

Sharing Visions: Towards a European Area for Foresight¹

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Introduction

In January 2000 the European Commission proposed the creation of a *European Research Area (ERA)*². At the Lisbon European Council on 23-24 March 2000 the Heads of State and Government of EU countries fully endorsed this project as a central component of the establishment of a European knowledge-based society³. They set a series of objectives and an implementation timetable up to 2010.

Following on from the Conclusions of the European Council, the Resolution adopted at the Research Council on 15 June 2000 called upon the Member States and the Commission to take the necessary steps to make a start on realising this Area. Meanwhile, the European Parliament had strongly supported the project in a Resolution adopted on 18 May 2000. The idea of a European Research Area has also been warmly welcomed by the scientific community and industry; several hundred companies, research bodies and individual researchers have sent in their comments, either spontaneously or in response to a wide-ranging consultation.

This paper follows on the approach developed in previous analyses of the evolution of EU research policy (see Caracostas and Soete, 1997; Caracostas, 2003, forthcoming) and attempts a forward-looking approach of the issue of the role of foresight for the governance of an emerging but rapidly developing European (structural) research policy.

This paper will focus on:

- The rationale behind the three interdependent dimensions of a European Research and Innovation Area in an age of globalisation (part 1);
- The shared governance of the ERA (part 2);
- The role of European co-operation in the area of foresight in the context of this shared governance (part 3).

The analysis will concentrate on the strategy presented in the above-mentioned January 2000 communication and the debate on its implementation through the “*open method of*

1 Views expressed in this paper are those of the author and do not reflect official positions of the European Commission.

2 COM (2000)6, 18 January 2000, "Towards a European Research Area", European Commission communication

3 "The Union has today set itself a new strategic goal for the next decade: to become the most competitive and dynamic knowledge-based economy in the world, capable of sustainable economic growth with more and better jobs and greater social cohesion." (Point 5 of Lisbon conclusions).

co-ordination” of national research and innovation policies and the sixth EU research framework programme (2002-2006).

1. The three interdependent dimensions of the European Research and Innovation Area in a globalised and competitive world

In the early 1980s voices were raised at national and European level warning against the risk of Europe falling behind the United States and Japan in the major fields of science and technology. Nearly 20 years on, knowledge is widely considered to be a central component of the economy and knowledge-based society developing worldwide. Seen as basic driving forces behind economic and social progress and a key factor in competitiveness, the dynamics of job creation and an improved quality of life, science and technology are also becoming central to the policy-making process.

While in the mid-1980s, Japan’s emerging leadership in information and communication technologies was perceived by Europeans as the threat to their own competitiveness, today the United States constitute the new reference model for a majority of policy-makers, industrialists, researchers and opinion leaders.

Europe is at the cutting edge of many areas of science, it has the proven capacity to turn ideas into innovative products and services, and its education systems are generally strong. At the same time, the European higher education and research system fails to attract enough people and investment, both from within Europe and worldwide.

Attractiveness is particularly important in the context of globalisation. To be able to create or preserve jobs, to raise productivity, to improve quality of life, a country or a region of the world needs to attract qualified people, capital and knowledge services and to make the best possible use of its own human and financial resources. A few examples hereafter show that European countries are facing common challenges in this respect. In particular, under-exploitation of intellectual and human resources have been identified in the discussions preceding the launch of the ERA strategy:

- World-class centres of excellence exist in practically all areas and disciplines in Europe. Their exact specialities, however, are not always sufficiently well known outside the frontiers of the country in which they are established, especially by companies, which could usefully join forces with them.
- There are not enough women in research in Europe. Although they account for 50% of university graduates and even exceed the number of men in some subjects (life sciences and technologies, for example), they are not found in the same proportions in the laboratories and research departments of companies. Their progress in a scientific career is slower than that of men and their numbers start to rarefy as we climb the ladder of responsibilities. At the top of the academic hierarchy in the European Union, for example, there are on average fewer than 10% women. Employment in high-tech sectors remains dominated by men, who account for

almost two thirds of total employment in these sectors⁴. Gender gaps in employment shares range from 25% in Portugal to above 50% in Greece, Belgium, the UK and the Netherlands.

- Every country in the Union is observing a disaffection for scientific study and a loss of interest among the young in careers in research. In Germany, for example, the number of physics students has dropped by half since 1991. In the United Kingdom the number of future teachers of physics slumped from 553 in 1993 to 181 in 1998. And in France the number of science students dropped from 150 000 in 1995 to 126 000 in 1999. This trend is even more worrying if one takes into account the ageing of Europe's population which also affects the researchers population in many EU countries.

It is against this background that the question of a true European Research and Innovation Area can be discussed.

To be attractive, such an Area must show that it invests more than other parts of the world in research and education (commitment), that it optimises its resources (optimisation) and that it differentiates itself from its competitors (identity).

1.1. Increasing the resources of the European Research and Innovation Area

Funding for research and education is still not sufficient in Europe, particularly from business sources in the case of research. The US and Japan lead the EU in terms of investment in the knowledge-based economy. Figures speak for themselves:

The European Commission proposed in January 2002 that the European Council endorses action to strengthen the European area of research and innovation by setting a target of 3% of GDP for the overall level of public and private spending on research and development by the end of the decade. Within that total, the amount funded by business should rise to around two-thirds against 55% today.

The Heads of State and Government of EU countries endorsed this objective in March 2002 in Barcelona⁵. It is the first time that such a commitment to a quantitative target is made for research at such a high level.

Concerning the ways to reach such objectives, the policy debate so far has stressed the importance of a favourable economic and fiscal environment for R&D and innovation. The various public support mechanisms to stimulate private investment (subsidies, fiscal incentives, guarantee schemes, public-private partnerships, and those aiming at facilitating capital risk finance) need to be compared and assessed at European level as a

⁴ Employment in Europe 2001, Recent Trends and Prospects, European Commission, 2001

⁵ Point 47 of the Spanish Presidency Conclusions: *The European Council therefore: agrees that overall spending on R&D and innovation in the Union should be increased with the aim of approaching 3% of GDP by 2010. Two-thirds of this new investment should come from the private sector;*"

means to improving their effectiveness and assessing their multiplier effect, individually and in combination.

1.2. Optimising the allocation and use of European Knowledge resources

The issue of better co-ordinating science and technology policies in Europe is not new. Going back to the European Atomic Energy Community (Euratom) Treaty at the end of the 1950s – which gave the European Commission the mission to co-ordinate national research programs – and to the original mandate of the Committee for Scientific and Technological Research (CREST) of the EC in the mid-1970s, this is a recurrent theme in the European research policy debates.

De-compartmentalisation and better integration of Europe's scientific and technological policies, resources and institutions is, after the Commission's January 2000 communication, now becoming the key message:

“We need to go beyond the current static structure of “15+1” towards a more dynamic configuration. This has to be based on a more coherent approach involving measures taken at different levels: by the Member States at national level, by the European Union with the framework program and other possible instruments, and by intergovernmental co-operation organisations. A configuration of this kind would make for the essential “critical mass” in the major areas of progress in knowledge, in particular to achieve economies of scale, to allocate resources better overall, and to reduce negative externalities due to insufficient mobility of factors and poor information for operators.”

The *European Research Area* strategy stems from the recognition by policy-makers and the various actors in the European research and innovation system of a “systemic failure”, i.e. a failure for European countries to jointly exploit their fragmented resources. This systemic failure combines many failures, e.g. failures:

- To develop regional and national policies on the background of a shared Foresight and intelligence knowledge base;
- To plan in a concerted way the setting up of new research and information infrastructures and facilities;
- To inform European and non-European firms about dispersed and undersized nodes of excellence in research and technology in order to attract investments in Europe;
- To use, in a national or regional research and innovation context, the knowledge and expertise available elsewhere in the EU;
- To mobilise existing research capacities in virtual research centres capable of competing and co-operating with their US counterparts, etc.

Most of the issues related to the need to optimise the development and exploitation of Europe's research capacities are thus covered by the ERA strategy (see Table 1).

1.3. Differentiation of the European Research and Innovation Area in the global context

In the global research arena, attractiveness of a particular zone also depends on the specific features of its research and innovation system. Specialisation—in scientific, technological and economic terms—is therefore an important location factor for attracting ideas, human resources and capital investments.

Since the EU framework programmes have become an important instrument for stimulating co-operation between firms, research centres and universities within Europe, the issue of concentrating EU funds on a limited number of key research priorities has been at the core of the discussions between Member States; the European Commission and the European Parliament.

The European Commission usually advocates the pursuit of concentration on the basis of both the principles of subsidiarity (i.e. focusing on what can be done best at EU level) and optimal use of fragmented European research resources (concentration means creating critical mass to compete internationally). Member States often defend priorities which they think make more sense if their specialisation is to be strengthened through co-operation with their partners. The European Parliament (EP) pushes for priorities that, according to its role of transnational representation, correspond best to the aspirations and needs of European citizens.

Through the co-decision procedure which, on the basis of initial proposals by the European Commission, involves an agreement between the Council of Ministers and the EP, these points of view merge into a 5-year EU framework programme.

The Sixth Framework Programme (FP) for Research of the EU (2002-2006) will thus focus European partnerships on seven key priorities⁶:

- Life Sciences, genomics and biotechnology for health (Advanced genomics and its applications for health, Combating major diseases)
- Information society technologies
- Nanotechnologies and nanosciences, knowledge-based multifunctional materials and new production processes and devices
- Aeronautics and space
- Food quality and safety
- Sustainable development, global change and ecosystems (Sustainable energy systems, Sustainable surface transport, Global change and ecosystems)
- Citizens and governance in a knowledge-based society.

Taking into account the fact that the new instruments described above will mobilise, through EU funding aiming at integrating national research activities, a much greater

⁶ Funding co-operation in these 7 broad fields of research represents nearly 70% of the total budget foreseen for the 6th FP of the EC (total budget 2002-2006: 16 270 Mio€), the rest being allocated mostly to activities aiming at "structuring the ERA" and "strengthening the basis of ERA. Moreover a Framework Programme for atomic energy research (based on the EURATOM Treaty), totalling a budget of 1230 Mio€ for the same period has been decided.

proportion of national resources than in past framework programmes, it is likely that the Sixth FP will have noticeable impact on Europe's research specialisation. A "European research identity" is in the making with sustainable development objectives (a better health and quality of life, sustainable energy and mobility systems, social cohesion) pursued through co-operation in new research agendas.

1.4. Functional reading of the January 2000 ERA Communication

In Table 1 we have attempted to present and re-interpret the various policy priorities deriving from the ERA strategy on the basis of our tri-dimensional functional classification illustrated by points 1.1 to 1.3 above. It results in showing that the priorities described in the Commission's January 2000 communication mainly concern the level of resources and their optimal use in the ERA.

In addition, the issue of a "European Research identity" was, as analysed previously, tackled through the proposed research priorities of the Sixth FP. The latter has moreover introduced new ideas on how to create a bridge between the EU framework of co-operation and other intergovernmental co-operation frameworks such as Eureka, the European Science Foundation or the European Molecular Biology Laboratory. Strengthening this "European research identity" will nevertheless require to go a step further by creating a policy framework encompassing both EU framework programmes and these intergovernmental schemes. The European Research Area strategy is clearly leading there⁷ through the experimentation allowed for by the new instruments and structural actions of the Sixth FP. It is indeed assumed that a better integration of these intergovernmental schemes into EU co-operation activities could on the long run promote a more strategic review of their collective interplay.

2. Governing together the European Research and Innovation Area.

From government to governance, this shift in notions reflect both the new ways policy-making works in advanced democracies (participation of stakeholders in the preparation and the implementation of government decisions) and the complexity of articulating national (and increasingly regional) government policies into a post-national decision-making process such as the one characterising the EU.

The notion of governance embeds the idea of policy convergence through diverse interaction and co-operation processes between policies and strategies carried out at different levels. As long as the EU treaty does not allocate a strong co-ordination mandate to the EU level of decision-making (Art. is not imperative where in the past the Euratom Treaty was foreseeing), the "open method of co-ordination" allows to move in this direction. This second part will attempt an analysis of the trends toward a shared governance of the ERA.

⁷ See axis 2.2 (Closer relations between scientific and technological co-operation organisations in Europe) of the January 2000 Communication.

Table 1: Policy priorities for implementing the European Research Area strategy

As presented in the Commission's January 2000 communication	Classified according to a functional approach
<p>1. A stock of material resources and facilities optimised at the European level</p> <p>1.1. Networking of centres of excellence and creation of virtual centres 1.2. Defining a European approach to research facilities 1.3. Better use of the potential offered by electronic networks</p>	<p>1. Increasing the level of resources for the European Research Area</p> <p><u>1.1. Financial resources</u> - Better use of instruments of indirect aid to research - Development of effective tools to protect intellectual property - Encouragement of the creation of companies and risk capital investment</p>
<p>2. More coherent use of public instruments and resources</p> <p>2.1. More co-ordinated implementation of national and European research programmes. 2.2. Closer relations between scientific and technological co-operation organisations in Europe</p>	<p><u>1.2. Human resources</u> - Greater place and role for women in research - Giving the young a taste for research and careers in science - Integration of the scientific communities of western and eastern Europe - Making Europe attractive to researchers from the rest of the world</p>
<p>3. More dynamic private investment</p> <p>3.1. Better use of instruments of indirect aid to research 3.2. Development of effective tools to protect intellectual property 3.3. Encouragement of the creation of companies and risk capital investment</p>	<p>2. Optimising the use of existing or future resources</p> <p><u>2.1. Shared policy design</u> - Tackling the questions of science and society in their European dimension (- Sharing Foresight and intelligence) - Development of a shared vision of the ethical issues of science and technology</p>
<p>4. A common system of scientific and technical reference for policy implementation</p> <p>4.1. Developing the research needed for political decision 4.2. Establishment of a common system of scientific and technical reference</p>	<p><u>2.2. Policy co-ordination</u> - Benchmarking national research and innovation policies - More of a role for the regions in the European research effort - Defining a European approach to research facilities</p>
<p>5. More abundant and more mobile human resources</p> <p>5.1. Greater mobility of researchers in Europe 5.2. Introduction of a European dimension into scientific careers 5.3. Greater place and role for women in research 5.4. Giving the young a taste for research and careers in science</p>	<p><u>2.3. Co-ordination of implementation</u> - More co-ordinated implementation of national and European research programmes. - Closer relations between scientific and technological co-operation organisations in Europe</p>
<p>6. A dynamic European landscape, open and attractive to researchers and investment</p> <p>6.1. More of a role for the regions in the European research effort 6.2. Integration of the scientific communities of western and eastern Europe 6.3. Making Europe attractive to researchers from the rest of the world</p>	<p><u>2.4. Sharing mobile and distributed research resources</u> - Networking of centres of excellence and creation of virtual centres & Better use of the potential offered by electronic networks - Greater mobility of researchers in Europe & Introduction of a European dimension into scientific careers</p>
<p>7. An area of shared values</p> <p>7.1. Tackling the questions of science and society in their European dimension 7.2. Development of a shared vision of the ethical issues of science and technology.</p>	<p><u>2.5. Sharing scientific and technical knowledge for decision-making in other EU and national policies</u> - Developing the research needed for political decision - Establishment of a common system of scientific and technical reference</p>

“It cannot be said that there is today a European policy on research. National research policies and Union policy overlap without forming a coherent whole.” “The European market of supply and demand in knowledge and technology still remains largely to be created. For it to develop and function a real European research policy needs to be defined.”

These were key statements made by the European Commission communication of January 2000 on the European Research Area.

At the Lisbon European Council of 23-24 March 2000, the concept of ‘open method of co-ordination’ was introduced in order to better implement the long-term strategy for a competitive knowledge-based economy with more and better employment and social cohesion. This method is described in the conclusions (points 37 and 38):

« 37. Implementation of the strategic goal will be facilitated by applying a new open method of coordination as the means of spreading best practice and achieving greater convergence towards the main EU goals. This method, which is designed to help Member States to progressively develop their own policies, involves:

- fixing guidelines for the Union combined with specific timetables for achieving the goals which they set in the short, medium and long terms;*
- establishing, where appropriate, quantitative and qualitative indicators and benchmarks against the best in the world and tailored to the needs of different Member States and sectors as a means of comparing best practice;*
- translating these European guidelines into national and regional policies by setting specific targets and adopting measures, taking into account national and regional differences;*
- periodic monitoring, evaluation and peer review organised as mutual learning processes.*

38. A fully decentralised approach will be applied in line with the principle of subsidiarity in which the Union, the Member States, the regional and local levels, as well as the social partners and civil society, will be actively involved, using variable forms of partnership. A method of benchmarking best practices on managing change will be devised by the European Commission networking with different providers and users, namely the social partners, companies and NGOs. »

This new method, a generalisation of the approach developed in the field of the EU employment policy, is supposed to be more open to national diversity and variable geometry. In contrast with the policies aimed at building the single market the emphasis is here on mutual learning and discovering jointly appropriate solutions in those policy areas where a clear integrative role of the Union is not explicit or yet accepted.

Notably, the Lisbon European Council recommended the benchmarking of national RTD policies. The Commission and the Member States set up a partnership in the form of a High Level Group (HLG) of representatives of Ministers in charge of research. A joint European Commission-Greek Presidency Conference took place in Athens in January 2003, with a double objective: the diffusion of the results from the first benchmarking cycle and the design of the next cycle.

The strong commitment of the research administrations of Member States in the benchmarking process will therefore be a test of the full implementation of the "open method" in the field of research policy. Once this has been achieved, one can ask if a specific provision in the Treaties (a rewriting of the article which suggests a role for the co-ordination of national policies alongside the definition and implementation of EU Framework Programmes) could not be envisaged so as to institutionalise co-ordination and define the corresponding policy process and implementation instruments. If this occurs in the future, the "open method" would have paved the way towards a renewed and more integrated EU research policy.

3. Sharing visions of the future: policy learning through co-operation in Foresight⁸

Alongside benchmarking, Foresight activities carried out in a commonly agreed framework or jointly can also make an important contribution towards the promotion of the European Research Area (ERA).

3.1. Co-ordinated foresight, EU-level foresight.

Indeed, Foresight is precisely about identifying key societal trends and leading edge technologies, mapping positions and then identifying priorities for investment. EU level Foresight can help to identify those areas of emerging and strategic technologies where there is a requirement for pre-competitive joint responses to global developments in science and technologies, such as:

- common investments and exploitation of economies of scale in costly, large-scale facilities and infrastructures;
- the building-up of critical mass (in research expertise, approaches, learning effects) especially in emerging or fragmented research fields;
- co-ordinated research approaches to complex issues such as environmental threats, individual privacy protection, food safety or nuclear safeguards, in particular in areas where EU policies are developed.

Foresight is also frequently orientated towards identifying strategies to build a competitive position for the future. In this respect European Member States, as well as regions within Member States, might be seen as entities in a competition with each other. But, even if member states are competitors, a joint, co-ordinated Foresight could help identify areas of industrial strength and research excellence that are based on common training infrastructures, market systems, regulatory structures. It could also help to raise awareness of areas of emerging technological opportunity in which the EU could become a leader e.g. by building interdependencies between existing areas of

⁸ See the Report of the High Level Expert Group on the European dimension of Foresight, "Thinking, debating and shaping the future: Foresight for Europe", April 2002, accessible at: <http://www.cordis.lu/rtd2002/foresight/main.htm>

strength (for example in knowledge management, soft technologies or between embedded hardware and software technologies and mobile communications).

Europe has many common goals and priorities relating to areas such as knowledge-based competitiveness; innovation, establishing the ERA, cohesion.... Europe also faces many common and complex challenges, such as environmental issues, unemployment, infectious diseases, disaster prevention, transport, energy, to name a few.

These goals and challenges can only be addressed by co-operative action, across national borders and cultures. The same can also be said for research policies and programmes. Policies and programmes have traditionally taken place at national or regional level. Some issues, however, require a consistent position perhaps between neighbouring countries or regions, at EU level or even global level. Examples include common security threats, averting environmental damage, the management of water resources, traceability of foodstuffs and global climate change.

Foresight could also address emerging requirements for common approaches to regulations, standards, measurement and testing.

Such joint activities can moreover contribute to raising awareness and participation in political development. At the EU level, Foresight can have a role in building solidarity and shared agendas by giving stakeholders a chance to contribute creatively to shaping a new Europe. Such vision creating and goal setting for Europe should be based on joint efforts and take into account different perspectives. As a long-range process, Foresight also needs to be the subject of continuity in policies that will have to continue under changing national political administrations. European Foresight processes are in a strong position, therefore, to make such joint vision and goal setting possible.

3.2. What foresight at national and regional (sub-national) levels?

In Europe, Foresight activities emerged first at the national level. Just to quote a few Germany, France, the UK and the Netherlands have been undertaking a range of 'futures research' activities since the early 1990s. Austria, Ireland, Portugal, the Czech Republic and Sweden just finished Foresight exercises. Greece has just initiated one. Box 1 hereafter presents a few significant Foresight activities.

It is at the regional level that the final translation of knowledge into economically relevant activities takes place. It is also at this level that 'learning' capacities can be best organised through networks and public-private partnerships, in order to ensure that knowledge flows irrigate the economy and resources are most efficiently used for tackling specific economic development objectives. Given the increasing complexity of challenges, the importance of informed decisions and strategic management capacities of regional decision-makers grows.

The implied need for more widespread structured forward thinking at regional and local levels, connected with Foresight activities at national and EU levels, is highlighted in the Communication on the Regional Dimension of the European Research Area (COM (2001) 549). It emphasises that, together with innovation and education and training,

research brings a new message to regional economies, allowing for new forms of advancement keeping pace with local but also international developments.

Moreover, based on joint Foresight activities, inter-regional co-operation between regions facing similar challenges as well as within “macro-regions” (such as, for example, the Baltic, the Mediterranean, etc.) could stimulate and mobilise an enormous potential for the European Research Area.

<i>Box 1 - Overview (non exhaustive) of Foresight organizations and activities in European countries (EU and candidate countries)</i>		
Country	Title	Internet address
Austria	Institute of Technology Assessment	http://www.oeaw.ac.at/ita/welcome.htm
	Delphi and 2013 Report	http://www.bmwf.gv.at/4fte/materialien/delphi/index.htm
Belgium	Foresight at Federal level	http://www.socioforesight.net/
Czech Republic	Technology Foresight	http://www.foresight.cz/www/?lang=1
Cyprus	Foresight (eFORESEE project)	http://www.eforesee.info/cyprus/index.shtml
Denmark	The Danish Technology Board	http://www.tekno.dk/eng/publicat/rt/TF.htm
Estonia	Foresight (eFORESEE project)	http://www.eforesee.info/estonia/index.shtml
Finland	Ministry of Trade and Industry	http://www.vn.fi/ktm/eng/2ktm_etu.htm
France	Technologies-clés 2005	http://www.industrie.gouv.fr/observat/innov/carrefour/f2o_exer.htm
Germany	The FUTUR initiative	http://www.futur.de
Greece	The Greek Foresight programme	http://www.gsrt.gr/html/gr/gprt/foresight/indexfs.html
Hungary	Ministry of Education, Research and Development Division	http://www.om.hu/
Ireland	ICSTI	http://www.forfas.ie/icsti/index.htm
Italy	Fondazione Rosselli	http://www.fondazionerosselli.org
Malta	Malta Council for Science and Technology (eFORESEE project)	http://www.mcst.org.mt/
Netherlands	Advisory Council for Science and Technology Policy (AWT)	http://www.awt.nl/Welcomeuk.html
Poland	KBN	http://www.kbn.gov.pl/index_p.html
Portugal	Engineering and Technology 2000	http://www.civil.ist.utl.pt/~et2000/index2e.html
Spain	Observatorio de Prospectiva Tecnológica Industrial (OPTI)	http://www.opti.org/
Sweden	Teknisk Framsyn panel based Foresight exercise 1999-2000	http://www.iva.se/tekniskframsyn/index.html
United Kingdom	The Foresight initiative	http://www.foresight.gov.uk/default1024ns.htm
Norway	Norway 2030	http://www.norway2030.net/

3.3. European foresight co-operation initiatives and institutions

At the European level, apart from "embedded" S&T Foresight in multilateral research infrastructures like CERN and EMBL, Foresight and supporting activities have been developed principally by:

- *The European Parliament and The European Parliamentary Technology Assessment Network*, EPTA. EPTA networks Parliamentary Technology Assessment bodies of Europe. It naturally involves informing the national and European parliamentary debate but it also enhances the products and experiences of their work with similar organisations. Currently it consists out of eight countries and the European Parliament (STOA) as members and five additional countries and the Council of Europe as associates. The Presidency rotates annually.

Box 2 - The European Parliamentary Technology Assessment Network	
Member	Internet address
Finnish Committee for the Future	www.parliament.fi/FutureCommittee
Hellenic Parliament	http://www.parliament.gr/synthes/defaultEpitropes.htm
OPECST	http://www.senat.fr/opecst
POST	http://www.parliament.uk/post/home.htm
Rathenau Instituut	http://www.knaw.nl/01instit/rathnl00.htm
STOA	http://www1.europarl.eu.int/dg4/stoa/en/default.htm
TAB	http://www.tab.fzk.de/home.html
Teknologirådet	http://www.tekno.dk
VAST	http://vast.camera.it
EPTA network	http://www.eptanetwork.org/

the European Commission.

- The Institute for Prospective Technological Studies (IPTS - <http://www.jrc.es/welcome.html>) in Sevilla is one of the eight research institutes of the Joint Research Centre (JRC). The mission of the IPTS is to provide techno-economic analysis to support European decision-makers. It monitors and analyses S&T related developments, their cross-sectoral impacts, inter-relationships and implications for future policy development.
 - A specific Science and Technology Foresight unit (K2 - <http://www.cordis.lu/rtd2002/foresight/home.html>) was created in DG Research to promote co-operation in Foresight in Europe.
- *the European Science Foundation.* The ESF recently introduced its "Forward Look" instrument (<http://www.esf.org/flooks/intro.htm>). It should enable Europe's scientific community to develop medium to long term views and analyses of future research developments in multidisciplinary topics, and interact with policy makers from member organisations.

3.4. A European Area for foresight in the making (2001-2002)

In June 2001, the European Commission established a High Level Expert Group to explore the ground for an EU Strategy and Action Plan in the field of Foresight. The

objectives of this Group were to explore in depth the options for developing Foresight to strengthen the strategic basis of the ERA. It was composed of experts coming from Research Ministries, Foresight institutions, Parliamentary Technology Assessment organisations, and industry. The Final Report was ready in spring 2002 and is being since presented and debated in many fora (see <http://www.cordis.lu/rtd2002/foresight/main.htm>).

Moreover, the Commission established a High Level Expert Group on Regional Foresight and organised a Conference on this subject in September 2002 (see <http://www.regional-foresight.de/>). In order to promote experimentation and interplay of new Foresight activities in Member States, candidate countries and regions, the development of specific tools is being promoted. In particular the FOREN guide to regional Foresight has been widely diffused and used throughout Europe and beyond. The Commission is now supporting the development of “Country Guides to Regional Foresight” that present the experience of most EU and various Candidate Countries in this area and further develops the methodological “tool-box”.

In order to identify and mobilise all relevant actors, the JRC/IPTS (with the support of ESTO, the European S&T Observatory) is developing a project to map the Foresight competences available in Europe (across the EU15 and a selection of Pre-Accession Countries) more systematically. Moreover, within the context of the emerging European Research Area, the project will also map the competencies of those individuals and organisations actively engaged in organising and managing Foresight activities at National, Regional, Local and sectoral level. This information is compiled and structured for the European Commission and other policy makers, as well as those planning to undertake Foresight, when seeking to identify expertise in the Foresight area (see <http://les.man.ac.uk/eurofore/>).

Finally, the Commission has funded and still funds, through the STRATA programme, a number of European co-operation projects which provide a contribution to the self-organisation of the European Foresight landscape (see Box 3). These complement research projects on the subject which were (or are) funded by the Targeted Socio-Economic Research (TSER) Programme under the fourth Framework Programme (see <http://www.cordis.lu/rtd2002/foresight/research.htm>).

<i>Box 3 - Foresight-oriented STRATA projects</i>		
Acronym	Title	Start Date
FOREN	Foresight for Regional Development Network (completed)	01.02.2000
EUROPOLIS	Scenarios for the evolution of European S&T policies (completed)	01.03.2000
FOMOFO	The Four Motors Foresight Initiative (completed)	01.04.2001
DFFN	Design for future needs	January 2002
eFORESEE	Exchange of Foresight relevant experiences for small European and enlargement countries	January 2002
ITSAFE	Integrating technological and social aspects of Foresight in Europe	January 2002
FORETECH	Technology and innovation foresight for Bulgaria and Romania	October 2002

3.5. The next steps and the opportunities offered by the Sixth Framework Programme (FP6, 2002-2006)

On the basis of the activities carried out in 2001-2002 to stimulate the creation of a European area for Foresight and in particular the advice provided by the High Level Expert Groups, a “Knowledge Sharing Platform” will be set up by the European Commission with the aim to develop a coherent supportive framework at the European level to ensure systematic use and optimum benefit of Foresight, and to identify and mobilise all relevant actors (at every governance level) to enable EU-wide networking and capacity building.

The main idea behind the setting up of such a platform is to diffuse and exploit information on useful results stemming out of forward-looking activities carried out at all levels in Europe for informing policy-makers dealing with research and innovation. It will moreover support the self-organisation process of the “Foresight Community” through knowledge sharing activities and events.

Concerning EU-supported collaborations, it is worth mentioning here that the 6th Research Framework Programme (FP6, 2002-2006) - the main instrument to implement ERA - offers many opportunities for this aim. In particular, Foresight activities can be integrative elements in all thematic priority areas. This is specifically highlighted in the introduction to the priority thematic areas:

“consideration of ...socio-economic impacts of scientific and technological development and Foresight, will where relevant form a part of the activities.”

Therefore an «outline Guide to opportunities offered by the Sixth European Community Research Framework Programme for supporting co-operation in the field of Foresight in Europe » has been prepared (to be updated regularly) to help those wishing to joint their efforts at EU level (see <http://www.cordis.lu/rtd2002/foresight/cooperation.htm>).

The JRC’s Foresight activities will finally develop under FP6, the IPTS in Seville concentrating on

- long-term prospective studies on crucial technological developments affecting the EU and the relevant impact on growth, sustainable development, employment, social cohesion and competitiveness.
- the creation of an International Foresight co-operation forum allowing it to strengthen its working relationships with international think-tanks and top level advisors.

In short, Foresight processes in Europe can help to:

- Increase the strategic capabilities in the EU;
- Improve communication and co-operation between actors from different sectors of society and between different policy levels on EU-wide issues; and
- Contribute to the democratisation of EU policy making.

Foresight co-operation for supporting the ERA strategy can be useful, if we follow the functional analysis presented in point 1, for identifying and debating:

- the resources needed for research and innovation in Europe and how to estimate them;
- the structural and organisational changes required;
- and the future science and technology priorities on the basis of the needs of European societies.

Box 4 - Support to co-operation in Foresight in the Sixth Framework programme

Foresight activities can be funded in the:

a) Specific programme on ***Integrating and Strengthening the European Research Area (ERA)***:

- ❖ as integrative part of activities in all *Priority thematic areas of research* and in *Supporting policies and anticipating scientific and technological needs* (Foresight in a particular thematic area of S&T)
- ❖ contributing to the co-ordination of research activities, and the coherent development of policies in *Strengthening the Foundations of ERA*: exploiting synergy by supporting the co-ordination of independent activities including their mutual opening, the preparation and the management of joint activities (horizontal aspects of Foresight).

b) Specific programme on ***Structuring the European Research Area***:

- ❖ promoting inter-regional co-operation
- ❖ addressing science-society questions

Conclusion

The functional analysis performed above showed that the ERA strategy and its main implementation instrument, FP6, were to a large degree shaped and will be shaped in the future by national approaches to Europeanisation. The invention of this new institution, the "open method of co-ordination" (OMC), for the EU employment strategy and its diffusion to other fields of EU policy-making - such as research policy - reflects the will of Member States to find new way to enrich the European integration process:

"By agreeing to take part in the new process, States are also submitted to deep transformation in their preferences, perceptions and respective interests, in the framework of a reciprocal learning process, leading to greater convergence... What is actually happening is a new development of the multilevel governance... There is an increasing number of actors taking part in the multiple process of coordination and submitting themselves to continuous interaction that can lead to increased European interlinking between the States and their political approaches. Governmental actors are to some extent obliged to work increasingly with each other within common institutions and to go beyond perceptions and actions which are strongly marked by national history⁹".

⁹ See M. Telò, "Governance and government in the European Union: The open method of coordination", p 261, in M. J. Rodrigues (Ed), 2002, *The New Knowledge Economy in Europe*, Edward Elgar.

