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Five-Year Assessment of the European Union Research Framework Programmes

1999-2003

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EUROPEAN COMMISSION

Five-Year Assessment of the European Union Research Framework Programmes

1999-2003

CONCLUSIONS AND RESPONSE FROM THE COMMISSION

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FOREWORD

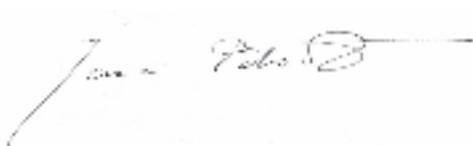
The Framework Programmes for Research make a difference. There is compelling evidence to show that they have played a critically important role in developing the European knowledge base and in bridging the gap between Research and Innovation, while providing significant European Added Value. These are the positive and encouraging conclusions which the high level expert Panel chaired by Dr. Ormala, Vice President, Nokia, drew from the strategic Five-Year Assessment 1999-2003 of the Community Research Programmes.

In line with the Commission's priorities and the renewed Lisbon Strategy, the experts also rightly emphasised that there is a strong need for a strengthened Framework Programme as a response to the four major challenges identified by the experts: attract and reward the best talent; create a high-potential environment for business and industrial RTD; mobilise resources for innovation and sustainable growth; build trust in science and technology.

The experts also put forward a set of recommendations for current and future Framework Programmes to help face these challenges. They suggest that the Framework Programmes should provide a clear vision and well-articulated aims, stimulate competitiveness and support an appropriate environment for industrial research, encourage further scientific excellence and human resources as well as simplification of its participating rules.

The European Commission welcomes the expert report, its analysis, conclusions and recommendations which were presented at a very appropriate time at mid-term of the current 6th Research Framework Programme and in the early stages of the formulation of the future research policy. The Commission broadly agrees with the full set of recommendations and has taken due account of them in its Proposals of 6 April 2005 for the 7th Framework Programme.

I should like to take this opportunity to thank Dr. Ormala and all the distinguished members of the Panel for the efforts they have put into this work, for their thoughtful and stimulating report and not least for the very fruitful exchanges we had on these issues.

A handwritten signature in blue ink, appearing to read 'Janez Potocnik', with a long horizontal line extending to the right.

Janez Potocnik

European Commissioner for Science and Research

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RESPONSE FROM THE COMMISSION TO THE EXTERNAL FIVE-YEAR ASSESSMENT

RESPONSE FROM THE COMMISSION TO THE EXTERNAL FIVE-YEAR ASSESSMENT¹

In the second half of 2004, a strategic Panel of thirteen high level experts² carried out the Five-Year Assessment covering Community research activities 1999-2003 and as foreseen in the Decisions concerning the 6th Framework Programme³. In response, the Panel provided a clear and authoritative overview and assessment, at a horizontal level, of Community research activities, through a thorough evidence-based analysis of the implementation and achievements of past and current activities. In accordance with the Decisions on the 6th Framework Programme, the Commission hereby communicates the conclusions of this assessment accompanied by its observations to the Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions.

The Five-Year Assessment report and its analysis, conclusions and recommendations, are warmly welcomed by the Commission.

First, the Commission agrees with the Panel on the four main challenges identified: attract and reward the best talent; create a high-potential environment for business and industrial RTD; mobilise resources for innovation and sustainable growth; build trust in science and technology.

Second, it notes the positive assessment of the implementation, results and added value of the Framework Programmes, notably in terms of contribution to the European knowledge base, networking among researchers and structuring of the research system in Europe.

Finally, it broadly agrees with the recommendations put forward in order to improve the relevance and quality of research initiatives and programmes at present and in the future. The Commission's proposals for the 7th Framework Programme, adopted on 6 April 2005, take full account of these recommendations. They also will be kept in mind in the preparation of the

¹ COM (2005)387 final of 24.08.2005. Communication from the Commission to the Council, the European Parliament, the European Economic and Social Committee and the Committee of Regions Responding to the Five-Year Assessment of Community research activities (1999-2003) carried out by high level independent experts

² See list of experts page 33

³ Decision 1513/2002/EC of the European Parliament and of the Council, OJ L 232 of 29.08.2002, and Council Decision 2002/668/Euratom, OJ L 232 of 29.08.2002.

entire legal framework for Community research, notably the specific programmes and the rules for participation and dissemination of results.

The evaluation report has been disseminated widely, including through Europa⁴ and presented to and welcomed by the main stakeholders, notably the relevant committee and Working party of the European Parliament and Council, CREST and programme committees.

The Commission warmly thanks the Five-Year Assessment Panel for its creative ideas and valuable work which have already provided and will certainly continue to provide an important input to the Community research.

A more detailed analysis and comments for each specific recommendation are provided in a Commission staff Working Paper⁵.

⁴ http://europa.eu.int/comm/research/reports/2004/pdf/fya_en.pdf

⁵ SEC(2005) 1054

DETAILED COMMENTS FROM COMMISSION SERVICES

DETAILED COMMENTS FROM COMMISSION SERVICES⁶

In the second half of 2004, a Panel of 13 high level experts chaired by Dr. Ormala, Vice-President Technology Policy, Nokia, carried out the Five Year Assessment of Community research activities 1999-2003, foreseen by the Decisions of the Sixth Framework Programme. The Five-Year Assessment report submitted by the Panel to the Commission includes observations on the socio-economic landscape and European Union research challenges, conclusions on the implementation and achievements of Community research activities and a set of recommendations on the past, present and future Framework Programmes as well as on Community research policy.

The Communication from the Commission (COM (2005) 387 final) sets out the broad response from the Commission to the Five-Year Assessment. The present Commission Staff Working Paper presents in more detail the observations from the Commission services on each of the specific recommendations proposed by the Panel. Also it relates the individual recommendation to the proposals for the 7th Framework Programme proposed by the Commission on 6 April 2005 (COM (2005) 119).

1. Context and analysis – The need for a strengthened Framework Programme as a response to major challenges

The Five-Year Assessment 1999-2003 of the Community research programmes was carried out at a time of momentous changes in the European economy and society and in the European Union itself, with the appointment of a new Commission, the start of a new legislature for the European Parliament, the enlargement of the Union by ten new Member States, the new Constitution put forward including renewed emphasis on research and the review of the Lisbon strategy.

In this evolving context, Community research is in the foreground of the political agenda of the Commission. When defining strategic objectives for the next five years⁷, the Commission has drawn strong links between on the

⁶ SEC(2005) 1054 of 24.08.2005 Commission staff working paper. Annex to the Communication from the Commission to the Council, the European Parliament, the European Economic and Social Committee and the Committee of Regions Responding to the Five-Year Assessment of Community research activities (1999-2003) carried out by high level independent experts

⁷ COM (2005)12 final of 26.1.2005.

one side research, and on the other growth and prosperity, underlining the importance of investment in research, the role of innovation and the need to reinforce attractiveness for researchers and scientists.

In its proposal for the Financial perspectives 2007-2013, the Commission underlined that 'the imperative need for a quantum leap in European research effort justifies a significant boost to the resources devoted to research from the European Union budget' and proposed, consistent with the 3 % Barcelona target of which one third is to come from public funding, a doubling of the European Union research budget⁸.

Reviews of the Lisbon objectives, the report from the High Level Group chaired by Wim Kok and the mid-term analysis of the Commission, both confirm that reinforced action is needed. Research is considered as a major driver for competitiveness and growth. In a recent Communication⁹, the Commission expressed its will to give a new impetus to the Lisbon strategy calling notably for a reinforced role of knowledge, for more numerous well-trained and motivated researchers and for sound macroeconomic conditions and policies.

The mandatory ex ante impact assessment¹⁰ underpinning the 7th Framework Programmes proposals also identified economic, social and environmental challenges which confront the European Union, as well as weaknesses of the European research systems.

Similar concerns were raised in the Resolution of the European Parliament prepared by Ms Locatelli¹¹, in the Council conclusions¹² as well as in the opinions of the Economic and Social Committee¹³ and the Committee of the Regions¹⁴ concerning the Commission's communication on the future of research¹⁵.

⁸ COM (2004) 101 of 26.02.2004 and COM (2004) 487 of 14.07.2004.

⁹ 'Working together for growth and jobs. A new start for the Lisbon Strategy' COM (2005) 24 of 2.2.2005.

¹⁰ SEC (2005) 430 of 6.4.2005.

¹¹ A6-0046/2005 of 28.2.2005.

¹² 12487/04 (PRES 269) of 24.9.2004 and 15259/04 of 22.12.2004.

¹³ INT/246 of 15.12.2004.

¹⁴ OJ C 71 of 22.3.2005 pp. 22-25.

¹⁵ COM (2004)353 of 16.6.2004.

In line with the Commission's analyses, the Five-Year Assessment Panel identified **four main challenges**:

- attract and reward the best talent
- create a high-potential environment for business and industrial RTD
- mobilise resources for innovation and sustainable growth
- build trust in science and technology.

The Panel also supports the doubling of the Community research budget, underlining that this increase should be accompanied by increases in the RTD budgets of the Member States.

2. Conclusions – The Framework Programmes make a difference

The Panel concludes from its in-depth evaluation of the solid evidence base that the Framework Programmes have played an important role in **developing the European knowledge base** over the period of review (1999-2003) while being more modest in terms of direct contribution to innovations with the potential to deliver dominance at global markets.

It underlines that the Framework Programmes have corrected some of the deficiencies in the European research landscape and have contributed significantly to **bridging the gap between RTD and innovation**. While pointing out the strong interest from industry, universities and other research institutes, it also emphasises that the Framework Programmes have played an important part in the generation and diffusion of new knowledge and the formation and reinforcement of inter-organisational networks, both amongst European players and including players in Associated States.

Finally, it emphasises the significant **additionality and European Added Value** of the Framework Programmes.

3. Recommendations and observations

The main messages addressed by the Panel through its recommendations, which are based on the assessment of the previous Framework Programmes and on various contextual analyses, may be grouped according to four main issues:

- A **clear 'vision' and well-articulated aims** of European Union research policy are essential (cf. recommendations 1, 4, 8, I, II)
- European Union research policy and Framework Programmes should **stimulate competitiveness** and support an appropriate environment for business and industrial RTD (cf. recommendations 3, 9, IV)
- **Scientific excellence and human resources** are at the heart of efficient research activities and should be further encouraged (cf. recommendations 2, 7, III).
- Whilst the Framework Programme plays an essential role in the European research landscape, any action to **simplify access and participation to the Framework Programme** would enhance its impact (cf. recommendations 5, 6, 10).

As stated in the Communication responding to the Five-Year Assessment¹⁶, the Commission 'broadly agrees with the recommendations put forward in order to improve the relevance and quality of research initiatives and programmes at present and in the future'. The recommendations and observations constituted a useful input to the preparation of the proposals for the new Framework Programmes which take full account of them. The table hereafter provides detailed comments from the Commission services on each recommendation.

¹⁶ COM (2005) 387 final of 24.8.2005

Previous and current Framework Programmes: relevance, impact and user-friendliness

RECOMMENDATIONS	OBSERVATIONS FROM THE COMMISSION SERVICES
<p>1</p> <p>The aspiration for European RTD must be better articulated and clearly reflected in the Framework Programme. The Framework Programme would benefit from a better focus at the overall priority level and reduced specificity at individual programme level</p>	<p>The Commission's proposals for the 7th Framework Programme are fully aligned with the idea that European research activities should be well-formulated and well communicated, linked to a clear and compelling vision of the role of research in Europe's growth, prosperity and general wellbeing. Such a vision should underlie all aspects of the Framework Programme.</p> <p>The 7th Framework Programme proposals have been developed and are presented so as to be fully consistent with these concerns.</p> <p>First, the entire proposals are founded on a clear conception of a 'Europe of Knowledge', expressed through the triangle of education, research and innovation. The links with major objectives such as competitiveness and growth are well-delineated as are more immediate and concrete actions for the citizens such as public understanding of science and training. A Communication has been presented to accompany the Framework Programme proposals 'Building the ERA of knowledge for Growth'¹⁷ which aims to explain in a simple and clear fashion the major arguments.</p> <p>Second, the structure of the proposals are designed to link activities with powerful yet simply expressed ideas such as cooperation, ideas, people and capacities for the main axes.</p> <p>Third, the proposals are built on a hierarchy of complementary and interlocking objectives. Objectives are set out for each of the Specific Programmes and the activities within these.</p> <p>Finally, the presentation of the proposals emphasises clarity, simplicity and readability. Particular attention has been given to wording and the use of common sense terms. All of these qualities will help to create a better understanding among stakeholders on the aims and means for achieving European RTD.</p> <p>On the separate question raised by the Five-Year Assessment Panel of reducing specificity at individual programme level, the Commission services' view is that while there may be variations between different thematic areas of activity, the focus of individual programmes is generally set at a sufficiently broad level to ensure competition of ideas and between different proposers. The clear structure and overall objectives of the Framework Programme proposals, as described above, will help overall to create a more effective balance between the high-level and individual programme level objectives.</p>

17 COM(2005) 118 of 6.4.2005.

RECOMMENDATIONS	OBSERVATIONS FROM THE COMMISSION SERVICES
<p data-bbox="238 1534 264 1561">2</p> <p data-bbox="347 1384 792 1719">The Framework Programme should primarily promote European leadership at a global level in science and technology. This requires excellence in research, longer-term research agendas, and more emphasis on radical innovation and risk-taking research in the projects supported by the Programme.</p>	<p data-bbox="180 61 238 1358">This recommendation confirms the Commission's recent analyses. In that context, it has sought to place research excellence, long-term research and risk-taking at the heart of its proposals for the 7th Framework Programme.</p> <p data-bbox="251 61 309 1358">The promotion of research excellence has been the sine qua non for funding under all Framework Programmes. However the proposals for the 7th Framework Programme contain innovative ideas to extend this philosophy much further.</p> <p data-bbox="322 61 618 1358">Most notably, the proposal initiated with the reflections on basic research¹⁸, to create a European Research Council with a substantial budget offers potentially an enormous boost to the development of Europe's science and technology knowledge base through the creation of ideas. For the first time individual teams would be supported for investigator-driven research projects selected on the sole criterion of excellence. This will dramatically reinforce European claims to research leadership, encouraging the most promising and productive research, while covering all research domains proposed by top-level researchers in the fields, independently of the thematic orientations of the Framework Programme.</p> <p data-bbox="508 61 618 1358">In addition, risk-taking research will be further encouraged. The positive experience of NEST activities (New and Emerging Science and Technology), which supports unconventional and visionary research under the 6th Framework Programme, will be pursued under the 7th Framework Programme and be implemented in all themes and thus have a significantly reinforced role.</p> <p data-bbox="637 61 695 1358">The possibility of complementing direct financial support in order to help access the European Investment Bank constitutes, as well, an encouragement to risk-taking in research.</p> <p data-bbox="708 61 875 1358">Further to that, in the context of its proposals for the mid-term review of the Lisbon strategy, the Commission has announced measures which would help leadership and risk-taking at European level: fiscal incentives for research and innovation, changes in the intellectual property rights regimes, facilitation of risk capital operations in the European Union and links between universities and industry. These activities are complementary to those included in the Commission's proposal for a Competitiveness and Innovation Framework Programme (2007-2013)¹⁹ which will support horizontal activities to improve, encourage and promote innovation in enterprises.</p> <p data-bbox="895 61 972 1358">Debates on longer-term research agendas have been raised several times during the previous Framework Programmes. In response to these concerns, together with the innovations set out above, a substantial increase in the duration of the next Framework Programme is proposed, covering seven years from 2007 to 2013.</p>

18 COM (2004) 9 of 14.1.2004.

19 COM (2005) 121 of 6.4.2005.

RECOMMENDATIONS	OBSERVATIONS FROM THE COMMISSION SERVICES
<p data-bbox="177 1534 264 1566">3</p> <p data-bbox="315 1379 757 1725">The industrial and participation in the Framework Programme must be enhanced. This requires restoring industrial relevance and leadership in programmes aimed at innovation and competitiveness. In particular, high-tech SMEs should be able to find direct participation more attractive.</p>	<p data-bbox="177 56 264 1361">In line with the reviewed and refocused Lisbon Strategy which identifies research as one of the main drivers of competitiveness and growth, the Commission's proposals for the 7th Framework Programme reflect extensively that the issues of increased industrial orientation and participation are critically important.</p> <p data-bbox="276 56 363 1361">On the basis of current statistics, and indeed as was pointed out by the Five Year Assessment Panel, the participation of industry in the Framework Programmes has been broadly stable over recent years. However, a new impetus is required if the current position is to be strengthened.</p> <p data-bbox="376 56 692 1361">European Technology Platforms have already demonstrated the willingness of industry to enter into a strategic and concerted process, bringing together all the relevant actors. The proposals for the 7th Framework Programme demonstrate a commitment to deepen and widen the scope of industrial participation based on strengthened cooperation between the public and private sectors. Illustrative of this approach are the 'Joint Technology Initiatives'. Built on the experience gained with the European Technology Platforms; they will support long-term research activities through a combination of private sector investment with national and European public funding. At this stage, Joint Technology Initiatives, which may take the form of joint undertakings, are envisaged in the fields of innovative medicine, nanoelectronics, embedded systems, aeronautics and air traffic management, hydrogen and fuel cells, and global monitoring for environment and security. Other possible themes will be identified subsequently. In addition, industry participation in all funding schemes will be encouraged and special attention will also be made to encourage industry to more actively contribute to the Networks of Excellence.</p> <p data-bbox="705 56 1049 1361">Regarding the participation of SMEs, to which the previous Framework Programmes also have paid particular attention, the 7th Framework Programme proposal is based on a twofold approach. First, encouraging and facilitating the participation of research performing SMEs, in particular high-tech SMEs, in RTD cooperation activities with large firms, universities and research centers in the various thematic areas. To this effect, the needs and potential of SMEs will be better taken into account in defining the objectives and activities of the thematic areas. Second, the Commission proposes to continue and scale-up the budget of the SME specific schemes to support outsourcing of research by SMEs or SME associations. These schemes are aimed at strengthening the innovation capacity of European SMEs and their contribution to the development of new technology based products and markets by extending their networks, better exploiting research results, acquiring technological know how and increasing their research efforts. They concern mainly SMEs with little or no research capacity but also research performing SMEs which need to outsource research. Clearly, the question of SME needs is also high on the agenda of the Commission's current initiative for simplification and rationalisation of administrative procedures and SMEs are likely to be some of the main beneficiaries of the improvements to be introduced.</p> <p data-bbox="1062 56 1148 1361">Finally, it should be kept in mind that SMEs will be supported by the Competitiveness and Innovation Framework Programme, notably via the Programme on 'Entrepreneurship and Innovation', through actions to provide SME support services, promoting the participation of SMEs in the 7th Framework Programme and enhancing access of SMEs to finance.</p>

RECOMMENDATIONS	OBSERVATIONS FROM THE COMMISSION SERVICES
<p style="text-align: center;">4</p> <p>A simple and robust definition of European Added Value is needed for the design and implementation of future Framework Programmes.</p>	<p>The objective of creating European Added Value is, and always has been, at the very heart of Community research activities and Framework Programmes. Nonetheless definition of the concept can be complex and for this reason the 7th Framework Programme proposals are characterised by efforts to clarify and make more consistent the key ideas and principles.</p> <p>Covering both subsidiarity²⁰ and proportionality²¹, the notion of European Added Value (EAV) has been the subject of much discussion. The essential rationale for the Framework Programme is that it finances activities that will benefit from public sector support, which can be more effectively carried out at a European level and thus produce a value over and above that which could be achieved through regional or national programmes.</p> <p>As a result of new European Union governance and financial requirements, for the first time the Framework Programme proposals have been based on an in-depth ex ante Impact Assessment which has been presented in a separate report as Annex to the proposals.²² This document contains a very clear analysis of the European Added Value, grouped into three categories: pooling and leveraging of resources; fostering human capacity and excellence in S&T through training, mobility, career development and competition at European level; better integration of European R&D. The various sub-components of each category are also set out including: critical mass; the leverage effect on private investment; big science; European training mobility and career development, competition in research; pan-European policy challenges and coordination of national research policies.</p> <p>The structure of the 7th Framework Programme proposals is a very visible demonstration of the Commission's commitment to provide a compelling and clear explanation of the 'what' the 'why' and the 'how' of the envisaged research activities, taking into account the European Added Value concept. For each of the Specific Programmes and constituent themes a common format sets out the Objectives, the Rationale and the Activities which are proposed.</p> <p>At the stage of implementation of the 7th Framework Programme the concept of European Added Value will be reflected in the selection criteria for identifying activities for support.</p>

20 The subsidiarity principle is intended to ensure that decisions are taken as closely as possible to the citizen and that constant checks are made as to whether action at Community level is justified in the light of the possibilities available at national, regional or local level.

21 The proportionality requires that any action by the Union should not go beyond what is necessary to achieve the objectives of the Treaty.

22 Commission staff working paper. SEC (2005) 430 of 6.4.2005.

OBSERVATIONS FROM THE COMMISSION SERVICES

RECOMMENDATIONS

The Five-Year Assessment Panel's recommendation expresses a concern that is already being actively tackled by the Commission both within the 6th Framework Programme as well as in the 7th Framework Programme proposals which will introduce more radical changes.

5

Starting in 2004, there have been substantial achievements towards improving, simplifying and streamlining administration for the 6th Framework Programme following the adoption of an action plan on rationalisation and acceleration of the implementation of the programme. From an initial focus on instruments the scope was broadened to cover the simplification of all aspects of submission and procedures such as management, financial control and communication. Many of the issues will be taken into account when designing the entire legal framework of new Framework Programme.

The administration of the Framework Programme should be streamlined and simplified. The streamlining and simplification of the application procedure, management and financial control of the projects must be vigorously pursued. There is a

need to improve procedures, including the establishment of permanent panels in some thematic priority areas or actions for the evaluation process throughout the duration of a Programme.

Although relevant to all Framework Programme participants, those likely to gain most from simplification are the small research entities such as smaller companies and university teams, as well as those groups that have not been very present up to now, such as researchers from young universities, from less advanced regions and from new Member States, although all these categories are already well represented in successful Framework Programme projects.

Of particular interest for them is the 'sounding board' composed of representatives from small entities (small and medium-sized enterprises, research teams...) which has been set up by the Commission. The aim is to consult users of European Union research funding in a structured way on what can be done to simplify research funding under the 7th Framework Programme and thereby to make participation easier and more rewarding for all. Emphasis will be given to identify at an early stage any potential barriers to the participation, including for SMEs and small research teams, which are to be encouraged under the 7th Framework Programme.

Simplification is a watchword for the new Framework Programme. The new proposals are accompanied by a separate paper²³ which outlines a first set of means for simplification of Framework Programme implementation. Among these, the establishment of an electronic registration desk for rationalising requests for information addressed to participants - only once during the Framework Programme (except updating) -, assessment of financial viability based on a single public list of criteria, a more extended use of lump sum financing, especially for the Networks of Excellence, removal of cost-reporting models as well as simplified calculation and payments procedures of EC financial contribution are some of the examples.

In a wider context, the Commission will pay particular attention in negotiations on the revision of the Financial Regulation to the positive effect on research activities. Furthermore, at the level of the Programme Committees, it is proposed that the request for an opinion of Programme Committees before concluding individual contracts could be replaced by a simple

23 Commission staff working paper. SEC (2005) 431 of 6.4.2005.

RECOMMENDATIONS	<p data-bbox="135 423 161 996" style="text-align: center;">OBSERVATIONS FROM THE COMMISSION SERVICES</p> <p data-bbox="167 61 225 1358">information procedure which would enable a reduction in time between the opening of negotiations and the effective entry into force of the contract.</p> <p data-bbox="238 61 495 1358">The Commission services can only to a limited extent follow the Panel's recommendation of establishing permanent panels for proposal evaluations. In the particular case of the European Research Council, it will be for the Scientific Council to determine the most appropriate procedures for peer review of proposals. For the remainder of the Framework Programme, the current approach has also offered stability in cases of repeated use, sometimes up to four years, of the core team of an evaluation panel which has been particularly effective. However, there are several arguments against turning this into a permanent panel, notably the need to maintain flexibility to take account of new research areas, to avoid further layers in the proposal evaluation process which would conflict with the move to simplification of administration, and above all, to ensure precisely through a process of rotation, that there is no suspicion of 'insider-dealing' in a process which is crucial to ensuring the trust of the wider scientific community.</p>
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RECOMMENDATIONS	OBSERVATIONS FROM THE COMMISSION SERVICES
<p>6</p> <p>The selection of instruments should be made more flexible to facilitate the specific characteristics of the funded RTD. The new instruments should be maintained in the next Framework Programme, not least for stability. Research proposers should have the freedom to select the appropriate instruments</p>	<p>The desire for more flexibility in the use of instruments and for the maintenance of instruments introduced under the 6th Framework Programme has clearly been taken on board by the Commission, building directly on the recommendations from the Five-Year Assessment and as explicitly mentioned in the Communication accompanying the 7th Framework Programme proposals²⁴.</p> <p>The Commission entirely agrees with the Panel's call for continuity in funding schemes of Community research activities and is fully aware of the importance of designing research instruments which meet the needs and research agendas of participants.</p> <p>The 7th Framework Programme will benefit from the positive results of the 6th Framework Programme that introduced new funding 'instruments' in view of increasing the impact of European Union research funding and to help structure the European Research Area.</p> <p>However, the new Framework Programme will clearly put the emphasis on research themes rather than on 'instruments', while rationalising their use. A smaller set of simpler funding instruments will be used, alone or in combination, with more flexibility and freedom, to support the different categories of actions. Particular attention has also been drawn to the need for clear descriptions.</p> <p>At the same time, the Commission wishes to facilitate applicants in their choices and avoid generating unduly high expectations with the consequent difficulties of oversubscription. For that reason, when appropriate according to the relevant research agendas, the decisions for Specific Programmes, work programmes and calls for proposals will mention the types of schemes, the categories of participants and the types of activities. Where different funding schemes can be used, the work programmes may specify the funding scheme to be used for the topic on which proposals are invited.</p> <p>The 7th Framework Programme is characterised by a profound openness to all stakeholders and research actors, as well as to possible support from all financial and legal 'tools'.</p> <p>Within this very flexible and multi-axes approach, various configurations will be possible, allowing more diversity and giving the participants wider prospects for research cooperation.</p>

²⁴ In COM(2005) 118 of 6.4.2005.

OBSERVATIONS FROM THE COMMISSION SERVICES

RECOMMENDATIONS

The proposals for the new Framework Programme give the 'people' dimension, with a specific programme of its own, a significant place, thus endorsing strongly this recommendation. This is in line also with the recent Council conclusions of 18 April 2005 on the reinforcement of human resources in science and technology under the European Research Area, which makes explicit reference to the Five Year Assessment Panel's work.

The Commission is particularly conscious of the need to stimulate young people to enter the research profession, to encourage European researchers to stay in Europe and to attract researchers from around the world to Europe. This has also been highlighted in the report of the High-Level Group chaired by W. Kok on the mid-term review of the Lisbon strategy which stated that 'Europe needs to dramatically improve its attractiveness to researchers'. The Commission report to the Spring European Council underlines the need for 'more numerous well trained and motivated researchers' and the Council Conclusions of 18 April 2005 endorses this as well.

The 'People' dimension – embracing the Marie Curie actions - is one of the major objectives of the new Framework Programme and as such has a very broad scope. The different proposed actions will focus on the career development of researchers from initial to life-long training including the dimension of intra-European, international and intersectoral mobility. Awards to improve public awareness of these actions and their objectives will be provided. Partnerships will be diversified with special actions designed to particularly encourage industry/academia exchanges and enhanced collaboration between researchers in Europe and other parts of the world, as also suggested by the Panel.

The means of financing will be opened-up for some specific activities which could be co-financed at regional, national or international programme level. In addition, the overall level of investment in human resources should be increased with the proposed doubling of the annual budget up to M€ 900.

The current policy-oriented actions under the 6th Framework Programme aiming at implementing the 'Mobility strategy for the European Research Area' and the Communication "Researchers in the ERA: one profession, multiple careers' will be continued and reinforced under the 7th Framework Programme. This will include a wide uptake of the Commission's Recommendation on the European Charter of Researchers and the Code of Conduct for their Recruitment by also linking these instruments to the financial mechanisms.

7

Human resources and mobility programmes should be extended in scale and scope.

Links to national/regional programmes should be encouraged for greater leverage. Programme design must ensure that industry finds it attractive to participate. Stronger emphasis on mobility between the public and private sectors and from and to third countries is needed.

RECOMMENDATIONS	OBSERVATIONS FROM THE COMMISSION SERVICES
<p data-bbox="229 1534 264 1566">8</p> <p data-bbox="328 1384 470 1719">The Framework Programme must continue to address the issue of trust and legitimacy of science and technology in Europe.</p> <p data-bbox="470 1384 676 1719">Science and society issues must continue to be addressed in a separate programme whilst also being embedded in all other programmes. Action is needed both at EU and Member State level.</p>	<p data-bbox="177 61 264 1358">The Commission aims to support the building of a European Knowledge Society. In that context, particular attention should be given to trust and legitimacy of science and technology in Europe at all levels. Science and society issues should be addressed, while encouraging continuous feedback from and to the citizens.</p> <p data-bbox="276 61 450 1358">The Commission is already engaged in efforts to monitor and analyse the level of understanding and the reaction of the European public towards science and technology. Improving communication between the scientific world and the wider audience of policy-makers, the media and the public at large will be an important challenge under the new Framework Programme. Specific actions will be set up to help scientists to better communicate their work, an example of which is the just launched SINAPSE web-based information platform (Scientific Information for Policy Support in Europe), which will contribute to a better use of scientific knowledge in European Governance.</p> <p data-bbox="463 61 579 1358">A specific activity on Science in Society is proposed for the 7th Framework Programme. In addition, support to initiatives aimed at engaging broad dialogue on scientific issues and research results is envisaged for all thematic areas. Through these measures the 7th Framework Programme will provide a powerful stimulus towards the strengthening of trust and legitimacy of science and technology in Europe.</p> <p data-bbox="592 61 676 1358">Also the Commission seeks to respond to Member States concerns and ensure their involvement in these issues. As an example of the type of initiative to be developed, some pilot activities carried out under the auspices of CREST will be pursued through ERA-Net schemes.</p> <p data-bbox="689 61 805 1358">At a wider level, the Commission has identified 'accurate and effective communication' as one of its major strategic objectives for the next five years. This objective is especially relevant in the field of science and technology. Activities in this direction should enhance trust among stakeholders at all levels, between the European Union Institutions as well as between the Commission and the beneficiaries of research programmes or the public at large.</p>

RECOMMENDATIONS	OBSERVATIONS FROM THE COMMISSION SERVICES
<p data-bbox="229 1536 261 1568">9</p> <p data-bbox="327 1381 583 1721">The Commission should launch a consultation with the main stakeholders in order to improve the IPR procedures within Framework Programmes. However, the basic principles on IPR rules for the Framework Programme seem appropriate.</p>	<p data-bbox="179 59 293 1361">The Commission indeed carried out consultations with stakeholders regarding intellectual property rights (IPR) when establishing the provisions for the 6th Framework Programme. In addition, it has already organised several workshops with stakeholders, including SME associations, Higher Education Institutions and industry, in the context of the preparation of the 7th Framework Programme.</p> <p data-bbox="307 59 364 1361">The Commission welcomes the analysis of the Panel concluding that the basic principles on which IPR rules for the Framework Programme are based seem to be appropriate.</p> <p data-bbox="378 59 462 1361">The Commission attaches great importance to the IPR provisions for research participants since these have an influence during and after the research activities, on exploitation, on further research and on the promotion and dissemination of knowledge. This has been an area of continuous improvement.</p> <p data-bbox="476 59 735 1361">The IPR provisions in the 6th Framework Programme model contract were established with a view to simplifying the rules and making them self-sustainable as well as improving their legal certainty by restricting access rights to what is really necessary either for carrying out the project or for ensuring optimal exploitation of its results. Many of the difficulties faced by participants result from: the large number of participants in some projects (in particular the new instruments of the 6th Framework Programme); from the growing relevance of IPR in today's knowledge-based economy; and, from a lack of understanding of some less-experienced participants. Accordingly, IPR guidelines for the 6th Framework Programme projects have been developed, and the Commission funds a project (IPR-Helpdesk) that provides free advice to Framework Programme participants who have IPR enquiries on what is really necessary either for carrying out the project or for ensuring optimal exploitation of its results.</p> <p data-bbox="749 59 890 1361">Finally, it should be remembered that the approach on IPR provisions interconnects with a far wider range of issues than just research. Any improvement or simplification of IPR provisions under the Framework Programme will need to be consistent with the general Community rules. And for the future, the consultation recently launched by the Commission on the global state aid reform devotes a large part to the key priorities of the Lisbon Strategy, including research activities.</p>

OBSERVATIONS FROM THE COMMISSION SERVICES

RECOMMENDATIONS

Programme evaluation in research design and management is of crucial importance. Effective research evaluation is also a critical component in building public understanding and trust in research investment, and is especially vital in areas of high risk research.

10

Very considerable efforts have been made over recent years to both streamline and strengthen the processes of research programme evaluation and monitoring, with particular attention to the need for stronger analytical and evidence bases. The proposals for the 7th Framework Programme go further in this direction. They set out a new evaluation approach which will be: more oriented towards outcome and impact, covering the economic, social and environmental domains; based upon clear and verifiable objectives and indicators; strengthened by a high-quality evidence base; providing a strong articulation between ex-ante and ex-post evaluation; streamlined and rationalised; based on a coordinated approach within the Commission and with Member States and including contacts with best practice at world level; resourced at a level commensurate with the challenge and comparable with international norms.

The assessment of the Framework Programme should be systematically developed and should reflect the new understanding of the interactive nature of innovation.

Assessment should also address the structural impact of the Framework Programme on the European economic and research landscape.

The proposed new approach to evaluation will separate three distinct tasks: the monitoring of programme implementation by the Commission services; an interim evaluation carried out at mid term by science panels supported by relevant state-of-the-art methods and tools, and engaging top level skills and expertise, focusing on research quality and effectiveness and tracking progress; and an independent ex-post assessment of the Framework Programme within 2 years of its completion.

Other key features of the new approach will include improvements to the setting of clear research objectives with appropriate indicators, new and simplified means for the collection of data which reduce the burden on research participants. Moreover, an expanded and co-ordinated set of evaluation studies at both horizontal and thematic level, including long-term innovation impacts, will also pay particular attention to the assessment of system-level effects. This approach will thereby be more consistent with what the Panel has described as the interactive nature of innovation.

European Union research policy

OBSERVATIONS FROM THE COMMISSION SERVICES

RECOMMENDATIONS

In line with the current draft Treaty establishing a Constitution for Europe which calls for strengthening the scientific and technological bases of the European Union through the European Research Area, this recommendation is entirely reflected in the proposals for the 7th Framework Programme.

The Constitutional Treaty will enshrine the concept of the European Research Area. Efforts to ensure coherence between national science and innovation policies are already supported through dedicated channels like CREST, but also de facto through other consultative or management bodies like the programme committees.

Many actions have already been developed and will be pursued. The ERA-Net activities (European coordination of national and/or regional research and/or innovation activities/programmes) contribute widely to enhance the cooperation between regional, national and European Union entities. The European Strategy Forum on Research Infrastructures (ESFRI) brings together representatives from the 25 Member States, from the Associated countries and representatives from the Commission, to identify a list of opportunities for development of research infrastructure in Europe.

The major initiatives provided for in Articles 169 and 171 to be launched in view of cooperation between national programmes or initiatives contribute to this same aim. Moreover, complementarities with national research activities and Community actions are widely explored in the 7th Framework Programme proposals.

For the regions in particular, the proposals build on the positive results of the pilot action on 'Regions of Knowledge' and include specific actions aiming at strengthening the capacity of the European regions to invest in RTD, to carry out research activities and to strengthen their research potential. Dedicated actions for the recruitment of researchers from other European Union countries, the secondment of research and management staff, the organisation of evaluation facilities and the acquisition and development of research equipment are foreseen. Such actions will also help identify needs and opportunities for reinforcing the research capacities of existing and emerging centres of excellence in these regions, which can be met by structural funds.

The Panel's endorsement of the proposed actions in the Commission's Communication from June 2004 on the future European Union research policy was paralleled by the strong support which came from stakeholders who participated in the online consultation on the Communication. The main actions suggested in the consultation document were taken on-board in the design of the new Framework Programme, including the creation of a European Research Council, development of Joint Technology Initiatives, enhancement of the co-ordination of national research programmes and actions to strengthen human potential in research.

I

The ERA process must continue.

The coherence between national science and innovation policies and the Framework Programmes must increase. The Framework Programme should cover high European value RTD activities, with tailoring for local effectiveness and take-up occurring at national and regional levels. We endorse the actions in the Commission's communication on the future EU Research Policy. The actions must be appropriately designed to develop high-quality, internationally competitive research environments in Europe. They should provide Europe with a policy response to the key challenges identified above.

RECOMMENDATIONS	OBSERVATIONS FROM THE COMMISSION SERVICES
<p style="text-align: center;">II</p> <p>Europe must strive for the best integration of the New Member States. Inclusion in all EU policies and instruments is a prerequisite for effectively tapping the significant human and economic potential of these countries to build a more competitive and cohesive Europe, enjoying sustained development. The Framework Programmes should help accelerate the process of integration</p>	<p>This recommendation reflects concerns already tackled in the previous Framework Programmes and has been particularly taken into account when designing the new Framework Programme.</p> <p>The New Member States were already active partners in the Framework Programme but are now directly involved in the decision-making processes for the 7th Framework Programme. This will provide an opportunity for these countries to better articulate their needs and help tailor the Framework Programmes both according to those and to their areas of strength.</p> <p>However, the Commission is aware of the specific circumstances of these Member States as regards their full integration with the European research system, as well as the significant research potential that has yet to be fully unlocked.</p> <p>The particular efforts which will be made should be placed in a long tradition of participation and openness to other countries. As from 4th Framework Programme onwards, the Commission has progressively involved Acceding countries in Framework Programme activities (of which most became New Member States in the meantime), Associated countries and third countries. As a result, the participation of New Members States in Framework Programme projects is already clearly established and will progress further.</p> <p>Specific activities are envisaged in the 7th Framework Programme proposals notably through actions for the Convergence regions of the European Union. Actions in favour of regions ('Regions of Knowledge') will also offer opportunities to strengthen the research capacities in these countries, while remaining open and involving regions from all Member States (see for example the Commission services' observations to the Panel's Recommendation I). In addition, complementarities should be sought with the action of the Structural Funds to overcome specific weaknesses.</p>

RECOMMENDATIONS	OBSERVATIONS FROM THE COMMISSION SERVICES
<p style="text-align: center;">III</p> <p>We support the establishment of a European Research Council.</p> <p>The Council needs sufficient resources to make a difference to the European science base. It must promote excellence in science, be cost efficient and encourage the development of world-class research environments. Scientific fields with potential for long-term impact on competitiveness and innovation should also be strongly supported.</p>	<p>The Commission warmly welcomes the support from the Panel for the creation of a European Research Council.</p> <p>This proposal follows in-depth reflections, supported by the Communications on 'Basic research'²⁵ and on 'Science and technology, the key to Europe's future'²⁶. The creation of a European Research Council to support investigator-driven research in all scientific and technological fields is one of the cornerstones of the Commission's proposals for the 7th Framework Programme. It is designed to enhance the dynamism, the creativity and the excellence of European research at the frontiers of knowledge.</p> <p>The approach will be very different from the classic activities based on collaboration across geographic borders in previous Framework Programmes. The sole criterion of selection will here be the excellence of the research, and for the first time, individual teams will be in mutual competition. They will present their proposal on subjects of their choice, independently of Framework Programme priorities. The successful research proposals will respond to the most promising and productive areas of research and will generate new knowledge and even new fields of knowledge.</p> <p>The Commission will ensure the independence and autonomy of the ERC, as well as its efficiency and effectiveness. The ERC will consist of a Scientific Council supported by a dedicated implementation structure.</p>

²⁵ COM (2004) 9 of 14.1.2004.

²⁶ COM (2004) 353 of 16.6.2004.

RECOMMENDATIONS	OBSERVATIONS FROM THE COMMISSION SERVICES
<p style="text-align: center;">IV</p> <p>We support the idea of establishing a limited number of 'technology platforms', with the objective of establishing European leadership in key emerging technologies, thereby increasing private investment in RTD. These large collaborative programmes should be industry-driven, with public/private partnerships for both funding and execution. They should involve academic institutions, large and small companies and, often, participants from outside Europe. Excellent management of pooled resources, from Framework Programme, national sources and industry will be needed to make an impact.</p>	<p>The Commission, in line with the Barcelona target, is very concerned with the objective of increasing private investment in research. It is therefore very much in agreement with the Panel in the support given to European Technology Platforms as possible actions to contribute to this objective.</p> <p>At this stage, some 25 European Technology Platforms have been constituted. The European Technology Platforms represent a very useful vehicle for improving the synergies between Framework Programme, Members States' programmes and industrial research and development. They bring together all relevant stakeholders, including industry, the research community and public authorities at different levels, as well as the financial community, regulators, consumers and wider civil society, in addressing a particular technological challenge and identifying Strategic Research Agendas. They provide and have already demonstrated a major reinforcement of the potential for industrial participation in the Framework Programme. Their work constituted an important input when defining the research themes under the 7th Framework Programme.</p> <p>The new Framework Programme goes further by envisaging the establishment, in a limited number of cases, of 'Joint Technology Initiatives' (see for example the Commission services' observations to the Panel's Recommendation 3). These initiatives will stimulate industrial research in fields that are key to Europe's economic growth and welfare and which are of such an ambitious scale that they require long-term public/private partnerships and will be implemented by combining private sector investment and public funding, national and European, including grant funding from the Research Framework Programme and loan finance from the European Investment Bank.</p> <p>Key criteria for the identification of Joint Technology Initiatives include the principles of European Added Value and the need to support European competitiveness.</p>

THE 1999-2003 FIVE-YEAR ASSESSMENT PANEL

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Vice President, Technology Policy, Nokia Corporation



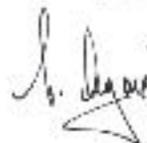
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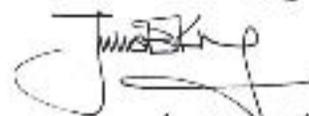
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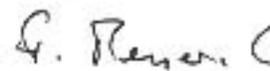
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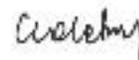
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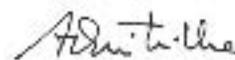
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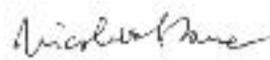
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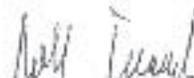
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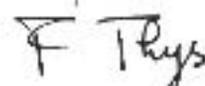
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EXECUTIVE SUMMARY OF THE EXTERNAL FIVE-YEAR ASSESSMENT

The current Treaty of the European Union identifies two core strategic objectives for the European Research Framework Programmes: (i) strengthening the scientific and technological bases of industry to encourage its international competitiveness and (ii) supporting other policies of the European Union.

This Report, the third Five-Year Assessment of the Research Framework Programmes (European Community, Euratom), reviews the implementation and achievements of the Framework Programmes over the period 1999-2003. The recommendations cover the remainder of the Sixth Framework Programme, to 2006, and suggest improvements to the nature and direction of future Framework Programmes. In making these recommendations, the objective is to provide well-informed input to strengthen the quality, relevance and impact of current and future Framework Programmes.

²⁷ The complete report "Five-Year Assessment of the European Union Research Framework Programmes 1999-2003" is available at the following address:
http://europa.eu.int/comm/research/reports/2004/fya_en.html

The challenge

During the period covered by this Report the European policy landscape has changed significantly as a result of the introduction of the Lisbon and Barcelona objectives and the establishment of the European Research Area (ERA).

Moreover, the overall European economic and research landscape is in flux. Global knowledge-based competition is changing fundamentally the environment in which European research and industry operate. Europe and the rest of the industrialised world can no longer take their technological leadership for granted. Whilst Europe still maintains leadership in certain industrial areas, supported by a well-educated workforce, concern about the future arises from the rapid expansion of European industry research and technological development and demonstration (RTD) outside Europe and the inability to attract the best talent into Europe from around the world. The increasing availability of high-quality, industrially relevant knowledge, efficient innovation environments, and easier access to markets outside Europe are contributing to a gradual loss of European competitiveness.

Europe is, increasingly, falling behind its main competitors. Europe's performance, in terms of growth, productivity and job creation is not sufficient to maintain prosperity in the future. These developments, and the challenges they raise, are reported in some detail in recent reports, such as those by Sapir (2003) and Kok (2004). The broad consensus is that research, education and innovation are at the heart of any response to these challenges.

European universities and research institutions have traditionally been able to develop and maintain the European knowledge base. In many fields this is still the case. However, only a few European universities are recognised as global leaders. This is, at least in part, a result of insufficient resources combined with the fragmented nature of the European RTD landscape. European universities and institutes are yet to fully respond to global competition for knowledge and talent.

In a knowledge-based economy innovation depends critically on collaborative networks involving academic and business enterprise research. The conventional view of a linear process of academic-based knowledge creation subsequently picked up and exploited by industry has given way to a new practice of interactive innovation facilitated by public/private partnerships, knowledge sharing and mutual learning.

Meanwhile, the new Member States are in the process of transition. They must, simultaneously, create an enterprise-friendly environment whilst building conditions for the knowledge-based economy. Institutional reforms and the allocation of sufficient resource to knowledge creation and sharing are both necessary steps in building a sustainable economic future. The intelligent use of structural funds combined with other EU and national instruments could provide solutions to these challenges.

The general public in Europe is becoming concerned about the social and economic impact of scientific and technological advances, as well as about how decisions relating to these developments are taken. In some areas the lack of public support is clearly apparent. For Europe to achieve the leadership in science and technology that is crucial for future prosperity, these concerns have to be addressed at both European and national levels.

In order to reverse the trends, Europe – the EU and the Member States together – must take coordinated actions to meet four key challenges to:

- attract and reward the best talent
- create a high-potential environment for business and industrial RTD
- mobilise resources for innovation and sustainable growth
- build trust in science and technology

The Commission's proposal to substantially increase the European research budget in the future is a welcome step in the right direction. This provides an opportunity to strengthen, significantly, the European knowledge base and European competitiveness. However, it can only succeed if this increase is accompanied by increases in the RTD budgets of the Member States. The signals are clear: the European Union as a whole must invest more in RTD to respond appropriately to these challenges.

Assessment Conclusions

The Panel concludes that the EU Research Framework Programmes have played an important role in developing the European knowledge base over the period of the review (1999-2003). The Framework Programmes have corrected some of the deficiencies in the European RTD landscape and have contributed significantly to bridging the gap between RTD and innovation. The strong emphasis on information and communication technologies and on life sciences has, for example, been instrumental in strengthening European capabilities. There has been strong interest from industry, universities, and other research institutes. The Framework Programmes have played an important part in the generation and diffusion of new knowledge and the formation and reinforcement of inter-organizational networks, both amongst European players and including players in associated States. All reports seen by the Panel, whether at Community or Member State level, consistently emphasised the significant additionality and European added value for the Framework Programmes.

Despite notable successes, however, the achievement of the Framework Programmes has been more modest in terms of direct contribution to innovations with the potential to deliver dominance in global markets. There has been much discussion of this apparent 'weakness'. However, evaluations and impact studies are generally conducted too early for major economic impacts to be evident. Moreover, the production of specific innovations has never been the core focus of the Framework Programme, which has been the strengthening of the European research system as a whole. Given the budgetary limitations of the Programme – less than five percent of the total government RTD expenditure in the EU area – we consider the achievements of the Framework Programme in this 'structural' role very important indeed.

Panel Recommendations on the Framework Programme

Based on the review detailed in this Report, the Panel makes the following recommendations to strengthen the relevance and impact of the Framework Programme, and to improve user-friendliness:

- 1. The aspiration for European RTD must be better articulated and clearly reflected in the Framework Programme.** The Framework Programme would benefit from a better focus at the overall priority level and reduced specificity at individual programme level.
- 2. The Framework Programme should primarily promote European leadership at a global level in science and technology.** This requires excellence in research, longer-term research agendas, and more emphasis on radical innovation and risk-taking research in the projects supported by the Programme
- 3. The industrial orientation and participation in the Framework Programme must be enhanced.** This requires restoring industrial relevance and leadership in programmes aimed at innovation and competitiveness. In particular, high-tech SMEs should be able to find direct participation more attractive.
- 4. A simple and robust definition of European Added Value is needed for the design and implementation of future Framework Programmes.**
- 5. The administration of the Framework Programme should be streamlined and simplified.** The streamlining and simplification of the application procedure, management and financial control of the projects must be vigorously pursued. There is a need to improve procedures, including the establishment of permanent panels in some thematic priority areas or actions for the evaluation process throughout the duration of a Programme.

6. **The selection of instruments should be made more flexible to facilitate the specific characteristics of the funded RTD.** The new instruments should be maintained in the next Framework Programme, not least for stability. Research proposers should have the freedom to select the appropriate instruments.
7. **Human resources and mobility programmes should be extended in scale and scope.** Links to national/regional programmes should be encouraged for greater leverage. Programme design must ensure that industry finds it attractive to participate. Stronger emphasis on mobility between the public and private sectors and from and to third countries is needed.
8. **The Framework Programme must continue to address the issue of trust and legitimacy of science and technology in Europe.** Science and society issues must continue to be addressed in a separate programme whilst also being embedded in all other programmes. Action is needed both at EU and Member State level.
9. **The Commission should launch a consultation with the main stakeholders in order to improve the IPR procedures within Framework Programmes.** However, the basic principles on IPR rules for the Framework Programme seem appropriate.
10. **The assessment of the Framework Programme should be further developed systematically and should reflect the new understanding of the interactive nature of innovation.** Assessment should also address the structural impact of the Framework Programme on the European economic and research landscape.

Future Perspectives – Framework Conditions

The challenges for European research and innovation policy can only be addressed by a systemic approach reflecting the interactive nature of innovation and the complexity of the European innovation system. RTD policy should be coordinated with other socio-economic policies that affect the European innovation environment. These include competitiveness, intellectual property protection, competition, state aids, human resources, education, gender, and ethics. Demand-side policies, especially public procurement of RTD and innovative goods and regulation, also have a critical role to play in promoting innovation and the emergence of lead markets. We would like to see the Commission (i) address more clearly the contribution of the Framework Programmes to the broader EU policy formulation process; (ii) examine ways to enhance pull-through of innovative technologies through demand-side actions; and (iii) intensify efforts together with Member States to train more researchers and to retain them by making research careers more attractive.

We strongly advocate the swift implementation of the European patent with the requirement of a single language. The patentability of computer implemented inventions and of genetically modified organisms must be swiftly resolved. Fast and appropriate IP protection is an essential support for innovation and investment in RTD.

The Community State Aids rules are under revision. RTD networks, involving companies of all sizes with academia, and the new understanding of the interactive nature of innovation, challenge the traditional funding rules. Those limiting public funding to pre-competitive RTD and defining the level of support depending on the recipient firm should be reviewed. Europe's development should not be inhibited by the application of stricter rules than those of its main competitors.

Finally, based on the evidence reviewed, the Panel offers a few recommendations on future EU research policy:

- I. The ERA process must continue.** The coherence between national science and innovation policies and the Framework Programmes must increase. The Framework Programme should cover high European value RTD activities, with tailoring for local effectiveness and take-up occurring at national and regional levels. We endorse the actions in the Commission's communication on the future EU Research Policy. The actions must be appropriately designed to develop high-quality, internationally competitive research environments in Europe. They should provide Europe with a policy response to the key challenges identified above.
- II. Europe must strive for the best integration of the New Member States.** Inclusion in all EU policies and instruments is a prerequisite for effectively tapping the significant human and economic potential of these countries to build a more competitive and cohesive Europe, enjoying sustained development. The Framework Programmes should help accelerate the process of integration.
- III. We support the establishment of a European Research Council.** The Council needs sufficient resources to make a difference to the European science base. It must promote excellence in science, be cost efficient and encourage the development of world-class research environments. Scientific fields with potential for long-term impact on competitiveness and innovation should also be strongly supported.
- IV. We support the idea of establishing a limited number of 'technology platforms', with the objective of establishing European leadership in key emerging technologies, thereby increasing private investment in RTD.** These large collaborative programmes should be industry-driven, with public/private partnerships for both funding and execution. They should involve academic institutions, large and small companies and, often, participants from outside Europe. Excellent management of pooled resources, from Framework Programme, national sources and industry will be needed to make an impact.

European Commission

**EUR 21799 EN — Five-Year Assessment of the European Union Research Framework
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In the last semester of 2004, a high level panel chaired by Dr Erkki Ormala, Vice President, Technology Policy, Nokia Corporation and 12 other leading European figures from research policy, management and evaluation, carried out a clear and authoritative overview and assessment of the implementation and achievements of Community research activities for 1999-2003. The analysis, conclusions and recommendations provided by the high level experts are very warmly welcomed and endorsed by the Commission.

The experts made a positive assessment of the implementation, results and added value of the Research Framework Programmes, notably in terms of contribution to the development of Europe's innovation and knowledge society. However, they also emphasised the need for a strengthened Framework Programme in response to some major challenges identified by the Panel. A series of recommendations for both current and future programmes were proposed by the Panel to help face these challenges.

This brochure contains the full response from the Commission and its Services to the assessment, that is the Commission's communication to the other Institutions, more detailed comments from the Commission Services, as well as the executive summary of the high level Panel's report.



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