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Defining the European Commission's Role in the ERA of Foresight

Report about the international conference "The Role of Foresight in the Selection of Research Policy Priorities", Seville, Spain, 13-14 May

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Organisation and Structure

The Conference on the *Role of Foresight in the Selection of Research Policy Priorities* was organised by the Spanish Ministry for Science and Technology during the Spanish Presidency of the European Union. The European Commission supported the organizers via the IPTS (Institute for Prospective Technological Studies, DG Joint Research Centre, Seville), and its Science & Technology Foresight Unit (DG Research, Brussels). IPTS hosted the event in the World Trade Centre of Seville. The one-and-a-half-day conference attracted over 300 experts from more than 30 countries. The largest groups were formed by participants from Spain (close to 100) and from European Commission Services (more than 40). Ten participants came from Germany.

The conference opening was shared by Jean-Marie Cadiou, IPTS, Alejandro Herrero representing Commissioner Philippe Busquin, DG Research, and Ramon Marimon of the Spanish Ministry of Science and Technology. A plenary speech followed by Geoff Mulgan, director of the Performance and Innovation Unit of the British Government. The plenary session was followed by two parallel sessions in the morning and two in the afternoon. Each of these sessions started with an invited speech which was later discussed by an expert panel and the audience. *Session one* aimed directly at "European level foresight", *session two* was about "foresight and multi-level governance" and addressed the interplay of local, regional, national, and of course European level foresight. The *third session* addressed "international level foresight" comparing and bringing together experiences from different regions and international organisations, and looking for those issues where international co-operation is recommendable. The *fourth session* was called "thematic foresight", but actually it was about a classification of foresight exercises in Europe, national differences and lessons for European level foresight.

The second day saw a summary of the parallel sessions by rapporteurs, and a debate about "Priorities for the future". A speech by Richard Ernst of ETH Zürich, Nobel Prize winner in Chemistry 1991, about "The responsibility of academics in our time" closed this well designed, excellently organised and truly international conference. Worth mentioning are also the complete conference proceedings available on the web (<http://prospectiva2002.jrc.es>).

The present report covers the plenary sessions and parallel sessions one and four. Before turning to the content it should be noted that the topic of the conference was broader than its title suggests which merely addresses the selection of research policy priorities. The session titles (see above) give a better idea that the conference eventually dealt with *European level foresight* in many aspects. Also the organiser's definition of foresight appears to be less ambitious than that of a high level expert group (HLEG) heard more often throughout the conference. According to the organizers foresight

"constitutes a systematic attempt to observe the long-term future of science, technology, society, the economy and their mutual interactions in order to generate knowledge with which to effect social, economic and environmental improvements based on well founded projections"

(cf. conference program <http://prospectiva2002.jrc.es/download/EN-Programme.pdf>; emphasis KB), while the HLEG defines foresight as "a systematic, *participatory*, future intelligence gathering and medium-to-long-term *vision-building* process aimed at present-day decisions and mobilising joint actions" (cf. conference papers http://prospectiva2002.jrc.es/download/Conference_Papers.pdf; emphasis KB). It looks as if promotion of European level foresight has to proceed very cautiously as foresight has long been an instrument to strengthen national and

regional competitiveness. Furthermore the European Commission still seems to be in the process of defining its role and ambition in foresight.

Opening: The rationale for European level foresight

In recent times foresight has obviously become a hot topic at the European policy level. Its growing importance is visible in the establishment of Directorate K within DG Research in 2001 (Technology Foresight and Socio-Economic Research), which contains a Foresight Unit K1. It is also visible in a series of foresight conferences under the auspices of European presidencies. Sweden and Belgium started in 2001, Spain continued in Seville 2002, and a fourth conference has been already announced for 2003 under the Greek presidency. Furthermore a look at STRATA-ETAN projects¹ carried out since 2000 and the inclusion of Foresight in all research priority areas of the Sixth Framework Programme (FP6) reveals the interest in European level foresight. The old and new nucleus of European Foresight is the IPTS established in 1994 in Seville. Its director Jean-Marie Cadiou defined its role in his opening speech as “rather special in the foresight scene” and continued that IPTS “actually exists to provide foresight in those areas where a European dimension is required”. He further underlined that IPTS “operates in network mode drawing on the expertise of experts of the leading prospective and S&T support institutions from across Europe”.

The talk of Philippe Busquin (presented by Herrero) situated foresight in the broader political context of Lisbon Strategy and ERA (European Research Area). The “Lisbon Strategy” recognises research and innovation as an integral part of the social and economic policy framework, and envisages the EU as *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*. Competitiveness with other leading economies such as the US and Japan requires among others to overcome the present fragmentation in research, and the present barriers for innovation and the flow of knowledge. That is the aim of ERA.

Foresight at the European level has two aspects. First, foresight is one of the research fields where European wide co-operation is regarded as beneficial and therefore a “true European area for foresight” as part of ERA is desired. Second, foresight is thought of as a component of the toolbox for policy-making at EU level “needed to inform the policy debates concerning the future developments of common policies.” As a next step the setting-up of a “platform for the foresight community of practitioners and users in order to exchange knowledge and experiences at European level” was suggested (quotes from Busquin’s speech; cf. http://prospectiva2002.jrc.es/download/Speech_Herrero_Busquin.pdf).

Session 1: European level Foresight

In the framework of a STRATA-ETAN project, a High Level Expert Group (HLEG) had worked on *options to support European cooperation in Foresight in the Sixth Framework Programme and beyond*². This group was chaired by Luk Van Langehove, United Nations University, who had been asked to present results of this work at the conference. As Van Langenhove was not able to attend, François Farhi, rapporteur of the HLEG, presented the results instead.

Their *diagnosis* reveals four shortcomings: (1) In many European countries foresight activities are non-existent or remain relatively weak; (2) Many foresight exercises are simply repeating and duplicating efforts already made elsewhere; (3) Important players often do not take the EU level into account; and (4) EU concerns are often not present in national and regional foresight exercises.

To improve the situation of European foresight, it was suggested on the one hand to foster co-operation between foresight activities implemented at various levels in Europe and, on the other hand, to tackle jointly European wide and global issues. There are at least four starting points for European level foresight: It can start (1) where common problems across borders are identified (e.g. security, standards, water resources, ageing); (2) in those policy fields where the EU can act relatively autonomously, e.g. research policy or enlargement;

(3) where technologies are more or less generic (like information and communication technology, biotechnology or nanotechnology); and (4) in fields of emerging or strategically important technologies, where a European position and a common co-ordinated effort promise to strengthen the competitive position of the EU.

The required efforts to co-ordinate learning, training, evaluation, methodology, knowledge transfer are brought together in the concept of a *Knowledge Sharing Platform*, a concept taken up already by Commissioner Busquin (see above). More to the point and short-term, a feasibility study on the Knowledge Sharing Platform was recommended. Further suggestions were to build a “foresight portal”, to establish a network of excellence under FP6, to carry out a limited number of demonstrator projects, and to cross-connect regional foresight projects with the support of FP6 and the European Regional Development Fund.

The panel discussion following the presentation was extremely helpful in pointing to problems and limitations of foresight exercises in general and at the European level in particular. Luke Georghiou, University of Manchester, pointed out that learning from foresight exercises of others is extremely difficult as it would imply to understand the interaction of each foresight study with its socio-cultural and administrative setting. He also rejected the idea that the evaluation of the quality of foresights could best be organised at the European level, as suggested by the HLEG, and argued in favour of evaluation as an integral and non-intrusive part of each foresight process right from the start. Cornelia Haugg (German Federal Ministry of Education and Research) highlighted critical factors with respect to participation. Foresight depends on the involvement of actors, but it would be difficult to find the “right mix of people” and there would be a danger that lobbyists use the foresight process for their aims. She also pointed at the risk of interdisciplinary discourses, which might tend to circumvent conflicts and extreme visions, both resulting in mainstream thinking. It is quite likely that these problems of actor involvement are more pronounced at the European level. Barend van der Meulen, Twente University, reinforced the line of attack arguing that the HLEG was taking too easily for granted that foresight will help policy-makers and

stakeholders, neglecting the necessary social conditions. He further criticized that the presentation did not distinguish appropriately between “European” and “European Commission” foresight. The Commission’s own RTD policies should not be confused with a responsibility for the European RTD system. Commission’s RTD and Europe’s RTD are still different playing fields, and European level foresight would not be able to replace other ongoing activities at regional, national and sector levels. Finally he argued against one of the main pillars of the HLEG argumentation that European level foresight would help to avoid overlap and duplication of efforts. He held that overlap and duplication are necessary to create effective patterns in different places involving different actors. The last discussant of the panel, Emmanuel G. Koukios, National Technical University of Athens, was more positive, saying that Greece has just launched the first ever National Technology Foresight Programme and that one of the early triggers of this national action was the institutionalisation of Foresight within the European Commission’s DG Research. He also expected the Greek experience to be valuable for other member states and candidate countries.

Session 4: Thematic Foresight

In this session Rémi Barré (former director of Observatoire des Sciences et Technologies (OST), Paris, and now with Futuribles) presented a classification of foresight exercises based on work within an ESTO project³, and tried to find the “internal logic” behind different types of foresights. His reasoning led to a suggestion on what type of foresight would be most valuable at the EU level. Barré distinguished four types of foresight: Technology Foresight (e.g. nanotechnology, ICT, genomics); Sectoral Foresight (e.g. transport, service industry); Public Function Foresight (policy fields like health, education, environment); and Strategic Issue Foresight (e.g. crime prevention, ageing society). He investigated how these types or “thematic classes” (this term is probably due to the session heading) go together with further parameters such as *objectives* (research priority and investment; efficiency of innovation system; shared societal

awareness through debate); *involvement of societal actors* (none, ad hoc and limited, systematic); *cognitive nature* (analytical vs. interactive, consensus building), and *institutional-temporal architecture* (parallel/ sequential; institutionally distributed (embedded) vs. based on one institution). Based on the 14 cases analysed, he found that Technology Foresight tends to correspond to restricted participation and an analytical approach, while Public Function Foresight and Strategic Issue Foresight are more likely to be combined with shared awareness, consensus building and systematic implication of actors. Sectoral Foresight is somewhere in between.

In a next step he looked at the “external coherence”, i.e. the dependency of a foresight type chosen with its socio-institutional context. Factors such as the industrial development of a country, its sectoral strengths, tradition of foresight exercises, experience with participatory policy instruments, the need for industrial change etc. are relevant here. The Technology Foresight type seemed to be more relevant for technologically advanced countries, Sectoral Foresights are requested when an industry is confronted with potentially large changes due to new competition or a changing regulatory environment. Public Function Foresights are relevant when public policy areas are to be redefined and the role of the state has to be reassessed. Strategic Issue Foresight seems to be especially relevant in cases where there is a need to overcome institutional barriers through raising cross-cutting questions. Having this in mind Barré made an interesting proposal on what type of foresight might be best at the EU level. He opted for Strategic Issue Foresights with the following parameters derived from his classification: *objective*: shared societal awareness; *involvement of actors*: no direct implication of societal actors; *cognitive nature*: significant analytic work; *architecture*: institutionally distributed, parallel foresights.

During discussion the systematic effort of Rémi Barré to classify national foresight activities was recognised, however it was felt that the “French style”, as Andrew Webster, University of York, said – probably having Descartes or Linné in mind –, is not enough to explain why one type was selected in one country rather than another, and if the selected type

was the right choice in a given context. Webster also noted that in some countries more than one type of foresight is carried out at the same time. Further panellists contributed their country specific knowledge. Michael Damer, responsible for the Danish Foresight Programme, pointed out that the Danish approach would not fit well into the classification provided, given that it combines at least three types of Foresight and three different goals. Terttu Luukkonen, Research Institute of the Finnish Economy, talked about the Finnish experience, where foresight is well embedded in the research policy process, while there has been no national-level foresight yet. She highlighted the advantage of easy implementation in the Finnish embedded approach while its disadvantages are that this type of foresight is more short-term oriented, brings about less path-breaking visions and less new cross-sector cooperation. A national level exercise would be stronger in these respects. Claudio Roveda, Fondazione Rosselli, who had participated in a trans-national analysis of foresight studies in France, Spain, Italy and Portugal presented some study results⁴. His contribution expanded on the importance of the socio-political context to understand foresight exercises. He was able to show that the customer of the foresight exercise was different in each country, that the institutional set-up was different, and also the use made of the results.

Priorities for the Future

In this plenary discussion Paraskevas Caracostas, head of the Science and Technology Foresight unit in DG Research, underlined the world leadership of Europe with respect to Foresight, Forecasting and Technology Assessment. Nevertheless further progress would be needed and the Commission would act accordingly and support foresight within FP6 and in view of ERA. Jean Marie Cadiou, director of IPTS, also emphasised that it is time for action. He underlined the need for a better link of foresight to decision-making, and the need to find ways to get industry involved as it creates jobs. The relation of industry and foresight has been an interesting aspect of debate. Erkki Ormala of Nokia stated quite self-confidently that

Nokia was spending as much as the FP6 programme for research with research centres in 15 countries all over the world. He also said that the European framework conditions were not so good, especially with respect to education and skills. He pointed out that foresight could be extremely important for knowledge technologies and added that Nokia was committed to knowledge sharing. James Gavigan, IPTS, asked how far Nokia would go sharing their knowledge. The answer was that public sector foresight is not so important for industry, because it does not reach the level of detail required by industry. Nevertheless sharing of knowledge was being intensified at Nokia, with Nokia Forum with 6.000 subscribers as an example. Mutual learning by co-operation with universities and public research was already common practice.

Geoff Mulgan and Richard Ernst

Geoff Mulgan (Director Performance and Innovation Unit and also Director Prime Minister's Forward Strategy Unit) and Nobel Prize winner Richard Ernst from Switzerland framed the conference. Both can be regarded as extremely successful in their field and as excellent speakers too. Geoff Mulgan is head of a foresight staff of 100 persons working full-time for the British (Labour) government. The Performance and Innovation Unit, set up in 1998, looks like a think tank as impressive as the Office of Technology Assessment (OTA) of the US Congress in its days. PIU was created as consequence of the shortcomings of foresight panels. These are valuable to build a shared understanding within sectors, but they were, following Mulgan, not so efficient for strategic decision making. An institutionalisation of Foresight like PIU, he explained, cannot work without the support of policy leaders willing to introduce long-termism into policy. He also underlined that PIU is not technology driven but problem-oriented with problems of migration, personal health care and identity in cyberspace ranking high on the agenda.

In contrast Richard Ernst, who self-ironically admitted to presenting a "black and white picture in colours" (referring to his colour slides) has lost faith in free market economy and policy. He even wondered why gov-

ernments were the ones to set research priorities. He presented a lot of information to underpin his black & white diagnosis. Given the poor state of things he envisaged an important role for universities "developing again into cultural centres where ethical, cultural, and scientific guidelines for the peaceful and sustainable future development are formulated." Being aware that the current university system does not fulfil this function he called for a "new university". His talk closed quoting François Rabelais 'Science sans conscience n'est que ruine de l'âme'. In a way one might say that Richard Ernst performed as the "conscience" of the conference.

Bottom line

At this fruitful EU foresight conference the European Commission continued its dialogue with foresight "stakeholders" in order to communicate its vision and to get feedback to better define its own role in foresight. This dialogue is taking place in the context of the construction of ERA and at present shares the same contingencies⁵. There is no doubt however that foresight can help to define research priorities at the European level and there is no doubt that European support for co-operation across borders in the field is welcome. Things get more complicated than usual when European policy strives for new responsibilities affecting the national, regional or local level.

Notes

- 1) STRATA-ETAN means "Strategic Analysis of Specific Political Issues" and is part of the Specific programme of the 5th Framework Programme "Improving the Human Research Potential and the Socio-economic Knowledge Base"; ETAN is the abbreviation of "European Technology Assessment Network".
- 2) High Level Expert Group for the European Commission: Thinking, debating and shaping the future: Foresight for Europe. Final report, April 2002 available online at: ftp://ftp.cordis.lu/pub/rtd2002/docs/report_hleg_20426final.pdf>ftp://ftp.cordis.lu/pub/rtd2002/docs/report_hleg_20426final.pdf
- 3) The ESTO study took stock of Forecasting, Foresight and TA in the European Union. ITAS prepared the chapter about TA, see Tübke, A.;

- Ducatel, K.; Gavigan, J. P.; Moncada, P. (eds.): Strategic Policy Intelligence: Current Trends, the State of Play and Perspectives. S&T Intelligence for Policy-Making Processes. European Commission EUR 20137 EN, December 2001; <http://www.jrc.es/pages/projects/EUR.20137.EN.final.pdf>.
- 4) Jordi Molas-Gallart, Rémi Barré, Mario Zappacosta & James Gavigan (2001), A Transnational Analysis of the Results and Implications of Industrially-oriented Technology Foresight Studies (France, Spain, Italy & Portugal) IPTS Technical Report EUR 20138 EN; <ftp://ftp.jrc.es/pub/EURdoc/eur20138en.pdf>.
- 5) The contingencies of ERA were the subject of a conference in November 2001. See report by Jakob Edler: International Conference: "The Changing Governance of European Research and Technology Policy – The Dynamics and Potential Impacts of the European Research Area Initiative"; in: "Technikfolgenabschätzung – Theorie und Praxis", Nr. 1, 11. Jahrgang, März 2002, pp. 136-141; <http://www.itas.fzk.de/tatup/021/edle02a.pdf>

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“Shaping Better Technologies” Bericht über eine Veranstaltung der Deutsch-Ungarischen Arbeitsgruppe

Budapest, Ungarn, 12. - 15. April 2002

von Klaus Kornwachs, Universität Cottbus

Im Sommer 2001 wurden während gemeinsamer Aktivitäten des Lehrstuhls für Innovationsstudien und Technikgeschichte der Budapester Universität für Technologie und Wirtschaft (BUTE), Ungarn (Prof. Dr. Imre Hronszky), und des Lehrstuhls für Technikphilosophie der Brandenburgischen Technischen Universität Cottbus (BTUC), Deutschland (Prof. Dr. Klaus Kornwachs), im Rahmen des SOCRATES-ERASMUS Programms der Europäischen Union die Gründung einer gemeinsamen Arbeitsgruppe und ein gemeinsames Veröffentlichungsprojekt zu Fragen der philosophischen und politischen Probleme der Technikgestaltung vereinbart.

Diese Deutsch-Ungarische Arbeitsgruppe traf sich zu einem ersten Workshop vom 12. - 15. April 2002 in Budapest zum Thema

„*Shaping better technologies – Wie kann man eine bessere Technologie gestalten*“. Der Workshop diente auch der Vorbereitung des geplanten Buchprojektes.

Das Thema des Buches ist der angewandten Philosophie der Technik gewidmet. Es soll Ansätze aus der Soziologie, der Geschichte wie auch Aspekte der Technikentwicklung und politische Fragen behandeln. Mit ihren Beiträgen wollen die Mitglieder der Arbeitsgruppe und assoziierten Mitarbeiter der beiden Lehrstühle einen eigenständigen und eigenwilligen Blick auf die aktuelle Debatte über die Rolle der Technologie in Gesellschaft und Politik werfen. Damit kommt die entscheidende Frage zum Vorschein: Haben wir die Technik, die wir brauchen und brauchen wir die Technik, die wir haben?

Der Workshop behandelte in seinen Beiträgen zunächst historische Aspekte. Diese sollen es erleichtern, die Muster und Faktoren auszumachen, welche die technologischen Entwicklungen und Innovationen treiben. Will man das Entstehen von Innovationen begreifen, dann muss man auch die Frage nach Wirkungen und Ursachen stellen. Die weiteren Beiträge befassten sich deshalb mit den folgenden Themen: Was ist wirklich neu und warum ist es neu? Wie sehen die Beziehungen zwischen den technologischen Entwicklungen aus, wie unsere Haltung zur Technologie und den politischen und ökonomischen Bedingungen? Ändern sich diese aufgrund der technologischen Entwicklung selbst? Wie reagieren wir auf technologische Innovationen? Wie und warum werden neue Technologien akzeptiert? Mit welchen Besonderheiten haben wir es angesichts der Elektronisierung nicht nur der Information, sondern auch des Wissens zu tun? Gibt es neue Verfahren oder Vorstellungen, wie man durch Technologiepolitik Technologien besser gestalten könnte? Wie könnten wir zu einer besseren Gestaltung von bereits existierenden Technologien gelangen?

Die Vortragsthemen im Einzelnen waren: „Wie man mit Maschinen umgeht – einige Grundzüge der Geschichte der industriellen Sicherheit und Gesundheit vom Ende des 19. Jahrhunderts bis heute“ (Stefan Poser), „Zur Geschichte der Technikphilosophie und der Technikfolgenabschätzung in der früheren DDR“ (Käthe Friedrich, nur Abstract), „Demo-