EUROPEAN PARLIAMENT

1999

2004

Session document

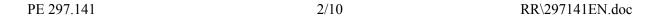FINAL
A5-0116/2001

2 April 2001

REPORT

on the Next Generation Internet: the need for an EU research initiative

(2000/2102(INI))

Committee on Industry, External Trade, Research and Energy

Rapporteur: Malcolm Harbour

EN

CONTENTS

Page

PROCEDURAL PAGE

At the sitting of 19 May 2000 the President of Parliament announced that the Committee on Industry, External Trade, Research and Energy had been authorised to draw up an own-initiative report, pursuant to Rule 163 of the Rules of Procedure, on the Next G*eneration* Internet: the need for an EU research initiative and the Committee on Culture, Youth, Education, the Media and Sport had been asked for its opinion.

The Committee on Industry, External Trade, Research and Energy had appointed Malcolm Harbour rapporteur at its meeting of 19 April 2000.

The committee considered the draft report at its meetings of 18 September 2000, 8 January, 27 February and 26 March 2001.
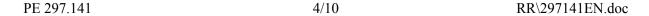
At the latter it adopted the motion for a resolution by unanimously.

The following were present for the vote: Carlos Westendorp y Cabeza chairman; Peter Michael Mombaur vice-chairman; Malcolm Harbour, rapporteur; Maria del Pilar Ayuso González (for Concepció Ferrer), Ward Beysen (for Colette Flesch), David Robert Bowe (for Glyn Ford), Felipe Camisón Asensio (for Paul Rübig), Gérard Caudron, Giles Bryan Chichester, Nicholas Clegg, Elisa Maria Damião (for Erika Mann), Willy C.E.H. De Clercq, Harlem Désir, Francesco Fiori (for Guido Bodrato) , Fiorella Ghilardotti (for Mechtild Rothe), Neena Gill (for Elena Valenciano Martínez-Orozco), Norbert Glante, Alfred Gomolka (for Konrad K. Schwaiger), Michel Hansenne, Roger Helmer, Hans Karlsson, Rolf Linkohr, Caroline Lucas, Eryl Margaret McNally, Nelly Maes, Angelika Niebler, Giuseppe Nisticò (for Umberto Scapagnini), Barbara O'Toole (for Massimo Carraro), Reino Paasilinna, Elly Plooij-van Gorsel, Samuli Pohjamo (for Astrid Thors), John Purvis, Godelieve Quisthoudt-Rowohl, Alexander Radwan (for Werner Langen), Bernhard Rapkay (for François Zimeray), Imelda Mary Read, Esko Olavi Seppänen, Helle Thorning-Schmidt (for Claude J.-M.J. Desama), Claude Turmes (for Ilka Schröder), Jaime Valdivielso de Cué, W.G. van Velzen, Alejo Vidal-Quadras Roca, Anders Wijkman, Myrsini Zorba.

The opinion of the Committee on Culture, Youth, Education, the Media and Sport decided on 13 September 2000 not to deliver an opinion.

The report was tabled on 2 April 2001.

The deadline for tabling amendments will be indicated in the draft agenda for the relevant part-session.

EN

MOTION FOR A RESOLUTION

European Parliament resolution on the Next Generation Internet : the need for an EU research initiative (2000/2102(INI))

The European Parliament,

–   having regard to Decision N° 182/1999/EC[1],

–   having regard to its resolution of 18 May 2000[2] on the Communication from the Commission to the Council, the European Parliament, the Economic and Social Committee and the Committee of the Regions 'Towards a European Research Area'

–   having regard to the conclusions of the Feira European Council meeting of 19 and 20 June 2000, SN 200/1/2000,

–   having regard to its resolution of 16th March 2000[5] on the Commission communication on "eEurope, An Information Society For All: a Commission Initiative for the Special European Council of Lisbon, 23 and 24 March 2000",

–   having regard to Rule 163 of its Rules of Procedure,

–   having regard to the report of the Committee on Industry, External Trade, Research and Energy, (A5-0116/2001)

A.   whereas the strategic importance of Internet development to the European economy and society, and the potential need for the EU to play a stronger role in developing the base technologies to support the next generation of Internet evolution is widely acknowledged,

B.   having regard to the importance which Internet development has for the countries currently preparing for accession,

C.   whereas there is a very strong need for Europe to accelerate the development of its electronic communication infrastructure, and to expand the use of mobile**,** as well as fixed**,** Internet-based applications throughout the public and private sectors**,**

D.   whereas there is a great need to enhance the creation of interoperable infrastructures for m-commerce, where m stands for multimodality, addressing the use of various communications channels and multiple types of access devices to the networks, both for businesses and individuals,

E.   whereas the Commission is now considering its allocation for IST in its proposal for the Sixth Framework Programme for research;

F.   whereas all areas of electronic communication technology and applications, including those that might operate outside the public "Internet" should be evaluated, taking into account the future segmentation of the market and the expansion of dedicated
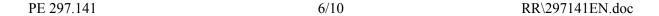
---

[1] OJ L 26,1.2.1999
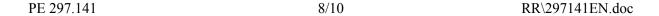[2] OJ C 226, 8.8.2000, p. 18
[5] OJ C 377, 29.12.2000, p. 184

communication networks, alongside the public network infrastructure,

G. whereas the EU should focus attention on medium and long term technology scenarios, and consider the potential areas where "pre-competitive" research would be desirable from the perspective of public interest and the EU's competitive position,

H. whereas in such a fast moving area it should be noted that the majority of the research will be funded by the marketplace, although there is scope for public investment (particularly in partnership with industry) for areas of technological risk and uncertainty,

I. whereas public sector research should be supported because they address distinctive public interest issues, which may not be covered by commercial funding or where the independent perspective of a public body is desirable,

1. Calls on the European Commission and the Member States to give an EU research initiative on the next-generation Internet and new communications infrastructure (and associated electronic communications) a high priority in the 6th Framework research strategy;

2. Emphasises that EU and Member State resources should focus on pre-competitive projects, with the objective of ensuring a powerful EU presence in the global development of next generation internet and new communications infrastructure, reinforcing the EU's role in Internet governance, especially on technical matters

3. Emphasises the importance of the support the Union has a duty to give developing countries so that they are better represented in the body that manages the Internet and in order to combat the digital divide;

4. Strongly supports the strategy for encouraging 'Centres of Excellence' in the Commissions' proposals for a European Research Area, as already set out in Parliaments' resolution considers that Electronic Communications must become one of these 'Centres';

5. Commends the Commission on its existing strategy for developing broadband infrastructure capability, but notes that robust research plans are needed to exploit this capability. Such initiatives may include:

   - integrating the Géant initiative with the work of the European Investment Bank, Structural Funds, other Community instruments and the work of Member States,

   - consolidating and developing the Géant infrastructure, and co-ordinating available resources to ensure that it fulfils its potential,

EN

- using globally competitive testbeds for research and development on new Internet technologies, products and services;

- creating the necessary conditions for value-added services within such networks;

6. Emphasises the Commission's task of overseeing the rapid creation of a superfast trans-European research network with a capacity of 100 gigabits/second, without which it will not be possible for a competitive, dynamic and knowledge-based economy to become a reality; calls on the Commission to be more ambitious when implementing the Géant project;

7. Re-affirms that all EU research initiatives on the next generation internet and new communications infrastructure must complement, not substitute for, market-driven research; supports the concept of partnership research ventures with the private sector, where appropriate, but stresses that the sector is evolving so fast that great care must be taken to ensure measures are technology-neutral;

8. Notes that technical and scientific activities should be co-ordinated with the broader political and social issues encompassed in the e-Europe strategy, backed by research where appropriate;

9. Considers that the following key areas of the Internet's evolution should be factored, inter alia, into any research strategy:

- the availability of abundant, low-cost, expanded high bandwidth infrastructure to which access is on equitable terms;

- a requirement for a significant improvement in the quality of Internet delivery (its speed, reliability, and security), and its 'value added' potential (e.g. collecting payment, handling customised requirements);

- an increase in the number of remote device connections, operating automatically, without user intervention (e.g. connecting baby monitors, domestic appliances, automobiles);

- a large escalation in the amount of wireless communications;

- the emergence of many dedicated service channels (i.e. the conventional 'Internet' will become just one service among many);

10. Urges the EU to promote research and coordinated development efforts inter alia within the following areas of exploitation of electronic communications infrastructure with high capacity, always-on connections and high mobility:

- interoperability and open architectures;

- the effective use of the capacity offered by expanded bandwith opportunities ;

- the optimum types of software and hardware to be used, leading to potential new

standards;

- the further development of photonics technology for the communications infrastructure, particularly to relieve the potential bottleneck in switching and routing*;*

- the new architectural framework of a very high capacity Internet;

- how a high capacity backbone network will interface with the mobile infrastructure;

- how content delivery, availability and security will be managed;

- how information search and retrieval can be facilitated;

- a distributed Domain Name Server route-service under the control of separate commercial entities

11. Stresses that e-participation and e-accessibility must be paramount in the research and development initiatives that are to make the Net accessible to all; considers that international co-operation to provide standards and guidelines for easy access for those with special needs, such as the disabled and elderly, should be developed (WAI - Web Accessibility Initiative);

12. Notes that a key issue for the future evolution of the Internet, which must continue to be, addressed by EU research initiatives, is data and system security**,** especially resistance to malicious attack;

13. Urges the EU to promote research into the following areas:

- Peer to Peer models and open source content

- means of protecting device generated data, including the need for discreet data "encapsulation" to avoid unauthorised consolidation of private information;

- a consistent legal framework in the area of internet security which, inter alia, provides for a more coherent and trustworthy encryption policy within the EU

- solutions to the growing privacy issues from 'infinite store and search capability';

- the concepts for an evolved Internet infrastructure with well-developed, in-built security mechanisms, which would enhance content protection and system integrity from external attack**,** especially in the case of mobile systems using wireless links;

- open-source encryption systems in the area of security;

- possible health risks associated with electro-magnetic radiation, and the optimum means of minimising consumer risk as usage expands;

EN

14. Notes the importance of developing technologies that will facilitate the expansion of wireless commerce, and therefore supports research into the following areas:

   - the evolution of mobile phones into "purses", which will greatly facilitate 'electronic money' purchases of goods and services, including secure interface technologies such as optical wireless links;

   - the use of mobile phones as a mean of identification which could provide the security systems in many organisations;

   - the concepts for a sales tax collection infrastructure across Member States, so as to facilitate wireless commerce and avoid "double taxation";

   - much enhanced security for the wireless transmission of highly confidential records, such as financial and health information, noting the potential benefits of emergency access to health records

15. Urges that research into the development of alternative web-browsers be promoted;

16. Notes that enhanced backbone networks give the potential to stream a large number of Real Time Digital TV services, both public and private;

17. Recognises that the potential to stream broadcasts to fixed and mobile Internet users offers high potential for EU technology leadership;

18. Believes that transmission selection and charging systems must be considered as a high priority for pre-competitive research and development;

19. Instructs its President to forward this resolution to the Council and Commission and to the Governments and Parliaments of the Member States.

EN

EXPLANATORY STATEMENT

BACKGROUND

The following scenarios, developed from discussions with interested parties, form the background to the report:

- Very large amounts of bandwidth available at competitive costs;
- Increasing demand for secure data delivery by new routings, with guaranteed integrity and possible revenue collection packaged together;
- Sharp increase in connections from personal devices, delivering system messages independently across networks, e.g. car navigation and system monitors, house security systems, domestic appliances;
- New wireless enabled communications, based on conventional Internet but expanding into other network forms tailored to wireless device capability;
- Public "Internet" will be just one of many applications in the communication spectrum.

RESEARCH ISSUES IN RESPONSE TO THE SCENARIOS

- "Abundant Bandwidth" Concepts - What will be the optimum software and hardware technologies and configurations to exploit high bandwidth availability? Will removal of constraints on bandwidth require entirely new approaches? What enablers will be needed to provide secured information delivery and revenue collection? How will the interface with mobile networks be managed?
- Data and System Security - How will random "device generated" data be secured against unauthorised access? How will personal data protection need to evolve when remote search and retrieval are multiplied by bandwidth availability? What will be needed to secure systems from external attack?
- Wireless Commerce Enablers - Wireless commerce could evolve very quickly as handheld devices become integrated with "electronic purses". How will existing security infrastructures handle wireless "cash" transactions? How will sales tax issues be handled? How will confidential records (e.g. health information) be made available in emergencies?
- Real Time Streaming - Very high bandwidth makes digital TV streaming commercially viable (radio streaming is already extensively used on the Internet). How will digital TV products be selected from a delivery pipeline and how will revenues be generated? How can digital TV and radio streaming be extended to wireless systems?

The resolution supporting this explanatory statement confirms the EP's support for selective public research in these key areas. This report will form an important input into the strategic debate on 6th FPRTD priorities. It will be important to ensure that the technical and scientific work in this area is supported by other projects examining the social and policy issues surrounding enhanced electronic communications usage.

EN