UNICE
Union of Industrial and Employers' Confederations of Europe
Union des Confédérations de l'Industrie et des Employeurs d'Europe

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UNICE RTD Working Group
Comments and Suggestions concerning
the Commission Communication

"Towards a European Research Area"

Foreword

This document is a follow-up of the initial **UNICE** political reaction (dated 25.2.2000) to the Communication. Its aim is to analyse the Commission Communication more closely and to make appropriate targeted suggestions in response to the proposed specific themes of action.

At the outset, **UNICE** would like to reiterate its basic view on the Communication:

> while welcoming the new open attitude of the Commission and the general content of the communication, **UNICE** expresses its concerns about the poor emphasis given to the private R&D, especially performed in enterprises, which represents some two-thirds of research efforts in Europe.

It is necessary to develop a comprehensive policy concerning European RTD as a whole.
The paper mainly focuses on academia and academic research, and adopts the excessively simplified and outdated perspective of a linear process going from basic research to commercialisation instead of the integrated reality from today. The paper fails properly to take account of two aspects : (1) the strengths and opportunities of industrial R&D and (2) the question of co-operation between academia and industry. The paper thus lacks the comprehensive perspective needed.

R&D is of general importance to society but, to really function as the driving force of prosperity, it must be of international top quality and performed in areas relevant to demand .
Shortage of qualified scientific and technical personnel is the main hindrance to growth and development of enterprises today. Researchers in “hot “ disciplines, especially in engineering, are scarce .Thus all measures should focus on these issues .

On the other hand, the **UNICE** initial reaction mentioned above expressed its special support for such objectives as :

- using more efficiently public monies by co-ordinating the R&D policies in Europe
- avoiding unnecessary duplication in research expenditures
- giving young people *"a taste for science and technology"*
- ensuring a sufficient level of competition between research operators to promote excellency

and stressed the paramount importance of the sections of the Commission document devoted to :

- the protection of intellectual property rights
- the encouragement of risk capital
- the use of public monies to support private R&D efforts and especially university-enterprise collaborations

1. A stock of material resources and facilities optimised at the European level

1.1. Networking of centres of excellence and creation of virtual centres

UNICE welcomes the idea of mapping and networking the centres of excellence existing in Europe. Further thoughts have however to be devoted to the criteria used to define those centres, their permanence and the body entitled to attribute such a nomination. Both the scientific community and industry, as the main actors of R&D in Europe, should be involved.

UNICE strongly supports the idea of creating "virtual centres of excellence" based on existing R&D groups (COST is a possible model) rather than creating new organisations and infrastructures.

1.2. Defining a European approach to research infrastructures

Coordination of building and operating research infrastructures in areas of potential European scientific and industrial strength can be a good application of the subsidiarity principle allowing to avoid unnecessary duplications of public research expenditures. Worldwide international co-operation should also be sought for programmes expanding beyond EU resources (fusion,...).

1.3. Better use of the potential offered by electronic networks

Ready access to information is a sine qua non condition for performing up to date research. Therefore, **UNICE** considers that full use of the potential offered by electronic networks for the dissemination of science and technology is a pre-requisite to efficient networking and to the creation of a real European (and world-wide) research area. European business must be given access to these electronic networks.

2. More coherent use of public instruments and resources

2.1. More co-ordinated implementation of national and European research programmes

While **UNICE** fully shares the view that a more efficient use of public monies could be achieved by coordination of public research at regional, national and European levels, it wants to remind the limitations imposed by the subsidiarity principle ; e.g. academic research in universities often backs high scientific education which is under the responsibility of Member States.

Bottom-up co-ordination initiatives both from the public and the private sector should be preferred to top-down prescriptions and encouraged by the Commission in order to find the right balance between avoiding unnecessary duplications (see above) and fostering useful emulation between research groups working on similar topics as well as between our European wealthy diversity and "techno-nationalism".

2.2. Closer relation between European organisations for scientific and technological co-operation

UNICE has, on several occasions called for improved co-operation between the EU programmes and EUREKA and welcomes thus the expressed intention to go in that direction.

Closer co-operation between European scientific organisations is obviously desirable ; however, **UNICE** warns the Commission against the tendency towards creating new intermediate levels of co-ordination and decision rather than improving the efficiency of what already exists.

3. More dynamic private investment

3.1. Better use of instruments or indirect support to research

UNICE considers and has often expressed its views that "*making the legal framework more favourable to innovation is a pre-requisite for any integrated policy in favour of innovation. This is a major role for both the Member States and the Union that applies to the legal, social, fiscal, environmental and intellectual property rights aspects".*

For what regards more specifically public financing of R&D in industry, **UNICE** calls for a balanced and flexible use of the different instruments going from fiscal or social incentives to R&D employment and investments (as practised by different Member States) to project-basedsubsidies as in the EU Framework Programmes.

All means of support have their own merit ; tax incentives are effective thanks to their automatic nature and simplicity, social incentives should be designed to create and maintain research and technical support jobs while direct subsidies to projects allow a selection on the basis of their intrinsic quality and relevance. (**UNICE**'s comments on the Green Paper on Innovation **[COM(95)-688 final]** , May 9, 1996)

Convergence of public financing of international and co-operative R&D/innovation programmes in Europe seems to be essential. EU policy on supporting R&D should ensure that the companies based in Europe are not put at a competitive disadvantage vis-à-vis their competitors.

3.2. Development of effective tools to protect intellectual property

UNICE considers the development of effective European tools for the protection of intellectual property as one of the priorities of any innovation policy in Europe. The present system for obtaining and enforcing patents in Europe is less supportive of innovation than in the USA, in particular in terms of costs and time to obtain patent protection. The major drawback of the patent system in the EU is the lack of unitary title covering its whole territory.

This is why UNICE actively supports creation of a Community patent that would meet users' needs. In this context, UNICE has always opposed introduction of a so-called "grace period" that would jeopardise legal certainty for most of the patent applicants and is the origin of a large number of lawsuits in the USA.**UNICE** suggests, as an alternative, a better information/training of potential

applicants on the functioning of the existing and forthcoming European patent systems.

3.3. Encouragement of the creation of companies and risk capital investment

In a benchmarking study just published, **UNICE** concludes that *"innovators in Europe face more difficulties that innovators in the USA in justifying and then financing investments in knowledge and new products, services and processes. Compared to the situation in the USA, support by governments for R&D is less generous, fewer people act as "business angels",less private equity is available and fewer funds are available from retained earnings"*and further that *"the overall return on equity is lower in Europe than in the USA, which means that there is less incentive to invest in R&D in Europe".*

(Stimulating Creativity and Innovation in Europe ; The UNICE Benchmarking Report 2000 ; 25.5.2000)

To improve the level of funding available in Europe for innovative individuals and companies without distorting the basis of competition, this study recommends i.a. that :
"Governments should improve the availability of seed corn finance for new, innovative companies by
- increas(ing) the level of fiscal incentives available to Business Angels, particularly for investments made in intangibles
- provid(ing) support to venture capital funds to reduce the one-off, "up-front" costs of investigating possible investments in new enterprises"

The study also stresses the fear of potential consequences of failure (bankruptcy legislations) and the administrative burden and lengthy procedures to create a company as major "cultural" hurdles to innovation in Europe.
While **UNICE** supports initiatives in favour of spin-off companies, it wishes to remind that the real challenge is how to make research results available to the business community as a whole, spin-offs being one of the possible ways.

UNICE supports the intention of the Commission to take *"initiatives for putting scientists, industrialists and financiers into contact with one another, in connection with national and European programmes".*

4. A common system of scientific and technical reference for policy implementation

4.1. Developing the research needed for political decisions

UNICE shares the views expressed by the Commission that *"policy options and decisions must be based on more solid scientific knowledge and a full and proper understanding of the economic and social aspects surrounding the problems in question"...* rather than on emotional reactions or dogmatic attitudes.

Policy options and decisions are translated in daily life into regulations ; industry is not against regulations, on the contrary, provided they are adapted, based on the best current knowledge and do not disturb competition by placing our enterprises in unfair situations as compared to those of our American, Japanese or other competitors.
To achieve the objectives stated by the Commission, the real stakeholders have to be involved before the need to legislate arises, in fact as soon as a potential problem can be identified, ideally before the problem exists.
The Commission and the JRC could play an important role in co-ordinating pre-legislative and pre-normative research with the Member States.

4.2. Establishment of a common system of scientific and technical references

As expressed already in its opinion paper dated November 3, 1998, **UNICE** regards " standardisation [as] an important factor for innovation and competitiveness". The JRC, working in co-operation and when appropriate even in competition , with the existing organisations of the Member states , could play an important role in helping to establish a common European system of scientific and technical references and to promote it at global level.

5. More abundant and more mobile human resources

More than by mobility, **UNICE** is concerned by the present shortage of qualified scientific and technical personnel. While recognizing that *"giving the young a taste for research and careers in science"* is principally the responsibility of Member States through their education/training systems (starting with primary education) **UNICE** is convinced that the Union has a major role to play in identifying, disseminating and fostering the best practices.

5.1. Greater mobility of researchers in Europe

UNICE considers that the mobility of researchers across national borders but also across "university-industry borders" is a major instrument for the promotion of R&D collaboration and technology transfer and acknowledges the success already obtained by the Marie Curie Programme.
The Commission has still an important role to play in lowering the hurdles to the mobility of researchers and their families due to inter-member states disparities in social, educational,... systems.

International mobility should however not hide the major problem of technology transfer to SMEs which is probably better solved by local solutions such as supporting short time training periods of their staff or placing scientific/technical and/or managerial advisers to their disposal in order to facilitate the "import" of recently developed technologies (see e.g. the Dutch so-called KIM-scheme, which stimulates –with a subsidy- SME's to hire people having a higher education).

5.2. Introduction of a European dimension into scientific careers

Industrial concerns equipped with their own research facilities have for long introduced an "international dimension" in their staff by hiring high quality scientists and engineers independently of their nationality.

It might be more a tendency in some European universities to appoint their own graduates as permanent members of their scientific and teaching staff. However, more and more, academic careers require nowadays an international expertise as provided e.g. by post-doctoral or sabbatical stays abroad. This is supported by the present Union RTD Framework Programmes.

5.3. Greater place and role for women in research

While recognising the existence of a "career progress problem" of female scientists, the research departments of most European companies generally follow an "equal opportunity" policy in hiring their collaborators more for their scientific merit that for their gender or nationality.

5.4. Giving the young a taste for research and careers in science

As stated above, **UNICE** considers this as a crucial issue and therefore strongly supports the proposal of the Commission communication that *"the Member States and the Union should rapidly undertake a joint in-depth study of the room made for science subjects in education systems and how the teaching of sciences in Union can be improved at levels of education, primary, secondary and further."*

6. A dynamic European landscape, open and attractive to researchers and investment

6.1. A reinforced role for the regions in the European research effort

Regarding the overall European Union R&D policy, **UNICE** calls for an improved co-ordination of the use of the ***Structural Funds*** and of the ***RTD Framework Programmes*** monies while keeping their respective specificities.
Bringing the scientific infrastructure of all regions of Europe to a level where they can participate efficiently in the *"European Research Area"* is a valuable intention that should be supported with the assistance and under the aegis of the Union. **UNICE** considers benchmarking of the research activities of the regions and measures taken to encourage research as proposed by the Commission as an indispensable instrument of such a policy.

It is **UNICE**'s opinion that the Framework Programme subsidies should continue to be used to support projects on the basis of their intrinsic scientific quality, economic relevance and European added value.

6.2. Integration of the scientific communities of Western and Eastern Europe

Integration of the scientific communities of Western and Eastern Europe is probably less a problem than the full integration of the related countries in the EU. After the collapse of the "Mauer", of the Iron Curtain and of the Soviet economy , collaboration with scientists of Central and Eastern Europe has been experienced very positively by several EU industrial research centres. These experiences should be exploited .

6.3. Making Europe attractive to researchers from the rest of the world

UNICE supports the opening of national and European research programmes to researchers from these countries and the concomitant creation of a system of grants as a corollary to the mobility of European researchers. It must , however, be kept in mind that the principal aim of these initiatives is the strengthening of Europe's scientific/technical basis in order to improve the competitiveness of its enterprises.

7. An area of shared values

7.1. Tackling the questions of science and society in their European dimension

UNICE supports the intention expressed by the Commission to co-ordinate foresight exercises at the European level as an instrument to identify the common needs, problems and perspectives where a common approach would bring a real "European added value".

The negative attitude of a large part of the European public towards science and technology has been identified as one of the main reasons of the "innovation gap" in Europe and of the lack of interest of the young for scientific/technical careers. It could also influence negatively governance in

science/technology related issues.
UNICE strongly encourages initiatives tending to develop the dialogue between the scientific community and the public in order to enhance the dissemination of unbiased scientific information in a "vulgarized" accessible form.

7.2. Development of a shared vision of the ethical issues of science and technology

Ethical issues of science and technology are not only a matter for scientists but for the whole of society. In order for the citizens to play their normal role in our democratic countries, they have to be informed in an objective way (see here above).

UNICE fully endorses the statement made by Prof. A. Fischli, then president of the International Union of Pure and Applied Chemistry that *"it is the responsibility of the scientific community to develop (the) science base, of the media to help them to inform the public in an understandable and unbiased way, of the public authority to take the relevant decisions on the basis of sound science and not on emotional reactions and of industry to act responsibly, endorsing product stewardship and responsible care"*

Conditions for action

The Commission communication emphasises the importance of defining the role of all actors at the different levels in the light of the subsidiarity principle and lists the different instruments that the Union should use to play its own role. In particular, the Commission states that it is essential to hear the views of the scientific community, the world of industry and more broadly "civil society".

UNICE welcomes the recent attitude of openness of the Commission and is willing, as the representative organisation of the European business community, to respond positively to this attitude. Thus, **UNICE** is ready to assist the Commission in the preparation of the 6th Framework Programme which it considers a milestone in the process to develop the European Research Area.

UNICE recommends that the Commission should have more "institutional" instruments for the consultation of the real actors of R&D in Europe , namely industry and private research centres on the one hand, and universities and high education institutes on the other.
Therefore, **UNICE** strongly suggests to reactivate advisory bodies on the model of **IRDAC** and **CODEST,** which proved their ability to represent independently the views of industrial and academic research circles and to co-operate efficiently when appropriate, rather than create large fora such as **ESTA** which was hardly in a position to bring valuable contributions to European R&D policy.

UNICE is certainly ready to participate to such a renewed industrial R&D advisory committee.

23 May 2000

UNICE RTD Working Group
Comments to the Commissioner's question list

"Towards a European Research Area"

1. Why do European firms spend so much less on R&D than US firms .

This question raised by Commissioner Busquin has unfortunately no straightforward answer.

Lower profitability of existing activities, the principal source of financing R&D in large companies, and lower expected profitability of new activities resulting from R&D are part of the explanation but not all of it.
On could even argue that more intensive investments in R&D could lead to shorter times-to-market, more innovative products, cheaper production processes, thus improved profitability and competitiveness which is certainly an incentive for European entrepreneurs as it is for their US competitors. Are we thus faced with a "chicken and egg" situation ?

Cultural reasons could also be invoked : the real importance for companies to engage in R&D and/or to participate to collaborations with the scientific community has been perceived rather recently in several European countries and economic sectors, starting often after the second world war.

Interesting conclusions could be drawn from a deeper analysis of the disparity in attitude towards the importance of R&D of different Member States and economic sectors.

The following issues could usefully be addressed :

- a sector by sector comparison of the R&D investments/turn-over in Europe (if possible per Member State)
- is there a correlation between the relative performances of the sectors and their R&D investments ? (this seems to be the case as shown by OECD statistics)
- is there a correlation between the R&D private investments in the Member States (often related to their GNP) and their "industrial structure" (relative importance of sectors, size of enterprises,....) ?
- a sector by sector comparison between the R&D investments/turn-over in the EU and the USA

- is there a correlation between the depth of the gap between EU and USA investments in R&D and the difference in profitability ? (a "fine"sector by sector comparison would be more demonstrative than the generally used overall figures).

Further to these statistical data, previous studies on the motivation for enterprises to undertake R&D should be analysed and summarized (contingently completed) in order for the public authorities to identify the incentives that could better stimulate private R&D investments.

UNICE recommends that the Commission undertakes a benchmarking study to address these issues.

2. What can public authorities do to stimulate private R&D investments ?

On different occasions, **UNICE** has pleaded for a coordination of public actions in favour of R&D with a general policy making the legal framework more favourable to innovation.
For what regards more specifically the financial support to R&D itself, **UNICE** reiterates its position expressed in the "UNICE RTD Working Group comments and suggestions concerning the Commission communication *Towards a European Research Area*" § 3.1. :
"**UNICE** pleads for a balance and flexible use of the different instruments going from fiscal or social incentives to R&D employment and investments (as practised in different Member States) to project-based subsidies as in the EU Framework Programmes.
All means of support have their own merit ; tax incentives are effective thanks to their automatic nature and simplicity, social incentives should be designed to create and maintain
research and technical support jobs while direct subsidies to projects allow a selection on the basis of their intrinsic quality and relevance.
Convergence of state aid to international and co-operative R&D/innovation programmes in Europe seems to be essential.
The Union should further revise its rules on state aids to R&D in order to bring them in line with the levels allowed by Europe's main competitors.

3. How can we measure success in R&D ? What are indicators of a successful R&D policy ?

Traditional bibliometric indicators used for the ex post evaluation of academic research are obviously of no value for the assessment of success of applied research/development projects even if the number of filed patents is sometimes used (but is of very limited value).
The time needed to transform research results into processes/products is a factor to be taken into consideration for the evaluation. Therefore, **EUREKA** has drafted a question list based on economic qualitative and quantitative indicators (new markets and/or applications, turn-over and employment generated by the activities resulting from the research,....) to be answered by the promoters 1, 3 and 5 years after the end of the research. **UNICE** suggests that the Commission should examine this ex post evaluation system and adapt it to its own needs.

4. Should public R&D money be concentrated.....?

UNICE wishes to recall its previous document (01/05/96) presenting its position in favour of a balanced public policy in favour of basic and applied research and supporting increased collaboration between universities and enterprises.
In particular, **UNICE** pinpointed *"the complementary roles of the European Union and its Member States in the area of support for research. Given that basic research is at the heart of university teaching, it falls logically to Member States, whereas the European Union's Framework Programmes designed to underpin the competitiveness of European industry are geared to "applicable" precompetitive research."*
On that occasion **UNICE** drew also *"the attention of Member States to the danger incurred by their scientific potential if they reduce their own support for research when the Union increases its efforts".*