

# Strategy of Excellence for the Austrian Innovation System

## Executive Summary



The Austrian Council for Research and Technology Development for the first time explicitly called for the formulation of a strategy of excellence for all levels and all performance sectors as a necessary step toward the further advancement of the national innovation system in its Strategy 2010 paper published in 2005. The objective of the strategy of excellence is to raise the quality of research in Austria as a whole and to facilitate internationally competitive cutting-edge research in Austria on a greater scale. This should raise the quality and attractiveness of Austria as a centre of research and technology and improve the country's international competitiveness.

This recommendation by the Austrian Council has generated crucial impetus in this area and motivated other research and innovation policy players to formulate elements of a strategy of excellence for their own areas of responsibility. The results include the COMET programme of the Austrian Research Promotion Agency (FFG), the "Exzellenzinitiative Wissenschaft" of the Austrian Science Fund (FWF) and the Institute of Science and Technology – Austria (I.S.T. AUSTRIA). The Austrian Council welcomes these initiatives as it regards the strategy of excellence as an ongoing process to which all those involved should make a long-term commitment.

In 2006 the Austrian Council organised an open space conference on excellence and commissioned three smaller studies to define excellence. However, global trends, international benchmarks and national developments were also drawn upon to map out possible courses of action. . Finally, a number of discussions were held with experts and key players from the Austrian research and innovation system to co-ordinate content. Following a detailed examination of all the available results, the Austrian Council analysed the existing

contributions in their entirety and then defined key points of a strategy of excellence, adding additional elements and suggestions of its own.

This strategy document represents a milestone in an ongoing process and provides an overview of all the activities carried out so far and the elements of the strategy of excellence which have been derived from them. The paper outlines the further course of development and the steps that are necessary to advance it. Below is a summary of the main elements of the strategy of excellence which have been elaborated in the relevant recommendations in chapters 2 (→ Third-Party Contributions as Elements of the Strategy of Excellence) and 3 (→ 8 Elements of the Strategy of Excellence).

### **Recommendations as an Addition to Third Party Contributions**

Since the basic recommendation was made in Strategy 2010, the three following larger elements to which the Austrian Council has made supplementary recommendations have been developed.

#### ***1. Competence Centres Programme COMET***

The Austrian Council recommends that adequate funding should also be made available for COMET in the long term in order to ensure the long-term success of the centres of excellence. In the Austrian Council's opinion financing for COMET should therefore be provided in two instalments. On the one hand, the funding that has already been earmarked in the budget planning of the responsible ministries (BMVIT, BMWA) is being made available as basic financing. Subject to the jury vote, additional public funding may also be provided from the global budget so that no competence centre which received an excellent rating needs to be rejected due to lack of funding. This should also remove the limit on growth for competence centres that have been identified as excellent as a result of the budget ceiling. The Austrian Council is of the opinion that quality, and not financial resources, should be the only limiting criterion.

## **2. I.S.T. AUSTRIA**

The Austrian Council recommends that with regard to the share of public funding only the additional funding originally promised should be provided. This can be flexibly adjusted as needed and in line with the development status of I.S.T. AUSTRIA.

In order to establish internationally competitive cutting-edge research I.S.T. AUSTRIA must hold its own in competition with other research institutes by increasingly raising competitive funds. To ensure this outcome, an orientation towards international benchmarks is necessary. In this context networking with existing national and international universities and research institutes is essential. Appropriate conditions must therefore be created for this purpose. For example, incentives for the scientific community could be developed which offer thematically related research institutes the opportunity to use I.S.T. AUSTRIA's high quality infrastructure.

The research teams at I.S.T. AUSTRIA must exceed a critical dimension in order to ensure national and international visibility. If the number of researchers remains as planned, it can be assumed that there will only be a small number of research topics.

As soon as I.S.T. AUSTRIA has proved its leading position in national and international terms, additional resources should be provided to fund the PR work of the research teams at I.S.T. AUSTRIA in order to raise their national and international visibility. The province of Lower Austria should seek a two-fold increase in the amount of federal funding to finance the public relations work.

## **3. Exzellenzinitiative Wissenschaft**

International trends in the field of excellence promotion indicate a need to encourage excellent basic research in order to facilitate the development of critical masses. These are the prerequisite for cultivating competitive key areas of research and thus raising international visibility. The Exzellenzinitiative Wissenschaft of the FWF

sets out to achieve precisely this goal. The Austrian Council therefore recommends implementing the draft programme as quickly as possible on the basis of an adequate structure and financial planning. In the medium term, consideration should also be given to obtaining a financial contribution from industry.

## **Recommendations Regarding the 8 Elements of the Strategy of Excellence**

The Austrian Council has defined 8 elements of the strategy of excellence. The individual strategy elements and themes are to an equal extent the result of the open space conference and the smaller studies to define excellence and were formulated by the Council itself on the basis of international trends and independent analyses. Individual elements have already been dealt with in detail at the topic sessions of the open space conference or in the studies commissioned by the Austrian Council so that no follow-up work is required at present. Others need to be elaborated in more specific terms, which requires the Austrian Council to play an active role in order to develop proposals for advancing and implementing the aforementioned strategy elements.

### **1. *Excellence on Top End (EXOTE)***

The Austrian Council recommends the establishment of an excellence bonus called “Excellence on Top End” (EXOTE) to grant renowned research teams additional latitude for their research work. The excellence bonus should be a fixed sum within a range of EUR 500,000 and EUR 1 million which will be awarded to no more than five research teams from each performance sector who will receive support for a maximum period of five years to work on a clearly defined topic.

The Austrian Council will set up a working group which will subsequently develop suitable frameworks and steps for implementation. Researchers from all performance sectors who have experience with national and international funding (e.g. from among the

open space participants), representatives from the funding agencies and the responsible ministries should participate in this working group.

## **2. University Sector**

### *Measuring Excellence: Quality Assurance and Control*

Quality assurance and control at universities must become the subject of performance agreements. Within the scope of the performance agreements all universities must commit themselves to developing and implementing appropriate systems and procedures within the next few years.

In addition, particular value must be placed on fostering and enhancing excellence in research and teaching. The universities must develop catalogues of targets and criteria to measure excellence which are geared to international benchmarks and best-practice models.

### *The Use of Performance Agreements as a Steering Instrument*

In principle the Austrian Council welcomes the introduction of performance agreements at universities. It recommends that performance agreements should be used as an effective steering instrument. To ensure this outcome the process must be understood as a genuine process of negotiation until the agreements have been concluded. The experience gained in the negotiations which have been completed should be critically evaluated and used to optimise the next round.

In order to achieve international excellence greater emphasis must be given to the fundamental idea of competition between the universities. This must be based on a transparent catalogue of goals and criteria. The aim must be to systematically foster potential for excellence and to further strengthen existing excellence. Achieving these goals must pay off for both the individual institute and the university as a whole. In the long term, the percentage of the performance-based budget compared to the basic budget should be successively increased.

### *Improving Research Infrastructure*

An excellent infrastructure is the basic prerequisite for achieving scientific excellence. In order to strengthen the position of Austrian universities in international competition, the Austrian Council recommends that funding should again be provided for a university infrastructure programme. At the same time, greater attention needs to be given to the potential of infrastructure facilities which are linked and networked to one another and which are accessible to research teams from all over Austria. The goal is to promote the efficient utilisation of existing facilities and the economically efficient and comprehensive use of infrastructure by multiple research teams as recommended within the context of I.S.T. AUSTRIA (→ see Chapter 2.1 Third Party Contributions as Elements of the Strategy of Excellence).

### **3. Corporate Sector**

#### *Establish a Focus on Excellence in RTI Funding*

The Austrian Council recommends the drawing up a comprehensive concept for business related RTI funding which provides for a target group-specific differentiation and thus contributes to increasing quality on a broad level.

In addition, direct RTI business funding must have a stronger focus on excellence. To achieve this, greater incentives to improve quality and engage in higher risk RTI projects must be developed at all levels. Appropriate funding schemes for highly innovative and excellent corporate RTI projects should be realised within existing instruments, for example by refining the general or thematic programmes of the FFG by using the maximum funding amounts, longer programme durations etc.

#### *Expanding the Headquarter Strategy*

The Austrian Council recommends that existing funding schemes to safeguard national competitiveness and create favourable locational conditions be maintained and, where possible, expanded in order to

counter increasing pressure as well as both global and internal corporate competition on the part of headquarters with regard to decisions concerning R&D locations. To this end, the existing instruments of tax-based research funding such as the research allowance and research bonus should be evaluated and refined (→ see Chapter 3.3. Corporate Sector, strategic goal Establishing a Focus on Excellence in RTI Funding).

Incentives to relocate headquarters should be created by, for example, supporting direct co-operation between companies and universities and Fachhochschulen in the field of teaching, in order to develop customised courses or further education and training courses.

In addition to this, measures to attract a greater number of high calibre R&D activities will be required. In this connection the Austrian Council welcomes the programme line Research Headquarters drawn up by the FFG in close co-operation with the BMVIT and recommends its systematic elaboration with particular consideration to be given to promoting excellence. The Austrian Council also recommends developing suitable measures for carrying out consistent location marketing.

#### *Promoting a Willingness to Take Risks*

The Austrian Council sees a need for the corporate sector to accept that RTD projects involve a high degree of risk. High-risk RTD projects create room for the development of excellence and radical innovations. The establishment of a corresponding culture of risk is therefore an essential development task which presupposes a clear commitment on the part of all decision-makers and players.

Greater willingness to take risks should also be encouraged by giving funding agencies such as the FFG and AWS appropriate powers. At the same time, awareness measures should be developed to ensure an extensive flow of information to companies and researchers.

#### **4. Co-operative Sector**

##### *Introduce Target and Performance Agreements*

The Austrian Council recommends the development of new governance and financing models for all research facilities which receive basic funding from national government. Starting from an appraisal of the institution in question suitable models should in each case be developed to provide basic financing on the basis of multi-year target and performance agreements. The necessary survey of the status quo and an agreement concerning the further course of action requires a clear political commitment.

Greater emphasis needs to be given to excellence and its development must be rewarded. Competition between and within institutions must also be guaranteed. A binding and transparent catalogue containing specific and comprehensible criteria for measuring excellence should form the basis for the funding decision.

##### *Bundling of Programmes to Promote Co-Operation*

The Austrian Council believes that a functioning culture of co-operation is a fundamental prerequisite for the development of excellence. The Council therefore recommends increasing the effectiveness of funding in the co-operative sector by bundling programmes to promote co-operation. As part of this process it is essential to streamline the range of programmes in order to increase their transparency for funding recipients and improve the efficiency of programme management.

The activities developed in this regard within the scope of the FFG programme COIN (Co-operation/Innovation), which was designed as an umbrella for the programmes PROKIS04, FHplus, REGplus, protecNETplus and CIR-CEP, should be systematically further developed. The aim must be to integrate the aforementioned programmes, and if necessary, additional programmes into COIN so that these can be completely absorbed into an all-embracing programme.

## **5. Quality Assurance and Excellence in Research Funding**

### *Reducing Barriers to the Development of Excellence*

The Austrian Council recommends the systematic removal of all barriers to the development of excellence in the RTI system. Avoidable obstacles must be identified and specific proposals for solving the problem must be developed.

The efficiency of research funding schemes should not be curtailed by administrative or other obstacles. Top priority must therefore be given to the efficient structuring of the existing funding mix and the co-ordinated definition of key areas in the funding portfolios of the FWF and FFG.

Bearing in mind the principle of a clear separation between the political-strategic and operational levels, optimal use must be made of the possibilities of task sharing between the ministries and the funding agencies.

### *Reorganisation of the Structure of Programme Evaluation*

Based on the discussions held during the audit of the Austrian Council for Research and Technology Development by the National Audit Office, the latter suggested reorganising the structure of programme evaluations. The Austrian Council offers its support to draw up a corresponding legal basis.

## **6. Human Resources:**

### *Offering More Attractive Career Models for Female Researchers*

The Austrian Council recommends that priority be given to the introduction of the tenure track system. In addition to providing more specific career perspectives, attention must be given to encouraging excellent young researchers to engage in independent scientific work early on in their careers. The collective bargaining agreement which has been formulated should also be concluded and implemented speedily.

### *Improving Conditions for Foreign Researchers*

The Austrian Council recommends improving conditions for foreign researchers. To achieve this end all administrative hurdles must be

eliminated. It must be ensured that a sufficient number of excellent foreign researchers are available to enable Austria to hold its own as a centre of science and industry in the global competition with the leading nations.

#### *Optimise Financial Support (Grants)*

The Austrian Council recommends that the reforms which have already been initiated on the basis of the Austrian Council's recommendation should be speedily continued and completed as quickly as possible.

In order to establish additional performance incentives for students and young researchers the Austrian Council recommends extending funding for outstanding achievement within the scope of existing grant programmes.

#### *Promoting International Mobility*

The Austrian Council recommends developing measures to raise awareness with the aim of increasing participation by Austrian students in European mobility programmes.

Furthermore, all obstacles to mobility, especially for young scientists, must be identified and eliminated in order to clear the way for excellent young researchers to move to top international research institutes.

#### *Expanding Inter-Sectoral Mobility*

The Austrian Council believes that mobility fosters innovation. The Council therefore points to the need to systematically implement the recommendation it made to this effect in Strategy 2010. In a first step, all measures designed to promote co-operation and the K-programmes should be analysed to see whether they include the promotion of inter-sectoral mobility. Building upon this, the existing FFG and FWF programmes to promote inter-sectoral mobility should be expanded and refined with respect to promoting excellence.

### ***7. Inter-and Trans-Disciplinary Research***

The Austrian Council sees a great deal of potential for the development of innovations in inter-and trans-disciplinary research practice. It

therefore recommends the development of measures to anchor inter- and trans-disciplinary research in bottom-up funding and in institutional practice. Research programmes to establish theories and methods of inter- and trans-disciplinary science should be strengthened. Structures and criteria must be established which will open up new paths for research funding in Austria in order to exploit potential for excellence more effectively than in the past.

### **8. Gender and Excellence**

The Austrian Council recommends analysing Austrian academic life and the funding system with regard to whether the design of measures and the selection criteria and methods that are used put women at a disadvantage. Appraisal procedures and evaluation methods must be sufficiently objective and value-neutral to rule out gender-specific discrimination. Excellence must not be a question of gender. The Austrian Council therefore recommends anchoring gender mainstreaming as a basic principle in all programmes and measures.

“Traditional” means of promoting women in general research promotion and in the institutions should be continued and stepped up. In doing so, the institutional framework, especially at research institutions should be given a sharper focus. In addition, greater support should be given to initiatives such as Excellentia or the Laura Bassi Centres of Expertise which are explicitly geared to promoting excellence.

### **Conclusion**

This strategy document points to the path which must be consistently followed in the forthcoming period in order to achieve the objectives defined by the Austrian Council - to raise quality at a broad level and promote excellence at the top. The Austrian Council will continue to carry out its task of developing the strategy and following up on its implementation in co-operation with all the stakeholders in the innovation system.