



EUROPEAN  
COMMISSION

Community Research

Report of the  
***“Foresighting the  
New Technology Wave”  
Expert Group***

**Dissemination Conference**

***“Converging Technologies for a  
Diverse Europe”***

14th & 15th September 2004, Brussels

Provisional Venue: Centre Albert Borschette - 36, rue Froissart-1040 Bruxelles Room 0D

**DRAFT CONFERENCE PROGRAMME**

[The conference will explore and develop issues for European Research raised in the Report](#)

Conference Rapporteur: Dr T. Bernold, Communication and Policy Consultant, Switzerland; Visiting Research Professor at the School of Public Policy, George Mason University. USA

14 September 2004

13:00 – 14:00 Registration and coffee

### Opening session

Chair: Director, Directorate K, “Social sciences & humanities, foresight”, DG Research, European Commission

Issues : There is a need to analyse the emergence of a new research policy theme, the convergence of Nano, Bio, Info and Cogno-technologies, in the US and Canada and to assess the implications of the converging agenda for Europe’s scientific enterprise and trajectory of socio-economic development. The opening session will allow Commissioner Busquin, Irish *Tánaiste*<sup>1</sup> Mary Harney, and other policy-makers to set the scene and will include a general presentation of the report of the expert group set up by the European Commission (Chaired by Professor Kristine Bruland from the University of Oslo; Norway; Rapporteur: Professor Alfred Nordmann, Darmstadt University, Germany)

14:00 – 14:20: Philippe Busquin, European Commissioner for Research  
***Opening research policy to converging technologies***

14:20 – 14:40: Ms. Mary Harney, *Tánaiste*, **to be confirmed** Minister for Enterprise, Trade and Employment; Department of Enterprise, Trade & Employment, Ireland  
***Nanotechnology, biotechnology and the opportunities of Convergence***

14:40 – 15:00: Prof. K. Bruland, Professor of Economic History, University of Oslo, Norway and Prof. A. Nordmann, Institut für Philosophie, Technische Universität, Darmstadt, Germany; Adjunct Professor of Philosophy, University of South Carolina  
***Converging technologies – Shaping the Future of European Societies***  
*The key messages of the European Expert Group on Converging Technologies*

**15:00 – 15:30: Coffee Break**

### Session 1: Understanding Convergence

Chair: Prof. K. Bruland, Professor of Economic History, University of Oslo, Norway

Issues: Three types of converging processes are at stake: between scientific fields, but this convergence seem to couple disciplines like molecular biology and computer modelling rather than unify them; between technological developments but this is not totally new; as we know convergence between computer, telecommunications and media technologies have been discussed for years; between industrial sectors; the more visible applications like sophisticated prosthetics are far from being real markets yet. One major difference with the US and Canadian approaches; and the expert group’s vision is that the role of social sciences and humanities is underlined. This session will discuss the convergence process and its limits: What is really converging? NBIC fields as a whole or their applications for engineering complex artefacts and technical systems? What is the evidence?

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<sup>1</sup> Deputy Prime Minister, Ireland

- 15:30 – 15:50: Prof. D. Andler, Head of the Department of Cognitive Studies at Ecole normale supérieure, Paris, France  
***The cognitive sciences perspective on Converging Technologies***
- 15:50 – 16:10: Dr. J. Smith, National Research Council (NRC) Office of Technology Foresight, Canada  
***Biosystemics, the Canadian Vision.***
- 16:10 – 16:30: Dr. R. Kneucker, Ret. Director General Research & International Affairs, Austrian Federal Ministry of Education, Science and Culture; Director of the "Gallery of Research" of the Austrian Academy of Sciences. Austria  
***Integrating the Social Sciences and Humanities dimensions in an expanded European vision***
- 16:30 – 17:00: Discussion  
Initiating Discussants: JP Tassin, T Gaudin

## **Session 2: The process of Convergence**

Chair: Dr. G. Küppers, Physicist and Social Scientist, Institute for Science & Technology Studies (IWT), University of Bielefeld, Germany

Issues: Three speakers will make a statement from their perspective on the realities of convergence, *Is ICT the focus of convergence, the catalyst to higher order applications, or a means to an end: Is NBIC about developing new efficient systems and services for people, and society as a whole, or just a technology push for a few? Also, current public opinion suggests that there are social and societal barriers to some of the visions outlined – how real are these, how informed are they and how can they be used as a force for good?*

- 17:00 - 17:20: Prof. J. Encarnação, Dr.-Ing. Dr. h.c. mult., Dr. E.h., Hon. Prof. mult; Fraunhofer IGD; Unicv. Darmstadt; Chairman, Information Society Technologies Advisory Group  
***The ICT perspective on Convergence.***
- 17:20 – 17:40: J.P. Dupuy, Philosopher, Ecole Polytechnique, Paris, and Stanford University, California  
***Can we shape Converging Technologies, or will they shape us?***
- 17:40 – 18:00: Prof. G. Gaskell, **to be confirmed**, Chair, EC Advisory Group Science and Society, Director of the Methodology Institute, Centre for Analysis of Risk and Regulation, Social Psychology Department, London School of Economics, UK  
***Converging Technologies and Science-Society***
- 18:00 – 18:30: Discussion  
Initiating Discussants: I Pearson, D Polsek

15 September

### **Session 3: Opportunities for Europe from the New Technology Wave**

Chair: Prof E. Fontela, Universidad Autónoma of Madrid; Hon Prof of Economics, University of Geneva, Italy; Visiting Prof University of Seville; Spain. Chairman of the Expert Group on Developing Foresight on Research/Higher Education Relation.

Issues: The novel and specific character of “converging technologies” (CT) opens up a wide area for technological development. Just as some CTs are rooted in the nano-scale and others are not, the resulting technical applications do not all share the same defining features. Yet, the mutually enabling technologies or knowledge systems favour particular technological opportunities. These suggest many features of CT applications, regardless of whether they originate within the European context or elsewhere. This session will debate the technological, economic and social implications of CTs: What might be the implications for Europe’s position in the world as a science and economic powerhouse? For the quality of life in Europe?

9:00 – 9:20: G. Ringland, CEO and Fellow, SAMI Consulting

***Four scenarios for Converging Technologies in Europe***

9:20 – 9:40: Dr. Michael Morgan, Chief Executive (Retired), The Wellcome Trust Genome Campus, Cambridge, UK

***Will Converging technologies impact European Quality of Life?***

9:40 – 10:00: Prof. W. Bibel, Professor of Intellektik, Darmstadt University of Technology, Germany and University of British Columbia, Canada.

***Potential impacts of Converging Technologies on cognition and social learning***

10:00 – 10:30: Discussion

Initiating Discussants: D. Fitzmaurice, A. Morato

**10:30 – 11:00: Coffee break**

### **Session 4: New research models**

Chair: E. Barbieri-Masini, Sociologist and Futurist, Professor Emeritus, Faculty of Social Sciences, Gregorian University, Rome, Italy

Issues: The continuous debate on the relations between scientific developments and societal aspirations and perceptions is a strong feature of the science system in European countries. Nanotechnology is attracting more and more attention from the public and a number of NGOs are already voicing their worries. The expert group tries to go beyond the traditional controversies opposing pro- and anti-technology groups. The group proposes to experiment with new ways of performing research in those fields where convergence moves fast and prospects are highly uncertain. This session will be focused on the research environments that need to be discovered jointly by scientists, policy-makers and other stakeholders in order to manage a smooth embeddedness of new (potentially highly disruptive) technological developments in our societies.

11:00 – 11:20 : J. Staman, Directeur, Rathenau Instituut of the Koninklijke Nederlandse Akademie van Wetenschappen, Netherlands

***Ethics beyond Committees***

- 11:20 – 11:40: O. Saxl, Chief Executive, Institute of Nanotechnology, UK  
***Avoiding the “GMO crisis” for Converging Technologies***
- 11:40 – 12:00: Prof. A. Nordmann, Institut für Philosophie, Technische Universität, Darmstadt, Germany; Adjunct Professor of Philosophy, University of South Carolina. USA  
***New European designs for R&D***
- 12:00 – 12:30: Discussion  
Initiating Discussants: F Roure
- 12:30 – 14:00: Lunch**

### **Session 5: Converging Technologies and the Current EU research policy framework**

**Chair:** R. Tomellini, head of unit, Nanoscience and Nanotechnology, DG Research, European Commission

**Issues:** The 6th EU framework programme funds research partnerships in a number of priority areas. This session will be devoted to a discussion between members of the expert group, research managers of DG Research and other Commission DG's and the audience on what research could be initiated now and how future developments of a CT research agenda be reflected at EU level.

14:00 – 15:30: A Round table with EC programme planners and managers on the recommendations of the Expert Group and possible take up into Research Agendas.

**Issues for Research Agendas**, Introduced by K Bruland with A. Nordmann.

**B. Rhode**, head of unit, Ethics and science, DG Research,

**A. Sors**, head of unit, Strategy and policy, Directorate Social sciences & humanities, foresight, DG Research.

**T Van der Pyl**, head of unit, Future and emerging technologies, DG Information Society,

**W. Cannell**, head of unit, Anticipation of scientific and technological needs: fundamental research; DG Research,

### **Closing Session: Opening Research policies to Converging Technologies**

**Chair:** Director, Directorate K, “Social Sciences and Humanities, Foresight”, DG Research, European Commission

**Issues:** This session will focus on the new themes and strategic issues that have resulted from the articulation of the report with policymakers and practitioners over the previous 5 sessions; and place them in the context of the developments of EU research policy for the period 2007-2013.

- 16:00 – 17:00: T. Bernold, Conference Rapporteur, K Bruland and A Nordmann  
***Strategic Themes and Implications for Policy***
- 17:00 – 17:15: Closing Remarks by Director, Directorate K

## Outputs

The inputs to the conference, the issues raised by the attendees, and the discussion of the sessions will form a part of a short “uptake” report that will review the way the Expert Group report is taken up by the scientific and the policy making community, and the issues that arise out of the discussions.

This report will be available soon after the conference, and will be mailed to all attendees, as well as being accessible via the web site.