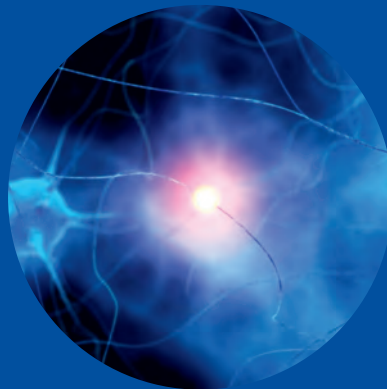
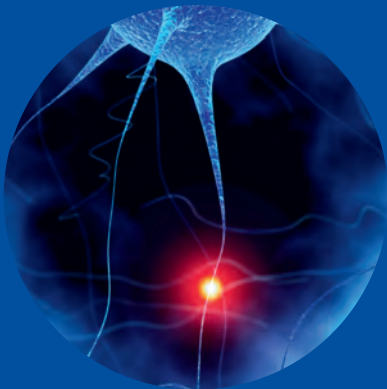
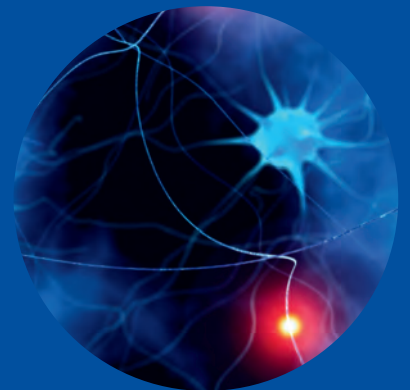
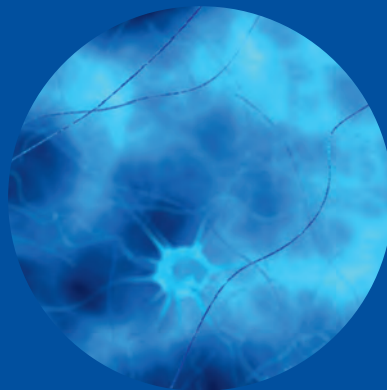
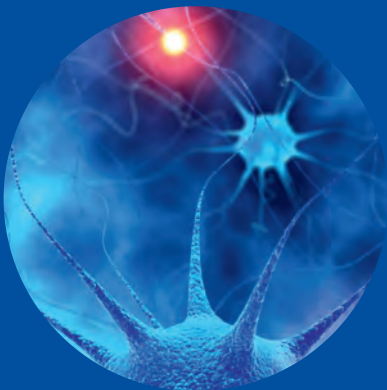
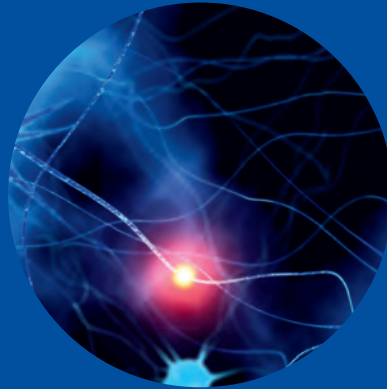
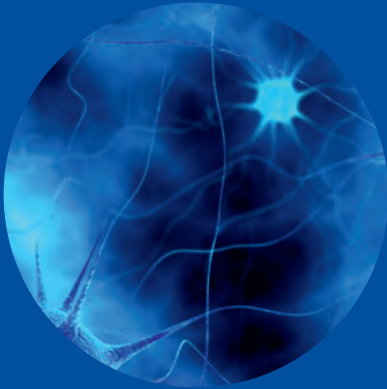






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4 __ **foreword**

5 __ **editorial**

7 __ **outlook**

Global Innovation Monitor _____ 8

13 __ **the austrian council recommends**

Recommendations 2014 _____ 14

33 __ **creating knowledge**

Accomplishments _____ 34

Reports and Studies 2014 _____ 37

International Activities _____ 48

51 __ **events**

59 __ **the austrian council**

Review and Outlook: 2014 and 2015 _____ 60

Members of the Austrian Council _____ 62

Secretariat _____ 63

64 __ **contact**

foreword

Strengthening Austria as an innovation location over the entire innovation cycle is one of the Austrian Government's most important mandates, particularly in view of the persistent economic crisis.

The implementation of the research, innovation and technology strategy 2011 and the goal of joining the group of innovation leaders is more critical than ever under the given conditions. Important steps in this direction have already been specified: securing basic research and increasing the university budget, boosting both application-oriented research and research by companies, continued focus on new production technologies and the recently decided increase in the research premium from 10 to 12 percent. With these measures, the body politic has committed to the importance of education,

research and innovation, and this also in such difficult economic times. Despite increasingly smaller fiscal room to manoeuvre, this will maintain good framework conditions for exploiting growth potential through knowledge, technology, innovation and creativity. Only with constant improvements in precisely these areas can Austria's growth and prosperity be secured for the long term.

The Austrian Government is extremely well accompanied and supported on this path by the Austrian Council for Research and Technology Development. This cooperation is the key to surmounting the challenges on the road to becoming an innovation leader.

With this in mind, we would like to thank the members of the Council for their commitment and valuable expertise!



Dr. Reinhold Mitterlehner
Vice Chancellor and Federal Minister of Science,
Research and Economic Affairs



Dr. Hans Jörg Schelling
Federal Minister
of Finance



Alois Stöger
Federal Minister for Transport,
Innovation and Technology

Austria intends to join the group of “Innovation Leaders” by 2020 – as set out in the objective of the 2011 RTI Strategy of the Austrian Government. The findings and analyses of the status quo accumulated when working out the strategy provided a realistic and thoroughly critical view of the starting position of the RTI location at the time. Five years later, however, both the global and national framework conditions have changed.¹ We are therefore facing a global and sustained growth decline, which poses major challenges for Europe in particular, but increasingly also for Austria. This entails a crisis for the European Union, the consequences of which cannot yet be entirely assessed for Austria. The austerity measures and budget consolidations this produces have at any rate also

been perceptible for some years now in Austria.² Little wonder then that the innovation dynamic has deteriorated, which since the key crisis year of 2009 has also hurt our competitiveness, and, in comparison with Germany and Switzerland, caused unemployment to increase rapidly. Relevant country rankings make it increasingly clearer that Austrian development in the individual competition-driving political areas is stagnating or even regressing.³ Joining the group of “Innovation Leaders” by 2020 therefore appears unrealistic from today’s perspective, unless the dynamic is recovered very rapidly with suitable measures.

editorial



Hannes Androsch
Chairman
of the Austrian Council

Education policy also always means innovation policy

According to Article 14 Para. 5a of the Austrian Federal Constitution of 2005, school “must secure the highest possible level of education (...) for the entire population, regardless of origin, social position and financial conditions (...)”. The reality, however, is somewhat different, as, according to PISA 2012, in Austria the education of parents has a major influence on the performances of the respective students. Education in Austria is consequently reproduced or “inherited” to a very high degree, whereby the socio-economic background of the family has the greatest influence. To counteract this education selectivity, ultimately it requires no less than the courage to improve the education and training system decisively and for the

long-term with structural changes. Full-day care can contribute significantly here to balancing out the qualitative and quantitative care deficit in the parental home. A series of further measures are, however, required in this respect. The highest priority must be that every child and every adolescent receives the best possible access to education and training, regardless of their socio-economic origin. The still usual half-day classes with an especially high number of days off has long since fallen short of schooling requirements or neuroscientific findings, and of course, also social conditions with a high labour force participation rate by women.



Peter Skalicky
Deputy Chairman
of the Austrian Council

¹ Among others, see Kissinger, H. (2014): World Order. Penguin Press, New York; Keuschnigg, C., et al. (2014): Vision Österreich 2050 – Vorsprung durch Bildung, Forschung und Innovation. Holzhausen Verlag – Vienna, p. 19 ff.

² Aiginger, K. (2015): Die Wende vom Konflikt zum Brückenbau. In: Der Standard, 3/4 January 2015, p. 38.

³ See the “Reports on Austria’s scientific and technological performance” from 2012 and 2014 published by the Austrian Council for Research and Technology Development.

editorial

This is one of the essential reasons why Austria, despite a top rating in monetary family support, with a birth rate of only 1.3 is on a par with China. France by comparison is at 2.0. Furthermore, everywhere in rural areas, i.e. in all places where

there is no grammar school lower grade, there has long been a common school, while in urban areas there is a lack of social integration. On the whole, therefore, the talent pool is certainly far from an optimum use.

Education, research and innovation as one unit

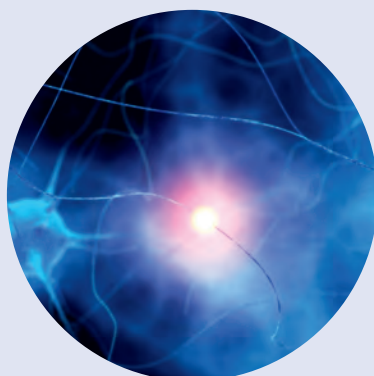
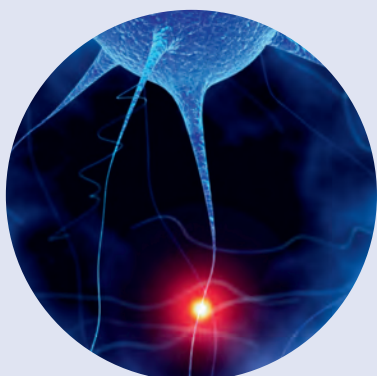
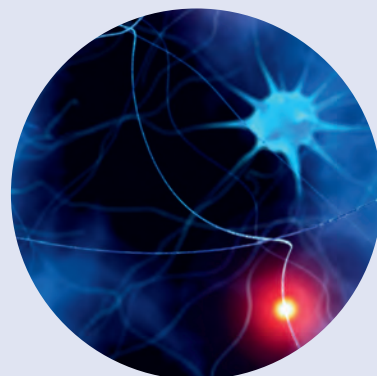
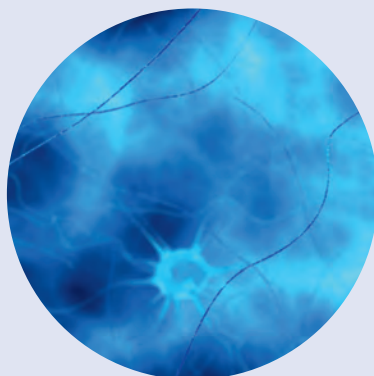
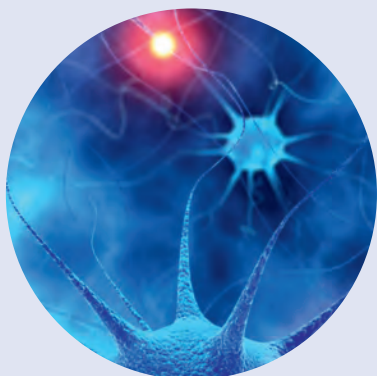
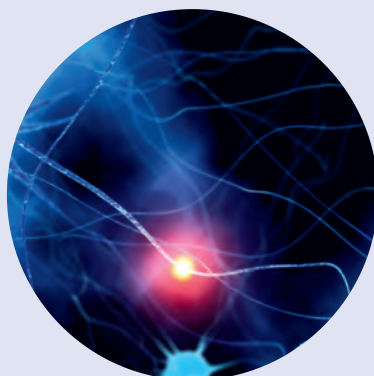
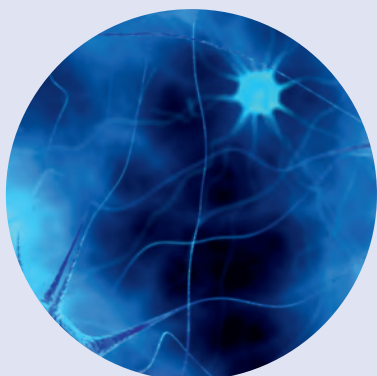
Furthermore, education, research and innovation must be considered more intensively than before as one unit. Together they form the prerequisite for a scientific and innovative basis for new ideas, new products and new services, which in turn secure the quality and competitiveness of Austria as a strong economic location. This requires political control that creates the kind of framework conditions under which

creativity can unfold and evolve. With this in mind, we thank all those that accompany and support the work of the Austrian Council for Research and Technology Development, and invite all to continue to work on the improvement of these framework conditions, to truly position Austria in the group of “Innovation Leaders”.

The members of the Austrian Council (from left to right):

Markus Hengstschläger,
Karin Schaupp,
Gi-Eun Kim,
Renée Schroeder,
Marianne Hilf,
Peter Skalicky,
Gabriele Ambros,
Hannes Androsch





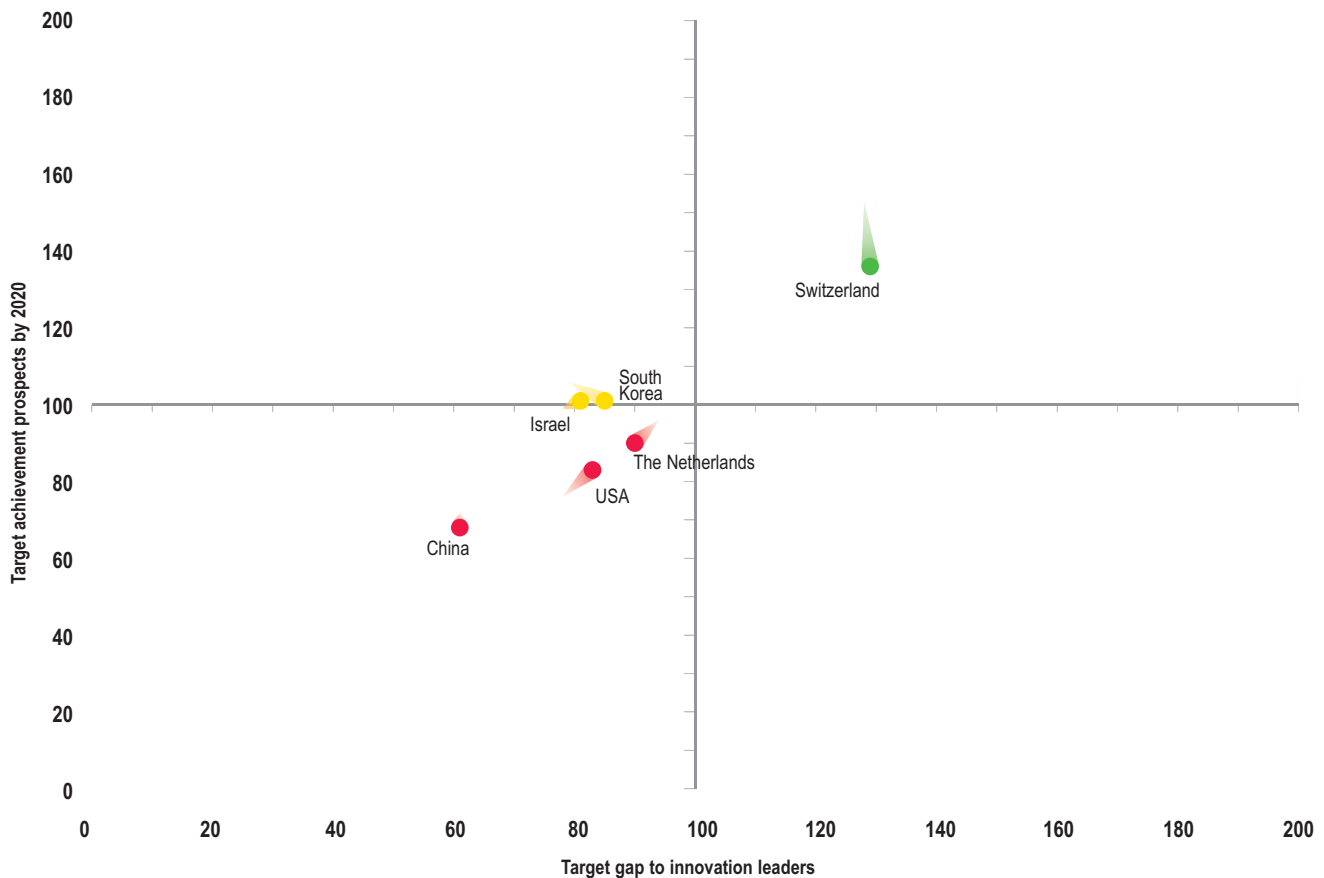
outlook

Global Innovation Monitor

The Council presented its “Global Innovation Monitor” within the scope of the Alpbach Technology Talks. The purpose of the Global Innovation Monitor is to examine our country’s position in the light of global developments based on a comparison of Austria with the globally leading or emergent innovation nations. Switzerland, the Netherlands, Israel, South Korea, the USA and China have been drawn as comparison countries, as

they (with the exception of China) apply as global leaders due to their successful performance, and can therefore serve as benchmarks. China for its part has been chosen because of its immense growth rates in research spending, publications, number of patents, among other factors. The “Global Innovation Monitor” will be a fixed component of the “Report on Austria’s scientific and technological performance” from 2015.

Figure 1: International economy, society and environment comparison



Source: Global Innovation Monitor

The Global Innovation Monitor compares Austria's performance in the areas of economy, society, environment, education, university research and corporate research. The following graphics show Austria's performance in relation to that of the aforementioned countries. Austria's target gap (x-axis) and the development dynamic (y-axis) are calculated standardised for Austria (= 100). Those countries that are currently rated better than Austria are on the x-axis right of 100 in this illustration. With a y-axis value >100 the countries shown have a higher development dynamic than

Austria, and with it either reduce their gap to Austria or cannot be caught up with.

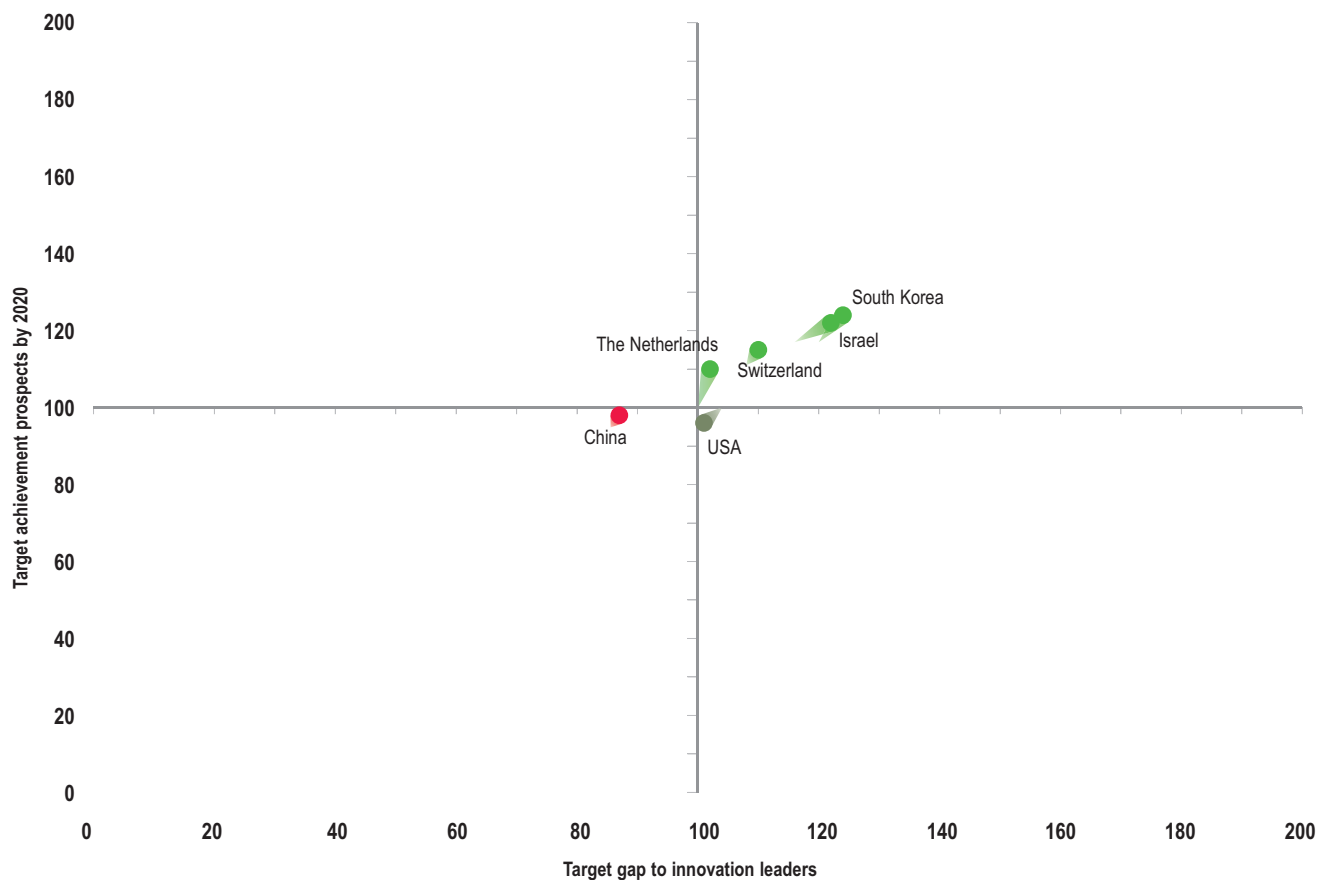
Economy, society and environment

Austria is – gauged on current economic KPIs – one of the most successful countries in the world: with high employment levels, low unemployment figures, considerable prosperity (gauged on above-average high per capita GDP) and a clear current account surplus.

At the same time, however, the fact must not be

outlook

Figure 2: International education comparison



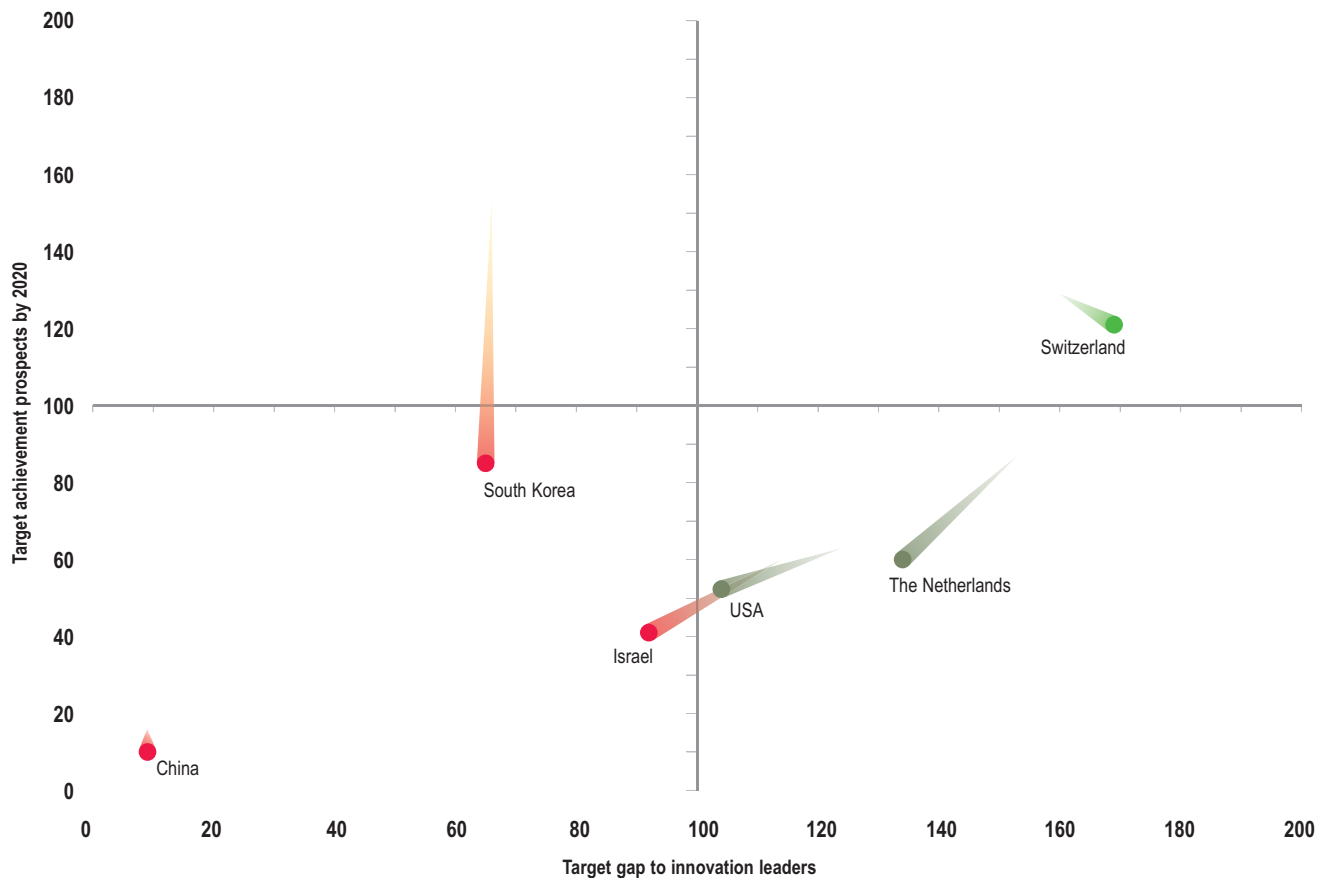
Source: Global Innovation Monitor

outlook

overlooked that Austria has been in a stagnation phase since 2009, the effects of which are now gradually becoming visible. Sharply rising unit labour costs, a high subsidy rate, productivity that has been clearly falling since the mid-90s, a high national debt and one of the highest tax and social-contribution ratios, which above all burdens the work factor, have caused a failing development dynamic for some years now. The following graphic provides an overview of the development trends of the countries dealt with in more detail

in the Global Innovation Monitor with regard to their economic, social and ecological performance. The graphic shows how Austria is relatively well positioned when considering the economic, social and environmentally-relevant KPIs. Only Switzerland and Israel are better positioned with regard to their economic development, social prosperity and the environmental situation; the Netherlands is positioned about the same as Austria. South Korea's development dynamic, however, is higher than Austria's, which is why South Korea could overtake Austria by 2020 with

Figure 3: International university research comparison



Source: Global Innovation Monitor

the current trend. The USA's performance is not sufficient, despite the increases, to overtake Austria by 2020. And vis-à-vis the possibility of overtaking Austria by 2020, China's development trend is even regressive. But China's growth dynamic should not be underestimated purely based on this lagging behind Austria.

Education

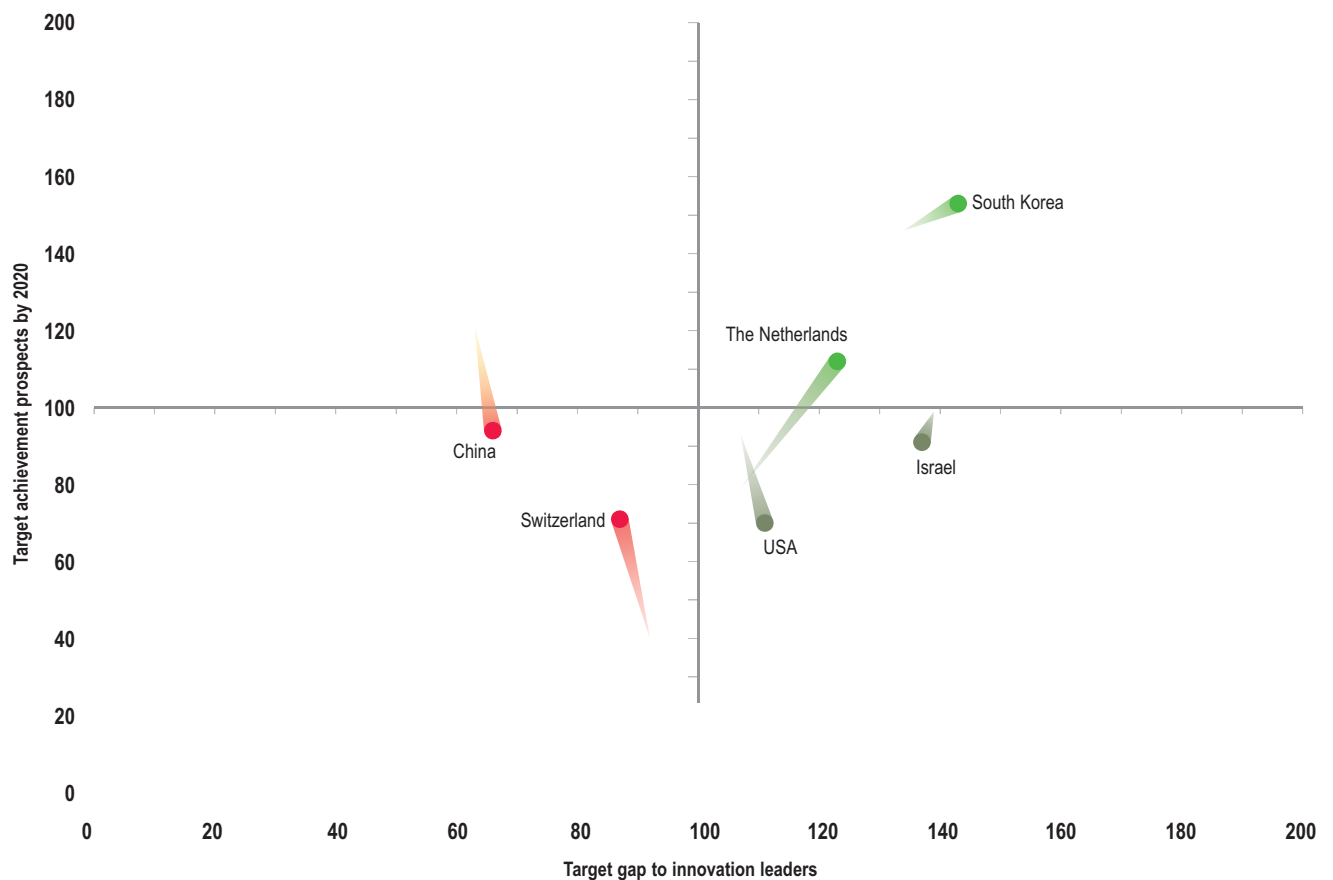
The evaluation of the education system is provided in a consolidated form by the results of the PISA studies as output components, and the

spending in the tertiary education sector for students as input components.

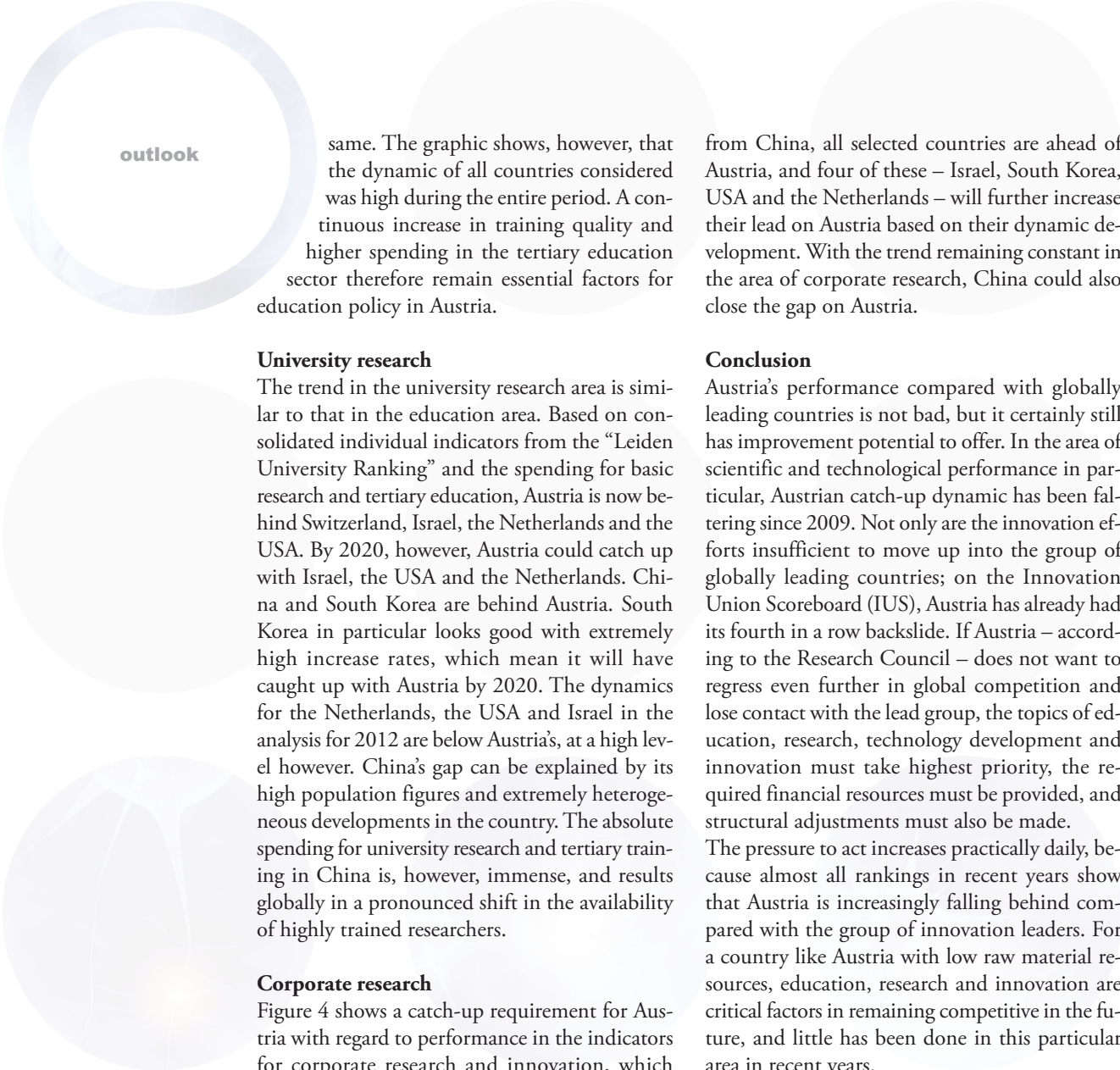
When we compare the current evaluations, Austria's education performance is ahead of Israel, South Korea and China, but behind the USA, the Netherlands and Switzerland. Although the performance of the Austrian education system has risen in these indicators in relation to all countries considered, the Netherlands and Switzerland remain clearly in front of Austria in their development dynamic. South Korea, China and the USA are about the

outlook

Figure 4: International corporate research comparison



Source: Global Innovation Monitor



outlook

same. The graphic shows, however, that the dynamic of all countries considered was high during the entire period. A continuous increase in training quality and higher spending in the tertiary education sector therefore remain essential factors for education policy in Austria.

University research

The trend in the university research area is similar to that in the education area. Based on consolidated individual indicators from the “Leiden University Ranking” and the spending for basic research and tertiary education, Austria is now behind Switzerland, Israel, the Netherlands and the USA. By 2020, however, Austria could catch up with Israel, the USA and the Netherlands. China and South Korea are behind Austria. South Korea in particular looks good with extremely high increase rates, which mean it will have caught up with Austria by 2020. The dynamics for the Netherlands, the USA and Israel in the analysis for 2012 are below Austria’s, at a high level however. China’s gap can be explained by its high population figures and extremely heterogeneous developments in the country. The absolute spending for university research and tertiary training in China is, however, immense, and results globally in a pronounced shift in the availability of highly trained researchers.

Corporate research

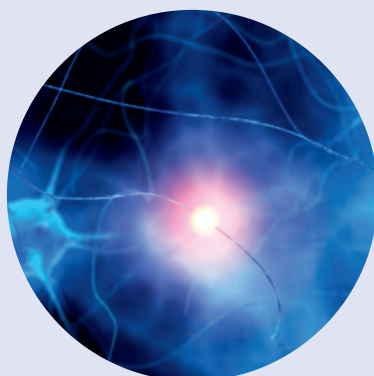
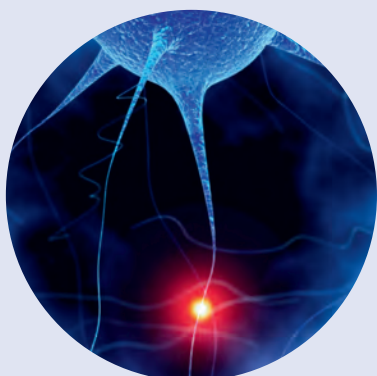
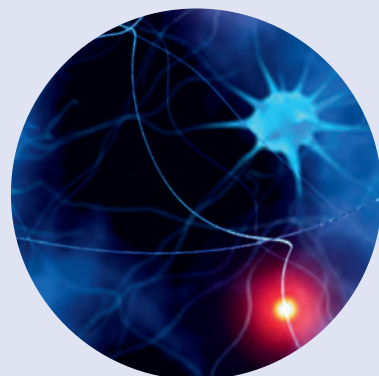
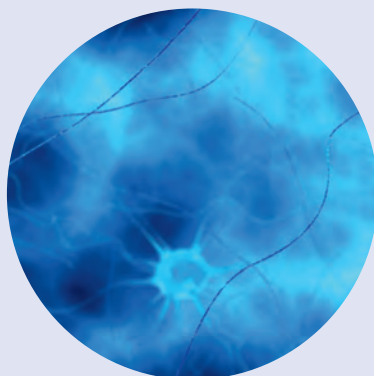
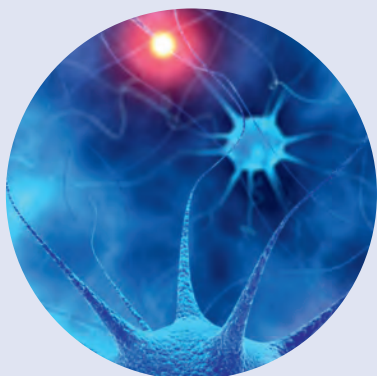
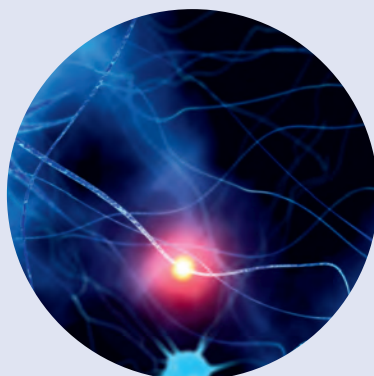
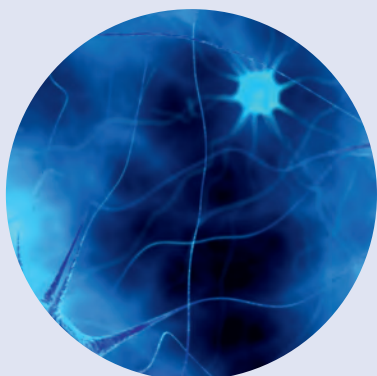
Figure 4 shows a catch-up requirement for Austria with regard to performance in the indicators for corporate research and innovation, which have been summarised for this illustration. Apart

from China, all selected countries are ahead of Austria, and four of these – Israel, South Korea, USA and the Netherlands – will further increase their lead on Austria based on their dynamic development. With the trend remaining constant in the area of corporate research, China could also close the gap on Austria.

Conclusion

Austria’s performance compared with globally leading countries is not bad, but it certainly still has improvement potential to offer. In the area of scientific and technological performance in particular, Austrian catch-up dynamic has been faltering since 2009. Not only are the innovation efforts insufficient to move up into the group of globally leading countries; on the Innovation Union Scoreboard (IUS), Austria has already had its fourth in a row backslide. If Austria – according to the Research Council – does not want to regress even further in global competition and lose contact with the lead group, the topics of education, research, technology development and innovation must take highest priority, the required financial resources must be provided, and structural adjustments must also be made.

The pressure to act increases practically daily, because almost all rankings in recent years show that Austria is increasingly falling behind compared with the group of innovation leaders. For a country like Austria with low raw material resources, education, research and innovation are critical factors in remaining competitive in the future, and little has been done in this particular area in recent years.



Recommendations for 2014

Recommendation for financing universities and research until 2020 –
Recommendation of 16 January 2014

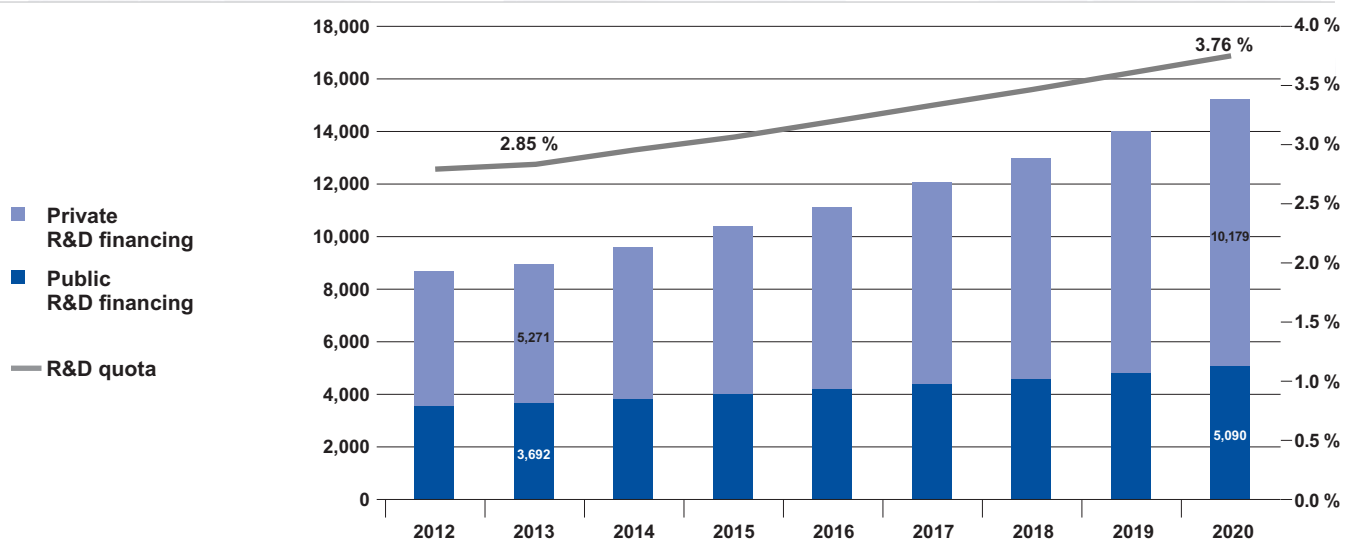
Background

An important step in the improvement of science and research framework conditions in Austria was already taken with the implementation of the Austrian Government's strategy for research, technology and innovation in 2011. One objective defined here was the achievement of an R&D rate of 3.76 percent (in percentage of GDP). In its 2013-2018 government programme, the Austrian Government has once again specified science and research as basic pillars in Austria's general nationwide development. The setting of specific budgetary measures to achieve the 2-percent rate (in percentage of GDP) for tertiary education institutions by 2020 has been announced as an objective of the government programme.

Additional financing requirement with public financing to achieve R&D spending target of 3.76 percent of GDP amounts to over EUR two billion by 2018.

Even before the current government was formed in October 2013, the calculation of possible paths towards the research quota targets by 2020 was published by WIFO (Austrian Institute of Economic Research) on behalf of the Council. While the study reveals that the development trend of the R&D quota does show an increase in spending for science and research, the required increases to achieve the 3.76 percent target, however, cannot be met. The WIFO study specifically shows that, to achieve the quota target, a sharp in-

Figure 5: Financing path to achieve R&D quota target of 3.76 percent in 2020 (in EUR m).



Source: WIFO, research quota targets 2020

crease in public financing from 2013 to 2020 would be required (see graphic 5). Based on 2013, the accumulated additional funding requirement with public financing by 2018 is more than EUR two billion.⁴

EUR 400 million increase per year required to achieve the target of “2 percent of GDP for the tertiary sector by 2020”

If the target of laying out 2 percent of GDP for the tertiary sector is to be achieved by 2020, the funding for the areas of universities, basic research and applied research must be increased significantly.

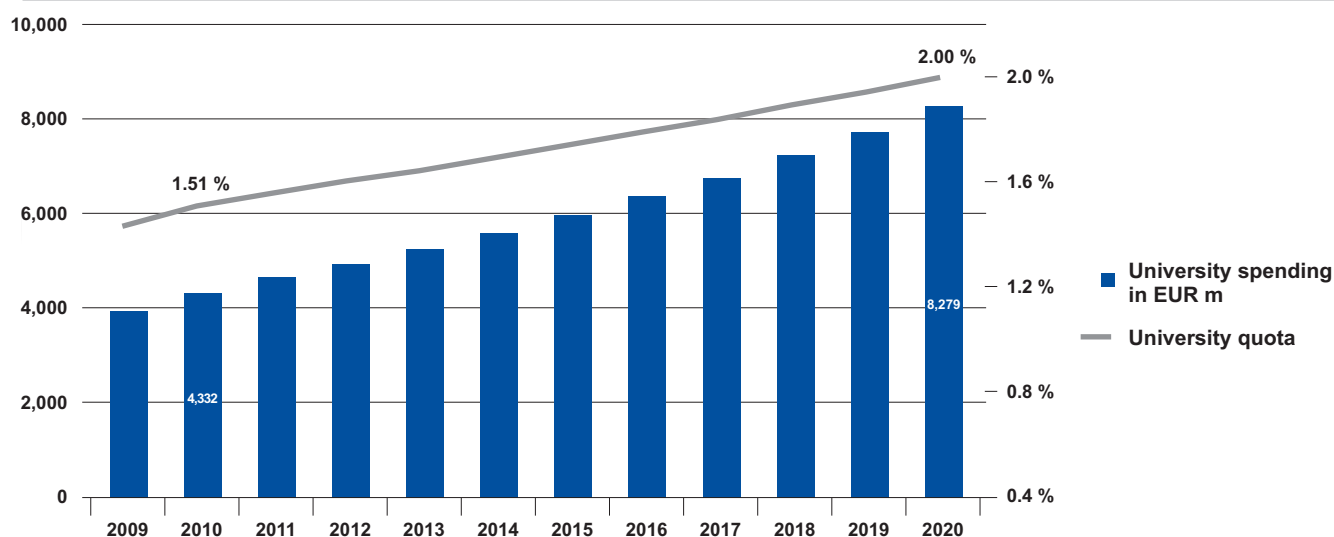
To achieve the 2 percent target, spending would have to increase from 1.51 percent of GDP or EUR 4.3 billion in 2010 to EUR 8.3 billion in 2020 (see graphic 6). As the public sector financing share in the tertiary sector outweighs that of

the private sector, the required increases must primarily be provided by the public sector. Annual additional spending averaging approx. EUR 400 million over the remaining period would be required to achieve the 2 percent target. As appropriate increases are not included in the federal financing framework, achieving the target is improbable, therefore the acute requirement for action.

Recommendation

The Council recommends the announced and necessary measures for financing the tertiary sector and public sector R&D total spending be implemented immediately. This is especially true because sustainable growth for science and research will only be guaranteed with a continuous increase in spending.

Figure 6: Spending for the 2 percent target for the tertiary sector in 2020 (in EUR m)



Source: WIFO, research quota targets 2020

⁴ This calculation depends on a series of assumptions, among others: The R&D quota grows at a constant growth rate; percentage target 33.33% public financing, 66.67% private financing in 2020; federal government share including research premium in public financing constant at 81%; research premium carried forward from 2014 with 10% of private financing in year t-1.

Recommendation for amendment of the Alternative Investment Fund Manager Act (AIFMG) – Recommendation dated 6 March 2014

Background^{5 6 7}

Austria ranks among Europe's top group of countries with the best general financing conditions for small companies. The very favourable general framework conditions, however, are opposed by a newer, and in international terms, smaller market for risk financing.

At 0.08 percent of GDP, the risk capital invested in 2012 in Austria is less than a third of the average for comparable European countries (0.26%). When it comes to raising funds at home and abroad for domestic companies, Austria is placed only 19 out of 25 comparison countries. A functioning risk capital market is, however, a basic requirement for joining the top knowledge and innovation-based economies. Ultimately with risk capital it is all about a special financing segment for small, young (or recently started) innovative companies, for which there are no real alternative forms of financing available.

Additional legal initiatives have recently been kick-started to invigorate the market, particularly for international financing. Based on the EU's "Alternative Investment Fund Managers Directive (AIFMD)", the Alternative Investment Fund Manager Act (AIFMG) was initiated in July 2013. Standardised admission requirements

will also be stipulated with these provisions for risk capital funds across the EU.

The "European Venture Capital Pass" associated with this produces benefits with international financing. Higher costs for admission, however, are also produced.⁸ A sub-threshold area for small funds has therefore been created⁹, which is excepted from regulation. If such typical for Austria small risk capital funds do not voluntarily meet the requirements of AIFMG, they miss out on the benefits of the European Pass. Following a one-time registration, the "European Venture Capital Regulation (EuVECA)" therefore offers an option for the administration of these funds with a similar pass, provided 70 percent of the capital applied goes to young and innovative companies.

The AIFMG itself does not utilise the scope granted by the EU directive, and with a transition period until July 2014 only continues to admit direct investments of private investors for real estate, some special funds and managed future funds. Sale to private investors, especially in the form of risk capital, would consequently no longer be permitted. Valuable investment resources for Austria would then also be lost, and would probably be diverted into funds invested outside of Austria.

⁵ Peneder, M.: "Von den trockenen Tälern der Risiko- und Wachstumsfinanzierung", WIFO Monthly Reports, 2013, 86 (8), pp. 637–648.

⁶ Jud, Th.: "Funktionsmodell und Rahmenbedingung der Risikokapitalfinanzierung", WIFO Monthly Reports, 2013, 86 (8), pp. 663–672.

⁷ Jud, Th., Marchart, J.: "Mögliche Konsequenzen der Umsetzung der EU-Richtlinie zum Management alternativer Investmentfonds für die österreichische Risikokapitalbranche", WIFO Monthly Reports, 2013, 86 (8), pp. 699–706.

⁸ Jud, Th., Marchart, J., Friesenbichler, K. S., Peneder, M., Haslinger, S.: "Risikokapital in Österreich. Angebots- und nachfrageseitige Erklärungen der geringen Ausprägung und Empfehlungen zu ihrer Überwindung", A Study by Improveo, AVCO and WIFO, Vienna, 2013.

⁹ The sub-threshold for these funds is generally set at EUR 100 million and EUR 500 million for those funds that utilise leverage financing.

This provision results, not least of all, in insufficient consistency with investor protection, as according to the AIFMG, private direct investment itself is restricted to large funds, while according to EuVECA, shares of smaller funds with technologically and financially more risk-intensive portfolios can be sold to private investors.

Recommendation

The Council confirms that a well-developed risk capital industry is an essential driving force for a national economy, which is based on innovation and technological market leadership. The Council therefore recommends the Austri-

an Government to utilise the regulatory scope to remove considerable obstacles to an increase in risk capital intensity, and welcomes the plans proposed in this direction for this legislative period.¹⁰

The Council in particular recommends,

- that, following the end of the transition period in July 2014, the prohibition of sale for direct private investors coming into effect in accordance with § 48 AIFMG be lifted by the amendment
- and that the complementarity and consistency of the investor provisions of EuVECA and AIFMG in the sub-threshold area relevant in practical terms for Austria be optimised.

recommendations

Recommendation on priority of research, technology and innovation –

Recommendation dated 6 March 2014

Background

The Innovation Union Scoreboard 2014 was published on 4 March 2014. The sobering result: Austria falls one place again in the ranking and is now placed 10th. This is the fourth fall in a row. The four innovation leaders Sweden, Denmark, Germany and Finland continue at the top.

The relative gap to the leading countries is actually reduced, because Austria, vis-à-vis the overall index since 2006, has grown faster than the four innovation leaders. Sweden, Denmark, Germany and Finland, however, are still on a far higher level, and Austria's dynamic has stagnated since 2009. This is also the reason for Austria's continuous regression, because Belgium, the Netherlands, Ireland and the UK have grown more intensively than Austria in this period.

Conclusion: Austria's catch-up dynamic is currently insufficient. Continuing as before is therefore not an option, as other comparable countries show stronger development dynamic. If Austria intends not to fall further in global competition and lose its connection with the lead group, the highest priority must be given to the issues of research, technology and innovation, and the required financing must be provided, with structural adjustments also being required. The Council has already defined the required budget method in its "Recommendation for financing universities and research until 2020" dated 16 January 2014. This is also a prerequisite for achieving the target set by the Austrian Government in its RTI strategy of joining the group of innovation leaders by 2020.

¹⁰ Work programme of the Austrian Government for the period 2013-2018, p. 15.

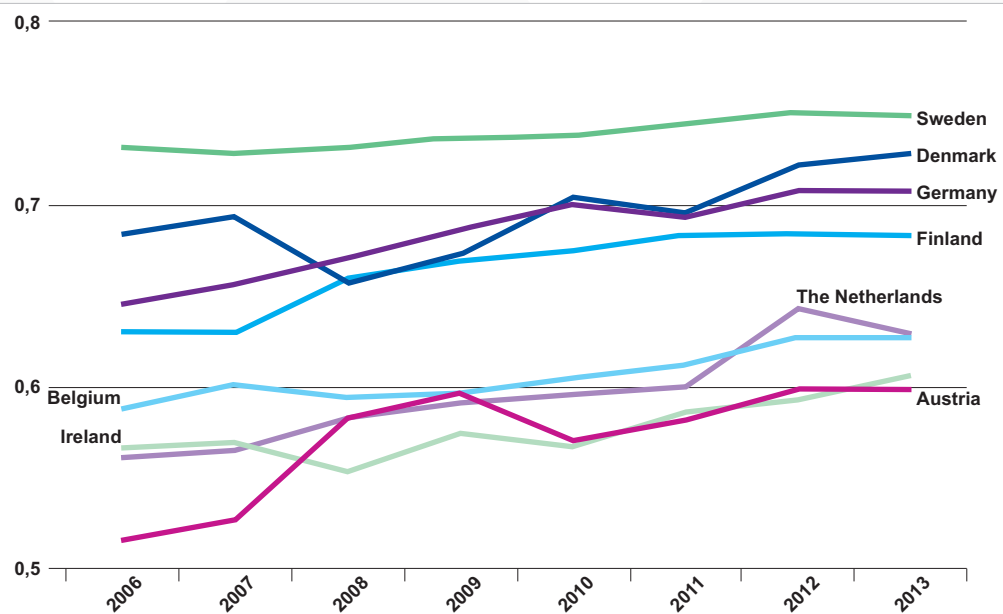
recommendations

Recommendation

The Council recommends the efforts to implement the measures included in the RTI strategy be pursued with the highest possible priority and the required financing basis be made available. On one hand, the proposals of the Council on structural reforms of the RTI Governance in its “White

paper for controlling research, technology and innovation in Austria” must be followed up on. On the other hand, the required innovation dynamic must also be ensured for the long term with appropriate financing. The budget method for achieving the R&D spending target of 3.76 percent required for this must be adhered to.

Figure 7: Development dynamic of the IUS 2006-2013



Source: Innovation Union Scoreboard 2014

Recommendation on priorities for awarding funding by the National Foundation RTD 2015 – Recommendation dated 6 March 2014

The National Foundation for RTD plays a very important role in the Austrian RTI system as an additional financing source for long-term strategic measures. The Council therefore once again regretfully acknowledges that the funds provided to the National Foundation has steadily de-

creased in recent years, and on average is already significantly below the amount proposed in the annotations on the law.

Thus, once again a sufficient and sustainable allocation of funds must be advised so that the National Foundation can perform its functions.

Following detailed discussion, the Council recommends the following content-relevant orientation for awarding funds 2015:

recommendations

(Basis for the 46th Foundation Council session 25 March 2014)

- Boosted research infrastructure by focusing on initiatives with
- corresponding critical variables and risk potential
- Boosted national human potential basis
- Increased risk capital
- Increased contribution by intellectual property to growth and innovation
- Increased innovation potential with "Open Innovation"
- Coordination and consultation between regional and federal RTI activities
- Excellence in basic research
- Measures for boosting Austria as a location for research-active companies
- Research and technology initiatives for the industrial location

Orientation follows the principle of long-term planning ability and continuity of the National Foundation.

With the applications of the recipients, special factors to be considered include the existing pro-

grammes in the responsible units and agencies and, with regard to the focus on intellectual property, the planned elaboration of an overall national strategy on intellectual property.

Recommendation on Austria's internationalization in research, technology and innovation – Recommendation dated 8 April 2014

Background

Research, technology and innovation are closely interwoven on an international level. All research countries compete globally in this network for the best locations for research and development, as well as the best researchers. Austria's positioning in a global RTI network is therefore an essential component for the successful development of Austria as a research and business location. The political and economic relevance of international relations increases and effects increased fund-

ing and expansion in this area. A study carried out on behalf of the Council compares¹¹ RTI internationalization strategies and structures for this in knowledge management in Germany, Switzerland, the UK and France. These research nations increasingly focus on a conscious RTI internationalization policy. Germany and Switzerland are intensively networked in the RTI area overseas (DWIH¹² and swissnex¹³). There are also attachés and technology councils at the local em-

¹¹ Sigl, L., Witjes, N. (January 2014): *Koordinations- und Kooperationsstrukturen für die Internationalisierung österreichischer Forschung, Wissenschaft und Technologie (EU-Drittstaaten), durchgeführt am OIIP*; <http://www.rat-fte.at/publikationen/articles/Publikationen.html>.

¹² German science and innovation companies.

¹³ <http://www.swissnex.org/>.



recommendations

bassies, which report across-departments to different committees, whereby a shared knowledge and information management of science and foreign policy has developed.

The UK and France utilise their knowledge attachés in embassies in possible target regions differently to other countries. In the UK, the attachés' reporting is connected with a systematic analysis of the target countries. In France the Office of Science and Technology (OST)¹⁴ produces regular reports on activities and scientific profiles of countries outside Europe (emerging countries in particular), which enables early identification of cooperation potential. In both the countries mentioned and at EU level, there is agreement that, regardless of the specific targets of the stakeholders involved, strategic knowledge of the potential of future cooperation countries is absolutely necessary. There are, however, only very few systematic indicators for identifying future areas for science and technology. This always involves a combination of top-down and bottom-up priority setting: top-down in terms of a selection based on wide-ranging political criteria, and bottom-up in terms of personal knowledge and networks of priorities set by the research community. With the "Becoming an Innovation Leader" RTI strategy, the Austrian Government outlined a dynamic path for research, technology and in-

novation in 2011. The measures described in it are intended to enable a well-developed knowledge and research system to rank Austria's scientific and technological performance in the group of leading innovation countries.

Controlling Austria's international positioning, not only in the European area, but also beyond Europe's borders, is a key factor for a successful policy for research, technology and innovation. Austria can refer here to a high foreign capital spending percentage. Companies with overseas holdings consequently contribute approx. one third to the entire R&D spending in Austria. The top country of origin positions are occupied by Germany, Switzerland, the USA, Canada and the Netherlands.¹⁵ Just like internationalization initiatives at different levels in recent years, the measures implemented for research and development in Austria have contributed to making knowledge and research internationally visible in Austria. There is, however, a lack of communication structures to bundle the knowledge available in ministries, agencies and research institutions. Setting up a permanent work group¹⁶ of the Task Force RTI for coordinating and implementing an Austrian foreign science and technology policy consisting of specialist departments underscores the importance of this task. The "Beyond Europe"¹⁷ publication provides a direction-setting result from the work process of the 7a Work Group here.

¹⁴ <http://www.france-science.org/Locations,375.html>.

¹⁵ See Research and Technology Report 2013, p. 42 ff.

¹⁶ Representatives of the BMeiA with the inclusion of representatives of the most important Austrian RTI stakeholders work together in the "internationalization and RTI foreign policy" 7a Work Group of the Task Force RTI, headed up by representatives of BMVIT and BMWFW. The group of RTI stakeholders includes representatives of the following institutions: ABA, AIT, AWO/WKO, AWS, FFG, FHK, FWF, OeAD, Forschung Austria, Austrian Council, UNIKO.

¹⁷ Beyond Europe – Austria's internationalization in research and innovation across and beyond Europe – Recommendations of the AG7a to the Austrian Government's RTI Task Force (July 2013; https://www.zsi.at/object/news/2786/attach/FTI_AG7a_Brosch__re_Druck.pdf).

On the basis of analyses, studies and discussions, five targets of the Austrian RTI internationalization policy and instruments, measures and recommendations are formulated herein. The different targets pursue thematic, organizational and geographical priorities for RTI internationalization here. The measures and tools for science, economy and diplomacy will boost each other reciprocally in this respect and promote international networking. The international dialogue and a mutual relationship with the partner countries require at all times that Austria's attractiveness as a research, technology and "cooperation country" will continue to be enhanced. Presenting Austria as a destination country for young talent, outstanding scientists and international companies is an essential element of a successful internationalization strategy for Austria.

Recommendations

Competence network set-up – A responsible and future-oriented internationalization policy strengthens Austria as an important stakeholder in research, technology and innovation. The political mandate for this is specified in both the Austrian Government's RTI strategy 2011 "Becoming an Innovation Leader", and in the current work programme of the Austrian Government 2013-2018, "Successful Austria". A functioning communication requires cross-department coordination of overseas activities and the provision of information for stakeholders, in order to enable the coordination and planning of individual activities and a joint presence of Austrian RTI stakeholders. The Council supports the activities of the 7a Work Group and actively contributes to communication and cooperation processes.

The Council recommends

the set-up of coordination and communication structures

- organization of RTI internationalization as an RTI cross-section topic and strengthening of the inter-ministerial coordination between

the federal ministries involved, and further intensification of the coordination with BMeiA in particular. It is recommended the measures postulated in the report of AG7a ("Beyond Europe"), a governance structure for coordination, implementation and monitoring of the Austrian foreign science and technology policy be installed for the long term.

the knowledge management in terms of a coordinated information policy and a structured information exchange be intensified

- the setting up of a regular "internationalization round table" be institutionalised with the RTI stakeholders.
- an "internationalization office" be set up – based on the European and International Programme (EIP) already existing in the Austrian Research Promotion Agency (FFG) this agency could perform this function, which will act as a hub for knowledge management in the area of internationalization and for the coordination of international activities as commissioned and controlled by AG 7a.
- the presence in important partner countries (see prioritisation of countries by AG7a) be increased by setting up further OSTAs and dispatching RTI attachés.
- an HR pool be formed to cover the required HR requirements for this and to generate the highest possible flexibility, to follow current developments and to temporarily fill field posts at short notice with "flying experts".

to proactively generate knowledge on potential target countries

- to provide a sufficient budget and generate a central data pool, to put the inter-ministerial control group in a position
- to commission structured (country) analyses to develop evidence-based internationalization activities
- to make control-relevant data available for RTI internationalization

recommendations

recommendations

- to guarantee monitoring and analysis of global RTI trends and national RTI internationalization activities, which can form a structured basis for decision makers.

to intensify the promotion of research with international partners (outside of the EU)

internationalization is promoted in Austria at European level with a variety of instruments and programmes. Uni, bi and multi-lateral instruments in research funding support international research and technology cooperation. Together with international mobility programmes, they therefore also represent an essential element of an efficient internationalization strategy.

The existing funding options for cooperation across and beyond Europe are, however, limited. They will therefore be intensified, as close net-

working is extremely important for Austria to promote scientific cooperation, enable knowledge transfer and to participate in international initiatives, research infrastructures and programmes.

This would require

- the conclusion of more bilateral cooperation agreements (agreements on scientific-technical/ technological cooperation) with countries outside the European area (third countries) and promotion of the performance of joint calls in the science and technology area
- increased support of internationally oriented funding programmes and participation in international institutions to continue to enable target-oriented first-class research from Austria in the international research arena
- the expansion of existing programme formats for countries outside of Europe.

Recommendation on cooperation of medical universities and university clinics –

Recommendation dated 18 September 2014

Background

Since the introduction of the Austrian University Act 2002 (UG) and divestment of the medical universities in 2004, the framework conditions for the cooperation of the medical universities with the university clinics have been controversially discussed again and again. At the three existing medical university locations – Vienna, Graz and Innsbruck – there were various developments and reform efforts during this period, which are intended to regulate the cooperation between hospital operators and universities. A sustainable solution for all three existing locations has not been found yet. The landscape of Austrian medicine at universities has also been expanded by the decision to set up a new medical faculty at the University of Linz. The underlying financing model will present a long-term solution for this location. It is, however, not fully applicable at the existing locations of Vienna, Graz and Innsbruck.

A university clinic can be defined as a hospital

whose operation serves entirely or partially the teaching and research purpose of a medical university. As a “centralized provider” they are also an indispensable partner for patient care. This distribution of tasks is also reflected in the distribution of competencies in Austrian Federal Constitutional Law, whereby the federal government is responsible for science, research and teaching, but the federal states are responsible for patient care.

This varying assignment of competencies and the interests connected with it resulted with different transition and intermediate solutions at the three established locations in different situations. The multifarious interface problems this creates are manifested in the daily operation of the university clinics, but especially in the following areas:

- **Strategy:** The different responsibility and mandate areas of the two regional administrative bodies result in different objectives and

prevent or impede a joint strategic orientation of the medical university and the hospital operators for a university clinic. In extreme cases, the talk is even of “conflicting goals”.

- **HR management:** The various legal employment contracts and the rigid public services law prevent and exacerbate strategic and operative HR management with the goal of resource-friendly HR deployment.
- **Organization:** The legally prescribed separate structures between medical universities and hospital operators create duplicated management and administration structures, which reveal optimization requirement with regard to both effectiveness and efficiency.
- **Financing:** The medical universities must, by law, perform their teaching and research tasks in the clinical area in interaction with public hospitals. For the performance of teaching and research tasks as part of the public hospitals, the federal government refunds the additional costs for the hospital operators as “additional clinical expenditure”, which are incurred with the set-up, design, expansion and operation of these hospitals. With regard to the financing of the university clinics, this is complicated by the terms of employment of the doctors in the federal states being regulated differently and infrastructure investments in the federal states being distributed differently at federal and state level. The special provision stipulated in the Austrian University Act for medical universities to conclude an agreement on cooperation with the operation of the individual organizational units belonging to the clinical area of the medical university and medical faculty and simultaneously forming a part of the public hospital has to date¹⁸ on-

ly been implemented at the Graz location to such a degree that would enable and realise the joint structures for managing the organizations. Agreements on cooperation have also recently been made between Vienna Medical University and the City of Vienna and the Medical University of Innsbruck in acc. with TILAK (Tiroler Landeskrankenanstalten GmbH, operator of the regional hospitals in Tyrol). Planning for the future financing and management of the medical universities and university clinics can now be implemented on this basis. From the Austrian Council for Research and Technology Development’s point of view these cooperation agreements between the hospital operators and the medical universities now enable cooperation reforms, despite different starting situations at the different locations. This long-term process must, of course, be accompanied by suitable temporary arrangements.¹⁹

At the centre of the definition of the respective competencies at both the federal side and the state side, there should at any rate be an increase in the performance of university medicine in Austria, which can be supported by increased transparency in financing.

Recommendations

Principle of a three-stage model for determining and paying additional clinical expenditure:

The medical universities must, by law, perform their teaching and research tasks in the clinical area in interaction with public hospitals. The federal government reimburses the legal entities of the hospitals in acc. with § 55 KAKuG for those additional costs that are incurred with the set-up, design and expansion of the public hospitals that al-

recommendations

¹⁸ Universitätsgesetz (Austrian University Act) 2002, § 29 Z 5.

¹⁹ An adjusted form of the payment of the ACE can be negotiated at the earliest with the performance agreement period 2016-18 and prepared for implementation in the following period. Until then patient care in particular, clinic operation and the defined amount of equalization payments within the scope of the ACE must be guaranteed by the federal government for the entire period with suitable transitional provisions. In this period, the required structures for this must be modified and adapted within the scope of the cooperation agreements between the medical universities and university clinics.



recommendations

so serve to provide teaching at medical universities and faculties because of the requirements of the teaching. This includes the costs, among others, of the people, medical equipment, service and maintenance (of buildings), investments and higher running costs in the operation of a university clinic used for this purpose. It should also still be possible to negotiate investment costs for new clinic buildings and conversions between the federal government and state and the legal entities of the hospitals.

To coordinate the financing and payment of the ACE the Council recommends a specific sequence of negotiations and agreement of results, which enable the timely and predictable implementation of the tasks in research and teaching, and for patient care as well.

Definition of research and teaching scope and HR planning at federal government level

First step:

Negotiation of the budgetary framework for payment of the ACE.

Responsibility: Austrian Ministry of Finance – Austrian Ministry of Science, Research and Economic Affairs

The Council recommends the amount of the budget for additional clinical expenditure at the medical universities be negotiated and defined by the ministries in advance for the next two performance agreement periods.

The content-relevant basis for the negotiations is formed by the development plans (and/or medical master plans) of the medical universities as the basis for strategic orientation of research (clinic), teaching and patient care, which define the scope and volume of the research and teaching activities

at the respective locations in conjunction with the university clinics.

The budget available for this can be determined in the cycle of the performance agreement negotiations for a period of at least three years. It defines the budgetary framework for the negotiations and planning between the medical universities and the responsible federal ministry.

Second step:

Negotiation of the teaching and research priorities (clinic area) and the scientific staff scheduled for this

Responsibility: Austrian Ministry of Science, Research and Economic Affairs – medical universities

The Council recommends the number of scientific staff deployed for research, science and teaching be defined, as well as the definition of groups of people with different research and teaching expenditure.

The scope of research connected with the university clinic and the personnel available for this can be defined based on the development plan (master plan) and the performance agreements of the medical universities together with the responsible ministry in the magnitude of the budgetary framework available for this. On the basis of the varying usage and research performance of the doctors connected with it at a university clinic, the Council proposes three usage groups for calculating the additional costs be defined – (i) Doctors with higher levels of research/teaching activity, (ii) Doctors with lower levels of research/teaching activity and (iii) Doctors without special research/teaching tasks. The scope of research and teaching in relation to normal working time must be negotiated for the respective groups. Regulation in the Austrian University Act²⁰ can offer a basis for this.

²⁰ § 29 (5) The medical university or the university at which a medical faculty is set up must reach an agreement with the legal entity of the hospital following approval by the federal minister while considering the performance agreement in acc. with § 13 on the cooperation with the operation of the individual organizational units that belong to the clinical area of the medical university or medical faculty and are at the same time a part of the public hospital, which also contains the reciprocal performances and their evaluation. This agreement must also specify that university affiliates in acc. with § 94 Para. 1 Z 4 in doctor or dentist use, who are commissioned with assistance in the performance of tasks of the organizational units of the clinical area as facilities of the hospital, in a recalculation period of 26 weeks use at least 30% of the normal working time of these university affiliates, applied to the respective organizational unit, for university research and teaching.

The defined usage groups and the associated research and teaching expenditure consequently provide a direct reference for payment of the ACE (see model for payment of the Additional Clinical Expenditure). The number of scientific employees in the defined groups (i and ii) is essentially specified here by the amount of research and teaching; the affiliation of the employees (doctors), however, enables a flexible, somewhat project-dependent allocation. The basis for this is formed by the development plan and the performance agreements of the medical universities with the responsible ministry.

Third step:

Negotiation of the medical staff additionally required for patient care.

Responsibility: State/hospital

The Council recommends the additional requirement for medical staff for patient care be determined based on the number of doctors in acc. with their usage groups.

The state defines the required staff volume for patient care based on the constitutional mandate. The number of doctors required for this can now be calculated based on the capacity made available by the medical universities (federal government). The proportion of university staff for research and teaching defined in step 2 now also defines the proportion that is available for patient care (difference between research part and normal working time). The capacity available for patient care is therefore oriented towards the defined research volume and average research requirement, as well as the teaching expenditure for doctors. Joint HR management of the medical universities and the hospitals planned in the cooperation contracts can form the basis to fund both, patient care and research and teaching as a joint task in the development of university clinics.

A transparent staffing structure must be created here as a prerequisite for a flexible staffing policy.

A performance agreement period (currently three years) can be applied as a planning peri-

od for the necessary medical requirements to properly maintain patient care in the competency area of Austria's "Länder".

In its statement and recommendation on additional clinical expenditure (2012), the Austrian Science Council (ÖWR) also specifies that, among other elements, "the service offering for hospitals must be discussed and coordinated with the medical university, so that the state hospitals and university clinics dual function is satisfied. The ÖWR specifies further that an appropriate agreement can be used to define what the hospitals can expect of the university employees in patient care and what room to manoeuvre will be provided for research and teaching in relation to the state doctors." With regard to the different staffing situation and the use of the medical staff at the three existing medical universities, the Council recommends the implementation of joint executive committees and joint HR management, as intended in the already concluded agreements on cooperation between the medical universities and the hospital operators. In the future this should enable (i) the definition of joint objectives in research and teaching, (ii) the development of a transparent HR structure and (iii) the creation of a joint development plan, which incorporates research, teaching and patient care on an equal footing.

Payment of the HR expenditure for health care and nursing and technical infrastructure

Similar to the recommended definition of the research and teaching expenditure in the three-stage model illustrated above, the Council recommends a coupling of the payment and calculation of the ACE to groups of people that have been defined for a specific amount of research and teaching.

Research, science and teaching are very closely connected with patient care. A complete separation calculation across all areas of the running costs can only, if at all, be produced with unjustifiable administration expenditure and is

recommendations



recommendations

therefore not viable in many areas. The payment of the additional clinical expenditure should represent the clearest possible agreement and regulation, which covers the costs for the additional

HR expenditure (health care and nursing staff, staff for technology and administration), caused by research and teaching and the provision of a technical infrastructure (space, medical-technical equipment, etc.).

Priority should therefore be given to flat rates and standard rates where applicable on the basis of model calculations.^{21 21 23} Calculations at the university clinics are also available, which can serve as the basis for defining and paying the ACE.

Model for paying additional clinical expenditure

The amount of the costs reimbursement, incurred for additional services in patient care, for research and medical-technical equipment, consumables or in administration, is specified by the research share defined in the preliminary stage – number of doctors with specific amount of research and teaching activities.

If the research and teaching percentage increases, the share of the costs increases accordingly. If, on the other hand, the expenditure for patient care (which would result from an increased number of doctors without research and teaching or with little obligation vis-à-vis research and teaching) in relation to research increases, then the percentage of operating and HR costs

falls, and therefore the proportional ACE does as well. The calculation is therefore not oriented on “primary health care” for patient care, but rather on the actual additional expenditure for research and teaching.

The assessment basis for the ACE essentially results from the overall costs of the university hospital, which can be determined according to the profit & loss account and specific surcharges and deductions.

The percentage of doctors with higher and medium research and teaching activity is defined in the development planning and strategy of the medical universities and forms a variable percentage of the doctors that perform research and teaching, and therefore is relevant for determining the (absolute) ACE. The resources available at this doctor pool for patient care are also defined by this.

A respectively fixed percentage of the assessment basis must be negotiated for these groups, which incorporates the proportional additional costs caused by R&T for HR infrastructure and other costs for the running operation. The percentage of doctors who are predominantly (more than 90%) responsible for patient care is not used for determining the (absolute) ACE. If the research volume (number of people with defined research percentage) increases, this cost share also increases proportionally. If, on the other hand, the percentage of services for patient care increases, then the proportional additional expenditure falls relative to the overall costs. The requirement for doctors, who are re-

²¹ Güntert, B., et al. (2004): Final report on the project to create an appropriate model to determine and handle the additional clinical expenditure with the operation of Vienna's general hospital from 2004 on the basis of the comparison of 12/2000, long version August 30, 2004.

²² Perception report of Audit Court; RH ZI 001.509/038-Pr/6/00, pp. 21–29.

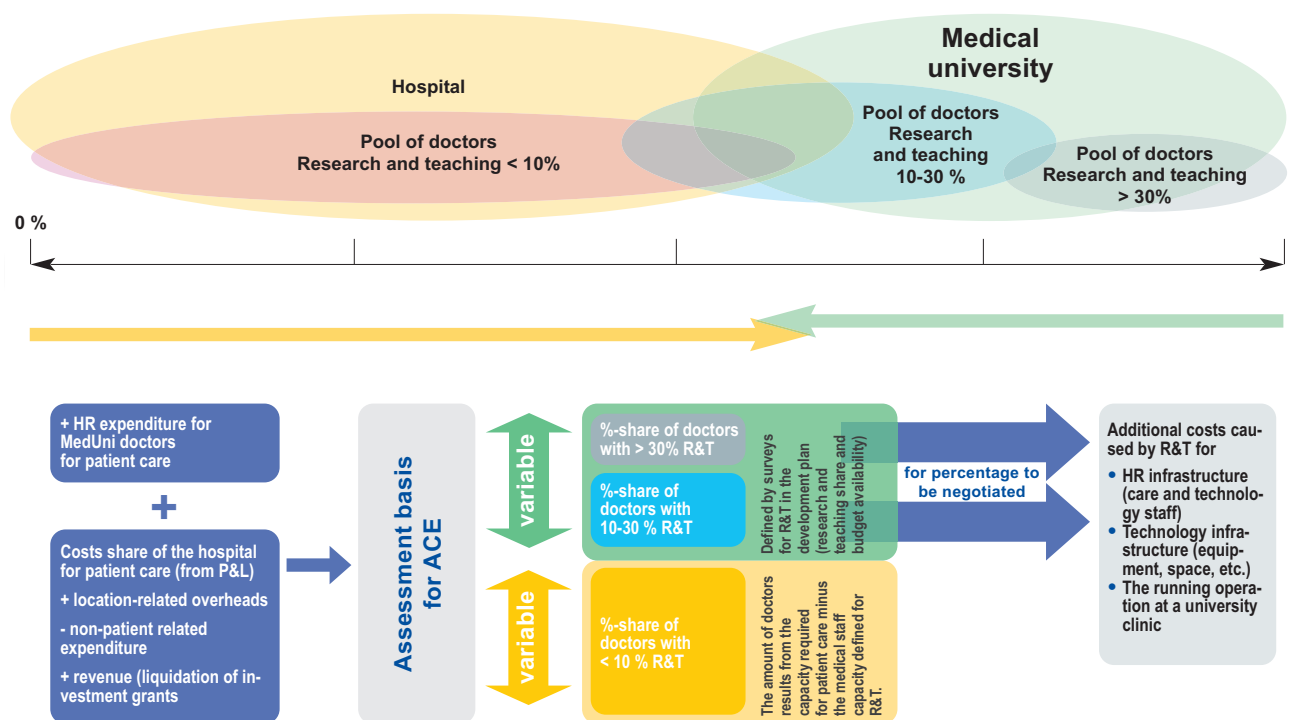
²³ Kriegel, J. (2005): *Finanzmanagement im Universitätskrankenhaus: Klinischer Mehraufwand für Forschung und Lehre*.

quired (additionally) for patient care, is also determined. The framework conditions provide specific percentages of HR costs for the medical staff, which are carried by the federal government or the state and which can be billed reciprocally according to the proportion of research and teaching expenditure or expenditure for patient care. As an example, three “doctor pools” with different teaching and research percentages were defined in the model for paying the ACE. Doctors/scientists with a share of more than 30 percent for research and teaching

(predominantly research and teaching), for example, could be rated with a higher percentage (share up to 100%) for the calculation of additional costs. Doctors/scientists with a share of 10 to 30 percent for research and teaching (low level of research and teaching) could, on the other hand, be rated with a lower percentage for calculating the (absolute) ACE. The number of doctors that are not active in research and teaching is not relevant for payment of the ACE.

recommendations

Figure 8: Model for paying additional clinical expenditure to medical universities and university clinics





recommendations

Further recommendations on strategic planning and coordination between the university locations

As part of a study commissioned and performed on behalf of the Austrian Council for Research and Technology Development,²⁴ in numerous interviews, discussions and meetings on the future possibilities for payment of the ACE and the cooperation of the medical universities with the university clinics, arguments were also gathered, and taken on board by the Council and directed as recommendations to the different stakeholders for the future development of the medical universities.

The Austrian Council recommends:

- The set-up of joint structures in the administration and organization of the university clinics

(hospital operators) with the medical universities
The legal framework conditions for this must be created.

- creation of service level agreements of the medical universities

Joint service level and target agreements of the medical universities with the responsible ministry should be provided for improved and efficient use of resources, e.g. for expanding and modernising the research infrastructure at the medical universities.

- the development of a joint strategy for research and teaching at the medical universities – priority

Joint and special research strategies at the medical universities in coordination with one another should be planned in research in particular to promote research priorities with the most efficient possible use of resources.

- the investment costs for research infrastructure and for construction and renovation work at the university clinics in terms of Austria as a medical research location must be negotiated between the federal government and the “Länder”

According to Austrian Federal Constitutional Law, the hospital operator is responsible for maintaining the infrastructure by matter of principle. Devices/equipment that are mainly used for research purposes are the responsibility of the medical universities and therefore of the federal government.

Optimum financing is indispensable for securing high medical quality at Austrian university clinics. As unavoidable overlaps between research and health care mandates occur here, negotiations on the percentage of new constructions and modernisation of infrastructures between the federal government and states must be held. Financial resources, which are assigned here to research and teaching, should be exclusively available to the medical universities as research infrastructure and not used for financing equipment that is primarily required for patient care.

- an efficient coordination of the strategic priorities of the university clinics with superordinate structure plans (Austrian Health Care Structure Plan, ÖSG, Regional Health Care Structure Plans, RSG)

The size of the care region and the corresponding “case numbers” to be expected at the locations are an essential factor for the successful operation of medical centres of excellence. A nationwide coordination is therefore critical for optimum planning. In urban areas and regions with low population density, additional strate-

²⁴ Austin Pock + Partners GmbH: *Befunde und Handlungsansätze zur Weiterentwicklung der Universitätsmedizin in Österreich. Der Klinische Mehraufwand und die Zusammenarbeit im Rahmen der Universitätskliniken, May 2014* (commissioned by the Austrian Council).

gies must be developed (decentralisation and priority setting in urban regions and centralisation in rural regions).

Duplicate structures that have formed at university clinic locations should (with little effect on capacity) be removed with increased cooperation with surrounding hospital centres.

Addendum to recommendation of the Council, “Cooperation between medical universities and university clinics in Austria”

Open discussion points and questions on political implementation

While working out the recommendation, statements and documents were provided by the rectors of the medical universities, which are intended to refer to requirements and open discussion points with regard to political implementation.

- Patient care, research and teaching are inseparably connected in the university hospital.
- The special feature of a medical university manifests itself in the fact that researchers care for patients and train students. There is an essential difference with other research organizations in additional patient care.
- An adjusted method for financing the additional clinical expenditure (ACE) must not

result in a reduction of clinic research in Austria.

- Current ACE and ACE for investments for construction purposes and for equipment must continue to be considered separately. The costs for procurement, operation and maintenance should be assigned proportionally and evaluated at periodic intervals.
- The agreements must guarantee that the ACE is not applied for cross-financing the patient care by the federal government/the medical university, which falls to the hospital operators.
- The agreements and regulations should at least apply for three service level agreement periods.
- On the basis of the function of the university hospital as a central medical institution in full operation, the financing of the existing ACE must be guaranteed with appropriate transitional regulations and periods.
- For areas that overlap between the medical universities and the university clinics, the establishment of joint management (MedUni – hospital) for the strategic and operative management of the university hospital should be endeavoured.

recommendations

**Recommendation regarding the use of the funding provided by the National Foundation for
RTD for 2015 – Recommendation dated 27 November 2014**

Institution	Title	Applied for total in EUR m	Scenario 1 Recommendation EUR 40 m	Scenario 2 Recommendation EUR 50 m	Scenario 3 Recommendation EUR 60 m
The Austrian Research Promotion Agency (FFG)	Headquarter	10	3	4	5
FFG	Bridge	20	6	7.9	10.9
FFG	Research partnerships	4	3	3	4
Austrian Science Fund (FWF)	SFB and DK	22.15	7.5	10	13
FWF	Matching Funds	3	3	3	3
Austrian Academy of Sciences (ÖAW)	New Frontiers Infrastructure	2.5	2.5	2.5	2.5
ÖAW	DI-ACDH: Digital Infrastructures for the Austrian Centre for Digital Humanities	4	2.5	4	4
ÖAW	HumanIS – Humanities and Information Science	4	0	0	0
Ludwig Boltzmann Society (LBG)	Health Sciences	4.6	4.6	4.6	4.6
Christian Doppler Society (CDG)	10 Christian Doppler- Laboratories	10.681	4.4	6	7
austrian business service (aws)	Venture Capital Initiative	5.4	0	0	0
aws	Industry 4.0	23.5	3	4.5	5.5
aws	Social Business Initiative	6.8	0.5	0.5	0.5
Total		120.631	40	50	60

Reason – Comment

The "Headquarter" programme has been in existence for some time now and comparably high amounts have been invested in this programme. The background research shows that the average funding amount per funded project was just under EUR 1 million. It must therefore be asked if a lower allocation on the basis of budgetary specifications would be logical, as only very few projects are funded, but the administrative expense still has to be paid. From an optimum use of resources point of view, with poor allocation of funds of the National Foundation, at least EUR 3 m must be targeted.

Similar to the "Headquarter" programme, "Bridge" has long also been an established programme. The cooperation between science and economy is very appealing here. For this reason, the Bridge programme should be preferred on the basis of scarce resources. The highest possible allocation of funds according to the proportion of resources is recommended.

This relatively new programme line promises a boost to human resources in terms of training; the industry shall be integrated in this programme, too. It is recommended at least the funding amount of the previous year (EUR 3 m) be paid out, and with corresponding budgetary possibilities of the Foundation, an increase also be made up to the requested amount of EUR 4 m. With the programme assessment targeted for 2015, an actual effect in the RTI system can be estimated.

The special research areas (SFB) are a superb funding concept with very high quality and maximum requirement for research and teaching. Financing of the SFBs is an essential factor of top-quality interdisciplinary research in Austria. A renewed programme evaluation will be contracted out and performed in 2015. The PhD programme (DK) received a very positive evaluation in 2014 with a view to its value for training highly qualified scientists. It is also evident that, although the PhD courses are among the core tasks of the universities, the additional and complementary financing of the structured PhD programme by the FWF appears to be essential for the universities until further notice.

The amount applied for from the National Foundation is EUR 22.15 m [total costs are EUR 44.73 m for (i) extension of 4 SFBs and 6 PhD to the tune of EUR 31.56 m, as well as of (ii) re-contracting out for 2015 (2 SFBs and 2 PhD programmes to the tune of EUR 13.17 m); according to the application, the Ministry for Science, Research and Economic Affairs funds EUR 22.58 million of this for 2015].

Assuming that all current SFBs and PhDs will be positively evaluated and extended, a funding of new applications on the basis of the available resources is not possible or only possible with restrictions.

Matching Funds is an innovative governance model in terms of an efficient interconnection of federal and state funding, and it in particular pursues the priorities and recommendations of the Austrian Council. Funding in full is recommended.

The programme serves to set up cutting edge research infrastructures for risk-intensive research projects within the scope of the New Frontiers Groups of the ÖAW. Funding is recommended in terms of the Austrian Council's recommendation to allow for more risk in research funding.

With DI-ACDA, digital infrastructures and specialised competencies for humanities, social and cultural sciences in the Austrian Centre for Digital Humanities will be organised and developed. Funding in terms of fortifying the research infrastructure is recommended.

HumanIS will renew and extend the research portfolio and infrastructure of the "Digital Humanities" programme required for this. "Digital Humanities" has been recommended as an instrument for networking scientific data last year with Foundation funding of EUR 4 m. As the ÖAW's application has been almost completely met and the Council also already supports the application by the Austrian Centre for Digital Humanities, financing for HumanIS is not recommended.

Due to the social importance of health sciences on one hand and the definition of the area of health sciences as an LBG priority for the coming years, the foundation of Ludwig Boltzmann Institute in this research area appears to be beneficial and worthy of funding. The LBG's application does not, however, explain how many institutes are actually to be founded. At 7 percent, the estimate for the administration costs appears to be quite high.

A continuance of the proven CD lab characteristics with regard to the applications. Depending on the available funding, a series of the requested CD labs should be funded, as CD labs take on an important role in the still quite weak knowledge transfer system.

The Venture Capital Initiative basically addresses a priority of the Austrian RTI landscape. However, the investments of the funds from recent years must now have an effect in the system. The share of the investments outside of Austria is very high, so this trend must be monitored in the coming year. Additional funding is therefore not recommended for 2015.

The initiative supports and provides incentives for the implementation of the methods of Industry 4.0, and therefore represents an investment incentive for Austrian industry. A topic that could make a potential contribution to strengthening the research location Austria is therefore addressed.

The initiative supports social enterprises that address social and economic challenges with new innovative methods. Sector-specific start-up initiatives are consequently funded and the number of company start-ups increases. The contribution of intellectual property to growth and innovation is also promoted. A new idea, which addresses the important trend of social enterprises and links it with the start-up initiatives in this sector. Provision of a basic allowance for the further elaboration of the initiative is recommended.

recommendations

Preamble

In conjunction with the awarding of resources for 2015, based on the resolution of the Foundation Council of 17 September 2014 to the Council for Research and Technology Development on 25 September 2014, an invitation was made to submit a recommendation in acc. with § 11 Para. 1 Z 1 of the RTD National Foundation Act on the use of subsidies of the Foundation for 2015. This should happen based on the applications of the recipients received. The total application volume for 2015 is **EUR 120,098,394**. The Foundation Council asks the Council for a statement against the background of three possible scenarios for available Foundation funds for 2015:

- 1) EUR 40 m
- 2) EUR 50 m
- 3) EUR 60 m

In view of the tense financing situation, the National Foundation takes on special importance, which is manifested in the support of long-term active interdisciplinary research measures (see § 2 RTD National Foundation Act).

The Council advocates a sufficient and sustainable financing by the National Foundation. The Council is concerned about the **highly fluctuating payment of funds**. The amount of the paid out funds has been hovering since at least 2008 far below the EUR 125 million per year stipulated in legislative guidelines.

The basis for the decision on awarding funds is the strategic importance and socio-political relevance of the proposals submitted and their integration into the overall context of Austrian research funding. The following priorities have also been defined by the RTD Council for awarding funds for 2015.

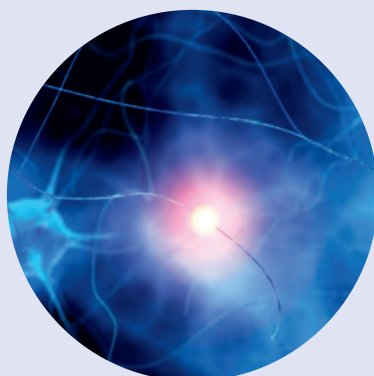
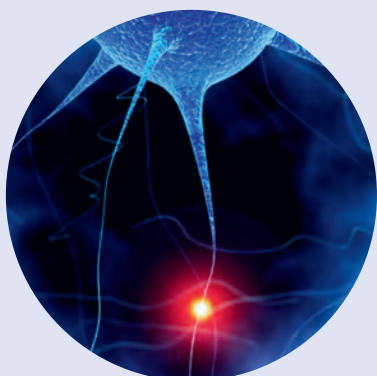
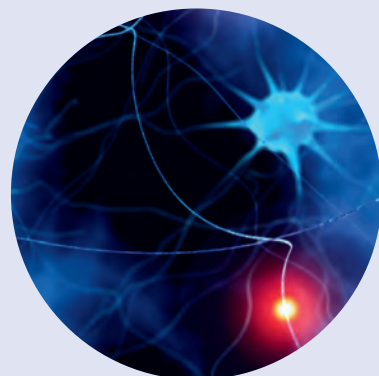
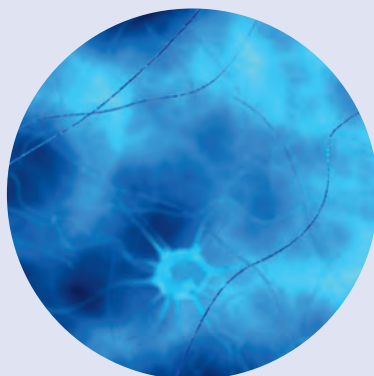
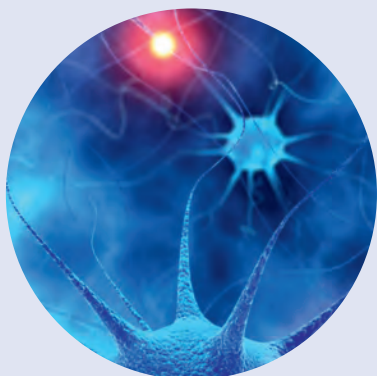
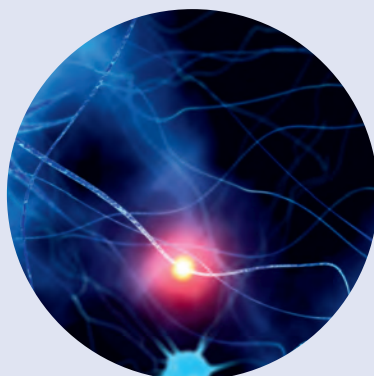
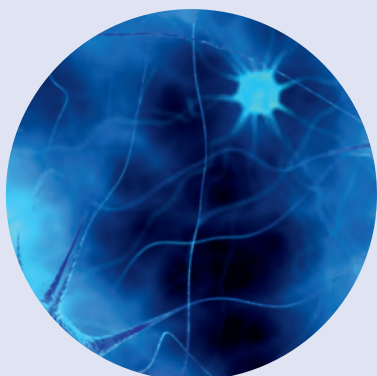
Priorities for awarding funds 2015:

- Boosting the research infrastructure by focusing on initiatives with corresponding critical variables and risk potential
- Boosted national human potential basis
- Increased risk capital
- Increased contribution by intellectual property to growth and innovation
- Increased innovation potential with "Open Innovation"
- Coordination and consultation between regional and federal RTI activities
- Excellence in basic research
- Measures for boosting Austria as a location for research-active companies
- Research and technology initiatives for the industrial location

Recommendation

The applications of the recipients for funding by the National Foundation basically concur with the Council recommendation for setting priorities and can therefore be supported in principle.

Following in-depth consultation and while considering the three financing scenarios communicated by the National Foundation, the Council recommends the following funds distribution for RTD: (see table page 30-31)



Update: Accomplishments

Migration and education – An increasingly more important topic

Austria's demographic development is being determined more and more by migration. According to current forecasts, Austria's population will continue to grow in the future, i.e. from 8.48 million (2013) to 9.03 million in 2025 (+7 percent) or 9.62 million (+13 percent) in 2060. This population increase is due on one hand to increasing life expectancy, and to immigration on the other hand.

The amount of the population born abroad (Austria-wide currently 1.37 million) will therefore continue to grow due to immigration. It currently accounts for 16 percent; by 2030 its number is expected to rise to 1.99 million (22 percent), by 2060 ultimately to 2.47 million (26 percent). Due to an "ageing" society and the fall in people in employment associated with it, Austria needs people immigrating from abroad. At the same

time, however, it appears essential that the education structure should improve both these immigrants and the entire population, in order to bolster the country's economic performance in increasingly tougher global competition.

The importance of migration and integration topics for the area of education, research and innovation will increase still further in coming years, especially with regard to the availability of qualified specialists. In order to obtain a clear view of the actual state of affairs and the required social and political direction setting, the Research Council checks the data situation and the existing options for action in a current project in cooperation with the activities of the migration quota set by the Federal Ministry of the Interior.

Why evaluate? Meta study to examine opportunities and obstacles

Austria ranks among the leading European countries when it comes to the number of evaluations in the research, technology and innovation policy area. After more than 15 years of following the evolution of the "Evaluation Project", various experts in the field nonetheless meet this resource-intensive undertaking with growing scepticism and pose the question as to how effective these analyses actually are. And the international discussion increases all the time.

In its March 2014 session, the Council decided to anchor the topic in the work programme. The objective is a systematic examination that illuminates the usefulness and effectiveness of programme evaluations with specific and restricted issues. With the Meta Evaluation a synthesis of the Austrian evaluation practice of recent years in the RTI area will be elaborated, which is oriented towards the international evaluation re-

search for the usefulness and quality of evaluations. Commissioning by Günther Landsteiner, independent evaluator in Brussels and Vienna and among others former employee of the IHS (Institute for Advanced Studies) and the Austrian Agency for Quality Assurance. There is generally acknowledged, internationally established knowledge on "what makes for a good evaluation". The objective of the study is to estimate on this basis how useful Austrian programme evaluations are and what can be improved.

The study incorporates twelve years of Austrian evaluation practice, whereby the last few years form a focus point. It will also point out strengths and weaknesses of this evaluation practice. Three methodical instruments will be used supplementary to one another for their analysis. These evaluation reports are the initial starting point to clarify the usefulness of Austrian programme evaluations in the RTI area.

These evaluation reports are characterised by a specific usage potential, which can be analysed using international evaluation standards with regard to specific strengths and weaknesses in a qualitative procedure. At the same time, the evaluation reports, so to speak, are the products of the evaluation processes behind them, whose specific strengths and weaknesses must also be addressed against the background of the evaluation standards.

Both points of view co-decide on whether evaluations are used “more” or “less”. Factors and mechanisms that influence this usage just as much as strengths and weaknesses are supplemented in the study by interviews with those who commission evaluations, as well as a survey of evaluators.

RTI platform Austria: Networking information

The RTI platform Austria serves the intensive exchange of the federal states and the funding agencies in all areas of the innovation system. The Council comes to the table as a coordinating and supporting partner on the platform. This work group successfully networked in 2014 with the alternately held federal government-federal states dialogue coordinated by the Austrian Ministry of Science, Research and Economic Affairs, and consequently created

additional synergies in the area of information provision. With the platform meetings in Graz and Neckenmarkt, the opportunity was utilised with the Styrian University Conference and the recently initiated RTI Burgenland to discuss current topics. In addition to current content-related issues, numerous bilateral offerings such as matching funds, cluster cooperation and other joint activities have emerged from the platform.

Cooperation with Lower Austria and Burgenland

In a recommendation, the Court of Audit calls for councils in the federal states. In addition to the cooperation initiated in 2011 with the state of Lower Austria, in December 2014, a cooperation agreement was also concluded with the state of Burgenland. As part of this cooperation, in the Burgenland Council for Research, Tech-

nology and Innovation, people from the Research Council were nominated, who actively participate in the implementation and further development of the state’s strategy. With both cooperations, there are two cooperation meetings each year, with which current topics from the innovation area are dealt with.



Picture on left, from left to right

Hannes Androsch,
Austrian Council

Gabriele Ambros,
Austrian Council

Gerald Gross, gross:media

Picture on right, from left to right

Hans Niessl,
State Governor of Burgenland

Gabriele Ambros,
Austrian Council

Hannes Androsch,
Austrian Council

When forecasts are applied – Regional innovation systems – Prediki

Sometimes a deficiency can also be the trigger for something innovative. In this specific case, data on the regional innovation system for Salzburg were insufficient, which is why the Council for Research and Technology Development commissioned Prediki Prognosedienste GmbH to develop an “Innovation Barometer” with Salzburg as its example. An innovative methodology was used here: a prediction market. This consolidates, similar to a stock exchange, the predictions of heterogeneous groups, in this case experts and general public in quotations that quantify their shared opinion.

1. Survey topics

The respondents were presented with three question bundles with three to five prediction questions each on innovation and start-up topics. These were illustrated briefly and links to background information were provided. To promote the respondents’ holistic thinking, predictions were requested for different Key Performance Indicators (KPIs) of the innovation system. Issues included here were:

- **Effect analyses** – The respondents predicted the influence of the following measures on macro-economic variables:
 - More corporate training with regard to employment effect
 - Direct innovation subsidies with regard to patent registrations
 - Expansion of start-up consultancy with regard to new start-ups
 - Tax breaks with regard to sales share of innovations
 - Relaxing of insolvency liability with regard to start-up intention
- **Implementation probability** – The respondents predicted the probability of implementation in the specific political environment of Salzburg.
- **Attitudes and values** – Most recently expectations for the future development of the in-

novation system in Salzburg by 2020 were raised: personal risk readiness, start-up interests and number of political initiatives.

2. Methodology

Firstly, the respondents were sought out as part of a representative survey. Participation in the prediction market was voluntary. Various expert pools were also invited to the prediction market. The survey was performed as part of a “Closed User Group” – general Internet users did not have access. 740 people were invited to the traditional survey, of which 340 finished the survey completely.

A total of 102 market participants took part in the prediction market. On average 50 business transactions were performed per prediction question. The minimum number of transactions for quotations that will have a meaningful result is 16, which was achieved with all questions.

3. Results

Für die Themenkomplexe ergab sich laut den Transaktionen am Prognosemarkt folgende Rangfolge, gereiht nach der prognostizierten positiven Veränderung der jeweiligen Kennzahl:

- According to the transactions on the prediction market, the following ranking emerged, ordered according to the predicted positive change of the respective KPI:
 - Direct funding/patent registrations (+8.0 percent)
 - Tax breaks/sales share of innovations (+7.6 percent)
 - Start-up consulting/new start-ups (+6.5 percent)
 - Training/employment (+5.6 percent)
 - Insolvency law/innovation share (+3.9 percent)

The probability of political measures for the further development of the innovation system

in this legislative period is low (between 14 and 22 percent).

With the topics of tax breaks (60 percent) and training (56 percent), initiatives are then actually expected from a new government; the probability of the other three topics remains far below the threshold of 50 percent. The principle interest in a company start-up will rise significantly in coming years with +9.1 percent. The

predicted political lethargy and unchanged personal risk acceptance are significantly contrasted here. This points to another positive influence factor (technical progress, or similar) or to a general trend.

Most of the hidden potential here is in tax breaks. The highest chance of above-average growth is predicted for this issue.

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Basic expertise: Reports and Studies 2013

Austria is catching up, but too slowly – Report on Austria's scientific and technological performance in 2014

Every year the Council for Research and Technology Development, commissioned by the Council of Ministers, compiles a "Report on Austria's scientific and technological performance", which together with the Research and Technology Report is sent to the National Council. The results of this implementation monitoring form an essential basis for the evaluation of the performance of the Austrian RTI system. The first report appeared in June 2012. The Council already presented its third report on 1 June 2014.

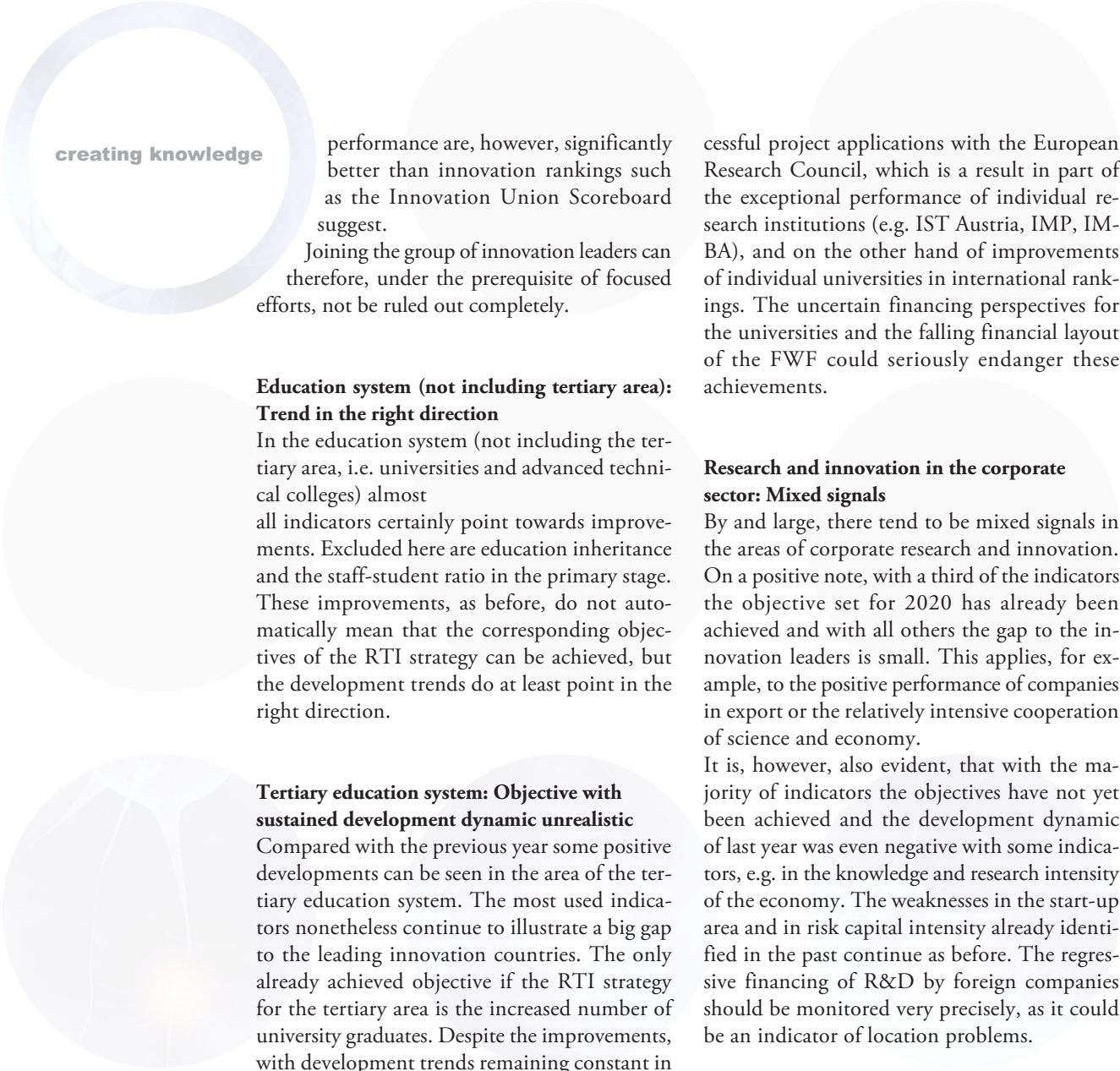
The content-related focus of the report is the issue as to whether or not the objectives of the strategy for research, technology and innovation (RTI strategy), which is also pursued in the current government programme as an essential orientation framework, have been achieved.

Basically, the chances for joining the European group of leaders and achieving the strategy objectives are still good. There is need, however, for efforts to really catch up in global competition and not fall back again. The report produced the following key results:

Above-average economic performance, but the need to catch up in terms of innovation performance

Austria's performance in the area of economic objectives of the RTI strategy is predominantly positive in comparison with the last report year. Austria performs well with an above-average GDP per capita and below average unemployment. It consequently continues to occupy a leading position in Europe in both areas. Life expectancy for both men and women has increased significantly, quality of life, however, has only increased marginally. With environmental indicators resource productivity has improved somewhat, while the emission of greenhouse gases and energy intensity are practically unchanged.

There is, however, still the need to catch up in terms of innovation performance. With regard to the implementation and utilisation of research results there continues to be a performance deficit compared with the leading innovation countries. On the whole, the effects of the innovation system on Austria's economic



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performance are, however, significantly better than innovation rankings such as the Innovation Union Scoreboard suggest.

Joining the group of innovation leaders can therefore, under the prerequisite of focused efforts, not be ruled out completely.

Education system (not including tertiary area): Trend in the right direction

In the education system (not including the tertiary area, i.e. universities and advanced technical colleges) almost all indicators certainly point towards improvements. Excluded here are education inheritance and the staff-student ratio in the primary stage. These improvements, as before, do not automatically mean that the corresponding objectives of the RTI strategy can be achieved, but the development trends do at least point in the right direction.

Tertiary education system: Objective with sustained development dynamic unrealistic

Compared with the previous year some positive developments can be seen in the area of the tertiary education system. The most used indicators nonetheless continue to illustrate a big gap to the leading innovation countries. The only already achieved objective if the RTI strategy for the tertiary area is the increased number of university graduates. Despite the improvements, with development trends remaining constant in nine of the 15 indicators used, from today's point of view there is no realistic chance of achieving the set objectives by 2020.

Universities and basic research: Positive trends endangered by cutbacks

The quality of research work has increased at the universities and in basic research. This is due on one hand to the high number of suc-

cessful project applications with the European Research Council, which is a result in part of the exceptional performance of individual research institutions (e.g. IST Austria, IMP, IMBA), and on the other hand of improvements of individual universities in international rankings. The uncertain financing perspectives for the universities and the falling financial layout of the FWF could seriously endanger these achievements.

Research and innovation in the corporate sector: Mixed signals

By and large, there tend to be mixed signals in the areas of corporate research and innovation. On a positive note, with a third of the indicators the objective set for 2020 has already been achieved and with all others the gap to the innovation leaders is small. This applies, for example, to the positive performance of companies in export or the relatively intensive cooperation of science and economy.

It is, however, also evident, that with the majority of indicators the objectives have not yet been achieved and the development dynamic of last year was even negative with some indicators, e.g. in the knowledge and research intensity of the economy. The weaknesses in the start-up area and in risk capital intensity already identified in the past continue as before. The regressive financing of R&D by foreign companies should be monitored very precisely, as it could be an indicator of location problems.

Science and society: Negative attitude continues

For the "science and society" area, the indicators for the attitude of Austrians towards science and research compared to 2013 indicate a clear downward trend. All indicators in this respect consequently now lie clearly below the objective for 2020, and the dynamic may not be sufficient to close the gap to the innovation leaders by 2020.

R&D financing: Stagnation, with no change in sight

The gap between the indicator for measuring the R&D quota and the target has closed somewhat compared to the previous year. At the same time, however, a slight decline in the dynamic can be identified, which on the whole means that the target cannot be achieved by 2020. Otherwise, the share of private R&D financing is also clearly below the level of the leading innovation countries. The very slow increase in the private financing share of R&D is a worrying development of recent years, which points to an entirely too weak expansion of corporate research and innovation activity.

Conclusion: Catch-up dynamic insufficient on the whole

Austria is currently too slow in its catch-up efforts. As other comparable countries demonstrate a stronger development dynamic, continuing the status quo is not an option. If Austria intends not to fall further in global competition and lose its connection with the lead group, the highest priority must be given to the issues of education, research, technology and innovation. This also includes providing the financing required for this and making the required structure adjustments.

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The “typical” scientist? It’s Albert Einstein! – How children see scientists

How do children imagine scientists and researchers? With this question, the Research Council commissioned the ZOOM Children’s Museum as part of the “Draw a scientist – who makes science?” project.

The objective was to find out how children in the third and fourth primary school class imagine scientists and researchers and the images they have of these professionals, their work and their work environment in their heads.

This yielded several hundred images. The result: Researchers work in a lab filled with test tubes, tiny bottles and pipes, bookshelves, microscopes and sometimes even lab animals. A high level of agreement also with gender: The “typical” scientist is quite young, male and with wild hair. In other words, Albert Einstein as role model. After drawing the children were asked to describe their drawings in small groups using a reflection sheet to consciously get to grips with they had drawn – each one individually, but also in comparison with the others. The questions posed here ranged from the description of clothes and the appearance of the

person/people drawn to the environment drawn, in which the scientists can be seen, through to the gender and age of the people drawn.

On the basis of the children’s information from the drawing reflection sheet, as well as in comparison with Çocuk İstanbul, a Turkish project





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with the same content, the drawings can now be described as follows: With regard to the appearance of the scientists drawn there is very high similarity between the pictures that were produced in the ZOOM Children's Museum and with Çocuk İstanbul.

Both in Vienna (62 percent) and in Istanbul (77 percent), to a large degree people were drawn who "look orderly", whereby the percentage in Istanbul was somewhat higher. It is interesting that at both locations (Vienna: 48 percent, Istanbul: 47 percent) a little under half of the children decided that the scientists should have wild and uncombed hair, which, however, in the estimation of the pupils does not appear to contradict the idea of an "orderly look". With regard to clothing both in Vienna (50 percent) and in Istanbul (46 percent) about half of the people drawn wore a lab coat and the other half did not – and this although at both locations a large part of the children (Vienna: 70 percent, Istanbul: 74 percent) said that their scientists work in a lab.

The greater part of the people drawn work in an interior room – be it a lab or another interior room – and only 14 percent of the ZOOM scientists and 13 percent of the scientists from Çocuk İstanbul work outdoors. With regard to age and gender of the drawn people, both in ZOOM and at Çocuk İstanbul there are clear trends, which are very similar at both locations. Both in Vienna (63 percent) and in Istanbul (65 percent), according to the children's information approx. two thirds of the scientists they drew are young, and a little more than a third are old. With regard to gender, both in Vienna and in Istanbul 4 percent of the children decided that this was not important with the figure they drew. The greater part, however, of the scientists were drawn as men (Vienna: 73 percent, Istanbul: 78 percent) – only 23 percent of the ZOOM scientists and 17 percent of the scientists from Çocuk İstanbul were drawn as women. There have been "Draw a Scientist" projects in the USA, France, the UK and other countries since the 80s already. This is the first time there has been a project of this kind in Austria and Turkey.

Imparting science – still a stepchild!

Many Austrian initiatives, universities and companies, which are active in the research area, increasingly dedicate their efforts to imparting and passing on science and technology. Their goal: To awaken passion for research and promote skills and talents. The employees deployed in activities such as the Long Night of Research ("Lange Nacht der Forschung"), for example, are actually extremely well qualified here. Frequently, however, they lack the educational qualification that would make it easier for them to develop more innovative, more dialogue-based forms of teaching and the respective specific handling of the knowledge status, language or school and everyday culture of their target

group. In the first survey of requirements commissioned by the Research Council and carried out by the "Science Center Network", on one hand observations on "imparting" science were therefore made as part of the Long Night of Research; on the other hand players in the arena of Austrian science awareness were surveyed with an on-line questionnaire and more in-depth telephone guideline interviews. This data produced recommendations on what a successful interaction with a lay audience might look like from the point of view of mediators, as well as qualification measures (target groups, content and topic areas, areas of application, etc.). The most significant problem in Austrian

science mediation is the lack of awareness of the available variety of possible mediation formats and the importance of successful and adapted mediation methods.

In the selection of suitable mediators, value is placed in particular on specialist knowledge; mediation competencies are consequently simply presupposed (motto: “If they work on this subject, then they can also impart it on to others”). There is very little preparation for events like the Long Night of Research for imparting knowledge. As a result, presentations and explanations by experts at market stands dominate the event, hands-on formats are only partially used, but then are geared towards children in particular. Plus, gender stereotypes are frequently intensified both by male experts direct-

ing their technical explanations at male visitors and by hierarchies in science being reproduced – students interact with children at the market stand; academically higher level “experts” hold talks with the interested (specialist) audience.

Study authors’ conclusion: There is a need for awareness-instilling measures on the interactive imparting of scientific knowledge, especially on the delimitation of PR and marketing, on the diverse range of existing formats and on the essential role of the mediator. Imparting scientific knowledge as a strategic priority means investment in resources, and this in particular also includes training and further training, as well as recognition for the people involved.

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Biotechnology: Conditions for success – thesis paper on the value creation ecology of biotechnology in Austria

What framework conditions are required to successfully generate value creation from research? This research issue was examined with a new approach with the example of biotechnology in Austria. Structural analyses, which in particular focus on the effectiveness between publications, patents and thematic priorities of individual institutions are used as the basis for national economy effects. Some theses have been created as a result. The project, whose most important results have been summarised within the framework of this thesis paper, had the objective, among others, of sounding out possibilities, comparing data on knowledge production in Austria’s biotechnology industry coming from very different data sources with one another, and in their context, to consider the classification of the technology areas in particular. With the quantitative and qualitative characteristics, it was shown that biotechnology companies differ in many ways from other com-

panies. Dependencies on knowledge sources such as universities and research institutions result in close interdependencies with the industry. The following risk capital must be balanced with public monies, and the scene prefers urban areas in which a critical mass can emerge. “Red biotechnology” is dominant, but the Austrian economy also offers appropriate value creation structures anyway for “non-red” biotechnology companies; networking with suppliers and customers is an essential success factor. A saturation in sub-areas can be seen with regard to the instruments of research funding; the sector generally still has growth potential. Economy and technology policy measures can be beneficial in supporting networking, both for biotechnologies among themselves and the networking of biotechnologies with adjacent technology areas. The study is available on the website of the Austrian Council.



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On the road to new routes with the swarm? – Study on crowd sourcing and crowd funding potential in Austria

How can high numbers of people be motivated to participate in innovative projects? This question is at the core of the debate on crowd sourcing and crowd funding, which has recently taken on a key position in the innovation policy discourse. The hope here: To open up innovation processes (Open Innovation) with the integration of the general public – be it with financial or content-related support. This also demonstrated a new way of enabling projects in their early phase with crowd funding.

The Federal Austrian Government is currently drafting a legislative proposal, which on one hand will guarantee investor protection and more transparency. On the other hand, it will

also enable a framework for alternative financing via crowd funding – of early phase projects, start-ups, etc. Together with the support of experts from research funding institutions, social partners and ministries and with representatives of the Austrian Control Bank, venture capitalists and other interested stakeholders, in autumn 2014 the Austrian Council worked out the “Crowd sourcing and crowd funding potential in Austria” studies concept, which has been implemented since November 2014 under the guidance of Reinhard Willfort together with Conny Weber and Peter B. Mayr (co-authors). The results of the study will be available in May 2015.

Austria's universities in transition – Governance and management structures at Austrian universities

On 1 January 2004, the universities were structured out of federal administration based on the Austrian University Act (UG) and converted to legal entities of public law. The UG has since formed the basis for Austrian universities. The universities have since had extensive autonomy with various characteristics in organizational, financial, staffing and academic terms. On the whole, Austrian universities have evolved very successfully since enforcement of the UG and the autonomy it brings with it. On the basis of this autonomy, universities can now apply new control instruments and steering mechanisms and react individually to the

respective changes. Some ten years after enforcement of the University Act, the Austrian Council is attempting to analyse of the general effects of the UA. Within the scope of the study²⁵ “Analysis of governance and management structures at Austrian universities”, an automated on-line survey was carried out at the universities and in-depth interviews were held with rectors on the subject. The internal control and the communications structures of the universities in particular have changed extensively due to the new tasks. In the conversations, the following points were presented as essential positive effects:

²⁵ Elias, B. (October 2014): *Analyse der Governance- und Management-Strukturen an österreichischen Universitäten*; Pöchlacher Innovation Consulting (download under http://www.rat-fte.at/tl_files/uploads/Studien/Endbericht_Governance%20Universitaeten_2014.pdf).

- The University Act and the university autonomy it brings with it basically had a positive effect on the development of the universities.
- This university autonomy enabled the economic independence of the universities, which increased their efficiency “dramatically”.
- The universities are considerably more flexible and can make strategic decisions significantly quicker than before (e.g. with appointments).
- The universities have a certain financial flexibility (within the scope of performance agreements). The financial autonomy is, however, currently limited *de facto* by the budget options of the federal government.
- Since introduction of the UG, strategic processes are more present and anchored more intensively in the “entire university”.
- The content-related “freedom” (e.g. organizational and curricula development or setting of research priorities) simplifies the profiling of the universities immensely.

Critically commented on in the talks:

- The autonomous freedom for the universities is increasingly restricted by different framework conditions (e.g. high student numbers and a relative to this stagnating or even falling budget; no university place financing; deterioration in staff-student ratio; restricted access rules).
- From the universities point of view, trends can be seen, whereby the autonomous control of the universities will be reduced within the scope of performance agreements with increasingly more detailed reporting and definition of the budget for fixed projects. It was noted here in several meetings that an “overall coordination” of the university and tertiary education landscape should be essentially pursued by the federal government.
- Aspects that were also discussed affected the interaction between university council, rectorate and senate, the respective tasks and interactions and the duration of periods in office and report periods.

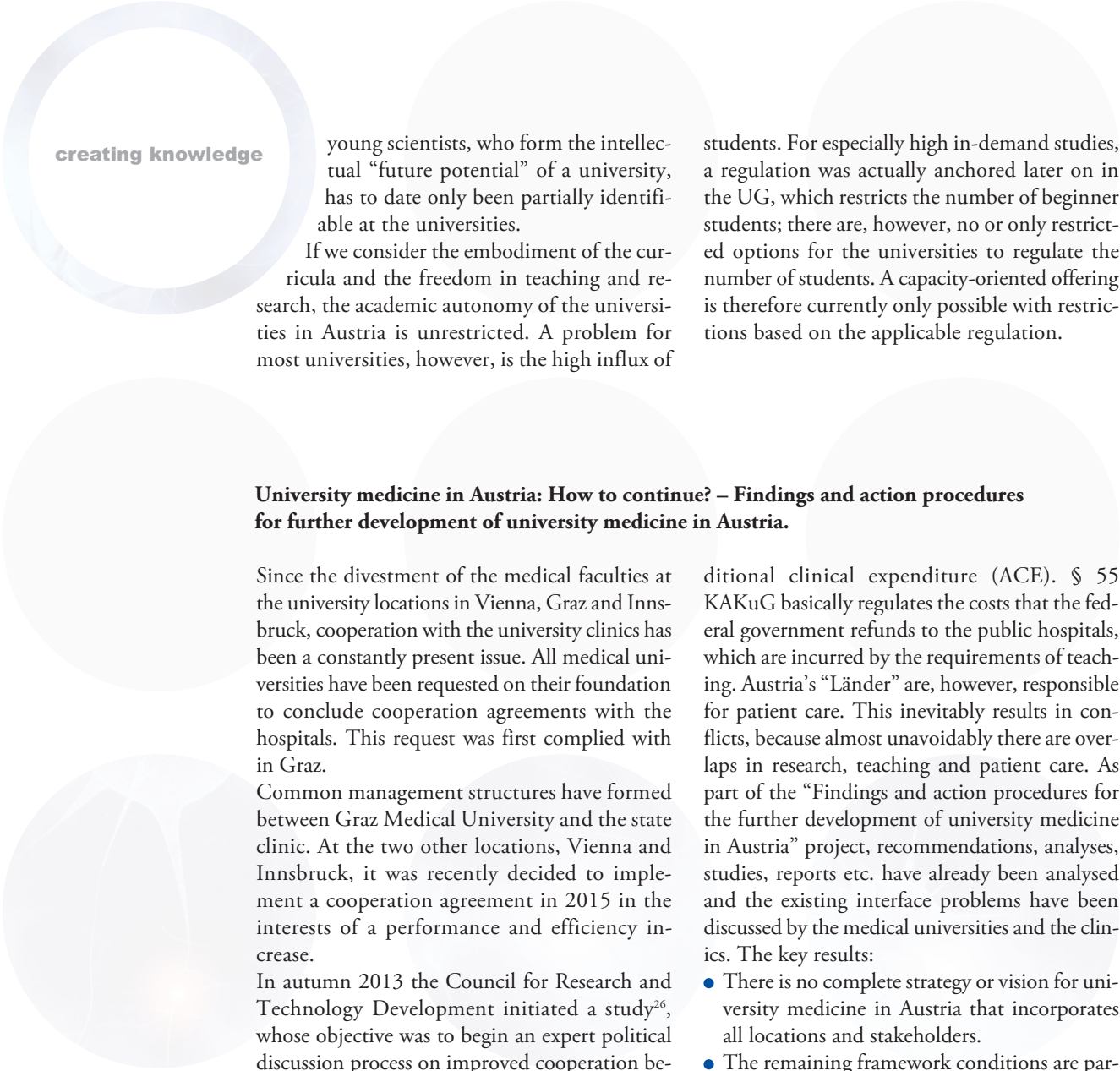
The following general conclusions were drawn from the talks and the automated survey:

The universities have a wide-ranging organizational autonomy. With the exception of management entities (university council, rectorate and senate) the internal organization of the universities is not regulated. This structural freedom resulted as a natural matter of course in different forms of participation. The quality of the communication of strategic and content-related decision-making processes is, however, evaluated by the subsequent levels as partially insufficient.

The function periods of the downstream organizational units are inconsistent at some universities. Harmonisation could produce more efficient cooperation between the management levels. The management structures at the universities should be individually adjusted more intensively to the requirements of the respective university. Larger universities require a different management structure than locations with smaller (specialist) universities. The range of tasks for deans and centre managers at different locations also varies. The HR structures are not sufficiently developed here at all places for optimum management.

The financial autonomy of the universities is also extensive. The controlling influence of the federal government can only be provided via the performance agreement. The universities are obliged to present reports – annual closing of accounts and university statistical data reports as part of the knowledge report. The financial flexibility of the universities remains, however, restricted, as only a low percentage of financial resources can actually be used for innovations. With the UG, the universities were also enabled a reorganization of their HR structures. Special importance is awarded to the “appointment policy”, which is an essential cornerstone for the scientific profiling of a university. Career models for young scientists are an equally important element of HR development. A clear concept for

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young scientists, who form the intellectual “future potential” of a university, has to date only been partially identifiable at the universities.

If we consider the embodiment of the curricula and the freedom in teaching and research, the academic autonomy of the universities in Austria is unrestricted. A problem for most universities, however, is the high influx of

students. For especially high in-demand studies, a regulation was actually anchored later on in the UG, which restricts the number of beginner students; there are, however, no or only restricted options for the universities to regulate the number of students. A capacity-oriented offering is therefore currently only possible with restrictions based on the applicable regulation.

University medicine in Austria: How to continue? – Findings and action procedures for further development of university medicine in Austria.

Since the divestment of the medical faculties at the university locations in Vienna, Graz and Innsbruck, cooperation with the university clinics has been a constantly present issue. All medical universities have been requested on their foundation to conclude cooperation agreements with the hospitals. This request was first complied with in Graz.

Common management structures have formed between Graz Medical University and the state clinic. At the two other locations, Vienna and Innsbruck, it was recently decided to implement a cooperation agreement in 2015 in the interests of a performance and efficiency increase.

In autumn 2013 the Council for Research and Technology Development initiated a study²⁶, whose objective was to begin an expert political discussion process on improved cooperation between the medical universities and the university clinics, and to support these with specialist arguments with a “thesis paper” developed for this purpose. Particular attention was paid here to the conflict surrounding the payment of the ad-

ditional clinical expenditure (ACE). § 55 KAKuG basically regulates the costs that the federal government refunds to the public hospitals, which are incurred by the requirements of teaching. Austria’s “Länder” are, however, responsible for patient care. This inevitably results in conflicts, because almost unavoidably there are overlaps in research, teaching and patient care. As part of the “Findings and action procedures for the further development of university medicine in Austria” project, recommendations, analyses, studies, reports etc. have already been analysed and the existing interface problems have been discussed by the medical universities and the clinics. The key results:

- There is no complete strategy or vision for university medicine in Austria that incorporates all locations and stakeholders.
- The remaining framework conditions are partially contradictory and unclear.
- Closer cooperation and joint management of the university clinics have proven to be beneficial, but they require real commitment to cooperation and mutual trust.

²⁶ Austin, Pock & Partners GmbH (May 2014): Findings and action procedures for further development of university medicine in Austria – Additional clinical expenditure and cooperation within the scope of the university clinics.

- The financing of the university clinics is too complex and not transparent and the clarity of the financing is not apparent.

Based on analyses, interviews, meetings and discussions were held with some 30 representatives of all stakeholders affected (federal ministries, states, medical universities, hospitals and university clinics).

The results here produced the proposal of a multi-stage model for paying for the additional clinic expenditure in the “Cooperation between the medical universities and university clinics in Austria” recommendation.²⁷

creating knowledge

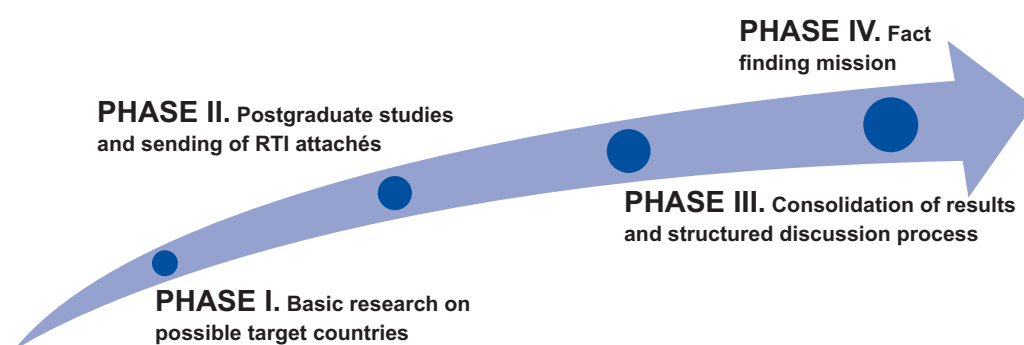
Looking for cooperation partners? Four steps on the way to the success of an internationalization of Austrian research, science and technology

How does the internationalization of innovative companies and research institutions and organizations take place? This question is addressed by the “internationalization and RTI foreign policy” Work Group (AG7a) of the RTI Task Force. In coordination with the activities in this work group, the Council for Research and Technology Development has commissioned a

study²⁸ that works out an analysis of international best practice examples on think tank structures, and from it derives specific recommendations for an Austrian model.

The four steps illustrated in the following model were recommended to find suitable target countries for a cooperation:

Figure 9: 4-phase model²⁹



²⁷ Recommendations of the Austrian Council: <http://www.rat-fte.at/einzelempfehlungen.html>.

²⁸ Sigl, L., Witjes, N. (2014): Zukunftsräume der internationalen FTI-Kooperation – Koordinations- und Kooperationsstrukturen für die Internationalisierung österreichischer Forschung, Wissenschaft und Technologie (EU-Drittstaaten), http://www.rat-fte.at/tl_files/uploads/Studien/140129_Internationalisierung%20oesterreichischer%20Forschung_Bericht.pdf.

²⁹ Sigl, L., Witjes, N. (January 2014): Koordinations- und Kooperationsstrukturen für die Internationalisierung österreichischer Forschung, Wissenschaft und Technologie, Study commissioned by the Austrian Council.



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The international comparison demonstrates that it is actually beneficial to draw on quantitative data (e.g. on co-publications, co-patents, foreign trade data, information for R&D, etc.) to obtain an initial overview of the RTI system of a target country. A template should not, however, under any circumstances be developed to be applied for countries as different as Ghana, South Korea or Oman, for example. In order to identify the special features of a country sufficiently and to achieve a well-based selection of cooperation countries, even more attention should be paid to research and analytical process monitoring in terms of an evidence-based policy. Qualitative analyses of RTI systems of the respective countries are indispensable for this, in order to be able to sufficiently consider their specific economic, political and cultural contexts. With emerging countries in particular it must also be assumed that the *dark innovation* area, i.e. innovative activities that are not (cannot be) recorded by previous quantitative data inventories, is particularly high. In-depth postgraduate studies, consultations and later on *fact-finding missions* are required to investigate these research areas – and the potential for cooperation with Austrian partners.

Structures, which, as a requirement for a structured opportunity screening, deliver continuous knowledge on RTI systems, are also required to be able to sustainably shape a process for setting up international RTI cooperation projects. Parallel information and knowledge management measures (between research and practice and between the various stakeholders) are also required. It also appears to be especially crucial to consider the different requirements, priorities and capacities of the participating stakeholders here to be able to flexibly approach the respective target country. The international comparison suggests, however: Geographical priority will only be successful when corresponding cooperation and coordination structures are sustainably institutionalised.

Building on the overall results of the “Coordination and cooperation structures for the internationalization of Austrian research, science and technology (EU third countries)” and the recommendations of AG7a in the “Beyond Europe” paper (2013), the study recommends sustainable structures be set up for coordination, knowledge management and research for RTI internationalization.

The economic situation of the universities of applied sciences sector in Austria

What is the economic situation of the universities of applied sciences sector in Austria like, and how has it developed in recent years? These questions were at the core of a project supported by the Council. The analyses focussed on the derivation of identifiable trends and, where applicable, a “clustering” of the support organizations. The analysis in the form of determined KPIs for these supporters is primarily restricted

to information included in the financial statements. This was performed in the form of a survey of all Austrian universities of applied sciences, for which all (annual) financial statements since foundation were considered in the analyses. The activities were performed by student groups with project coaching by university employees and completed at the end of the 2014 summer semester.

GEM2014 data monitoring on RTI-related new start-ups

The Austrian Council also supported the FH JOANNEUM this year with its International Management institute with the survey of start-ups and established companies in Austria within the scope of the Global Entrepreneurship Monitor (GEM). Austria is currently confirmed to have a consistently high level of start-up activity after 2012 in this globally highest benchmark on corporate activity by 70 countries.

With the joint initiatives of the key stakeholders as part of GEM 2014 with the participation of FH JOANNEUM, Austrian Ministry of Science, Research and Economic Affairs, Austrian Ministry for Transport, Innovation and Technology and Austrian Ministry of Finance, the WKO (Austrian Chamber of Commerce), the Austria Economy Service, the Council for Research and Technology Development, Styrian Economic Chamber, the State of Upper Austria and JOANNEUM RESEARCH, numerous

other aspects were also surveyed especially for Austria in the previous year, which will be published in May 2015 as part of the presentation of the Austria Report of the GEM. One of the aspects of this study was to filter out the research and innovation intensity of founders.

“A strategic objective of the Federal Government is, among others, to promote research, technology and innovation-based

start-ups. Growth potential for the domestic economy should in particular be expected from such start-ups.

For the first time, the status quo of these company start-ups was surveyed in Austria as part of the GEM 2014.

The good dynamic determined here is to be welcomed, but should not, however, obscure the fact that there is still more potential for improvement to achieve the Federal Government’s objective,” explained Karin Schaupp of the Austrian Council.

wissen schaffen

International Activities

Walter Schneider: Boost for the OSTA – April-June 2014

As a member at the Secretariat, from April to July 2014 Walter Schneider was delegated to the Office for Science and Technology Austria (OSTA) in Washington D.C. as a “Visiting Expert”. He supported the work in the OSTA and built up bilateral contacts in the areas of scientific communication and the start-up and founder scene. Washington D.C. in particular offers an excellent and active network of stakeholders in science communication, who vigorously ex-

change information. The OSTA supports researchers in North America, compiles the “Bridges” on-line magazine and is responsible for the Research and Innovation Network Austria (RINA). Schneider supported the OSTA, among other things, with the conversion of the Corporate Identity to a new design in the second quarter 2014. The website was redesigned and information was processed for the target groups.

Israel: Visit to the country of innovation – 10-12 June 2014

The Council made a delegation trip to Israel from 10 to 12 June 2014, where it met representatives from ministries, research funding agencies, universities, start-up companies and risk capital investors. Israel ranks among the most innovative countries in the world. With a civilian R&D quota of approx. four percent, it occupies a top global position. The innovative and dynamic private sector, which finances approx. 80 percent of R&D spending, is in particular responsible for this. With well-trained people and excellent research services, some of the globally leading scientific research institutions, such as the Weizmann Institute of Science, provide the basis for an increasingly knowledge-based economy. The

medium and high-tech sector has since become responsible for almost 50% of exports.

Israel’s greatest special feature is its high level of start-up activity: Per capita Israel now has more high-tech start-ups and higher risk capital intensity than any other country. After Silicon Valley, Tel Aviv and its surrounding environs and the Silicon Wadi are considered the second most attractive technology and start-up region in the world. With over 60 companies, more Israeli companies are therefore listed on the NASDAQ technology exchange than from any other country. In the years before the global financial and economic crisis, the country’s economic growth was thus constantly above three and four percent.

“Regional innovation systems” project: Cooperation with Stanford University – July 2014

Silicon Valley is one of the most innovative regions in the world, particularly when it comes to the number of company start-ups and the associated financing with venture capital. This particular strength consequently coincides with the challenge

in Austria of implementing this extensively available knowledge. For more than 35 years now, Austria has maintained a successful cooperation with Stanford University, which was further boosted with a delegation visit in autumn 2013. It was also agreed

here to set up cooperation between the institutions, to compare regional specifics with the other regions, and to contribute to development.

A part of this implementation was the use of specific expertise, which was built up at Stanford University in the area of regional innovation systems analysis. At the beginning of 2014 via literature research, the preparation of a project was initiated with the goal of analysing an Austrian region using the method developed in Silicon Valley (Triple Helix method) in order to determine findings for the required political and institutional decisions. In the period between January 2014 and July 2015, several documents emerged and continue to emerge, which consequently serve as the basis for the discussion. A product of this is a chapter in the publication of

the Council on the importance of innovation for society, which will be presented to the public in Alpbach 2015.

The documents were mostly prepared and compiled in Austria with the support of an on-site stay in Stanford in summer 2014, which served to coordinate the analysis methods and the discussion on the results achieved with the co-authors, who are active at the university. This stay was also utilised for the generation of more in-depth information on the framework conditions in Silicon Valley and recorded in a separate report. In addition to the chapter in the Council publication, this also produces a scientific publication and a detailed study, which then also summarises the data structures in the greatest possible depth.

creating knowledge

Transatlantic Exchange – Research and Innovation Talks, Cambridge/Boston, USA – 9-11 October 2014

The Austrian Research and Innovation Talks 2014 (ARIT) were held from 9 to 11 October 2014 in Cambridge (Boston, USA). Hannes Androsch, Gi-Eun Kim and Johannes Gadner took part as representatives of the Council. The programme hailed the motto, “Trends in research and innovation” and was organised by Austrian Ministry for Transport, Innovation and Technology, the Austrian Ministry of Science, Research and Economic Affairs and the Austrian Office of Science and Technology (OSTA) at the Massachusetts Institute of Technology (MIT). ARIT offers an already well-established platform for networking Austria as a research location in the

transatlantic context, and is also the annual network meeting point of Austrian researchers, entrepreneurs and innovators in North America. Almost 150 participants took part at the MIT in the event days 2014. Approx. 40 top ranking representatives of Austrian universities, research institutions, funding agencies, the economy and R&D policies travelled on their own initiative from Austria for the event. The framework programme offered the opportunity to obtain more in-depth insights into the research activity of MIT and to learn more about the framework conditions of one of the most well respected top research institutions in the world.

The EU and Russia: Year of Science builds bridges – 28 November 2014

Despite the political tensions between the European Union and Russia, together with a consortium of European and Russian research funding agencies, scientists and political deci-

sion makers, the European Commission organised the EU-Russia Year of Science.

The lead project of the Year of Science was entitled “BILAT-RUS Advanced” and primarily

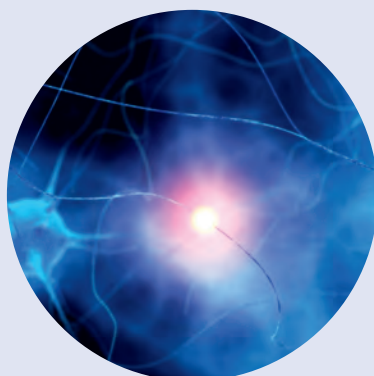
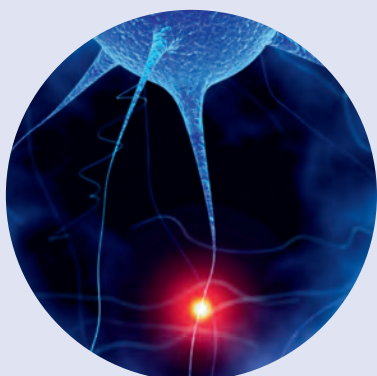
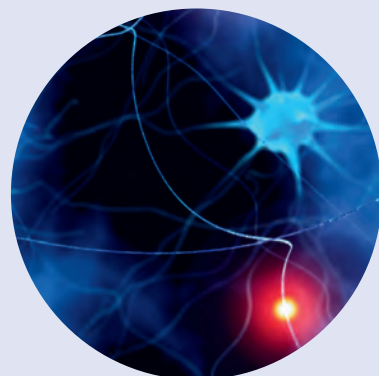
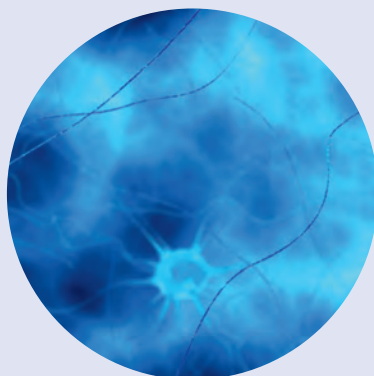
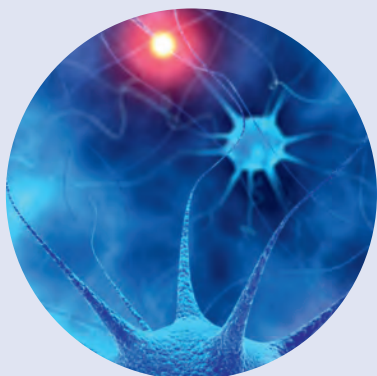
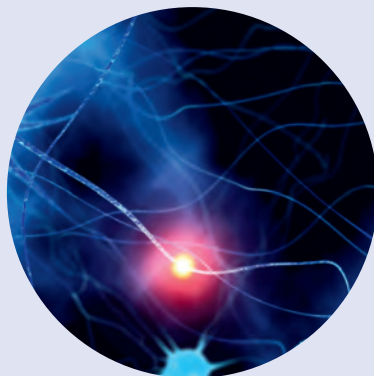
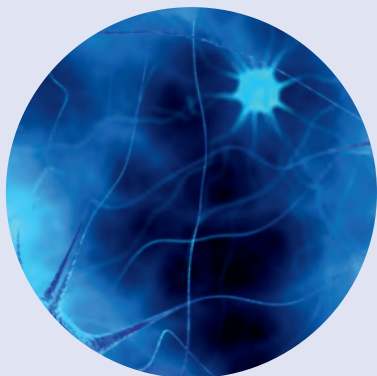
creating knowledge

dealt with the structural basis for bilateral cooperation in the areas of research and education. BILAT-RUS Advanced was also designed to further promote Russia's participation in programmes run by the European Union.

There were some 200 events in the first half of the Year of Science, which started in November 2013. The EU-Russia Year of Science concluded with the "EU-Russia STI collaboration:

Good practice examples from the Year of Science and beyond" conference in Brussels on 28 November 2014.

At the Austrian Council side, Peter B. Mayr worked as an independent administrator for EU-Russia research and innovation policy, continuously appraised the results of the BILAT-RUS Advanced project as a monitoring expert, and took part in the above-mentioned closing conference.





events

Funding for the community – 28 February 2014

The “Funding for science and research – a sustainable investment in our future” event was held on 28 February 2014 in the *Haus der Musik* in cooperation with the Fundraising Association Austria. The background of the event was the fact that in many countries non-profit making foundations are indispensable partners for science and research, but this development is somewhat stagnant in Austria to date. And this not least of all because the role of foundations in society is still rather unknown, and the appropriate framework conditions are insufficient. The objective of the event was therefore to draw attention to the special importance of scientific foundations, and to solicit the body politic for better framework conditions for non-profit making funding. The two keynotes were

re given by Prof. Dr. Andreas Schlüter (*Stifterverband für die Deutsche Wissenschaft, Donors' association for the promotion of humanities and sciences in Germany*) on the topic of “Foundations for scientific funding in Germany” and by Prof. Dr. Georg von Schnurbein (Centre for Philanthropy Studies) on the topic of “The Swiss philanthropical landscape and science”. Participants in the subsequent podium discussion included: Dr. Hannes Androsch (Rat für Forschung und Technologieentwicklung), Dr. Thomas A. Henzinger (Institute of Science and Technology), Prof. Dr. Andreas Schlüter (*Stifterverband für die Deutsche Wissenschaft*), Prof. Dr. Georg von Schnurbein (Centre for Philanthropy Studies), Dr. Dorothea Sturn (FWF, Austrian Science Fund) and Mag. Constantin Veyder-Malberg (Capital Bank).

Visiting research – 4 April 2014

For the third time in a row, the Council for Research and Technology Development actively contributed to the Long Night of Research (LNF) in the coordination of content and communication between the responsible areas and the federal states. The LNF is the biggest domestic research event, and was held across Austria on 4 April 2014. A new visitor record was set in 2014 with more than 1,800 stations and over 136,500 visitors. From the Council's point of view, this result confirmed how important it is to present the performances of the domestic research and innovation community to a wide-ranging public audience. On one

hand, together with *Akzent-PR*, the Council represents the interface with the Advisory Board, which is staffed with representatives of the responsible area, and on the other hand coordinates all nationwide measures with the federal states. Representatives of the federal states are responsible in the respective regions for operative administration. Parallel with the Long Night of Research the children's book “*Meine Freundin ist Forscherin*” (My friend, she's a researcher, you know?) was also put together for the early reader target group and distributed as a teaser for the event. The next Long Night of Research will be held 22 April 2016.

Austria in 2050 – A Vision – 15 May 2014

The “**A vision for Austria 2050 – Interstate treaty for the future**” event organised by the Council for Research and Technology Development was held in Parliament on 15 May 2014. The

“Vision Austria 2050” IHS (Institute for Advanced Studies) study compiled on behalf of the Council was presented to a wide-ranging public as part of this event.

Its main result: The answer to the big challenges in a radically changed world are adaptability and innovation; the key requirements for Austria occupying a top position in the world of 2050 therefore are education, innovation and structure change. Within the scope of this event the US economist and President of the Foundation of Economic Trends, Jeremy Rifkin presented the key challenges of the future from his point of view. According to Rifkin, these changes affect our perception of property, which changes as development progresses and with the increased importance of sharing networks of all kinds, as will the restructuring of the working world in the

course of the “third industrial revolution” (definition: Rifkin). The basis of these developments is formed by new technologies, which bring both unimagined opportunities and risks with them. The Director of the Institute for Advanced Studies (IHS) Christian Keuschnigg, the Chairman of the Austrian Council and Supervisory Board Chairman of the Austrian Institute of Technology (AIT), Hannes Androsch, and the renowned economics scientist Jeremy Rifkin from the Foundation of Economic Trends and ORF General Director Alexander Wrabetz went on to discuss this topic as part of a podium discussion.

events

Picture on left:

Jeremy Rifkin,
Economist and director of the
Foundation on Economic Trends

Picture on right:

Hannes Androsch,
Chairman of the Austrian Council



What women really want – Searching for clues – 24 June 2014

From advertising to toys, from the Pink Corner at Media Markt to pink girls' rooms and work overalls for boys through to professional preferences – in large areas of society, we still encounter stereotypical ideas of the wishes and requirements of men and women. Little wonder then that despite numerous efforts to increase the percentage of women in science and research, successes are low – especially in the STEM subjects (Science, Technology, Engineer-

ing, and Mathematics). The Austrian Council therefore invited on 24 June 2014 to a world café entitled, “Future: What women really want”. A number of topics were discussed together with approx. 50 participants – including, among others, possibilities for counteracting gender stereotypes. The objective was to develop ideas and solution approaches for a gender-friendly and good quality-of-life future.

events

Multi-stakeholder summit “Social innovation and social entrepreneurship” – Making a company from social engagement – 24 June 2014

The multi-stakeholder summit “Social innovation and social entrepreneurship” was held in Palais Eschenbach in Vienna on 24 June to promote increased awareness for young business owners and entrepreneurs, who in particular must surmount the special social challenges of the day. The participating social entrepreneurs, foundations and NGOs, plus Federal Government Ministers Hundstorfer and Rupprechter reached agreement on the need for improved framework conditions for social entrepreneurship. Social entrepreneurs, charity or-

ganizations, foundations, companies and special interest groups agreed that the direct support for innovative business owners and fortification of the eco-system are intrinsically necessary. The last aspect named here refers to better networking of market participants with political decision makers and other public players, such as special interest groups, innovation agencies and think tanks, such as the Council for Research and Technology Development. The Research Council was involved in the successful implementation of this multi-stakeholder summit.

The stony road of the innovation location Austria – Podium discussion “Innovation Location: Austria” – 4 November 2014

As part of an event organised by the Council for Research and Technology Development, together with Bank Austria, on 4 November 2014 measures were discussed to make Austria one of the leading research and development countries – as set out in the Federal Government’s strategy for research, technology and innovation. State

Secretary Harald Mahrer from the Federal Ministry for Science, Research and Economy, Wilibald Cernko, Chairman of Bank Austria, and Hannes Androsch, Chairman of the Council for Research and Technology Development opened the event. Julian Nida-Rümelin, Professor of Philosophy at Ludwig-Maximilians-Universi-

Julian Nida-Rümelin,
University of Munich,
former Minister of State



sity Munich and former German Minister of State, gave the keynote lecture. In the podium discussion that followed with Karl Aiginger (WIFO, Austrian Institute of Economic Research), Pascal Ehrenfreund (FWF, Austrian Science Fund), Eva Prieschl-Grassauer (Marinomed), Anton Zeilinger (ÖAW, Austrian Academy of Sciences), Julian Nida-Rümelin and Hannes Androsch, the social mandate and benefits

for a successful innovation location that established research institutes such as the universities might have and what role the free economy might play were discussed. There was agreement on the overarching importance of education, research and innovation – not always, however, on Austria's current status on its road to becoming an innovation leader.

events



International councils meeting in Vienna: Networking and exchanging information right across Europe – 6/7 November 2014

The international councils meeting was held on 6 and 7 November in Palais Daun-Kinsky in Vienna. The key topics of this international exchange were **“The changing role of science and innovation policy advice – new trends and challenges”** and **“How to set and change national strategic R&D priorities”**.

These topics were chosen, as all participating councils have the task of policy advice (for the respective governments and political system), but also because this informal network of the councils meeting is the only opportunity to exchange

experiences at international level. Changes in policy advice were also defined at secretariat level, as in many countries a series of new stakeholders and think tanks take on a similar policy-advising position. The keynotes were given by Prof. Christian Keuschnigg, Director of the Austrian Institute of Economic Research and Prof. Klaus Gretschnmann, former Director General of the European Commission. In his presentation, Professor Keuschnigg illustrated the results of the “Vision Austria 2050” study compiled for the Council; as part of his presentation, “High Ro-

Picture on left, from left to right
Anton Zeilinger,
 Austrian Academy of Sciences
Pascale Ehrenfreund,
 Austrian Science Fund
Julian Nida-Rümelin,
 University of Munich,
 former Minister of State
Karl Aiginger, WIFO
Eva Prieschl-Grassauer,
 Marinomed
Willibald Cernko,
 Bank Austria
Hannes Androsch,
 Austrian Council

Picture on right:
Harald Mahrer,
 State Secretary



events

ad or Thorny Trail? EU Innovation and Research Policy behind the Curve”, Professor Gretschnann reported on developments in innovation in the European Commission.

The keynotes were followed by brief presentations by the participating council formations on the conference topics:

- Prof. Gerd Folkers from the Swiss Science and Innovation Council spoke on the problems of the influence of cross-referenced journal articles on scientific careers.
- Prof. Antje Boetius from the German Council of Science and Humanities spoke about the Council’s initiatives in the previous year.
- Thomas Bech Hansen from the Danish Council for Research and Innovation Policy spoke on the, from his point of view, essential cornerstones of a science and innovation council.
- Tuomas Parkkari and Risto Lammintausta from the Finnish Research and Innovation Council reported on new developments in the area of research councils in Europe in general and Finland in particular.

- Wijnand van Smaalen from the *Adviesraad voor het Wetenschaps- en Technologiebeleid* in the Netherlands spoke about the reorientation of the Dutch Research Council.

- Danielle Raspoet from the Flemish Council for Science and Innovation illustrated the developments of the individual (regional in particular) R&D council formations in Flanders.

The following people took part in the councils meeting: Danielle Raspoet (Flemish Council for Science and Innovation), Jan Marek (Czech Science Policy Council), Thomas Bech Hansen, Sune Kaur-Pedersen and Jonas Lind (Danish Council for Research and Innovation Policy), Tuomas Parkkari and Risto Lammintausta (Finnish Research and Innovation Council), Philippe Lavocat (Conseil supérieur de la recherche et de la technologie), Prof. Antje Boetius and Thomas May (Deutscher Wissenschaftsrat), Wijnand van Smaalen (Adviesraad voor het Wetenschaps- en Technologiebeleid), Prof. Gerd Folkers and Marco Vencato (Schweizerischer Wissenschafts- und Innovationsrat).

Universities in transition: Achievements and challenges – 14 November 2014

To analyse the Austrian universities system ten years after implementation of the UG – this is the objective pursued by the³⁰ “Governance and management structures at universities – development of structures for the future” project. In cooperation with the Institut Français, the Council for Research and Technology Development organised a podium discussion with the same title based on its results. A new era began for universities in Austria with the implementation of the University Act (UG) 2002, which is characterised in particular by its newly created autonomy. New structures in

university management have been created and additional organization and management tasks must be tackled. Austria was considered one of the experts as a European pioneer of a progressive and highly autonomous university legislation. The French university and research system performed well until the turn of the millennium with strong centralisation of the areas of education and science and their financing. In 2007, the universities achieved higher independence and responsibility, which enables strategic management and promotes international partnerships.

³⁰ Elias, B. (2014), *Analyse der Governance- und Management-Strukturen an österreichischen Universitäten – im Lichte der Autonomie der Universitäten seit dem Universitätsgesetz*.

In 2013, the law on the development of teaching and research at universities emphasised the role of the corporate sector in university orientation and boosted cooperation between the universities. Keynote speakers in the discussion included Christoph Badelt, Rector of the University of Economics Vienna, and Jacques Fontanille, Professor of Semiotics at the University of Limoges. Christoph Badelt explicated his experiences as rector since 2002 in his keynote. In his estimation many positive achievements have been enabled by the UG, but he still sees the need to continue an open discussion on the limits of autonomy. From his point of view, new framework conditions, such as the sharply increased student numbers, require adjusted basic conditions for the management of a university. Jacques Fontanille in particular sees the universities challenged to promote even more synergies between the institutions. Freedom and responsibility should be heavily embedded with the universities. He also believes, however, that more cooperation and fusions in the university sec-

tor are required. The universities' management should promote this even more. Concerns about internal competition are unfounded and the result of insufficient structuring of excellence initiatives in France. Cyrille van Effenterre (Council for Science and Technology at the French Embassy in the UK), Jacques Fontanille, Sabine Seidler (Rector of Vienna Technical University) and Peter Skalicky (Deputy Chairman of the Council for Research and Technology Development) discussed at the podium. The tenor of the discussion was the requirement of the universities' autonomy for new elements. A more trusting handling of autonomy will fortify the universities in their respective roles. Sufficient financing is a prerequisite for top quality in teaching and research. An appropriate university place financing system, coupled with proper access regulations is certainly a factor that can have a critical influence on the development of the universities.



Picture from left to right

Reinhold Mitterlehner,
Federal Minister of Science,
Research and Economic Affairs

Doris Bures,
former Federal Minister for Transport,
Innovation and Technology

Hannes Androsch,
Chairman of the Austrian Council
at the New Year's reception
of the Austrian Council

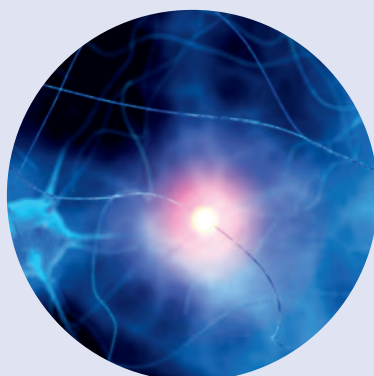
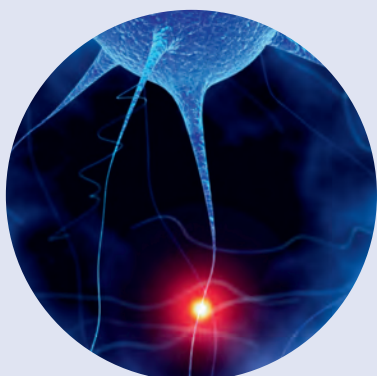
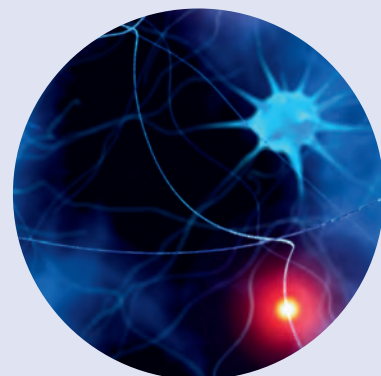
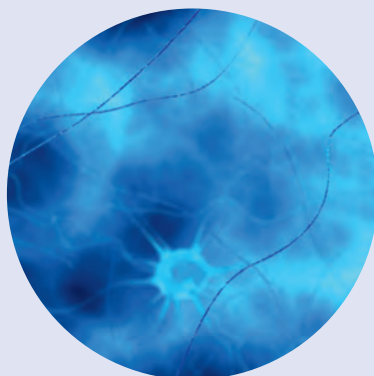
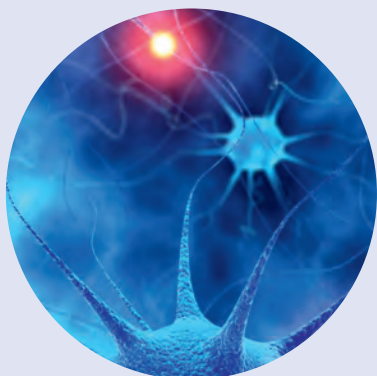
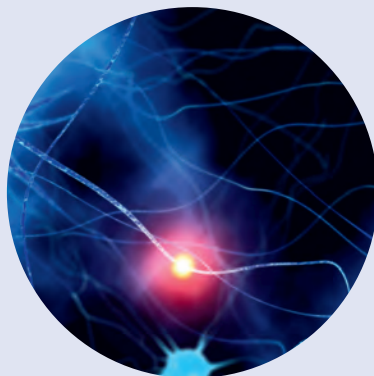
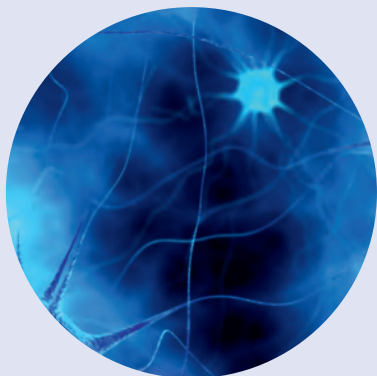


events

Industry location Austria: Specialists in demand – 24 November 2014

Re-industrialise Europe – this is the goal the EU has set itself based on the sustained economic crisis in Europe. This has also resulted here at home in a discussion on the future opportunities of the industry location Austria. The Vienna Chamber of Labour, the Austrian Federation of Trade Unions and the Council for Research and Technology Development therefore invited on 24 November 2014 to the “Industry location Austria – what’s next?” event. With an industry share of 18 percent of GDP, Austria is part of the emerging “industrial core” in the EU. Industry therefore continues to be an important factor for growth and employment in Austria. According to the unanimous tenor of all experts, modern framework conditions for a growing section of industry in terms of value creation must be implemented. A comprehensive strategic industry policy concept is therefore required of the government by the end of 2015. It must, however, also be observed that the key to an attractive industry location

Austria lies today in research and development – as well as in the continued progress in innovative products and services with value creation in one’s own country. There is also unanimity in the belief that this above all requires well-trained experts. Along with Chamber of Labour President Rudi Kaske, ÖGB President Erich Foglar and Chairman of the Council for Research and Technology Development, Hannes Androsch, as organisers Vice Chancellor Reinhold Mitterlehner, new Minister for Transport, Innovation and Technology Alois Stöger, Social Minister Rudolf Hundstorfer, the President of the Federation of (Austrian) Industries and the Austria Chamber of Commerce, top representatives of the trade unions, experts from the Austrian Institute of Economic Research (WIFO) and the Vienna Institute for International Economic Comparisons (wiiw), the rector of TU Vienna, Sabine Seidler, as well as managing directors and works councils of major Austrian companies all took part in the event.



the austrian council

Review 2014

As in previous years, 2014 was also characterised by the sustained economic and growth crisis, and the resulting budgetary shortages. In order, however, to emphasise the precisely for this reason current urgent need for sustainable investments in future areas such as education and research, the Council has repeatedly submitted proposals for better financial funding of research and innovation in Austria, e.g. with the “Recommendation for financing universities and research” or the “Recommendations for the National Foundation”.

The Council has also organised several events on the most diverse aspects of the importance of research and innovation

for our country to also awaken interest in the general public for these topics, beyond the scope of the more tighter-knit research community. Among others, US economist and President of the Foundation of Economic Trends, Jeremy Rifkin, also featured as introductory speaker on the topic of “Key challenges and changes of the future”, and former German Culture Minister and university professor Julian Nida-Rümelin spoke on the “Importance of education for research and innovation”. The immense attention caused by these events demonstrates the increasing awareness of the importance of these areas for safeguarding both our economic competitiveness and our social security and therefore our well-being for the long-term.



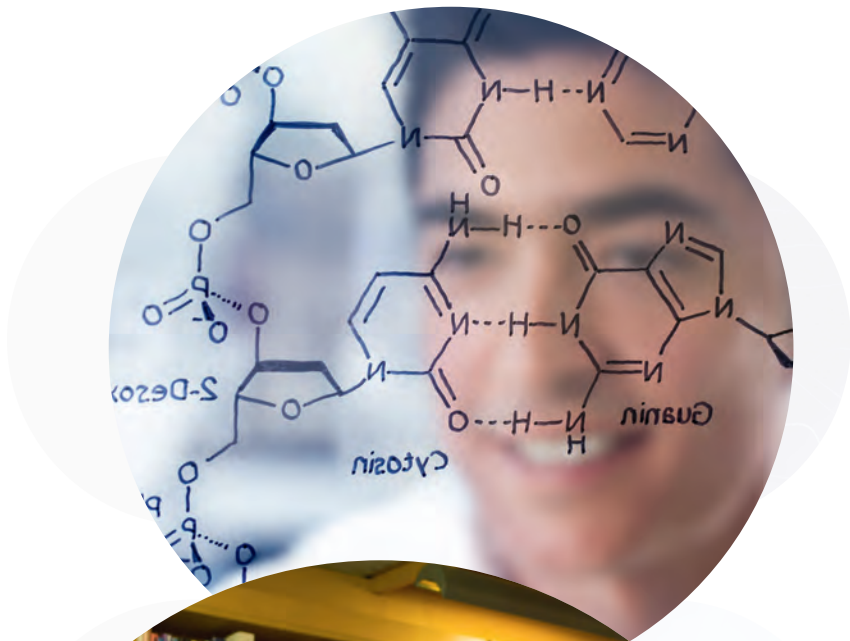
Ludovit Garzik
Head of the Secretariat

Outlook for 2015

In 2015, the Council also considers one of its most important tasks to be the monitoring assignment bestowed upon it by the Council of Ministers, and surmounting all challenges required to achieve the declared government objective of positioning Austria among the innovation leaders by 2020.

The most important instrument in this respect

is its “Report on scientific and technological performance”, which will be presented again in mid-year, and with which the Council will support the responsible units in their work. The Council is also once again planning a series of events on the topic, for example, of “Industry location Austria” in Graz, as well as together with Uniko on the issue of the “Value of Science”.



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Advisory Members

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Dr. Hans Jörg Schelling Federal Minister of Finance

Alois Stöger Federal Minister for Transport, Innovation and Technology



the austrian council



Dkfm. Dr. Hannes Androsch Chairman of the Austrian Council is an industrialist and former minister of finance who also served as a consultant to the World Bank. He is a member of the Senate of the Austrian Academy of Sciences (ÖAW) and head of the Supervisory Board of the Austrian Institute of Technology (AIT)



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The Secretariat

The Secretariat supports the Austrian Council both in terms of organization and content, in particular with regard to preparing and organising the meetings of the Austrian Council and work groups, and in respect of communication both within the Council and externally. The operations of the

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