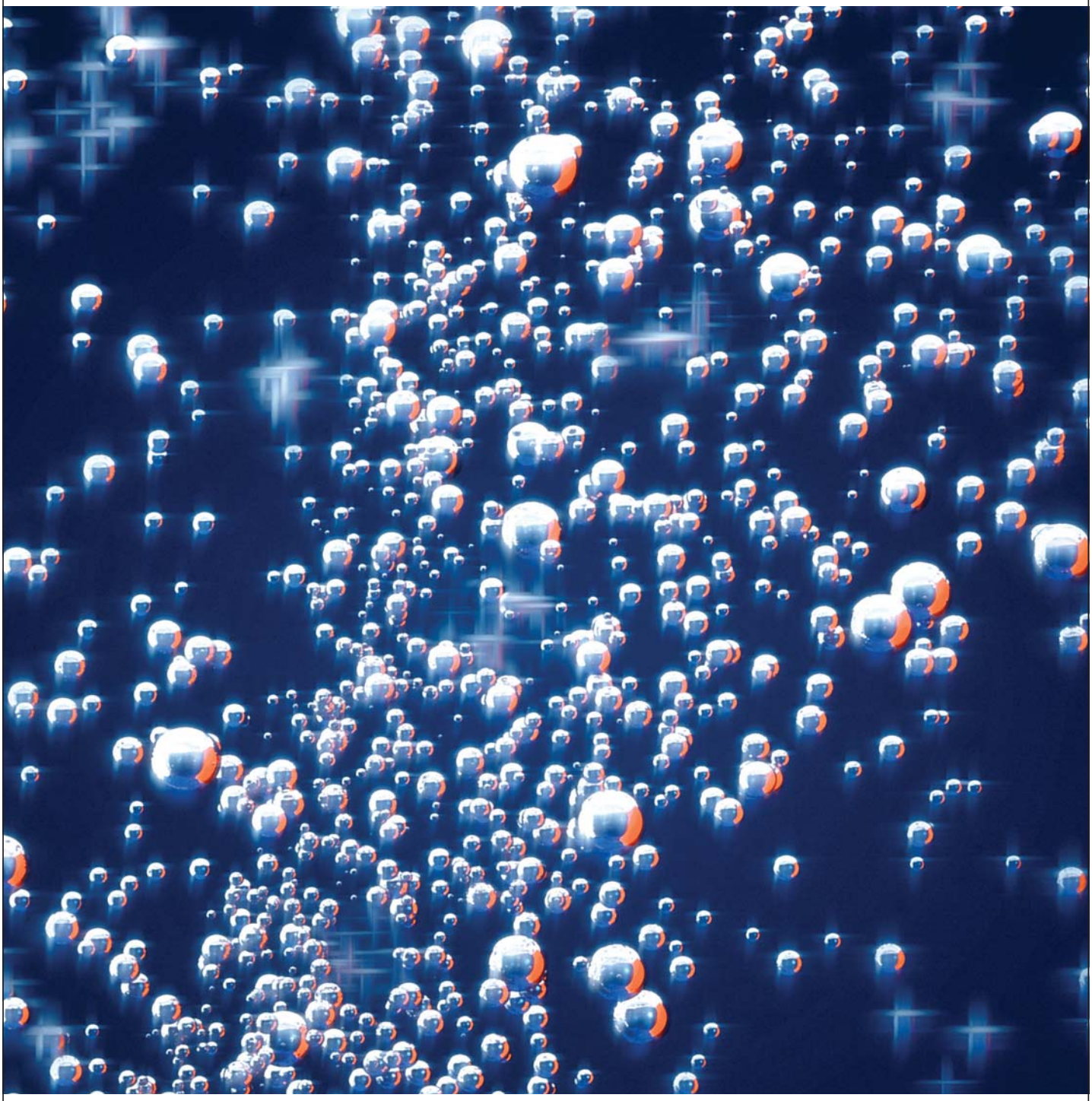
austrian council
FOR RESEARCH AND TECHNOLOGY DEVELOPMENT



ANNUAL REPORT 2002 2003

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Research and development are vital motors for national economic performance and as such are directly linked to competitiveness, the protection of business locations, employment and, in the final analysis, prosperity. Only if we strengthen R&D in Austria will we be able to position ourselves among the top five most innovative nations in Europe.

To this end, quantative goals have been formulated such as a 3% research quota by 2010. The Austrian Council for Research and Technology Development laid out the strategy thereto in the National Research and Innovation Plan. The plan aims to raise Austria's R&D quota to one of the highest levels in Europe. But there is another ambition too – we want to position Austria as a powerful and competitive innovation partner at the top of the European league tables.

We have to ensure that Austria remains an attractive scientific and economic location for national and international investors because, in the end, international corporations make greater investments in locations where their research and development centres are based. We need internationally competitive, research-intensive companies to create high-calibre jobs that can be protected in the long term.

In addition to the question of how research promotion should be financed and organised, increasing human resources is also a key issue. We will only be able to put the innovation potential that we have to use in cutting-edge products and services if we have enough researchers. Successful co-operation between the research, development and industrial application sectors to achieve top economic performance can only take place through the minds of our innovators. Our motto has to be "Investing in Brain Power." The Council has therefore given high priority to this topic in its strategy.

I would like to extend special thanks to the Council for its commitment, and in particular for the development and formulation of the National Research and Innovation Plan. I wish the Council success as it continues to carry out its important work.

HUBERT GORBACH
Minister of Transport, Innovation and Technology

The establishment of the Council for Research and Technology Development as a strategic advisory body to the government in the year 2000 was an important step forward. This Annual Report documents the valuable work carried out by the Council over the last year. The most important milestone was the National Research and Innovation Plan which builds upon the strategic work carried out in the past and forms a strong foundation for defining priorities and increasing the focus on emerging sciences such as biotechnology, or the promotion of young scientists and international mobility of researchers.

However, the success of the Council's work is also reflected in the numerous recommendations for the EUR 508 mn. in special funds set aside in the government's first action programme for research. The second instalment of funds amounting to EUR 600 mn. will be made available in 2004.

The European Union has set itself the goal of making Europe the most competitive and dynamic economic and knowledge area in the world by 2010. It also wishes to raise the research quota to 3% of GDP over the same period. Austria is on the right path. While average R&D spending by EU member states fell slightly from 1.94% at the beginning of the 1990s to 1.88% in 2000, 2002 was the best year ever for research and development in Austria. Since 1993, R&D expenditure has risen by 88.7%. From 1999 to 2003 the R&D quota increased from 1.86 1.95 percent.

I would like to thank the Austrian Council for Research and Technology Development for its hard work and the expertise that it has made available to the government. In this spirit, I look forward to continuing successful cooperation.

ELISABETH GEHRER
Minister of Education, Science and Culture

PREFACE

In our last Annual Report we outlined the general strategic positions of the Austrian Council for Research and Technology Development and described how the special funds provided by the government since 2001 onward had been used. A great deal has happened since then.

Early parliamentary elections, in-depth discussions with all political parties and the resulting confidence that policymakers will continue down the path toward repositioning Austria as a country of innovation.
In September 2002, after a year of preparations, we were able to start the first nationwide Awareness programme for research and innovation with an advertising campaign that was very well received. This year's report will give an insight into the individual projects and sub-programmes, all of which are distinguished by their diversity and imaginativeness. Over 40 individual projects were brought together under the umbrella of www.innovatives-oesterreich.at with the aim of informing the public about the benefits of innovation and winning the support of those institutions involved in research and innovation for professional public relations work. It is in our own interest to conduct research and innovation policies for an increasingly educated public in the spirit of a Europe that is responsive to its citizens. Research and innovation can certainly capable of arousing interest when they are clearly articulated.

A further priority was also set in autumn. In December 2002 the Council presented the National Research and Innovation Plan to the government in accordance with its instructions. On the basis of international comparisons that clearly reveal the connection between business, innovation and prosperity, scenarios were developed to increase the focus of Austrian R&D structures on economic and social needs, thus contributing to growth and employment.

Early in 2003 a number of working groups commenced discussions on how to implement the measures put forward in the National Research and Innovation Plan. These working groups were made up of representatives from the business and scientific communities, civil servants and politicians. The discussion process culminated in a workshop with international participation held at the beginning of July. This revealed that while Austria has undertaken significant initiatives, structural policy decisions will still have to be made in the near future.

Our actions are based on the conviction that Austria can gain a place among the top 25% of OECD states. To this end, appropriate strategies have been formulated on the basis of analyses about Austrian strengths and potential. In the current situation, particular attention must be paid to vocational qualifications and financing certainty. On the one hand, the "University Reform Project" has been designed to eliminate existing deficits in tertiary education, especially in the technical disciplines, on the other, the public purse must guarantee that innovative projects can rely on long-term funding assurances.

If the Research and Technology Report 2003 classifies Austria's innovative ability as "highly average," while at the same time calling the increase in the research quota to 1.95% of GDP "pleasing," it is both a signal and incentive. A signal to make a special effort to accelerate the pace of change in the economy and to bring about an increase in the small percentage of those employed in the R&D sector. An incentive to convince politicians that public investments in R&D will have an impact on competitiveness and prosperity and send a clear positive message about Austria as a business location. Together with the new government we have found a sound approach to this. The renewed promise to use EUR 600 million for stimulation measures, will not only increase the R&D quota, it will also help concentrate the strategic options and implement goal-oriented measures.

In this spirit, we would like to thank all those people who support our work. We hope they find this Annual Report informative and invite them to continue down the road with us toward an "Innovative Austria."

GÜNTHER BONN, *Univ.Prof. Dr.*

KNUT CONSEMÜLLER, *Dipl.Ing. Dr.*

P.S.
The layout of this report picks up the motto of the United Nations for 2003, The International Year of Fresh Water. We believe that giving more thought to things that are taken for granted can give us a clearer view of what is essential.

Research Location Austria

In the years 2001-2002 a series of new and important programmes and initiatives for research and development were realised. The provision of EUR 508 million in special funding for R&D was a milestone in forward-looking public sector commitment. The 2002 Universities' Act created the basis for outstanding educational performance by permitting university autonomy, performance agreements and transparent decision-making structures.

Nevertheless, as the European innovation indicators clearly show, the international performance of the innovation system in Austria leaves much to be desired. In terms of national R&D spending and investment by business, venture capital financing, the number of researchers, science and engineering graduates, patent registrations, the number of scientific publications and the percentage of sales attributable to new products, Austria either reaches only the EU average or falls below it. And even if small and medium-sized enterprises show strong innovative performance in a European comparison, the call for targeted and sustainable measures to improve the situation of research and technology development is undoubtedly more relevant than ever.

At the same time however, it is apparent that although there is greater public and media interest in R&D and innovation in Austria, and although institutions are taking comprehensive measures to promote public awareness, the basic tenor of reports about national research policy is becoming increasingly negative. This should give us pause for thought. One reason for this could be that there is still no overall strategic and systematic coordination of research, technology and innovation. Compared to other countries, the distribution of strategic competences is highly fragmented. This heterogeneity also characterises the research landscape and promotion structures in this sector.

At the Bottom or the Top of the European League Tables

The Austrian government's explicit goal of reaching an R&D quota of 2.5% of gross domestic product (GDP) by 2006 and making greater use of the synergy effects in a European research area during the EU's 6th Framework Programme is a major challenge for all players. After all, in the medium term Austria wants to catch up with the top five EU member states in terms of all key innovation indicators. Subsequently, the aim is to increase the R&D quota to 3.0% of GDP by 2010 in line with the resolutions adopted at the EU Barcelona summit in 2002.

Achieving this ambitious goal will require the consistent implementation of fundamental principles designed to reshape the framework for R&D in Austria as set out by the Austrian Council for Research and Technology Development in the National Research and Innovation Plan. These include:

- **Focussing research funding** and concentrating on activities with a significant leverage effect in order to stimulate the innovation process, especially in the business sector.

- **Focussing on areas** of particular strength such as ICT, life sciences, nano and micro-technologies or sustainable development.

- **Financial planning security** for research and development in the sense of binding and sustainable public funding for multi-year programmes and initiatives. This requires a suitable earmarked source of financing with a long-term impact. In this context, higher R&D spending is vital in both the public sector, but especially in the private sector.

- **Improved cooperation** between university and non-university R&D and business. Non-university R&D should be supported by communications and coordination platforms, continued development of existing networks and clusters, as well as targeted transfers of knowledge and innovations to help raise the percentage of the research volume made by small and medium-sized enterprises.

- **Structural improvements to the research and funding landscape** in order to avoid duplications and concentrate efforts on specific areas of research and development. In addition to a clear clarification of competences at the government level and improved strategic coordination between national government and the provinces, this will also involve a more general clarification of the separation of strategic and operational levels as well as customer-oriented structures.

The common feature of all these approaches is a strengthening of horizontal measures and programmes that go beyond individual areas of technology – thematically open, there is room for a range of activities. In particular, these include promoting business start-ups in the technology sector through targeted promotion and consulting activities. Another example involves the protection of intellectual property rights (IPR) through patents and licences. A suitable exploitation infrastructure should be set up in Austria.

It will only be possible to implement these measures with properly qualified personnel and the next few years will witness greater demand for specialist R&D personnel, particularly in the business and non-university research sectors. Additional potential has to be created here, e.g. through attractive research positions in Austria (in order to increase the number of post-graduates and reduce the brain drain) and additional qualification opportunities.

Austria is at an important crossroads – if we want our country to remain competitive in the future, we will have to be bolder in our innovation efforts and create a new research infrastructure. The alternative means accepting the risk of attrition due to island solutions and a lack of coordination and cooperation structures, and falling behind in an increasingly dynamic Europe. Today's research creates tomorrow's jobs and Austria will have to make a determined effort if it does not want to end up on the European sidelines.

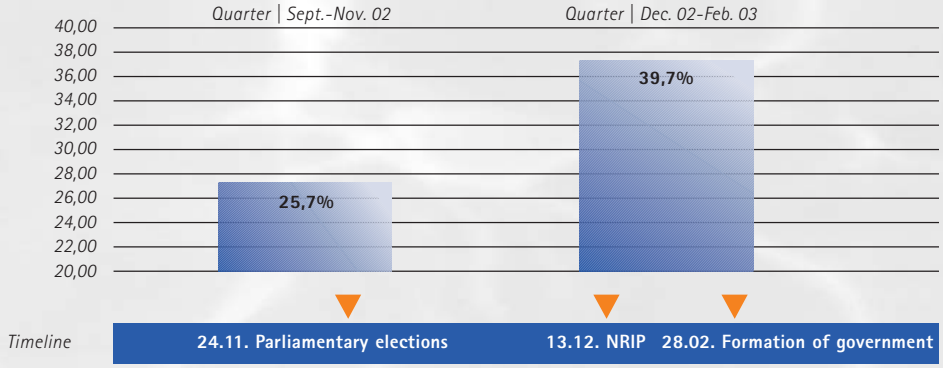
Media Analysis

The aim of the media analysis commissioned by the Council within the framework of the www.innovatives-oesterreich.at campaign was to compare media treatment of the topic "research policy" in terms of the amount of reporting on research, as well as the tenor of reports in the periods September to November 2002 and December 2002 to February 2003. The topic covered all those media reports that described or commented upon political decision-making processes such as total spending on research or measures to restructure the research system.

Random sample (number of analysed clippings):

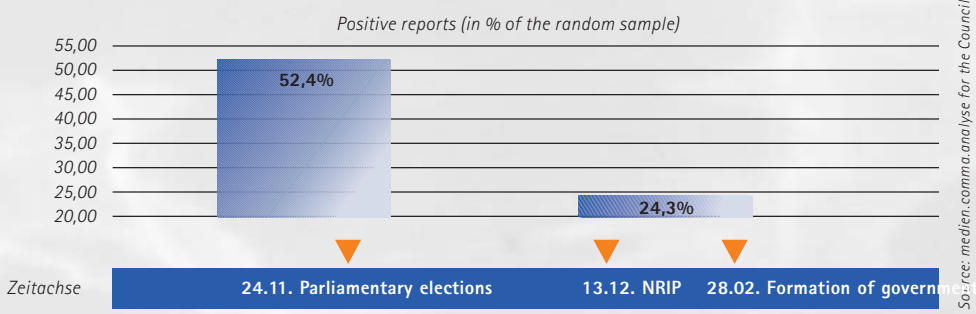
- Quarter | Sept. 02 - Nov. 02 n=113
- Quarter | Dec. 02 - Feb. 03 n=108

Fig. 1: Percentage of Reports on "Research Policy"



Message: Research policy received greater media coverage in the 2nd observation quarter than in the 1st. The number of articles on research policy increased by 47.5% in the 2nd quarter compared to the 1st quarter.
Explanation: The blue columns represent the number of articles on research policy as a percentage of all general articles on research that were studied.

Fig. 2: Tenor of Reporting on "Research Policy"



Message: The tenor of reporting on the topic "research policy" became increasingly negative in the quarter December 02 to February 03 in comparison with the quarter September to November 02.
Explanation: The blue pillars show the number of articles on research policy with a positive tenor as a percentage of all analysed articles on research policy.

Austrian RTI Policy in the Context of the Lisbon Process

The National Research and Innovation Plan (NRIP) should also be seen in the context of the process to strengthen and concentrate European RTI policy initiated by the European Council in March 2000 in Lisbon.

The measures proposed in the NRIP to increase Austria's innovative capabilities are intended to create the conditions required to successfully position Austria within the European research area. As mentioned earlier, the Austrian RTI policy goal of achieving an R&D quota of 2.5% of GDP is an intermediate step along the way to the Europe-wide target of a 3%-quota by 2010 (European Council Barcelona 2002).

In June 2002 the 6th EU Framework Programme for research, technological development and demonstration was approved, the research area's most important Europe-wide instrument. With its new programmes and schemes, in particular the networks of excellence and the integrated projects it makes considerably greater demands on the participating organisations than previous framework programmes. This is particularly true for small member states such as Austria whose structures are scarcely focussed on large-scale projects at present.

Consequently on 3 July 2002 the Council recommended the following measures to support Austrian participants in the 6th Framework Programme:

- Development of a coordinated internationalisation policy involving all responsible policymakers and all relevant players in the innovation system; strengthening the international activities of those institutions whose activities so far have been largely restricted to a national or regional context.
- Increasing the quality and capacity of existing information and advisory instruments at the national and regional levels and improving reciprocal coordination.
- Focussing the activities of the advisory institutions on active networking, support for setting up consortia, project management for large-scale projects and mobilisation of new participant groups.
- More financial resources for initiation and additional financing; simplified execution of these programmes and specific orientation toward the 6th EU Framework Programme.
- Coordinated elaboration of a personnel development concept in order to increase the number of Austrian staff at EU institutions.
- National programmes to supplement the EU Framework Programme.

The strategic recommendations set out by the Council in the NRIP concerning the most important issues surrounding the national research and innovation system formed the basis for a national and international discussion process. During this process, the Council decided to hold a workshop with international participation.

Part 1 of the workshop encompassed a general portrayal of the national innovation system (NIS), parts 2 and 3 the viewpoints of science and business, while part 4 dealt with problems in the areas of promotion, financing and organisation as sub-areas of the NIS.

The general tenor of the workshop was that **Austria's national innovation system is experiencing a period of change.** The government's goal of devoting 2.5% of GDP to research and development (R&D) by 2006 and the resulting allocation of around EUR 1.1 bn. in special funding by 2006, as well as the will for inter-sectoral strategic leadership on the part of the government as demonstrated by the establishment of the Council for Research and Technology Development as the strategic advisory body are major aspects of this change.

The simultaneous development of a polytechnic sector which the government has also charged with building up research and development structures, is another key aspect of change to the Austrian national innovation system that takes particular account of the research and development potential of small and medium-sized enterprises.

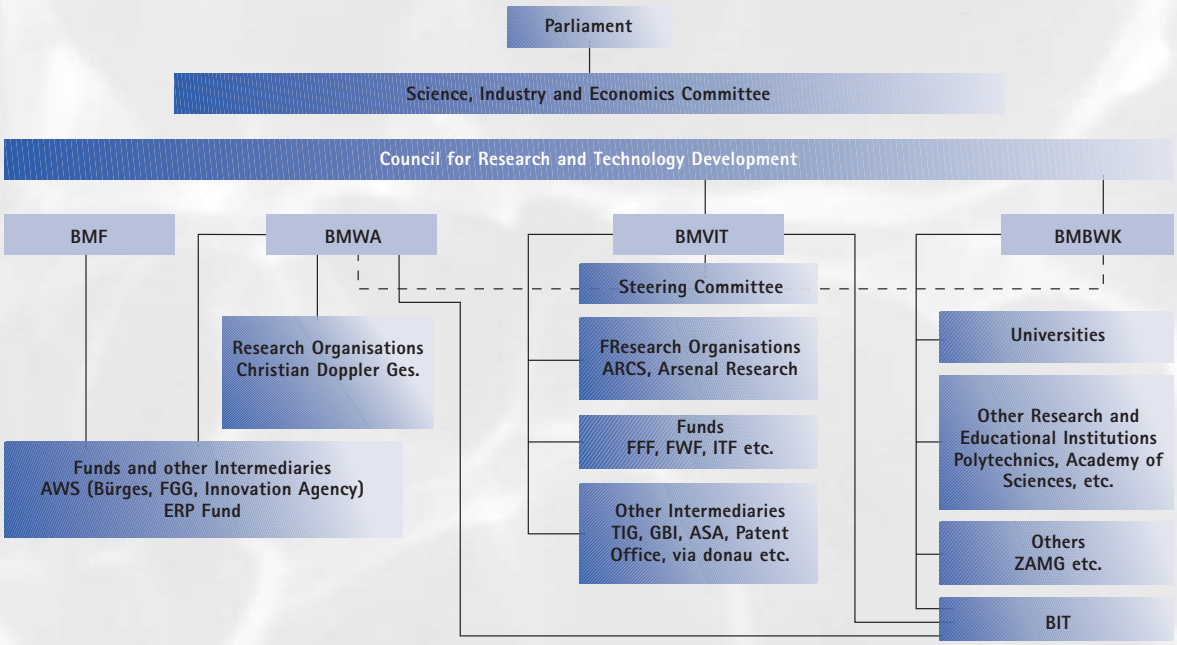
In cognisance of the 6th EU Framework Programme, the task now is to focus thematic priorities on the further development of national competences in selected areas of research, working very closely with the business sector in these areas in order to build up sustainable and additional R&D capacities.

High calibre workshop
Austria's National Research and Innovation Plan from an International Perspective, on 10 July 2003 at Tech Gate Vienna

A structural reform in the field of research, technology and innovation at both the strategic and operational levels has been a topic of discussion in Austria for a fairly long time. The Council regards an optimisation of the organisation of RTI policy and promotion as a vital prerequisite for creating the best possible conditions for the realisation of the proposed strategies.

In the National Research and Innovation Plan (NRIP) the Council analysed the institutional structure and reached the following basic conclusions:
Political competences remain highly fragmented and are characterised by overlapping jurisdictions. There is a lack of the necessary coordination between the players.
RTI grants are largely managed - both autonomously as well as on behalf of the ministries - by own funding institutions, in some cases directly by the ministries themselves. The Austrian support system is complex and, at the same time, not without overlaps and duplication. There is no clear division between the strategic and operational levels.

Overview of the institutional management of RTI policy in Austria (current situation)



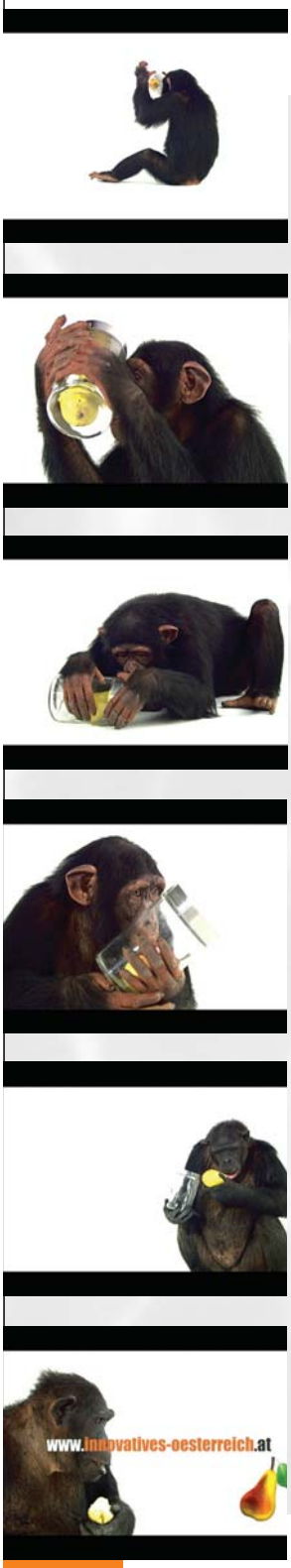
Source: Innovation Report 2001, Austrian Council 2002

On the basis of a study of RTI policy systems in a number of European countries, the Council formulated principles for a reorientation of the organisational structures. These include a comprehensive political approach through a clear division of strategic competences between the players at the national and provincial levels as well as guaranteeing appropriate implementation mechanisms and structures.

The Council calls for a clear separation of the strategic and operational levels and the containment of the historic uncontrolled growth of promotion agencies through a focus on institutions and programmes. The activities of the individual institutions should be focussed on their own core competences.

The discussion process is in full swing in the form of various platforms with leading representatives from science, business and the civil service conducted on the basis of input papers from the ministries and experts.

In future, the Council will continue to its efforts to use its function as a government advisory body and network hub for the Austrian innovation system to achieve a customer-focussed structural reform that will improve efficiency.



Starting from the question about how the Public Understanding of Science and Technology (PUST) can be created and maintained, the Council developed an integrative programme together with media and communications experts that was launched on 16 September 2002.
A steering committee made up of representatives of the four social partners, the three ministries that deal with research and technology policy and the Council is responsible for the overall coordination of the programme.

Brand Creation

Parallel with the start of the programme www.innovatives-oesterreich.at, a 6-week advertising campaign with a TV spot, 24 billboard posters and advertisements in the print media was started in September and October 2002.
Despite its brevity, a market research study carried out by the Vienna University of Economics and Business Administration attested the campaign good awareness and sympathy levels.

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Market Research

On behalf of the Council for Research and Technology Development the department of Advertising Sciences and Market Research at the University of Economics in Vienna surveyed the advertising impact of the campaign and at the same time analysed public attitudes to R&D and public R&D spending. Between December 2002 and January 2003, a total of 360 standardised face-to-face interviews were conducted with Austrians over the age of 18.
The survey showed that the TV spot (see the left hand margin) was seen as sympathetic and humorous, but less suitable for arousing interest in innovation. The print advertisement was compared with those of eleven major companies and achieved a better than average rating with the monkey theme. The slogan "Auf die Birne kommt es an," (which roughly translates as "it's your brain that counts") was generally well received, of the six poster subjects "Innovation ist, wenn Neugier zu Ideen führt" (Innovation is ... when curiosity leads to ideas) and "Innovation ist, wenn Ihnen Ihr Kind den Computer erklärt" (Innovation is ... when your children explain the computer to you) received the best ratings.
The analysis of attitudes to R&D and public spending in this sector showed that government spending was considerably overestimated and the actual spending was regarded as inadequate. Despite the overwhelmingly positive attitude to state R&D spending, in particular with regard to safeguarding employment, respondents felt that their personal information level was inadequate; as a consequence the direct personal benefit remained unclear.

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Website / Innovagent

The website www.innovatives-oesterreich.at went online on 16 September 2002. With the integrated Innovagent it is the central means of communication and offers an interested public simple access to the topic of innovation in Austria.
Until the end of 2002 a content cooperation with the web platform science.ORF.at delivered the latest reports from the field of science and research. Following the site's launch, research and inputs from the site itself and the business and scientific communities ensured regular updates.
On 25 February 2003 the website was expanded to include web space for the youth competition "Innovation Lab 2003."
www.innovatives-oesterreich.at took second place in the category "News" in the Austrian e-media competition "Austria's Top Websites."

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Website Use
Sessions: *Around 100 visitors use the website each day.*
Page Impressions: *Since the site launch around 220,000 page impressions.*
Average Session Time: *On average, visitors stay on the site for approx. 4 minutes a day in order to read the latest articles.*
Registrations: *Almost 1,600 registered users form their own community.*
Agents Played: *2,500 users have played the agent through to date.*

Science.ORF.at – Public Awareness of Science

The core reporting of this ORF website utilises ORF content and agency reports as well as content from specialist magazines such as "Nature," "Science," and the "New England Journal of Medicine" etc. to provide readers with a rapid and professional overview of the most important science and research news. The project's goal is to expand the content through additional capacity in order to draw greater attention to the innovative achievements of Austrian research. These were deliberately shown in the context of the European research landscape.

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Science.ORF.at – Ask your Scientist

Scientists and researchers answer application-oriented and basic questions sent in by users of the ORF website science.ORF.at, while permanent updates permit responses on topics of current debate. The editors of the website periodically draw attention to this service and forward user enquiries to scientists with the relevant expertise. Their answers are edited and adapted for Internet use with introductions and links. The result is a pool of information with editorial moderation.

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www.innovatives-oesterreich.at

Press Relations

Press relations work supported the individual projects within the programme in public. Moreover, all current research projects and corporate innovations were packaged in priority areas for the media. Topics included renewable energy technologies, the Council's new Research and Innovation Plan, start-up initiatives, new automation technologies and life sciences.
Information days for journalists in cooperation with the Club of Science and Education Journalists rounded off press relation's work.

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Media Cooperation

The success and broad presence of media cooperations in 2002 ("Der Standard," "Salzburger Nachrichten," "Neue Kronen Zeitung," "Die Presse," "Austria Innovativ," ORF-Format "Willkommen Österreich") was continued in 2003. The concept of using reports and examples to communicate key messages was retained. The media and themes were chosen according to the target groups of the campaign and supplemented the media cooperation of 2002. The main areas of content were "young" research taking account of the multipliers FFF, FWF, Seibersdorf and Joanneum ("NEWS"), communicating the purpose and need for research and development using selected examples to illustrate the point ("GEWINN"), as well as accounts of the campaign and its objectives ("ECHO").

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Media Worlds

The new department at the Technical Museum in Vienna devoted to information and communications technology – **medien.welten** – tells the story of the media from antiquity to the present with a view into the future on 2,500m^2 of floor space. "medien.welten" was opened on 8 March 2003.
The virtual reality theatre that is supported by the initiative www.innovatives-oesterreich.at was presented to the public on 4 September 2003.

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School and Youth Projects

The youth competition, **Innovation Lab 2003**, that was started in cooperation with FM4, allowed school pupils and students to become involved in the www.innovatives-oesterreich.at campaign, encouraging them to think about their own innovative potential. With 108 entries the

competition was a big success. The winning projects were selected by a high calibre jury and presented to the public in autumn. Teachers also received teaching material on the topic of research and innovation.

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Citizens' Conference

The idea behind the citizens' conference **"Genetic Data: where from, where to, why?"** – the first nationwide consensus conference – was to involve the public in the evaluation of new technologies. A panel consisting of twelve members of the public discussed various aspects of the subject with experts from politics, science and NGOs in workshops and at a public conference held on 20 and 21 June 2003 in Vienna.
The opinions of the members of the public were then publicly handed over to the chairman of the Council, Dr. Knut Consemüller, who then passed them on to decision-makers from politics and science.

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Nature Trail Graz 2003 / Glass Beehive

The Nature Trail 2003 was developed by the Institute of Zoology at the University of Graz as a way of implementing multi-media concepts for communicating knowledge about biological topics. Visitors should experience biology and biological research with all their senses for lasting impact. The exhibition addresses people of all age groups and educational levels. The project is one of the initiatives organised within the framework of "Graz – Cultural Capital 2003." The glass beehive is currently exhibited as part of the Nature Trail. Visitors learn how a colony of honeybees works as a functional unit.

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Jugend Innovativ

The platform for gifted school pupils, **talents.at**, supported by the initiative www.innovatives-oesterreich.at, is the joint umbrella for the ideas competition "Jugend Innovativ" and the biggest Austrian Internet school competition "Cyberschool." In cooperation with DerStandard.at and DerSchülerStandard, **talents.at** was presented in numerous reports together with other reports about project teams participating in the two competitions and their ideas and developments. Thanks to talents.at, Jugend Innovativ received a record breaking 244 project entries from 55 schools in the 2002/03 school year. Over 1,000 pupils entered 140 projects in three categories in "Cyberschool." The competition ended with a national final with the winners from 54 teams. At the same time, businesses set up a sponsors' pool to support very gifted children with internships and seminars.

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Course for Communicating Knowledge

The goal of the in-service training course at the Institute for Interdisciplinary Research and Further Education (IFF) in Vienna is to improve the interfaces between science and the public in Austria. Participants should develop the skills to present science and research successfully in public, to report on them journalistically and critically comment upon their importance for society.
The first course was held within the framework of www.innovatives-oesterreich.at in October 2002 and had 16 participants.
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Jobs through Innovation

This project honoured companies who have created jobs through innovation. Following the selection of nine winners from the provinces, the three national winners were honoured on 3 June 2003: 1st **Durst Phototechnik Digital Technology** GmbH. from Tyrol, 2nd **Ing. Erwin Thoma-Holz** GmbH. from Salzburg, 3rd **Boehringer Ingelheim Austria** GmbH. from Vienna.
In their speeches, Minister Hubert Gorbach, Chamber of Labour President Herbert Tumpel and Günter Kahler, director of the Austrian Industrial Research Promotion Fund all expressed their commitment to Austria as a centre of innovation.
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Works Council Initiative

The purpose of this project is to educate members of works councils in Austria about the importance of research and innovation for the business location in general and about regional promotion measures. Local events in all provinces and the distribution of information material are currently being planned. The Austrian Trade Union Federation is carrying out this project as part of www.innovatives-oesterreich.at.
The programme should put employee representatives in a position where they can actively shape structural change within their companies and also educate employees about the benefits of innovation for business – because: Innovation takes place at the individual workplace, be it a workbench, desk or laboratory.
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Genetic Engineering and the Media

This project should communicate basic information and the latest developments in genetics and genetic engineering to a wide audience. To this end, the platform **"dialog <> gentechnik"** cooperates with the ORF, in particular with the magazine "Universum," and with the editors of the

website science.orf.at. Over a one year period, readers should acquire a basic knowledge of genetics and genetic engineering, putting them in a position to follow the latest developments. A **"Gene Glossary"** is published each month in the magazine "Universum."

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Centres of Communication

The purpose of the project is to develop and make long-term improvements to the public relations work of selected RTD institutions with the help of training courses. A professional communications policy of the kind demonstrated by outside communications experts in the project should put institutions in a position to communicate their achievements to their target groups independently, and effectively.

A communications concept was drawn up for **Austrian Cooperative Research** (ACR) on the basis of a workshop and is now being implemented step by step.

After joint discussion at a workshop, a concept for public relations work was approved for the **Christian Doppler Society** (CDG). The CDG received further advice at the target group event "Zukunftschance CD-Labor." Together with the Kplus Competence Centre **Carinthian Tech Research** (CTR) a communications concept and a new approach were developed on the basis of a Start workshop. Other PR guidance followed. Starting from their strategy concept, a communications concept was drawn up together with the Austrian **Polytechnic's Conference** (FHK), the body representing all Austrian polytechnics, and discussed at a workshop.

A comprehensive PR concept was prepared for the Austrian Industrial Research Promotion Fund's (FFF) **Industrial Competence Centres and Networks** programme at a workshop. A model for the programme was later developed together with all competence centres.

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Kid's World

The main idea of this project is to use the existing website of the **ZOOM Children's Museum** in Vienna to increase the understanding and interest of children and young people for research and technology, in particular in the information technology and media sectors. Between 2001 and 2002 the site had more than 1.1 million page views and was able to expand still further as a result of the involvement of www.innovatives-oesterreich.at. The new service enables children and young people to familiarise themselves with the basic principles of digital technology by using interactive media. Not only are they confronted with products that have hidden functions, they also learn to understand basic processes and causalities in hands-on confrontation.

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Further Information: **www.kindermuseum.at**

Roadshows

The **kick-off event** on 16 September 2002 at Tech-Gate-Vienna marked the successful start to the events organised for target groups and the public within the framework of www.innovatives-oesterreich.at. The presence of prominent figures from politics, business, science and the civil service demonstrated that Innovative Austria is a joint effort.
The subsequent presence of www.innovatives-oesterreich.at at the **Intertech trade fair in Dornbirn**, the **Wels fair** and the **innovation summits of the Federation of Industrialists** allowed the initiative and its brands to be experienced in the provinces. Furthermore, participation in the award ceremony of the **National Innovation Award** on 27 January 2003 marked the start of a new form of cooperation.

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International Workshop Cancer and Infectious Diseases

The international workshop organised by Intercell Biomedical Research and Development AG from 10 to 13 April 2003 at the Hotel Panhans in Semmering was born of a desire to generate an exchange of opinion between two important research areas of biotechnology and medicine – cancer and infectious diseases. The importance of the workshop is demonstrated by the fact that there is no other event anywhere in the world that does justice to both areas and which has initiated or promoted this kind of interdisciplinary exchange.
A special goal of the workshop was to present Austria as a centre of innovation both within the scientific community but also to the financial community and an interested public.

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Journeys into Science

UNIversum – Journeys into Science was carried out by **"uniT – Verein für Kultur an der Karl-Franzens-Universität Graz"** on behalf of Graz 2003 - European Cultural Capital together with other institutions within the framework of www.innovatives-oesterreich.at. Between 15 and 17 May 2003, 15 different Journeys into Science took 1,500 people to 60 institutes of the three Graz universities, the Academy of Sciences, the Polytechnic College Joanneum and the Joanneum Research Center. Each journey had its own special production form and opened up many insights into the scientific world. The theatrical form of this dialogue between the public and science made the world of science accessible to all sections of the population.

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Trend Cocktail

The trend cocktail on the theme **"Neue Wege gehen – Erfolg durch Innovation"** is series of events newly designed by the Austrian Chamber of Commerce within the framework of www.innovatives-oesterreich.at to familiarise local businesses with the challenges of the future.
In 2003 16 regional events were held to increase awareness for corporate involvement in RTI and identify approaches to systematically anchor RTI activities.

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Humanities' Day

The humanities faculty of the Karl-Franzens University in Graz drew attention to the importance of the humanities in society and scientific structures with a Humanities' Day. The event was organised within the framework of www.innovatives-oesterreich.at and took place for the first time on 5 and 6 November. The project seeks to achieve a more intensive dialogue between science and practical experience. The aim of the project was a **"Career and Course Information Fair"** for students and graduates of the humanities.

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The continuation of the Council's awareness campaign will, as the results of the market research show, require a stronger focus on the various target groups. The Council therefore organised an event for opinion leaders and the media on 29 September 2003 to increase the focus of public debate on the importance of personal initiative, optimism and leading by example in connection with research, technology and innovation.

Innovation Summit

The aim of the innovation summits of the Federation of Austrian Industry is to increase the awareness of political decision-makers at the regional level, entrepreneurs and opinion leaders about the importance of innovation for Austria as a business location on the basis of cases of best practice. Furthermore, the current strengths and weaknesses in the individual provinces should be discussed, areas where action is needed identified and strategies developed to strengthen the innovation location.
The four innovation summits held as part of www.innovatives-oesterreich.at kicked off a **series of events organised by the Federation on the subject of innovation.** Following the summit held in Styria on 26 March 2003, three other summits will be held in Upper Austria in autumn 2003 and in Lower Austria and Salzburg in spring 2004.

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In view of its RTI policy goals (raising the R&D quota to 2.5% and then to 3% of GDP by 2010), the Council has given consideration to the development of human resources in the future. Growth in the R&D sector must be carried by an adequate supply of researchers.

The model calculations in the NRIP suggest that in 2005 there will be a shortfall of around 500 scientific personnel. The Council has therefore proposed the following counter measures that can be implemented straight away. Parallel to this, knowledge of human resources potential should be deepened. The Council has therefore commissioned an in-depth study that will also bear in mind the European integration process. In particular, qualification structures, recruitment strategies and the supply of R&D personnel will be examined. The project "Comparison of Demand and Future Supply Potential of Human Resources in the Austrian National Innovation System" covers all research sectors: university, non-university research institutions and business, whereby the non-university sector is seen as a special growth sector and for that reason is dealt with at the start of the study. It is generally harder to forecast demand for human resources than it is to forecast supply. The forecast therefore refers to the years 2006 and 2010.

The study was launched on 8 May 2003 at a meeting of a support group set up by the Council. Results should be available at the end of 2003.

At a meeting held on 3 December 2002 the Council for Research and Technology Development decided to draw up an Austrian strategy for research to promote sustainable development (FORNE) in cooperation with the other major players.

This will build upon the sustainable development strategy adopted by the Austrian government in April 2002 and generate the knowledge required for its implementation. Taking a solutions-based approach, the strategy should cover both the development of specific (technical) solutions as well as basic research for a deeper understanding of the relevant phenomena. Accompanying measures to facilitate the dissemination and implementation of the knowledge that is generated will also play an important role. Existing programmes run by the ministries will be incorporated into the strategy.

In a first step a working group set up by the Council and the ministries BMBWK, BMVIT and BMLFUW identified a series of key research areas and research tasks. On this basis, experts then drew up proposals for the basic content of the planned strategies.

On 7 May 2003 the Council held a strategy symposium on the subject in cooperation with the ministries BMBWK, BMVIT and BMLFUW. The proposals put forward by the experts were presented at this symposium and discussed with players from the scientific community involved in research to promote sustainable development.

A documentation of the symposium is available on the Council's website. In autumn 2003 work will be continued on developing the individual strategy areas on the basis of the symposium results. If possible, the draft strategy will be dealt with at a meeting of the Council this year and will be recommended to the government for implementation.

The implementation of the strategy by the ministries, i.e. development of the specific programmes and preparations of invitations to tender is unlikely to start before 2004.

Well known Austrians express their views on sustainable development

On the basis of the recommendations made in February 2002, the Council appointed a panel of experts for this innovative Austrian field of strength and entrusted it with the task of developing an overall concept for Austrian biotechnology.

An examination of the individual proposals for the founding of bio-tech centres, institutes, facilities and new programmes put forward by the Council in 2002 showed that many initiatives made a significant contribution to strengthening Austria's position as bio-tech centre. However, it also revealed that projects need to be concentrated and that the coordination between several of these activities will have to be improved if duplication is to be avoided.
On the basis of the work carried out so far, the panel of experts will particularise the overall strategy for Austrian biotechnology, set specific targets for the next decade and put forward proposals to focus activities and avoid duplication.

Prof. Schroeder and Prof. Bonn in debate with Dr. Sperl from the daily newspaper "Der Standard" on 18 February 2003 at the Vienna Biocenter

At a one-day workshop held on 31 January 2003 participants from science, industry, government ministries and the Council discussed the current situation and perspectives for the future, potential thematic priorities and suitable implementation measures. An editorial team is currently working on the concept. Parallel to this, an Internet survey commissioned by the Council was carried out in order to systematically gather information about the most important international thematic trends in the biosciences. As well as selected European countries, the USA and Canada were also examined.

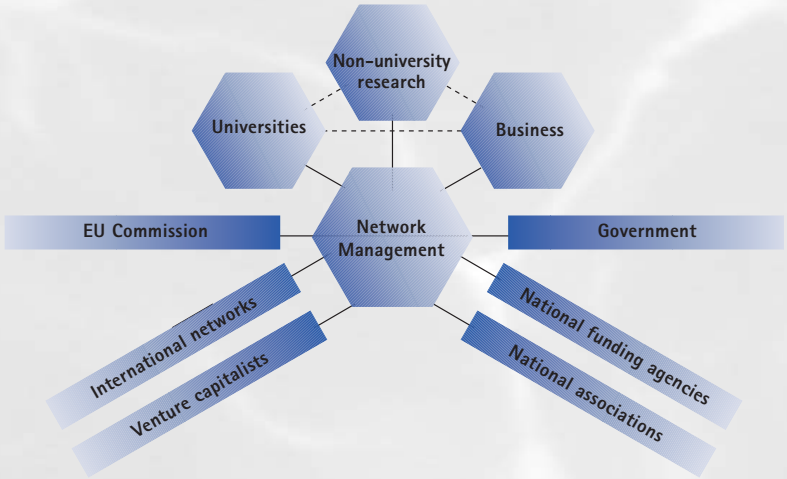
BIO

There is a broad scientific basis for nano sciences and technologies in Austria. More and more companies are also becoming interested in this important emerging technology. In order to systematically promote NANO in Austria, the Council, together with representatives from the scientific and business communities, has developed an Austrian NANO initiative. There are three elements to the strategy:

- The **promotion of research and technology development** from basic research to industrial production;
- The **development and implementation of educational and further training measures** for students, researchers as well as company employees;
- The **networking of all Austrian NANO players** (universities, research institutes, companies, financing companies etc.) with one another and with international partners (e.g. EU Framework Programmes, other NANO networks).

The Council has recommended using EUR 5.1 mn. of the special funds from Action Programme I for the start-up phase of the initiative. However, additional resources are required for medium and long term financing. The Council has planned the initiative as an inter-ministerial portfolio of measures under the lead of the BMVIT. The BMVIT scheduled the start of the programme for autumn 2003.

NANOnet Austria



NANO

INFORMATION AND COMMUNICATIONS TECHNOLOGIES

The Council regards information and communications technologies as central aspects of its strategy. For that reason, the Council made a recommendation within the framework of Action Programme I to provide funding for the FIT-IT programme of the BMVIT and the e-business programme of the BMWA.

Furthermore, it has also initiated the development of a joint ICT strategy by the ministries BMBWK, BMVIT and BMWA for the areas education, research & technology development, and technology transfer. A coordinated approach by the ministries should ensure that the various measures are optimally attuned to each another.

As a first step, the three ministries reviewed existing programmes and measures in the three specified areas. In addition, at the suggestion of the Council, an inter-ministerial working group was set up to provide a forum for the exchange of information and experiences, and to plan the joint activities.

Two current studies will provide important information for future strategic work. The Council has commissioned an analysis of the Austrian innovation system in the field of ICT on the basis of a number of indicators. The second study is examining how the governance of ICT in Austria functions and was commissioned jointly by the inter-ministerial working group and the Council. The results of the two studies will be available in autumn of this year and will serve as the basis for the further development of the strategy.

IKT

NON-UNIVERSITY RESEARCH, DEVELOPMENT AND DEMONSTRATION

The non-university sector encompasses both public sector institutions and establishments organised under private law. The sector's activities range from pure research to pre-market research, development and demonstration. The organisational heterogeneity and disciplinary diversity of the sector offer a large number of advantages such as a high level of diversity and flexibility, but have also led to structural deficits which need to be adapted to current circumstances and a focus on future international perspectives.
The Council has made allowance for this from the very beginning and defined a number of strategy elements in its research strategy for Austria, "2.5%+plus," that directly address the non-university sector and structurally include it (leverage effect, cooperation stimulation, interface function).
This was also done against the background that a complementary and inducive function between universities and business can be attributed to this sector, as well as strong growth potential per se. Extensive economic model calculations from 2002 showed that volume growth of 220% compared to the figure for 2000 is possible in this sector by 2005! (from some EUR 0.57 bn. to EUR 1.26 bn.). The logical conclusion from these findings was that stimulating growth potential in the non-university sector was crucial for achieving the 2.5% goal.

Within the non-university sector, the polytechnic college sector, that has been developing since 1994, has both the greatest opportunities for growth as well as the biggest uncertainties. However, the models available to the Council provided sufficient justification to continue an aggressive strategy.
The dotation of EUR 10.9 million for the newly developed impulse programme Fhplus recommended in April 2002 should make it possible for regional polytechnic courses to enter into R&D cooperations with regional businesses, thus carrying out their transfer functions more comprehensively. Following the jury decision on 7 March 2003 it will be possible to start 20 new courses. In view of the continuing financing requirements that are to be expected in this connection, and due to the ever faster changing needs of industry, the Council has commissioned a supplementary project that should concretise and update the investment requirement and efficiency of the polytechnic sector. An advisory council, consisting of representatives from the Ministry of Education and Infrastructure, the Polytechnic Council (FHR) and Polytechnic Conference (FHK), the research promotion funds (FWF and FFF), Technologie Impulse GmbH. (TIG) and independent experts, will accompany the project. Results are expected by mid 2004.

When making recommendations that concern the non-university sector and in particular the polytechnics, the Council is always careful to include developments at the universities in its deliberations and to coordinate efforts with the players in the university sector.

Based on the results of the workshop in June 2002 and the IPR working group, the Council issued a recommendation on 14 February 2003 with the following main points:

- **The goal of RTI policy:** rapid and most suitable exploitation of R&D results, to promote the commercial exploitation of as many good inventions as possible, to create an awareness for patents and know-how.
- The reorganisation of IPR in the **2002 Universities' Act** opens up new possibilities for universities with regard to the commercial exploitation of inventions.
- Guideline for future **IPR management** in Austria: strengthen efficient structures, targeted measures to compensate for weaknesses within the system
- Proposals to **regulate the exploitation process** at universities: material and non-material incentives for inventors have to be created for inventors caught between the conflicting priorities of publication and patenting; in the event that an inventor rejects the university's exploitation offer, he or she should have the **option of repurchasing** the rights from the university.
- **Transfer offices** should be set up at the universities.
- Professional **exploitation structures** should be created by means of cooperations between universities, with polytechnics, non-university research institutes and **copyright agencies.**
- **Exploitation campaign by government:** Knock-on financing for a limited period to build up exploitation structures in the form of a competition-based programme; funding for transfer offices on the one hand, on the other for network formation and cooperation with professional agencies.

Implementation of the recommendation: the Ministry of Education and Economic Affairs is currently working on a proposal together with the universities.

IPR

The working group for the humanities, social and cultural sciences which consists of experts from universities, non-university research institutes, the FWF, BMBWK and representatives of the Council, has been meeting since the end of 2002. The working group has drawn up a proposal for Austrian research in the humanities, social and cultural sciences that it has presented to the Council.

Bearing in mind the role and importance of the humanities, social and cultural sciences as well as the special situation with regard to research in these fields at universities on the one hand and the situation of the humanities, social and cultural sciences in non-university research institutes on the other, the strategy paper recommends a series of measures to improve the quality of research and education.:

- Selective measures to **promote young researchers**: doctoral grants for the humanities, social and cultural sciences, graduate colleges and interdisciplinary post-doctoral grants
- Multi-year key **national programmes** that overlap timewise
- **Dynamic quality assurance** for non-university research, in particular to ensure further qualification of scientists
- **Identification and preservation of the scientific and cultural heritage**
- **Overhead costs** for FWF projects

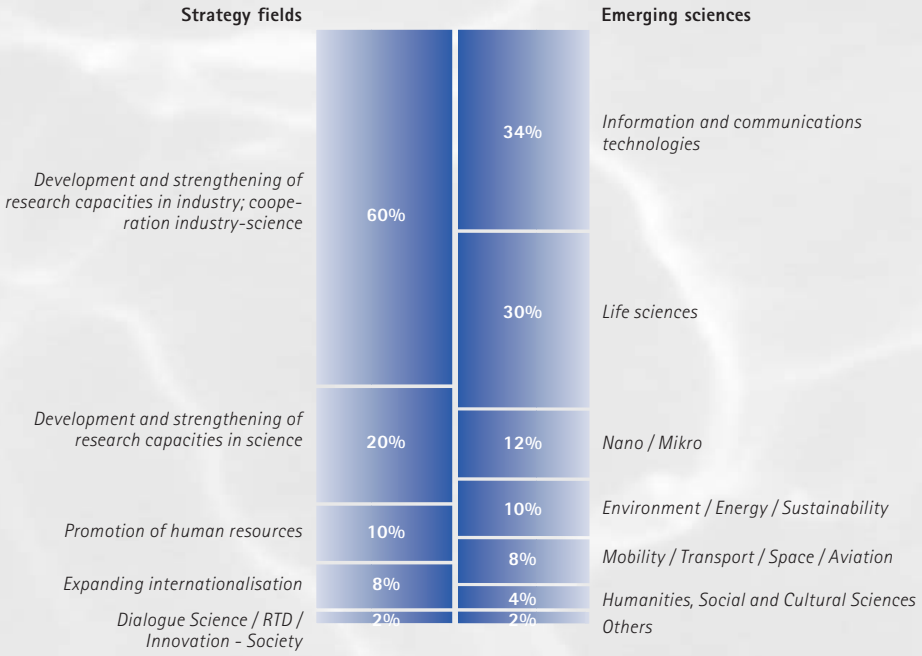
Other steps include: specific implementation proposals and a timetable for the planned measures from the working group in July; Council recommendation in September 2003.

On 10 June 2003 the Ministry of Education presented the results of the mapping of Austrian humanities, cultural and social sciences research that the Council had recommended; the interim and preliminary results have already been incorporated into the working group's strategy paper.

The Council gave fields of strength and emerging sciences high priority in its "2.5%+plus" strategy. As a consequence of this, its past strategic work and recommendations have given special consideration to vertical, i.e. theme specific programmes and initiatives.

The list of innovative sciences listed so far is deliberately conceived as an open list. The Council has commissioned a systematic and comprehensive study of emerging sciences with potential for Austrian research. A key area of this study is an empirical analysis of "strengths," "weaknesses," and promising areas of research in Austria. The analysis is based on criteria such as scientific performance, economic and technological potential as well as relevance for areas that society sees as important problems. The results of the study will be available in autumn 2003. The Council will then propose new measures to supplement the existing promotion portfolio if they are needed.

Action Programme II – EUR 600 mn. (distribution in %)



Evaluation as a collective term for different techniques, methods and measures has established itself as an evaluation and assessment instrument in international research and technology policy. It gives policymakers, programme managers and an interested public information about the suitability of individual initiatives for achieving public goals and overcoming market or system deficits.

To improve the evaluation culture in Austria and to counter the lack of systematic evaluation activities in particular, the Council has initiated a number of measures.

The Council has already defined a number of guidelines as indicators and established a first evaluation framework in conjunction with the recommendations for Action Programme I. The platform Research and Technology Evaluation and the Council are preparing a more detailed framework for evaluation as part of another project.

PLATTFORM ftEval
Forschungs- und Technologieevaluierung

A policy statement on "Standards of Evaluation in Research and Technology Policy" was presented at an international workshop organised by the platform on 15 May 2003. The workshop also discussed procedures for improving evaluation culture in Austria. In particular, the standards should provide evaluators and instructing institutions as well as those being evaluated with a framework and code of conduct for carrying out evaluations.

The Council regards this cooperation with the platform as important and will continue it. On the one hand, we will strive toward an evaluation culture that is a bottom-up process of the kind now being developed in the institutions of the Austrian innovation system, on the other, toward the necessary complementary structuring of conditions, which are applied quasi top-down when funds are awarded.

Further information: **www.fteval.at**

GÜNTHER BONN
Univ.Prof. Dr.

"I am pleased that the first incentive funds are beginning to have an impact and that we have been able to increase the research quota despite the poor economic situation. The open discourse with basic research, in particular the humanities, social and cultural sciences, is a positive development."

REINHARD PETSCHACHER
Dipl.Ing.

"Structural change in industry also has to be stimulated by appropriate promotion measures. High-tech developments and high-risk research need the security of public grants."

GOTTFRIED BREM
Univ.Prof. Dr.

"It is now being shown that the concentration of funds leads to greater excellence in the research sector too. Significant successes have already been achieved in the bio-sciences."

INGEBORG HOCHMAIR-DESOYER
Univ.Doz. Dr.

"I would especially like to encourage girls and young women to go for a technical or scientific education. There are extremely interesting career opportunities in this field, something that is still not recognised often enough. "

ALBERT HOCHLEITNER
Dipl.Ing.

"In my opinion, the first major steps toward safeguarding the business location have been taken. However, if we were to stop now, there would be a loss of confidence that would throw us back a long way."

DERVILLA DONNELLY
Prof. Dr.

"The Austrian evaluation initiative is exemplary and is being met with great interest abroad. I also hope that the awareness campaign started by the Council will provide lasting momentum."

KNUT CONSEMÜLLER
Dipl.Ing. Dr.

"We have implemented a good programme of consolidation this year and the publication of the National Research and Innovation Plan has created a basis for medium term planning that will allow us to follow the further use of funding more effectively."

HERMANN KOPETZ
Univ.Prof. Dr.

"My trips abroad repeatedly confirm that we have to attach even greater value to cooperation with international research teams. Top flight research is an international affair."

CALENDAR

Important events organised by the Council or where one or more Council representatives actively participated.

2002	SEPTEMBER	16.	Kick-off www.innovatives-oesterreich.at
		18.	Information event about www.innovatives-oesterreich.at
	OCTOBER	8.	Steering committee www.innovatives-oesterreich.at
		22.	Council autumn closed-door meeting
	NOVEMBER	5.-6.	Humanities' Day /Graz
		8.	Presentation at the FWF
		29.	PUST conference
	DECEMBER	3.	14th Council meeting
		11.	Steering committee www.innovatives-oesterreich.at
		13.	Press conference on the NRIP
2003	JANUARY	16.	Press briefing for the Citizens' Conference
		27.	National Innovation Award
		29.	Steering committee www.innovatives-oesterreich.at
	FEBRUARY	14.	15th Council meeting
		20.	Humanities, Social and Cultural Sciences Workshop
	MARCH	7.	Opening of medien.welten
		12.	Steering committee www.innovatives-oesterreich.at
		26.	Innovation summit/Graz
		31.	Workshop competence centres

APRIL	2.	16th Council meeting
	9.	Press briefing about biotechnology in Austria
MAY	6.	17th Council meeting
	7.	Symposium Sustainable Development
	13.	Steering committee www.innovatives-oesterreich.at
	15.	Workshop on evaluation
	22.	Panel discussion MT-NS/Wr. Neustadt
JUNE	3.	Award ceremony Jobs Through Innovation
	18.	Journalists' jour fixe
	19.-20.	International meeting of Councils/Paris
	23.	Press conference on Citizens' Conference
	26.	Presentation at the University of Economics
	27.	Jury InnoLab 2003
JULY	9.	18th Council meeting
	10.	International workshop on the NRIP
AUGUST	22.-23.	Alpbacher Technologiegespräche

BT	*Biotechnology*
FWF	*Fund for the Promotion of Scientific Research*
MT-NS	*Micro-Technologies-Nano Sciences*
NRIP	*National Research and Innovation Plan*
PUST	*Public Understanding of Science and Technology*
Council	*Council for Research and Technology Development*

MICHAEL BINDER, *Mag.*

Head of the Secretariat
"The adoption of the National Research and Innovation Plan was a milestone for me. It is already being implemented within the framework of the Action Programme II. I look forward to continuing successful cooperation with the members of the Council, representatives of the ministries and all other players from the research, technology and innovation scene."

m.binder@rat-fte.at

BRIGITTE TIEFENTHALER, *Dipl.Ing.*

"The major challenges facing the Austrian innovation system can only be overcome if all players work together. So it is especially exciting when the Council and the Secretariat collaborate with players from the sciences, business and civil service to develop concepts and strategies."

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P.S.:
JUTTA SEYFRIED finished her work at the secretariat on 30 June 2003.
But we have been back at full strength since 11 August 2003 and are pleased to welcome **MARGARETE ROHRHOFER** to the team.

SIMONE MESNER, *Mag.*

Deputy Head of the Secretariat
"What was enjoyable in our work last year was the strategy development. In the coming months it will be a matter of implementation. I hope that as many good concepts as possible can be realised quickly: the National Research and Innovation Plan, the strategy paper for the humanities, social and cultural sciences or the recommendations for IPR management."

s.mesner@rat-fte.at

WERNER HÖSS, *Ing.*

Organisation and Public Relations Work
"The development and execution of the awareness programme was a real challenge for me. But it was a challenge I accepted gladly and together with the proponents and the many project participants I tried to present Austrian innovation to the public. I hope that this joint process will be continued in the spirit of multi-faceted communication about research and innovation themes."
w.hoess@rat-fte.at

The Ministry of Transport, Innovation and Technology and the Ministry of Education, Science and Culture belong to the Council for Research and Technology Development in an advisory capacity (see Research and Technology Promotion Act 2000 § 17 para. 1).

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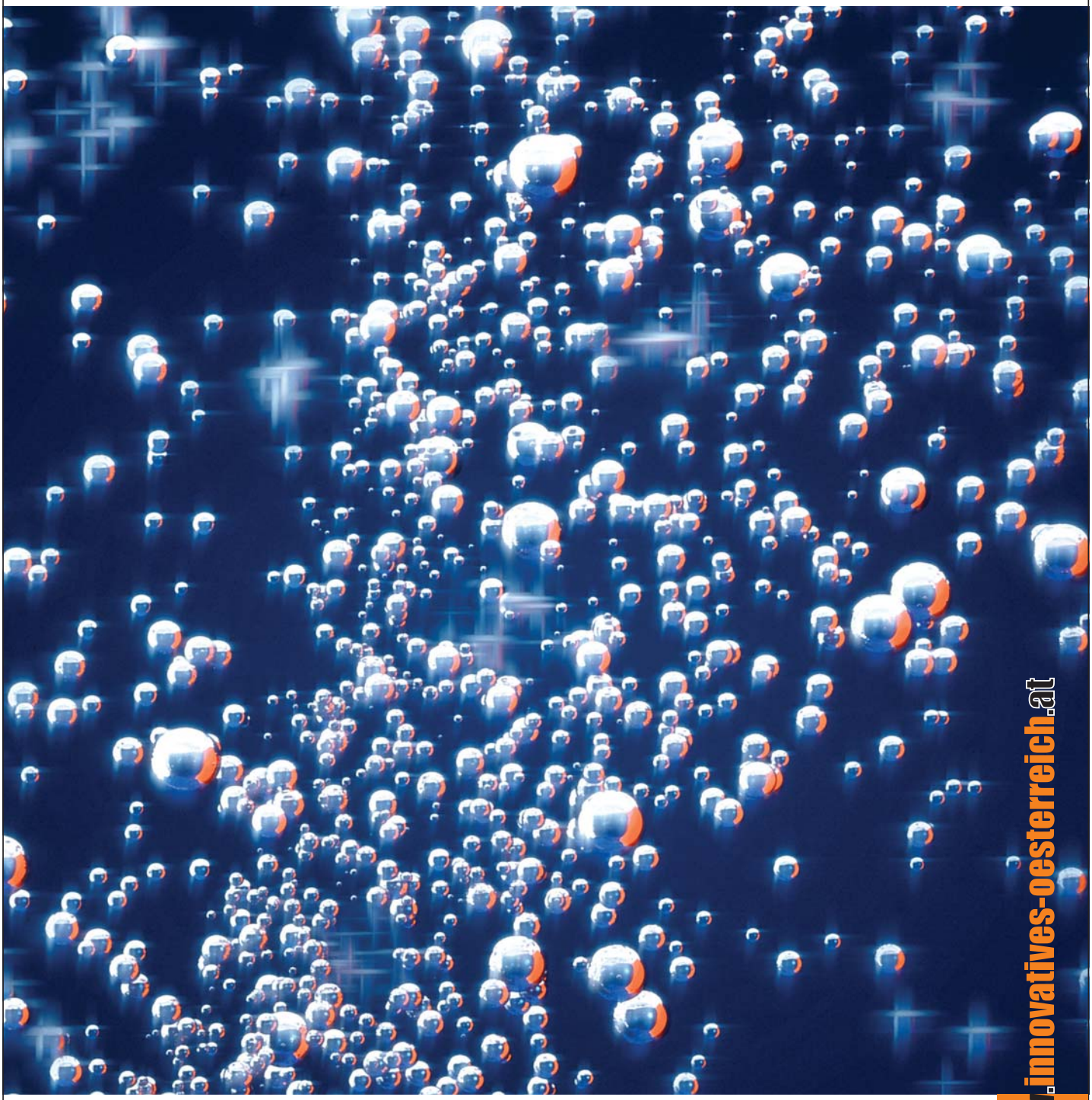

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