outcomes), and a more liberal practice of recognition. The latter will strengthen the competitiveness and attractiveness of Czech higher education as these certificates will be attractive for marketing purposes and to EU-projects and students.

CHAPTER ELEVEN: CONCLUSION

269. In the decade and a half since the Velvet Revolution the Czech Republic has built a tertiary education system that has responded vigorously to the major problems inherited from the Communist era and has engaged successfully with all of the challenges associated with the “European project”. It has done this by building a system of tertiary education distinguished by high levels of institutional autonomy, academic self-governance and (almost) full public funding of higher education. The key policy approach in this re-building of the system was a return to a Humboldtian model of university education and research, and of the relationship between the State and higher education.

270. These policies have served the Czech Republic well for a decade and a half but are not those best suited to guide “a richly diverse higher education system open to Europe and the world” for the next decade. The environment within which Czech higher education finds itself has changed fundamentally when compared to that of 1990. The priority then was to reconstruct the Czech university system in the wake of the communist era, and for which the Humboldtian university, with its deep roots in the Czech past and its tradition of scientific and intellectual independence was a highly appropriate model. The priorities today are to ensure that the Czech Republic has a tertiary education system that is able to function effectively in an increasingly competitive European and international higher education area, and that contributes to development of the Czech Republic in the context of the knowledge society. Underlying these changing priorities are the two seismic changes that have taken place within Czech higher education since the fall of communism – the rapid growth from an elite to a mass higher education system (and the consequent need to expand the diversity of the system) and accession to the European Union and the range of challenges and opportunities this has created in the developing European higher education and research area.

271. In all of the sets of policy recommendations in this report – on system structure; institutional governance; resources; equity; research and innovation; the labour market; quality assurance; and internationalisation – strong emphasis is placed on the need to move beyond the “inward focus” that was necessary to re-build the system to a more outward focus. This outward focus is multi-dimensional – it entails stronger educational links to employers, regions and labour markets; the development of research and innovation partnerships with business, industry and other HEIs; a greater role for external stakeholders in system and institutional governance and in accreditation; an increased private contribution to the costs of higher education; and, indeed, openness to Europe and the world.

272. Greater engagement and responsiveness and wider private financing are closely connected. Well-conceived public steering through institutional funding is desirable, as is a robust system of institutional governance that includes key stakeholders external to the institution. However, both must also be supported by demand-driven competition among institutions that is backed by students (or, graduates) who share in their funding, and discipline their performance.

273. The review team believes that what is needed now is a period of adjustment, in which the Ministry and higher education institutions engage just as vigorously with a new set of challenges – the need to focus in the years ahead on making tertiary education better, more competitive, highly diversified and more relevant -- to Czech society, to wider social needs and to working life.

274. The changes required to do this are not radical, but principally build upon changes now underway, or recognised and discussed, if not yet adopted. Many of these changes are already reflected in the *White Paper*, the *Higher Education Reform Policy* and the *Long-Term Plan 2006-2010*, and the *National Innovation Policy of the Czech Republic, 2005-2010*. The review team has not recommended the jettisoning of key strategies or any dramatic 180° policy turn-arounds. In each case the major recommendations are aimed at finding a new balance that will strengthen the capacity of the Czech tertiary system to achieve the goals it has set for itself; to respond to the global challenges all systems face; and to realise its full potential role in the European higher education and research area. To accept and implement these changes will require commitment from the Ministry and the recognised higher education advisory bodies—but it must also include the engagement of a broader set of stakeholders both within the government and in the wider society.

APPENDIX 1: THE OECD REVIEW TEAM

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APPENDIX 2: NATIONAL CO-ORDINATOR, NATIONAL ADVISORY COMMITTEE, AND AUTHORS OF THE COUNTRY BACKGROUND REPORT

National Co-ordinator for the Czech Republic

The national coordinator for the review was Helena Šebková, director of CHES.

National Advisory Committee and Country Background Report Authors

The background report for the OECD-review of the Czech tertiary education system was compiled by Centre for Higher Education Studies (CHES), a state organisation providing research and expertise in higher education, on behalf of the Ministry of Education, Youth and Sports.

A group consisting of research staff of CHES supervised and co-authored the background report. Apart from CHES and the Ministry of Education, Youth and Sports, several other institutions and representative bodies participated in the report co-writing: the Council of Higher Education Institutions including the Students' Chamber, Research and Development Council, Accreditation Commission, Centre of Education Policy of the Faculty of Education at Charles University in Prague, Centre for Social and Economic Strategies of the faculty of Social Sciences at Charles University in Prague, Institution for Information on Education, National Institute of Technical and Vocational Education, and CzechInvest.

In addition, a representative group of national tertiary education stakeholders was credited for detailing, revising and commenting upon the background report (Ministry of Education, Youth and Sports, Council of Higher Education Institutions, individual experts in the area of tertiary education).

The main supervision of the report was the responsibility of the National Advisory Committee composed of experts from higher education system and representatives of the number of other stakeholders and chaired by the vice-minister for research and higher education, Petr Kolář.

A range of other stakeholders were consulted during the preparation of the Country Background Report.

APPENDIX 3: PROGRAMME OF THE REVIEW VISIT

Monday, March 20

- 8:30 - 10:00 Ministry of Education, Youth and Sports (MEYS)
10:30 - 12:30 Ministry of Finance, Ministry of Labour and Social Affairs, Ministry of Industry and Trade
14:00 - 15:00 Council of Higher Education Institutions, Higher Education Labour Union
15:30 - 16:30 Rectors' Conference, Association of Private HEIs
17:00 - 18:00 Association of Tertiary Professional Schools, Czech Association of Schools of Professional Higher education

Tuesday, March 21

- 8:30 - 10:00 Charles University
10:30 - 12:00 Charles University
14:00 - 15:30 Czech Technical University / Institute of Chemical Technology
16:00 - 17:30 Czech Technical University / Institute of Chemical Technology

Wednesday, March 22

- 8:30 - 10:30 Brno Centre of European Studies (6 HEIs located in Brno): meetings with rectors, academic staff
11:00 - 13:00 Brno Centre of European Studies: meetings with students
14:30 - 15:30 Meeting with Student Chamber of Council of HEIs and Academic Centre for Student Activities (ACSA)
16:00 - 18:00 Masaryk University / Mendel University

Thursday, March 23

- 11:00 - 13:00 University of South Bohemia and Academy of Sciences České Budějovice
14:30 - 16:00 College of European and Regional Studies / Higher Professional School in České Budějovice - public TPS transforming into HEI

Friday, March 24

- 8:30 - 10:30 Parliament education committees: both Senate and Chamber of Representatives, including both the cabinet majority and the opposition
11:00 - 13:00 Accreditation Commissions for HEIs and for tertiary professional schools (TPSs)
14:30 - 16:00 Meeting with national panel of researchers and experts

Monday, March 27

- 8:30 - 10:00 Labour market representatives: Confederation of Industry, Confederation of Employers' and Entrepreneurs' Associations, Economic Chamber; Czech-Moravian Confederation of Trade Unions, Association of Autonomous Trade Unions
10:30 - 12:30 Research and Development Council, Academy of Sciences

- 14:30 - 16:00 Evangelical Academy – TPS associated with secondary school / Komensky College of Higher Education
- 16:30 - 18:00 Higher Professional School of Information Services / Academy of Performing Arts

Tuesday, March 28

- 9:00 - 10:30 Ministry of Education, National Advisory Committee
- 11:00 - 12:30 Closing discussion with Minister of MEYS
- 12:30 - 14:00 Lunch with MEYS officials and Minister

APPENDIX 4: COMPARATIVE INDICATORS ON TERTIARY EDUCATION

	Czech Republic	OECD mean	Czech Republic's rank ¹	% to OECD mean ²
OUTCOMES				
% of the population aged 25-64 with tertiary qualifications (2003)				
Tertiary-type B – Total	n	8	-	-
Males	n	7	-	-
Females	n	8	-	-
Tertiary-type A– Total	11	15	23/30	73
Males	13	16	23/30	81
Females	10	15	25/30	67
Advanced research programmes – Total	1	1	10/12	100
Males	1	1	12/15	100
Females	n	1	-	-
% of the population aged 25-34 with tertiary qualifications (2003)				
Tertiary-type B ¹	-	9	-	-
Tertiary-type A and advanced research programmes	12	20	27/30	60
% of the population aged 55-64 with tertiary qualifications (2003)				
Tertiary-type B ¹	-	5	-	-
Tertiary-type A and advanced research programmes	10	12	17/30	83
% of the population aged 25-64 with tertiary qualifications – time trends				
1991	m	18	-	-
2003	12	24	26/30	50
% of the population aged 25-34 with tertiary qualifications – time trends				
1991	m	20	-	-
2003	12	29	29/30	41
Average years in formal education (2003)³	12.4	12.0	16/30	103
Survival rates in tertiary education (2003)				
Number of graduates divided by the number of new entrants in the typical year of entrance				
Tertiary-type A education	61	70	14/19	80
Tertiary-type B education	77	73	7/16	105
Advanced research programmes	m	58	-	-
Average duration of tertiary studies (in years) (year varies)⁴				
All tertiary education	-	4.21	-	-
Tertiary-type B education	-	2.18	-	-
Tertiary-type A and advanced research programmes	-	4.72	-	-

	Czech Republic	OECD mean	Czech Republic's rank ¹	% to OECD mean ²
Tertiary graduates by field of study⁵ (2002)				
Tertiary-type A				
Education	17.8	-	8/27	
Humanities and arts	7.8	-	20/27	
Social sciences, business and law	26.5	-	21/27	
Science	7.2	-	20/27	
Engineering, manufacturing and construction	16.8	-	8/27	
Agriculture	3.5	-	4/27	
Health and welfare	10.3	-	17/27	
Services	3.3	-	8/27	
Not known or unspecified	6.7	-	2/13	
All fields	100	-	-	
Tertiary-type B				
Education	-	-	-	
Humanities and arts	10.0	-	8/25	
Social sciences, business and law	25.8	-	13/24	
Science	3.9	-	19/23	
Engineering, manufacturing and construction	5.0	-	20/23	
Agriculture	2.9	-	7/22	
Health and welfare	32.9	-	4/22	
Services	7.7	-	14/23	
Not known or unspecified	11.8	-	-	
All fields		-	-	
Advanced research programmes				
Education	1.4	-	18/23	
Humanities and arts	8.9	-	21/27	
Social sciences, business and law	16.2	-	15/26	
Science	25.9	-	10/27	
Engineering, manufacturing and construction	26.7	-	3/26	
Agriculture	7.1	-	9/26	
Health and welfare	12.1	-	20/27	
Services	1.7	-	9/22	
Not known or unspecified	-	-	-	
All fields	-	-	-	

	Czech Republic	OECD mean	Czech Republic's rank ¹	% to OECD mean ²
Tertiary graduates by field of study⁵ per 10,000 population (2002)				
Tertiary-type A				
Education	6.80	-	17/27	
Humanities and arts	2.96	-	23/27	
Social sciences, business and law	1.05	-	24/27	
Science	2.74	-	22/27	
Engineering, manufacturing and construction	6.36	-	14/27	
Agriculture	1.34	-	7/27	
Health and welfare	3.91	-	19/27	
Services	1.26	-	15/27	
Not known or unspecified	2.55	-	3/13	
All fields	37.95	-	2/27	
Tertiary-type B				
Education	-	-	-	
Humanities and arts	0.68	-	11/25	
Social sciences, business and law	1.75	-	16/24	
Science	0.27	-	16/23	
Engineering, manufacturing and construction	0.34	-	20/23	
Agriculture	0.20	-	12/22	
Health and welfare	2.23	-	14/22	
Services	0.52	-	18/23	
Not known or unspecified	-	-	2/7	
All fields	6.77	-	17/26	
Advanced research programmes				
Education	0.02	-	18/23	
Humanities and arts	0.14	-	20/27	
Social sciences, business and law	0.25	-	15/26	
Science	0.39	-	15/27	
Engineering, manufacturing and construction	0.40	-	5/26	
Agriculture	0.11	-	8/26	
Health and welfare	0.18	-	17/27	
Services	0.03	-	9/21	
Not known or unspecified	-	-	-	
All fields	1.52	-	16/27	
Employment ratio and educational attainment⁶ (2003)				
Number of 25 to 64-year-olds in employment as a percentage of the population aged 25 to 64				
Lower secondary education				
Males	54	73	27/30	74
Females	41	49	25/30	91
Upper secondary education (ISCED 3A)				
Males	87	81	7/29	107
Females	70	62	12/29	113
Post-secondary non-tertiary education				
Males	87	84	8/18	104
Females	73	72	9/18	101
Tertiary education, type B				
Males	87	88	13/26	99
Females	74	77	19/26	96
Tertiary education, type A and advanced research programmes				
Males	92	89	3/30	103
Females	79	79	18/30	100

	Czech Republic	OECD mean	Czech Republic's rank ¹	% to OECD mean ²
Employment ratio and educational attainment (2003)				
Number of 30 to 34-year-olds in employment as a percentage of the population aged 30 to 34				
Lower secondary education				
Males	59.3	75.8	24/26	78
Females	40.3	47.6	20/26	85
Upper secondary education (ISCED 3A)				
Males	90.6	84.2	4/26	108
Females	65.4	58.3	7/26	112
Post-secondary non-tertiary education				
Males	90.8	85.2	4/26	107
Females	65.4	59.9	10/26	109
Tertiary education, type B				
Males	90.7	86.5	5/26	105
Females	65.5	62.8	13/26	104
Tertiary education, type A and advanced research programmes				
Males	92.6	88.4	4/26	105
Females	66.2	67.3	18/26	98
Unemployment ratio and educational attainment⁷ (2003)				
Number of 25 to 64-year-olds who are unemployed as a percentage of the population aged 25 to 64				
Lower secondary education				
Males	21.7	9.8	3/28	221
Females	18.6	11.0	3/27	167
Upper secondary education (ISCED 3A)				
Males	2.8	7.1	21/23	39
Females	5.8	10.6	13/25	55
Post-secondary non-tertiary education				
Males	c	5.9	-	-
Females	3.2	6.9	9/11	46
Tertiary education, type B				
Males	c	3.9	-	-
Females	c	4.4	-	-
Tertiary education, type A and advanced research programmes				
Males	1.7	3.6	25/27	47
Females	2.3	4.1	21/27	56
Unemployment ratio and educational attainment (2003)				
Number of 30 to 34-year-olds who are unemployed as a percentage of the population aged 30 to 34				
Lower secondary education				
Males	20.6	11.0	3/26	187
Females	22.4	9.6	3/26	233
Upper secondary education (ISCED 3A)				
Males	4.9	7.3	22/26	67
Females	8.3	6.8	8/26	122
Post-secondary non-tertiary education				
Males	4.8	6.8	22/26	71
Females	8.1	6.6	8/26	123
Tertiary education, type B				
Males	4.9	6.3	18/26	78
Females	8.0	6.3	6/26	127
Tertiary education, type A and advanced research programmes				
Males	3.8	5.6	21/26	68
Females	6.8	5.7	8/26	119

	Czech Republic	OECD mean	Czech Republic's rank ¹	% to OECD mean ²
Ratio of the population not in the labour force and educational attainment (2002)				
Number of 25 to 64-year-olds not in the labour force as a percentage of the population aged 25 to 64				
Lower secondary education				
Males	30	20	6/30	150
Females	49	46	10/30	107
Upper secondary education (ISCED 3A)				
Males	10	13	22/29	77
Females	25	30	19/29	83
Post-secondary non-tertiary education ⁱⁱ				
Males	-	11	-	-
Females	-	22	-	-
Tertiary education, type B ⁱⁱⁱ				
Males	-	9	-	-
Females	-	21	-	-
Tertiary education, type A and advanced research programmes				
Males	6	8	24/30	75
Females	19	19	8/30	100
Ratio of the population not in the labour force and educational attainment (2002)				
Number of 30 to 34-year-olds not in the labour force as a percentage of the population aged 30 to 34				
Lower secondary education				
Males	16	10	4/29	160
Females	32	39	22/29	82
Upper secondary education (ISCED 3A)				
Males	1	7	26/28	14
Females	25	26	11/28	96
Post-secondary non-tertiary education				
Males	-	3	-	-
Females	-	18	-	-
Tertiary education, type B				
Males	-	3	-	-
Females	-	16	-	-
Tertiary education, type A and advanced research programmes				
Males	1	3	26/29	33
Females	26	15	3/29	173
Earnings of tertiary graduates aged 25-64 relative to upper secondary graduates aged 25-64 (2002) (upper secondary = 100)				
Tertiary-type B	-	-	-	-
Tertiary-type A	-	-	-	-
Earnings of tertiary graduates aged 30-44 relative to upper secondary graduates aged 30-44 (2002) (upper secondary = 100)				
Tertiary-type B	-	-	-	-
Tertiary-type A	-	-	-	-
Trends in relative earnings of tertiary graduates aged 25-64 (upper secondary and post-secondary non-tertiary education = 100)				
1997	179	-	2/18	-
2002	-	-	-	-

	Czech Republic	OECD mean	Czech Republic's rank ¹	% to OECD mean ²
PATTERNS OF PARTICIPATION				
Participation rates of all persons aged 15 and over by programme (2002)				
Per cent of all persons aged 15 and over in tertiary type-5A programmes	2.7	-	22/26	-
Per cent of all persons aged 15 and over in tertiary type-5B programmes	0.3	-	14/26	-
Per cent of all persons aged 15 and over in tertiary type-6 programmes	0.2	-	4/23	-
Per cent of all persons aged 15 and over in all tertiary programmes	3.3	-	21/26	-
Index of change in total tertiary enrolment (2003) (1995 = 100)				
Total				
Attributable to change in population ⁸	93	96	13/19	97
Attributable to change in enrolment rates ⁹	174	143	5/16	122
Enrolment rates (2003)				
Full-time and part-time students in public and private institutions, by age				
Students aged 15-19 as a percentage of the population aged 15-19	90.1	79.1	2/28	114
Students aged 20-29 as a percentage of the population aged 20-29	16.6	23.6	24/28	70
Students aged 30-39 as a percentage of the population aged 30-39	2.9	5.4	18/28	54
Students aged 40 and over as a percentage of the population aged 40 and over	0.2	1.6	20/25	13
Age distribution of enrolments (2003)				
Persons aged 35 and over as a per cent of all enrolments in tertiary type-5A programmes	4.3	10.3	18/24	42
Persons aged 35 and over as a per cent of all enrolments in tertiary type-5B programmes	3.3	16.2	19/21	20
Persons aged 35 and over as a per cent of all enrolments in tertiary type-6 programmes	18.1	30.2	18/22	60
Persons aged 35 and over as a per cent of all enrolments in total tertiary programmes	5.2	11.7	20/24	44
Persons aged less than 25 as a per cent of all enrolments in tertiary type-5A programmes	74.7	63.9	7/26	117
Persons aged less than 25 as a per cent of all enrolments in tertiary type-5B programmes	85.7	58.9	5/26	146
Persons aged less than 25 as a per cent of all enrolments in tertiary type-6 programmes	14.4	10.2	8/21	141
Persons aged less than 25 as a per cent of all enrolments in total tertiary programmes	71.4	61.5	7/27	116
Persons aged less than 20 as a per cent of all enrolments in tertiary type-5A programmes	10.6	13.9	18/27	76
Persons aged less than 20 as a per cent of all enrolments in tertiary type-5B programmes	16.2	17.2	13/27	94
Persons aged less than 20 as a per cent of all enrolments in tertiary type-6 programmes	0.2	0.4	-	50
Persons aged less than 20 as a per cent of all enrolments in total tertiary programmes	10.4	15.0	19/27	69

	Czech Republic	OECD mean	Czech Republic's rank ¹	% to OECD mean ²
Gender distribution of enrolments (2003)				
Females as a per cent of enrolments in tertiary type-5A programmes	50.0	53.2	24/29	94
Females as a per cent of enrolments in tertiary type-5B programmes	66.9	54.8	3/29	122
Females as a per cent of enrolments in tertiary type-6 programmes	36.1	44.0	26/28	82
Females as a per cent of total tertiary enrolments	50.7	53.2	23/29	95
Net entry rates into tertiary education¹⁰ (2003)				
Tertiary-type B				
Total	9.3	15.6	13/23	60
Males	6.5	14.2	16/22	46
Females	12.2	17.0	12/23	72
Tertiary-type A				
Total	30.3	52.5	24/26	58
Males	31.5	46.6	21/25	68
Females	34.6	57.1	22/25	61
Distribution of students in tertiary education by type of institution¹¹ (2003)				
Tertiary-type B education, public	67.8	67.5	17/27	100
Tertiary-type B education, government-dependent private	31.2	19.5	9/19	160
Tertiary-type B education, independent private	1.0	13.1	14/14	8
Tertiary-type A and advanced research programmes, public	95.8	77.6	8/27	123
Tertiary-type A and advanced research programmes, government-dependent private	n	11.5	-	-
Tertiary-type A and advanced research programmes, independent private	4.2	10.9	12/17	39
Distribution of students in tertiary education by mode of study (2003)				
Tertiary-type B education				
Full-time	97.1	78.3	13/29	124
Part-time	2.9	22.5	17/18	13
Tertiary-type A and advanced research programmes				
Full-time	96.6	83.4	12/29	116
Part-time	3.4	16.6	18/18	20
Age distribution of net entrants into tertiary education, tertiary-type A (2003)				
Age at 20 th percentile (20% of new entrants are below this age)	19.6	19.2	7/23	102
Age at 50 th percentile (50% of new entrants are below this age)	20.7	20.8	12/23	100
Age at 80 th percentile (80% of new entrants are below this age)	27.3	24.9	4/19	110
Foreign students as a percentage of all students (2003) (foreign and domestic students)¹²				
	4.3	6.4	13/27	67
Index of change in foreign students as a percentage of all students (2003) (foreign and domestic students) (1998 = 100)				
	229	-	3/22	-
National students enrolled abroad in other reporting countries relative to total tertiary enrolment¹³ (2003)				
	2.4	4.0	19/29	60
Expected changes of the 20-29 age group by 2012 relative to 2002 (2002 = 100)¹⁴				
	77	96	25/30	80
Upper secondary attainment rates (2003)				
% of persons aged 25-34 with at least upper secondary education	92	75	5/30	123
Expected years of tertiary education under current conditions (2002)				
Full-time and part-time ¹⁵	1.9	2.8	24/28	68

	Czech Republic	OECD mean	Czech Republic's rank ¹	% to OECD mean ²
Admission to tertiary education ¹⁶ Source: Eurydice (2005)				
Limitation of the number of places available in most branches of public and grant-aided private tertiary education (2002/03)				
Limitation at national level with direct control of selection		1/35	-	-
Selection by institutions (In accordance with their capacity or national criteria)		23/35	-	-
Free access to most branches	√	11/35	-	-
EXPENDITURE				
Annual expenditure on tertiary education institutions per student, public and private institutions (2002)				
In equivalent US dollars converted using PPPs, based on full-time equivalents				
All tertiary education (including R&D activities)	6236	10655	21/26	59
Tertiary-type B education (including R&D activities)	2703	-	15/15	-
Tertiary-type A and advanced research programmes (including R&D activities)	6671	-	14/16	-
All tertiary education excluding R&D activities	4963	7299	16/24	68
Annual expenditure on tertiary education institutions per student relative to GDP per capita, public and private institutions (2002)				
Based on full-time equivalents				
All tertiary education (including R&D activities)	38	43	17/26	88
Tertiary-type B education (including R&D activities)	16	29	13/15	55
Tertiary-type A and advanced research programmes (including R&D activities)	40	42	10/16	95
All tertiary education excluding R&D activities	30	34	10/21	88
Cumulative expenditure on educational institutions per student over the average duration of tertiary studies ¹⁷ (2002)				
In equivalent US dollars converted using PPPs				
All tertiary education	-	45812	-	-
Tertiary-type B education	-	-	-	-
Tertiary-type A and advanced research programmes	-	-	-	-
Change in tertiary education expenditure per student relative to different factors				
Index of change between 1995 and 2002 (1995 = 100, 2002 constant prices)				
Change in expenditure	118	-	17/24	-
Change in the number of students	170	-	4/25	-
Change in expenditure per student	69	-	23/23	-
Change in tertiary education expenditure per student				
In equivalent US dollars converted using PPPs (2001 constant prices and 2001 constant PPPs)				
1995	8785	9284	12/22	95
2001	5555	10052	21/26	55
Expenditure on tertiary education institutions as a percentage of GDP, from public and private sources				
All tertiary education, 2002	0.9	1.4	27/28	64
Tertiary-type B education, 2002	n	0.1	-	-
Tertiary-type A education, 2002	0.9	1.1	14/17	82
All tertiary education, 1995	1.0	-	19/25	-

	Czech Republic	OECD mean	Czech Republic's rank ¹	% to OECD mean ²
Relative proportions of public and private expenditure on educational institutions, for tertiary education				
Distribution of public and private sources of funds for educational institutions after transfers from public sources				
Public sources, 2002	87.5	78.1	11/27	112
Private sources, household expenditure, 2002	7.4	18.5	17/24	40
Private sources, expenditure of other private entities, 2002	5.1	7.6	10/16	67
Private sources, all private sources, 2002	12.5	21.9	17/27	57
Private sources, private, of which subsidised, 2002	m	1.3	-	-
Public sources, 1995	71.5	80.8	15/19	88
Private sources, household expenditure, 1995	3.3	14.4	12/15	23
Private sources, expenditure of other private entities, 1995	25.2	11.0	2/10	229
Private sources, all private sources, 1995	28.5	19.2	5/19	148
Private sources, private, of which subsidised, 1995	8.7	5.4	2/8	161
Distribution of total public expenditure on tertiary education (2002)				
Public expenditure on tertiary education transferred to educational institutions and public transfers to the private sector, as a percentage of total public expenditure on tertiary education				
Direct public expenditure on public institutions	92.1	71.1	4/25	130
Direct public expenditure on private institutions	0.9	11.5	18/20	8
Indirect public transfers and payments to the private sector	7.0	17.4	23/27	40
Expenditure on tertiary education institutions as a proportion of total expenditure on all educational institutions (2002)				
Public and private institutions	21	24	16/23	88
Total public expenditure on tertiary education (2002)				
Direct public expenditure on tertiary institutions plus public subsidies to households (which include subsidies for living costs, and other private entities)				
As a percentage of total public expenditure ¹⁸	1.9	3.0	22/26	63
As a percentage of GDP	0.9	1.3	24/28	69
Subsidies for financial aid to students as a percentage of total public expenditure on tertiary education (2002)				
Scholarships / other grants to households	7.0	9.2	17/26	76
Student loans	a	7.6	-	-
Scholarships / other grants to households attributable for educational institutions	m	1.1	-	-
Annual expenditure per student on instruction, ancillary services and R&D (2002)				
Expenditure on tertiary education institutions in US dollars converted using PPPs from public and private sources, by type of service				
Educational core services	4308	7173	19/22	60
Ancillary services (transport, meals, housing provided by institutions)	654	342	4/7	191
Research and development	1273	2795	16/22	46

	Czech Republic	OECD mean	Czech Republic's rank ¹	% to OECD mean ²
Expenditure on tertiary education institutions by resource category (2002)				
Distribution of total and current expenditure on tertiary education institutions from public and private sources				
Percentage of total expenditure				
Current	88.3	88.4	18/26	100
Capital	11.7	11.6	9/26	101
Percentage of current expenditure				
Compensation of teachers	27.7	42.3	14/26	65
Compensation of other staff	20.6	22.2	11/15	93
Compensation of all staff	48.3	66.1	26/27	73
Other current	51.7	33.9	2/27	153
Registration and tuition fees (2002/03) ¹⁹ Source: Eurydice (2005)				
Registration and tuition fees and other payments made by students of full-time undergraduate courses, public sector				
Neither fees nor compulsory contributions	√	9/35	-	
Solely contributions to student organisations		3/35	-	
Registration and/or tuition fees (and possible contributions to student organisations)		23/35	-	
LITERACY LEVELS				
IALS achievement levels of graduates aged 25-34 (1994-1995) Source: IALS				
Graduates aged 25-34 at IALS levels 1 and 2 as a per cent of total graduates aged 25-34				
	5	19	19/21	26
Graduates aged 25-34 at IALS levels 4 and 5 as a per cent of total graduates aged 25-34				
	71	40	1/21	178
PATTERNS of PROVISION				
Ratio of students to teaching staff in tertiary education ²⁰ (2003)				
Based on full-time equivalents, Public and private institutions.				
Type B	16.9	14.4	3/15	117
Type A and advanced research programmes	17.3	15.7	6/18	110
Tertiary education all	17.3	14.9	7/23	116
EXPECTATIONS OF 15-YEAR-OLD STUDENTS				
Students' expected educational levels (2003) Source: PISA 2003 (OECD, 2004)				
Per cent of 15-year-old students who expect to complete secondary education, general programmes (ISCED 3A)				
	39.0	48.9	22/28	80
Per cent of 15-year-old students who expect to complete secondary education, vocational programmes (ISCED 3B or C)				
	11.4	29.9	24/26	38
Per cent of 15-year-old students who expect to complete post-secondary non-tertiary education (ISCED 4)				
	a	16.4	-	-
Per cent of 15-year-old students who expect to complete tertiary-type B education (ISCED 5B)				
	10.5	20.5	23/26	51
Per cent of 15-year-old students who expect to complete tertiary-type A education or an advanced research qualification (ISCED 5A or 6)				
	36.6	44.0	19/29	85

	Czech Republic	OECD mean	Czech Republic's rank ¹	% to OECD mean ²
RESEARCH AND DEVELOPMENT				
Gross domestic expenditure on Research and Development (R&D) as a percentage of GDP Source: OECD (2005)				
2003	1.26	2.24	14/19	56
1991	1.90	2.21	16/26	86
Higher education²¹ expenditure on R&D as a percentage of GDP Source: OECD (2005)				
2003	0.19	0.42	17/19	45
1991	0.03	0.36	23/23	8
Percentage of gross domestic expenditure on R&D by sector of performance (2003) Source: OECD (2005)				
higher education	15.3	18.7	15/18	87
(higher education in 1991)	1.6	16.3	23/23	10
business enterprise	61.0	67.3	10/18	91
government	23.3	10.9	5/18	214
private non-profit sector	0.4	3.1	9/14	13
Percentage of higher education expenditure on R&D financed by industry Source: OECD (2005)				
2003	1.0	5.6	14/15	18
1991	-	5.5	-	-
Total researchers per thousand total employment Source: OECD (2005)				
2003	3.2	7.4	11/11	43
1993	2.7	5.9	18/19	49
Researchers as a percentage of national total (full time equivalent) (2003) Source: OECD (2005)				
higher education	27.3	50.9	8/11	54
(higher education in 1993)	10.2	23.8	23/23	43
business enterprise	41.5	29.0	7/11	143
government	30.6	17.1	2/11	179
Share in OECD total "triadic" patent families²² (%) Source: OECD (2005)				
2001	0.03	-	23/30	-
1991	0.03	-	22/30	-
Foreign PhD students as a per cent of total PhD enrolments (2003)				
	7.3	13.7	12/17	53

NOTES FOR THE TABLE

Sources:

All data are from Education at a Glance, OECD Indicators 2004 and 2005, unless indicated otherwise in the table.

Other sources:

Eurydice (2005), *Key data on education in Europe 2005*, Eurydice, Brussels

IALS, *International adult literacy survey database*

OECD (2004), *Learning for Tomorrow's World, First Results from PISA 2003*, OECD, Paris

OECD (2005), *Main Science and Technology Indicators, volume 2005/2*, OECD, Paris

Missing data:

- a: Data not applicable because the category does not apply.
- c: There are too few estimates to provide reliable estimates.
- m: Data not available.
- n: Magnitude is either negligible or zero.

General notes:

1. "Czech Republic's rank" indicates the position of Czech Republic when countries are ranked in descending order from the highest to lowest value on the indicator concerned. For example, on the first indicator "*% of the population aged 25-64 with tertiary qualifications, Tertiary-type B - Total*", the rank "*x/x*" indicates that Czech Republic recorded the *xx*st highest value of the *xx* OECD countries that reported relevant data. The symbol "=" means that at least one other country has the same rank.
2. "% to OECD mean" indicates Czech Republic's value as a per cent of the OECD value. For example, on the first indicator "*% of the population aged 25-64 with tertiary qualifications, Tertiary-type B - Total*", the percentage "*xx*" indicates that Czech Republic's value is equivalent to *xx*% of the OECD mean.
3. The calculation of the average years in formal education is based upon the weighted theoretical duration of schooling to achieve a given level of education, according to the current duration of educational programmes as reported in the UOE data collection.
4. Two alternative methods were employed to calculate the average duration of tertiary studies: the approximation formula and the chain method. For both methods, it should be noted that the result does not give the average duration needed for a student to graduate since all students participating in tertiary education are taken into account, including drop-outs. Hence, the figure can be interpreted as the average length of time for which students stay in tertiary education until they either graduate or drop out.
5. This indicators show the ratio of graduates as a proportion to all fields of studies. The fields of education used follow the revised ISCED classification by field of education.
6. The employed are defined as those who during the survey reference week: *i*) work for pay (employees) or profit (self-employed and unpaid family workers) for at least one hour, or *ii*) have a job but are temporarily not at work (through injury, illness, holiday, strike or lockout, educational or training leave, maternity or parental leave, etc.) and have a formal attachment to their job.
7. The unemployed are defined as individuals who are without work, actively seeking employment and currently available to start work.
8. The impact of demographic change on total enrolment is calculated by applying the enrolment rates measured in 1995 to the population data for 2003: population change was taken into account while enrolment rates by single year of age were kept constant at the 1995 level.
9. The impact of changing enrolment rates is calculated by applying the enrolment rates measured in 2003 to the population data for 1995: the enrolment rates by single year of age for 2003 are multiplied by the population by single year of age for 1995 to obtain the total number of students that could be expected if the population had been constant since 1995.
10. The net entry rates represent the proportion of persons of a synthetic age cohort who enter a certain level of tertiary education at one point during their lives.
11. Educational institutions are classified as either *public* or *private* according to whether a public agency or a private entity has the ultimate power to make decisions concerning the institution's affairs. An institution is classified as *private* if it is controlled and managed by a non-governmental organisation (e.g., a Church, a Trade Union or a business enterprise), or if its Governing Board consists mostly of members not selected by a public agency. The terms "*government-dependent*" and "*independent*" refer only to the degree of a private institution's dependence on funding from government sources. A *government-dependent private institution* is one that receives more than 50 per cent of its core funding from government agencies. An *independent private institution* is one that receives less than 50 per cent of its core funding from government agencies.
12. Students are classified as foreign students if they are not citizens of the country for which the data are collected. Countries unable to provide data or estimates for non-nationals on the basis of their passports were requested to substitute data according to a related alternative criterion, e.g., the country of residence, the non-national mother tongue or non-national parentage.
13. The number of students studying abroad is obtained from the report of the countries of destination. Students studying in countries which did not report to the OECD are not included in this indicator.

14. This indicator covers residents in the country, regardless of citizenship and of educational or labour market status.
15. School expectancy (in years) under current conditions excludes all education for children younger than five years. It includes adult persons of all ages who are enrolled in formal education. School expectancy is calculated by adding the net enrolment rates for each single year of age.
16. In this indicator, the column "OECD mean" indicates the number of Eurydice member countries/areas, in which limitation on admission to tertiary education is adopted, out of 35 countries/areas whose data is available. For example, in the column "Limitation at national level with direct control of selection", 1/35 indicates that limitation at national level with direct control of selection is adopted in 1 country.
17. The estimates of cumulative expenditure on education over the average duration of tertiary studies were obtained by multiplying annual expenditure per student by an estimate of the average duration of tertiary studies.
18. Total public expenditure on all services, excluding education, includes expenditure on debt servicing (*e.g.* interest payments) that are not included in public expenditure on education.
19. "Registration fees" refers to payments related to registration itself or the certified assessment of each student. By "tuition fees" is meant contributions to the cost of education supported by individual tertiary education institutions. These fees also include any certification fees. Payments for entrance examinations are excluded. In this indicator, the column "OECD mean" indicates the number of Eurydice member countries/areas, in which registration and tuition fees are adopted, out of 35 countries/areas whose data is available. For example, in the column "Membership fees to student organisations", 5/35 indicates that membership fees are adopted in 5 countries/areas.
20. "Teaching staff" refers to professional personnel directly involved in teaching students.
21. "Higher Education" includes all universities, colleges of technology and other institutions of post-secondary education, whatever their source of finance or legal status. It also includes all research institutes, experimental stations and clinics operating under the direct control of or administered by or associated with higher education institutions. For detail, see OECD (2002), *Frascati Manual 2002: Proposed Standard Practice for Surveys on Research and Experimental Development*.
22. "Triadic patent" means patents filed all together to the European Patent Office (EPO), the US Patent and Trademark Office (USPTO) and the Japanese Patent Office (JPO). This indicator shows each country's share in total triadic patents filed by OECD countries. Reference year is when the priority patent is filed. Data is estimated by the OECD Secretariat and provisional. Because a few countries share large proportion of triadic patents, other countries have small share.

Country specific notes:

- i "Tertiary-type B" is included in "Tertiary-type A and advanced research programmes"
- ii "Post-secondary education" is included in "Upper secondary education"
- iii "Tertiary-type B" is included in "Tertiary-type A and advanced research programmes"

APPENDIX 5: AN EXTRACT FROM THE AUSTRIAN TECHNOLOGY REPORT 2005

(p. 88ff)

4.3.2 Uni:invent

Under the 2002 University Act, Austrian universities are entitled to exploit inventions made by any of their staff members in the course of employment (which must be reported to the rectorate under Section 106 of the 2002 University Act) by applying for a patent and pursuing appropriate activities towards utilisation. It is incumbent upon the universities themselves to develop regulations on the exploitation and allocation of royalties.

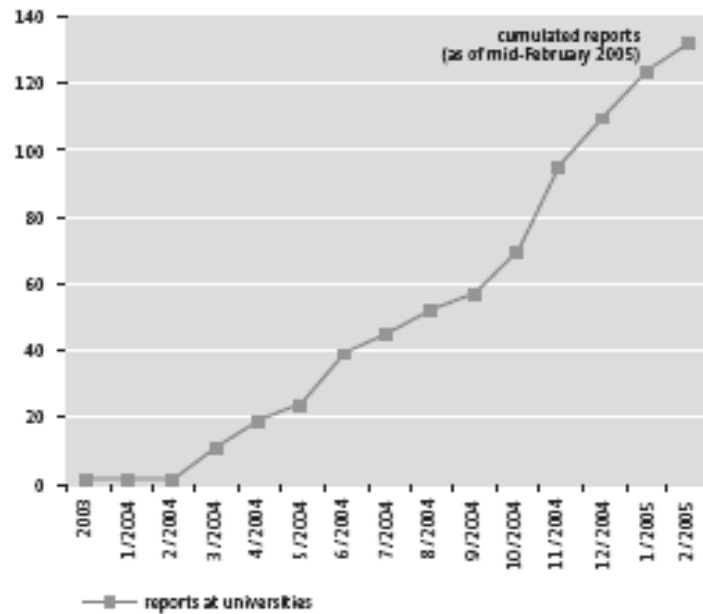
A programme known as uni:invent, initiated by BMBWK and BMWA and in place since early 2004, essentially aims to establish an "exploitation culture" at the universities and to set up efficient utilisation structures. Targeted measures are intended to raise awareness for the potential for economic exploitation that university research results may harbour in them, which can increase the economic use of university research. In order to create the structural prerequisites, so-called "innovation scouts" have been appointed at the universities participating in the uni:invent scheme.

Their purpose is to inform researchers of their legal and organisational situation, institute awareness-raising measures, identify research work of a high economic potential as early as possible, administrate research reports and, in general, act as the contact point for researchers with regard to their intellectual property rights. Innovation scouts also double as interface to the Austria Wirtschaftsservice (aws) and its technology utilisation unit tecma.

As programme organiser of uni:invent, aws-tecma prepares an expert opinion on the patent and marketing potential of innovations reported to it and provides a recommendation. If the university involved intends to utilise the invention, aws-tecma can be instructed to handle all patenting and exploitation proceedings (active search for licensees, contract negotiations, etc.).

The first reports – both to universities and to aws-tecma – were registered in March 2004. So far, a total of 130 inventions have been reported within the frame of the uni:invent scheme, originating from 13 universities and eight technology fields.

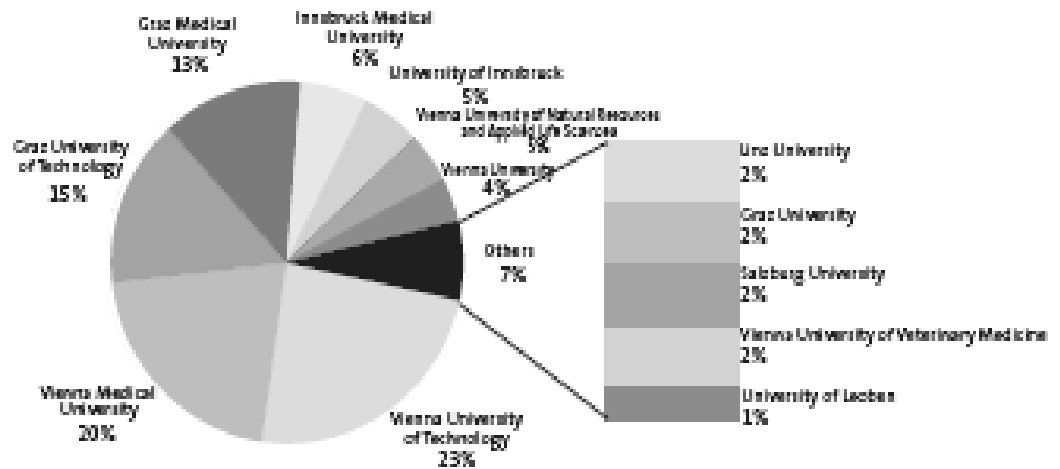
Fig. 43: Innovations reported since the start of the scheme



Not surprisingly, a majority of reports derive from universities of a technological or medical focus (Fig. 44). Their share of service invention reports is correspondingly high. At more than a third of all reports, biotechnology is clearly the number one technology field, followed by

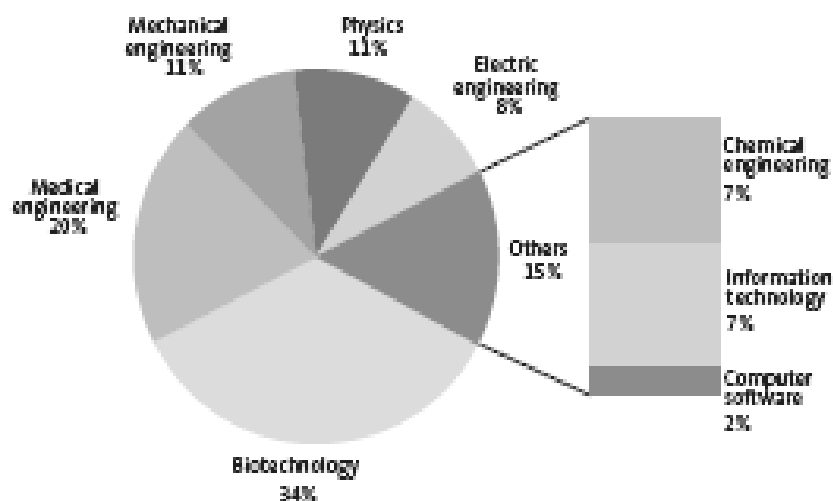
medical technology and (clearly relegated to the ranks) mechanical engineering, physics and electric engineering. Computer software is involved in 2 percent of the 130 reports (Fig. 45).

Fig. 44: Inventions reported, broken down by universities, 2004/05



Source: aws-tecma; tip calculations.

Fig. 45: Invention reports by technology fields, 2004/05

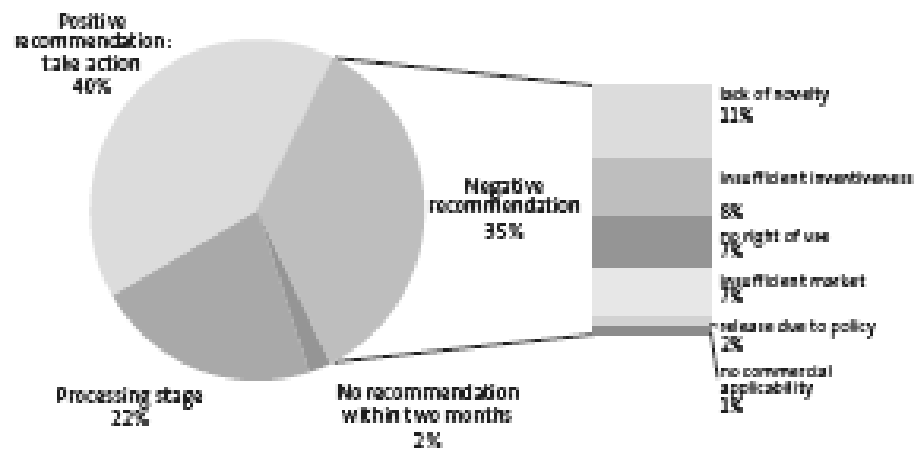


Source: aws-tecma; tip calculations.

From the totality of invention reports, aws-tecma recommended that an application be made for a service invention by the university in 40 percent of the cases. For 35 percent, the recommendation was negative, with reasons given

ranging chiefly from “no novelty”, to “insufficient level of inventiveness”, “lack of rights” and “insufficient market”. Currently, 31 invention reports are in their review stage.

Fig. 4.6: aws-tecma recommendations, 2004/05



Source: aws-tecma; tip calculations.

The accompanying programme evaluation finds much to praise the programme (Schibany 2004, Schibany and Streicher 2005b) and emphasises the need for public financing to launch such measures. Similarly positive words are found for the establishment of innovation scouts directly at the universities. Advice and awareness-raising measures require a local presence, a trust-based working relationship with scientists and measures tailored to the content and dimensions of a given university. The highly goal-oriented work performed by the innovation scouts should thus be supplemented by a greater emphasis on exploitation activities.