AMEM Communication

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European Technology Platforms

Their contribution to the development of a European Research Area.

Introduction

World-class scientific research and development – R & D is essential for Europe's future prosperity. Such R & D must be financed, must pass through legislative and administrative systems, and must still respond to the changing economic and social requirements of Europe – in other words R & D must be successfully integrated into the fabric of European society. This is a complex task, going far beyond the laboratory, the test site and the prototype.
The development of effective "European Technology Platforms" – ETP – can help ensure European investment in R & D rapidly and effectively

- delivering benefits to the European citizens
- creating competitiveness for European companies and
- ending a situation in which high EU investments in R & D quite often produced fewer than expected benefits.

These platforms will contribute to shape the European Research Area – ERA – on a sector – by – sector basis. But such platforms are, of course, not new. They already exist, at least partially, at national levels, in many Member States and even at a European level in bodies such as EUREKA. One of the tasks of European Technology Platforms will be to bring together and build upon the experience of these existing activities.

The term European Technology Platform is to a certain extent misleading. The focus of the activity is firmly on employing innovation to solve European economic and social problems – to create growth and jobs. It is a political rather than a research and technology driven initiative with a strong media – driven component. ETP is considered to be a tool contributing to the Union's Strategic Objectives increasing both employment and productivity, through enhanced competitiveness.

Conducting European research policies and implementing European research programmes is in the first instance a legal and political obligation resulting from the Amsterdam treaty. A chapter in fact in this treaty has underlined that Research and Technological Development – RTD – is an essential element in the functioning of industrialised countries, such as EU Member States: the competitiveness of companies and the employment they can provide depend to a great extent on R & D.

European Research Area – ERA

The idea of a European Research Area grew out of the realisation that research in Europe suffers from three weaknesses

- insufficient funding
- lack of an environment to stimulate research and exploit results, and the
- fragmented nature of activities and the dispersal of resources

The objective of the European Research Area initiative combines three relating and complementary concepts:

- creation of an "internal market" in research, an area of free movement of knowledge, researchers and technology
- restructuring of the European research fabric, in particular by improving co-ordination of national research activities and policies
- development of a European research policy

At the Lisbon summit in March 2000, EU governments called for a better use of European research efforts through the creation of an internal market for science and technology – a European Research Area.
FP6 and FP7 are the financial instrument to help make ERA a reality.

The Amsterdam Treaty Title XVIII

Research and Technology Development

"The Community shall have the objective of strengthening the scientific and technological bases of community industry and encouraging it to become more competitive at international level, while promoting all the research activities deemed necessary by virtue of other Chapters of this Treaty. For this purpose the Community shall encourage undertakings, including small and medium-sized undertakings, research centres and technological development activities of high quality."

Article 169

"In implementing the multi-annual framework programme, the Community may make provision, in agreement with the Member States concerned, for participation in research and development programmes undertaken by several Member States, including participation in the structures created for the execution of these programmes."

In other words – the participation in research programmes undertaken by several Member States under the banner of Joint Technology Initiatives – JTI. The creation of a specific management structure is possible, but not compulsory.

Article 171

"The Community may set up joint undertakings or any other structure necessary for the efficient execution of Community research, technological development and demonstration programmes."

In other words – the development of infrastructures. This implies setting up a specific management structure for their implementation.

Article 172

"The Council, acting by qualified majority on a proposal from the Commission and after consulting the European Parliament and the Economic and Social Committee, shall adopt the provisions referred to in Article 171.

European Technology Platform – ETP

A European Technology Platform is a major, pan-European, mission-oriented initiative aimed at strengthening Europe's capacity to organise and to strengthen the European-wide innovation process.
The ETP will bring together the relevant European stakeholders to identify the innovation challenge, develop the necessary research programme and implement the results.

Characteristics of a European Technology Platform

- Platform Title
- Road Map
- Mission Orientation
- Leadership & Commitment
- Flexibility
- Scale
- Added Value
- Political Awareness & Visibility
- Secured Funding plus
- Openness and Transparency

Therefore a voluntary code of practice was proposed by the Commission which could be an effective way of promoting this necessary openness and transparency.

Definition

A Technology Platform – TP –is a mechanism to bring together all interested stakeholders to develop a long-term vision to address a specific challenge, create a coherent dynamic strategy to achieve that vision and steer the implementation of an action plan to deliver agreed programmes of activities and optimise the benefits for all parties. In achieving its wider goal, a Technology Platform should generate competitiveness and world leadership for the European Union in the field concerned, by stimulating increased and more effective innovation and eliminating the barriers to the development and growth of new technologies.

Objectives

Technology Platforms were developed to foster effective public – private partnership. Through this co-operation, Technology Platform can define the necessary research and technological priorities for that sector in the medium to long-term and to co-ordinate European and national, as well as public and private, R & D investments. In doing so Technology Platforms can make a significant contribution to the development of a European Research Area.

Technology Platforms are being established to meet specific policy objectives vital for Europe's future competitiveness, such as new technologies that would lead to radical changes in a sector. Other suitable goals include the reconciliation of different initiatives with regards to sustainable development of the renewal of traditional industrial sectors – like shipbuilding.

Technology Platforms will aim to keep Europe at the leading edge in high-technology sectors which have significant strategic and economic importance as well as technology based public goals or services with high entry barriers and uncertain profitability, but high economic and social potential.

Impacts

As the implementation strategy unfolds, the expected benefits of Technology Platforms are manifold. They shall have a positive impact on:

- raising overall European Union, Member States and private R & D investments

- supporting the development and networking of regional clusters
- identifying and addressing obstacles at European Union, national and regional levels
- facilitating and accelerating the market penetration of new technologies
- contributing to the achievement of a coherent and consistent policy and regulatory framework in the European Union
- making the European Union more attractive both for researchers and industrial investment
- increasing public awareness, understanding and acceptance of the technologies concerned

Participants

Technology Platforms bring together all relevant groups in a sector of the industry. These will vary from one sector to another, but will include research institution, national and regional public authorities, financial institutions, user groups, regulatory authorities, policy-makers and non-government organisations. In each case, industry is the driving force.

Participation in a Technology Platform may include, as appropriate:

- the research community - both public and private
- industry, including SMEs – embracing the whole production and supply chain, including component, equipment and subsystem suppliers and user/operating industries
- public authorities – both in their role as regulators and policy makers and promotors and consumers of technologies
- the financial community – banks including the EIB – European Investment Bank and EIF – European Investment Fund, venture capital, insurance companies etc.
- users, operators and consumers – involving the customer base
- civil society organisations and NGOs – Non-Government Organisations

Even though traditional, established sectors, such as aerospace, rail or steel will have very different characteristics and needs compared to new or emerging sectors like hydrogen, nano-technology, photo-voltaics, the common thread always be the potential strategic importance of the sector – in terms of major economic technological or societal challenges – the EU dimension and the importance of the role of R & D in fully achieving the potential benefits.

This no doubt applies to the WATER*BORNE*^{TP} *in all dimensions!*

Mirror Groups

Mirror Groups ensure the participation of Public Authorities at national, regional and European levels.

Co-ordination and integration of national programmes are of significant importance for Technology Platforms and all Member States including candidates and associates are expected to participate via representatives in the Support Groups – SGs – as well as in the General Assembly – GA – meetings.

Member States Mirror Groups are composed of representatives on senior or directors level, nominated by the appropriate government bodies responsible for the specific area of research of the Technology Platform.
The Member States may also appoint rapporteurs to attend and provide feed back from technical thematic working groups.

Strategic Research Agenda – SRA

The elaboration and the follow-up of a Strategic Research Agenda form a crucial part of the implementation strategy, to optimise the contribution of R & D to the Technology Platform.

The SRA is the plan for materialising the Vision and the goals it identifies and it is implemented by its stakeholders.

These goals are to make Europe the world leader in a specific sector through collaboration, strengthened and guided by a single shared vision. Common mechanism will be created for research and technological development in the service of leading-edge sectors symbolising European industrial ingenuity and excellence.

Thus Technology Platforms play a leading role in defining Strategic Research Agendas in the fields concerned and in mobilising substantial public and private funding sources for their subsequent implementation. The implementation of these research agendas will, in many cases, be carried out with the support of existing Community R & D instruments. However, in a limited number of cases requiring the efficient and effective implementation of very large-scale applied and industrial research and the setting of public – private partnerships for this purpose, the inclusion of Joint Technology Initiatives as a mechanism within FP7 is aimed at providing a telling response at Community level to addressing these challenges.

Identification Process

In order to avoid fragmentation and to create the necessary critical mass of research and development efforts in the areas concerned, an objective and transparent identification process will be needed to confirm the most appropriate technological avenues which should be pursued at all European levels. In this respect the progress of the various Technology Platforms will be reviewed and an assessment of their deliverables made. This process should be particularly geared to identifying this Strategic Research Agenda for which the setting up of Joint Technology Initiatives would be the most appropriate way forward.

Framework Programmes

The Framework Programmes – FP6 at present and FP7 from 2006 onward – are the European Unions's main instruments for research funding in Europe. The FP is proposed by the European Commission and adopted by the Council and the European Parliament following a co-decision procedure.

FP 6

FP6 aimed to contribute to the creation of a true "European Research Area" – ERA.

To help solve problems experienced in former FPs and to work towards creating ERA two new instruments had been designed and implemented in the FP6: Networks of Excellence – NoE – and Integrated Projects – IPs.
The philosophy of both instruments was to move from multiple project funding to the funding of coherent programmes of research activities, leaving the highest degree possible of autonomy and flexibility to European research consortia.

Networks of Excellence aimed at progressively integrating activities of network partners thereby creating "virtual" centres of excellence.

Integrated Projects were projects of substantial size, designed to help build up the "critical mass" in objective-driven research with clearly defined scientific and technology ambitions and aims.

It should be noted that the setting up of a Technology Platform in a given field is by no means a pre-condition for inclusion of support for that field within the FP6 and FP7.

FP7

The Commission was presenting its proposal for the Union's 7th Research Framework Programme, at the beginning of 2005. It was based on the basis of the results of two debates, a policy debate within the Institutions, and a debate among the stakeholders in and users of research in Europe.

On this occasion the Commission presented a list of thematic domains for future European Union support to research, as set out in the Communication COM (2004) 353 "Science and technology, the key to Europe's future – Guidelines for future European Union policy to support research."

Thematic Domains

The European Commission has undertaken a process to identify thematic domains for future support under the 7th Framework Programme. Based on the listing in FP6, three criteria were used to identify which domains were included in FP7.

- Contribution to EU policy objectives
- European research potential
- European added value

Among others, the topic of "marine research" was proposed, which finally became part of Sustainable Surface Transport under the banner of the Technology Platform WATER*BORNE*TP .

List of thematic areas for collaborative research in the 7th Framework Programme:

- Health
- Food
- Agriculture and Biotechnology
- ICT Information and Communication Technologies
- Nanosciences
- Materials and new production technologies
- Energy
- Environment
- Transport including Aeronautics
- Socio-Economic Sciences
- Security and Space

Budget

In its proposal the Commission stresses that collaborative research , under the "Co-operation" heading, will constitute the bulk and core of EU research funding. Indeed, nearly 45 billion Euro of the total 73 billion Euro budget will be channelled towards this priority under the Commissions plan. Apart from collaborative research, the Co-operation Programme will cover Joint Technology Initiatives, Coordination of national research programmes and international co-operation.

As with FP6, the largest thematic areas in budgetary terms is ICT, with a proposed allocation of 12.7 billion Euro over seven years.
Next comes Health with nearly 8.4 billion Euro, followed by Nanosciences with just under 5 billion Euro. The newly created Security and Space research priority is set to be fifth largest , with a budget of 4 billion Euro, while the other new thematic area, Socio-Economic Sciences will be the smallest with a budget of 797 million Euro.

As for the content of each priority,the proposals explain that at this stage the themes are broadly defined so that they can be adapt to needs and opportunities as they rise during the lifetime of FP7.

SMEs

The participation of SMEs – Small and Medium-Size Enterprises in Technology Platforms is actively encouraged by the Commission, taking into consideration their role as indispensable partners of the larger industrial players and their importance as developers of leading-edge technology and drivers of innovation. Measures will be taken to ensure a wide dissemination of results to the industries concerned.

Apart from Technology Platforms, the European Union – EU – supports research carried out collectively by national or regional centres of excellence on behalf of industrial associations, both European and national, on subjects that are of interest to large numbers of SMEs.

So-called "co-operative research" actions can provide a response to the scientific and technological needs of groups of SMEs from various countries intending to innovate without having their own research capacity. Consortia involving a minimum of three SMEs from two different countries can entrust research and development tasks to scientific institutions. The SMEs will own the results.

To boost innovation of whole groups of SMEs, the instrument "collective research" was foreseen. Business associations (consortia of at least two national associations from two different countries or one international association) may receive funding to entrust research activities to research institutions.

DG Research, SMEs and the 7th Framework Programme

In the latest European Innovation Scoreboard it was confirmed that the EU continues to lose ground in innovation stakes against its major competitors the US and Japan. This is mainly because the Americans and Japanese have further enhanced their innovative capacity, helping them to widen the gap with their European rivals. Another reason is because the new Member States have lowered the Union's average some what. This is the challenge the EU is facing and Potočnik has the intention to make the impossible possible. His target of spending 3% of the GDP on research and development is in principle based on the Barcelona 2002 Agenda and will highly depend on the commitment of the Member States in a dramatically adverse economic environment.

In December 2004 he considered Technology Platforms as "building blocks" for the shaping of the 7th Framework Programme adding that the bottom-up nature of platforms and the dynamic process by which strategic research agendas are defined, provide a solid basis for identifying thematic priorities for collaborative research in FP7. Three months later the Commissioner said that the structure of FP7 will focus more on themes than on instruments. He mentioned the term "co-operation projects" formerly referred to as "collaborative research" which will be more industry orientated and therefore growth supportive. The thematic priorities – the research areas to be funded by the European Commission – again will be more focused on industry than in previous programmes, and will particularly take into account the needs of SMEs, said the Commissioner.

Basic research he continued – to keep the equilibrium of forces – will not lose out as it is to be funded through the European Research Council – ERC and actions on "frontier research".

Other changes are also planned to make FP7 more attractive to SMEs. Funding schemes will be more flexible with regard to their size and scope so as to facilitate the participation of SMEs, and the two schemes which support the outsourcing (!) of research by SMEs or SME associations will be strengthened via a considerable budget increase and other important administrative improvements.

The Commissioner also pledged that SME involvement will be encouraged in other EU research initiatives. He cited Technology Platforms, the development of European research infrastructures, Technology Initiatives and human mobility actions as examples. In addition to that, the Commission will work together with the Member States in order to further promote and support co-ordination and joint SME programmes between the Member States, for example under the umbrella of EUREKA.

The Commission also intends to ensure that these measures have the desired effect by consulting SME representatives on what is needed. The first meeting between Potočnik and his "SME sounding board" took place on March 17, 2005.

A week later the Commissioner presented four more buzzwords which he claimed will form the basis of the Commission's formal proposals for the 7th Framework Programme:

co-operation, ideas, people and capacities.

Or is there any serious content in these 4 buzzwords?

In fact – the Commission has unveiled its plans for the 7th Framework Programme on April 6, 2005 which propose a duration of seven years from 2007 – 2013, a budget of 73 billion Euro and a structure based on four specific programmes.

Within these four programmes,

- "Co-operation" refers to collaborative transnational research activities
- "Ideas" covers basic research implemented through a European Research Council – ERC
- "People" includes Marie Curie actions and other initiatives, while
- "Capacities" encompasses support to research infrastructures, regions of knowledge and small and medium-sized enterprises – SMEs.

"Co-operation" no doubt, constitutes the heart of EU research funding with a budget of almost 45 billion Euro.

Under the "Ideas" programme, the Commission foresees the funding of individual projects suggested by researchers on subjects of their choice. The programme will be implemented by an ERC independently of the rest of the Framework Programme, with a proposed budget over seven years of 12 billion Euro.

The "People" programme will cover the initial training of researchers, live-long training and career development, fellowships and the exchange of researchers. The proposed budget allocation is the lowest of the four specific programmes at 7.2 billion Euro.

The "Capacities" programme will target the optimal use and development of research infrastructures, strengthening the innovation capacities of SMEs, the development of regional research clusters, improving the research potential in EU convergence regions.
The Commission has proposed a budget of 7.5 billion Euro.

Conclusion

The Lisbon Strategy was based on the vision of not only replacing the old economy but creating an absolutely new economy, providing hundred thousands of jobs in the ICT and other service related industries. This bubble has burst after less than three years while the de-industrialisation of Europe was progressing fast. Lisbon was a declaration of economic war against the world's largest economy and Europe had to learn the lesson that the driver of the world economy is still the US. The leadership of the US is based on an absolutely different approach towards research and development. The US system is market orientated and governed by industry in close cooperation with an elite driven scientific community.
The European model is based on the vision of building a knowledge based society on all levels, meeting the superimposed interests of a multitude of diverse stakeholders, best described in one of Commissioner Janez Potočnik's recent speeches:

"In Europe we must become better at creating knowledge through research, at diffusing knowledge through education and at applying knowledge through innovation".

Some 25 Technology Platforms have been formed so far. It is recommended to approach the National Contact Points for excessive and specific informations, in Austria it is FFG – the government owned research promotion agency.
This organisation offers advice, support and promotion for research and innovation projects. In this way , the FFG plays an important role in achieving aims, both research and political,defined by Austria and the European Union.

www.ffg.at

WATERBORNE TP
is the Technology Platform for Waterborne Transport and Operations in Europe.

Acronyms and Abbreviations

CA ..... Coordination Action
DG ..... Directorate General
EC ..... European Community
EIB ..... European Investment Bank
EIF ..... European Investment Fund
EP ..... European Parliament
ERA ..... European Research Area
ERC ..... European Research Council
ETP ..... European Technology Platform
EU ..... European Union
EUREKA ..... pan European network for market-orientated, Industrial Research
FFG ..... Forschungsförderungsgesellschaft
FP ..... Framework Programme
GA ..... General Assembly
GDP ..... Gross Domestic Product
ICT ..... Information & Communication Technology
IP ..... Integrated Project
JTI ..... Joint Technology Initiative
MG ..... Mirror Group
MS ..... Member State
NGO ..... Non-Government Organisation
NoE ..... Network of Excellence
R & D ..... Research and Development
RTD ..... Research and Technological Development
SG ..... Support Group
SME ..... Small and Medium-sized Enterprise
SRA ..... Strategic Research Agenda
SSA ..... Specific Support Group
STREP ..... Specific Targeted Research Project
TP ..... Technology Platform
WG ..... Working Group