



EUREKA – A cornerstone of the European research and innovation area

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The views expressed in this document have no legal basis and are based on the experience of their contributors and on the discussion maintained during the EUREKA lunch at the European Parliament hosted by Mrs. Doyle on the 7th February 2006

“Competitiveness of tomorrow depends on research and innovation today”

- EUREKA Czech Chairmanship, EUREKA Forum, October 2005 –

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1. EXECUTIVE SUMMARY

When compared with China, India and the USA, the EU has low productivity and sluggish economic growth. The Lisbon strategy was developed to deal with these weaknesses. Increasing the level of European R&D is seen as central to improving the innovation and economic potential of the continent.

Reform is needed in both national and European economic policy, and the instruments used. It is vital that Member States and EU measures complement each other to make Europe the ideal continent for companies to carry out R&D and manufacturing, and to make Europe the location of first choice for European (and non European) researchers.

EUREKA is a pan-European initiative which is ideally formulated to contribute to the growth of market-lead research and development. The EUREKA Initiative can assist businesses of all sizes, as well as research centres and universities which conduct applied research. EUREKA brings these organisations together to develop innovative products, processes and services. Through its well-established collaborative research networks and proximity to the market, EUREKA is well placed to promote and facilitate public and private investment in R&D, bringing Europe closer to achieving the objective of 3% GDP investment in research and innovation.

This report describes the EUREKA Initiative, highlights its contributions to European R&D and illustrates some potential complementarities that exist between EUREKA, the Framework Programmes (FP) for Research, Technological Development and Demonstration, and other actors of the European Research Area (ERA). The forthcoming Seventh Framework Programme (FP7) (2007-2013) may provide further opportunities for successful collaboration between EUREKA and other programmes and initiatives

supporting collaborative R&D at the EU level to promote innovation, create jobs and boost economic growth in Europe. According to the contributors of this report, there are growing opportunities for EUREKA and FP to work closely together to enhance the effectiveness of European collaborative R&D.

The March 2006 European Council and subsequent high level meetings of European policy makers have stressed the importance of Member State support for cooperation between EUREKA and other related R&D and Innovation programmes, notably FP7. Two initiatives currently being developed will play a vital role in this: the **Eurostars** programme will offer funding support to high R&D performing SMEs; and a complementary initiative for large companies will provide **collaboration between EUREKA Clusters and Joint Technology Initiatives (JTIs)**. Both initiatives will be needed if Europe is to get closer to meeting the goals established in Lisbon in 2000.

2. INTRODUCTION

European industry, national governments and the EU Institutions all agree that research and innovation are crucial preconditions for economic development, future growth and competitiveness. However, given the challenges brought about by globalisation, as well as constant changes in the political and economic landscape of Europe, the EU needs to improve its R&D and innovation performance to be able to compete successfully in future global markets.

The objective of this report is to raise awareness of the EUREKA Initiative among politicians and parliamentarians of Europe and to illustrate some complementarities that exist between this Initiative and other European R&D programmes. A number of suggestions as to how these programmes may collaborate and contribute towards achieving common objectives to improve R&D and innovation in Europe are presented in this paper.

This paper is the result of a consultation with Members of the European Parliament (especially the Industry, Research and Energy Committee), Representatives of the European Council Secretariat, Science Technology Options Assessment Committee of the European Parliament, European Commission Representatives, Members of the European Union Scientific and Technical Research Committee (CREST), Members of the Joint Research/Atomic Questions Working Party (RAQ), the EUREKA Czech Chairmanship (July 2005 – June 2006), the EUREKA High Level Representatives, the EUREKA Advisory Committee, the Head of the EUREKA Secretariat, the Rapporteur of the Aho Report, and EUREKA Clusters and Umbrellas Chairmen.

Partnerships between the EUREKA Initiative and the Framework Programmes for Research and Technological Development, referred in this document as the Framework Programmes (FP), have been built over many years by virtue of the fact that the European Commission is a member of the EUREKA Initiative. Collaboration between the initiatives should be strengthened in those areas of clear complementarity where they can learn from each other's success and experience with the final objective of generating a greater impact in European industrial competitiveness and innovation.

Examples of possible collaboration can be found in the current 7 Framework Programme proposal by the European Commission which includes clear actions to enhance the complementarities and synergies between the Framework Programme and EUREKA. It also includes EUREKA projects as part of those large initiatives that may benefit from the "Risk-Sharing Finance Facility" set up by the Community to provide a grant to the EIB addressed to European RTD actions.

3. EUREKA AND THE FRAMEWORK PROGRAMME

3.1. COMMON OBJECTIVES

3.1.1. EUREKA's role in Europe

Created as an intergovernmental Initiative in 1985, EUREKA aims “to raise, through closer cooperation among enterprises and research institutes in the field of advanced technologies, the productivity and competitiveness of Europe's industries and national economies on the world market”.¹

The objectives of EUREKA² are to:

- Facilitate the generation of market-oriented innovative projects by supporting cooperation between small and large companies, research institutes and universities.
- Offer an easy access to international cooperation, through a network of national agencies and departments or ministries.
- Supporting strategic projects by offering an appropriate platform to industry to initiate the discussion on strategic areas. Members can therefore initiate dialogue
- Increase participation of Small and Medium-sized Enterprises (SMEs) by assisting in establishing partnerships and building co-operative R&D networks of industry, SMEs, universities and research institutes.
- Involve Central and Eastern European countries by aligning the existing R&D potential of CEE countries with market requirements, and integrating CEE enterprises into high-tech joint ventures.
- Open EUREKA to world-wide co-operation by promoting EUREKA in non-European countries as a valuable partner for technological co-operation with European companies.
- Increase the awareness of EUREKA effectively through activities at the national level and concerted actions at the Network level in order to facilitate the generation of new projects.
- Improve the efficiency of the EUREKA Network and continuous dialogue with industry and the scientific community by ensuring better co-operation with other initiatives (the Framework Programme of the EU, COST and other multilateral schemes) for the benefit of European citizens.
- Provide funding where appropriate from EUREKA members and provide better access to sources of private funding for innovation. To this end, the participation of banks and other financial institutions is to be further encouraged and monitored. Efforts are undertaken to increase availability of equity financing, venture capital and seed money.

¹ Declaration of Principles relating to EUREKA, Hanover, 6 November 1985, p.1

² Based on “The Guidelines EUREKA 2000plus”, of the 18th Ministerial Conference in Hanover, 23.06.00

3.1.2. EU R&D Programmes

3.1.2.1. The Framework Programmes

Since 1984, the European Union's research and innovation activities have been bundled together in a single programme, known as the Framework Programme (FP). The FP is proposed by the European Commission and adopted by the Council of the European Union and the European Parliament following a co-decision procedure. The current FP is the Sixth Framework Programme (FP6), which will run until the end of 2006. The Seventh Framework Programme for Research and Technological Development (FP7) will run from 2007 until 2013. The general policy objectives of the Framework Programmes are specified in the Treaties.³

3.1.2.2. COST

COST (European Cooperation in the field of Scientific and Technical Research) is an intergovernmental framework for coordination of nationally-funded research at a European level, based on a flexible institutional structure. COST operates on the basis of networks called Actions covering basic and pre-competitive research as well as activities of public utility. Founded in 1971, some of COST's early Actions have helped pave the way for other European research programmes, such as the EU Framework Programmes, running from 1983, and EUREKA, launched in 1985.⁴

Since 2005, COST includes a total of 4132 institutions from 56 countries⁵, extending its collaboration network beyond the borders of the EU, making it an important tool for research in the fields, where cooperation on newly emerging or multidisciplinary scientific topics is desirable. As such, it continues to play an important role in scientific and technical cooperation in Europe – encouraging European synergy and networking and helping to further European integration – a crucial element in ERA.⁶

3.1.3. Contribution to the creation of ERA

The creation of a European Research Area (ERA) has been proposed by the Commission and endorsed by the European Parliament and Council to overcome the fragmentation of Europe's efforts in the area of research and innovation.

The three broad objectives of ERA⁷ are:

1. The creation of an "internal market" in research, an area of free movement of knowledge, researchers and technology, with the aim of increasing cooperation,

³ Based on the European Commission's contribution to the report

⁴ Based on the General presentation of COST, as presented in the COST Vademecum, Available at: <http://www.cost.esf.org/index.php?id=38>

⁵ COST Annual Report 2005, p.27, Available at: <http://www.cost.esf.org/fileadmin/publications/06-01.pdf>

⁶ 2006 About COST, April 2006, Available at: <http://www.cost.esf.org/fileadmin/publications/06-02.pdf>

⁷ 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" COM (2000) 6 - 18.01.2000

- stimulating competition and achieving a better allocation of resources;
2. A restructuring of the European research landscape, in particular by improved coordination of national research activities and policies, which account for most of the research carried out and financed in Europe;
 3. The development of a European research policy which not only addresses the funding of research activities, but also takes account of all relevant aspects of other EU and national policies.

With regard to the first objective, EUREKA, COST, the Framework Programmes, and other EU R&D programmes contribute to the creation of a market, in which researchers, technology, and knowledge can move freely. EUREKA, through its market-oriented, industry-driven approach to research, allows for a dynamic participation of a variety of stakeholders in individual and collaborative projects. For example, in 2005, EUREKA generated 181 individual projects, 57 Cluster projects and 3 new Umbrellas. Likewise, through the European Technology Platforms and other networks, the Framework Programme involves a wide spectrum of the research community. Together with new and developing instruments for increasing the mobility of people, they contribute to the creation of a true European market of research.

To assist the coordination of national research activities and policies, the second objective of ERA, EUREKA enables EU national policymakers to support their local enterprises in trans-national collaboration, thus creating regional growth and employment whose positive effects are shared by the European community at large.

Regarding the third ERA objective, to develop a real European research policy, EUREKA contributes to creating a dynamic European landscape, increasingly open and attractive to researchers and investment. EUREKA gave initial impetus for the integration of the scientific communities of Western and Eastern Europe. Most Central and Eastern European countries were given the opportunity to gain experience in European research collaboration via EUREKA from the early 1990s, a decade before their accession to the European Union and thus had the ability to take part in the Framework Programmes. Improved cooperation between national and European research programmes, and tackling the questions of science and society in their European dimension, contribute to the creation of an ERA of shared values and vision.

In the long term it is necessary to create more coherence between national and European R&D strategies. This will prevent overlap in key thematic areas and avoid the fragmentation of academic, industrial and governmental activities.

3.2. EUREKA STRUCTURE

3.2.1. EUREKA Members and Approach

The EUREKA Network counts 36 members, three National Information points (NIPs) and one Associated Country (AC). Austria, Belgium, Croatia, Cyprus, The Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Latvia, Lithuania, Luxembourg, Monaco, The Netherlands, Norway, Poland, Portugal, Romania, The Russian Federation, the Republic of San Marino, Serbia and Montenegro, The Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey, The United Kingdom and the European Union are full Members. Albania, Bulgaria and Ukraine are NIPs and Morocco is an AC. The EUREKA Secretariat (ESE) in Brussels is an international association which acts as the central support unit for the Initiative. The ESE manages the EUREKA project database and undertakes marketing, communications and network-development activities.

EUREKA is an inter-governmental Initiative, which functions through a network of 36 National Project Coordinators (NPCs), one of them being from the European Commission, presently at DG Research. NPCs, usually based in the relevant ministry or government agency of each member country, provide market knowledge, scientific expertise, general information and support and facilitate access to national funding. High-level representatives (HLRs), acting on behalf of ministers, meet three to four times a year to decide on the endorsement of projects which are eligible to receive the internationally recognised EUREKA label. The structure of EUREKA is “bottom-up”, which means that the project participants, mainly SMEs, research centres and large companies, dictate the way the project comes together, its duration and the amount of money invested in it. Such a structure allows for flexible frameworks of cooperation between all market participants and facilitates delivering market-oriented results via well-targeted projects.

3.2.2. Accessibility / Rules of participation

A EUREKA project is implemented by at least two partners (companies, research laboratories etc.) located in at least two of the current 35 EUREKA member countries, and aiming at the innovative development of a product, process or service, clearly intended to deliver ready-to-market results. The partners must be ready to collaborate to achieve the stated goals and express significant financial engagement to progress their initiative. Such structures facilitate the transfer of new knowledge and advanced technologies throughout Europe, permit industrialists to propose projects on different market-dictated topics, help to extend experience of friendly cooperation in research beyond the limits of the EU and create long-lasting international contacts that serve as a base to start further projects with different, wider scope in EUREKA or in other EU R&D programmes.

3.2.3. Duration

The simple rules and minimal bureaucracy involved in the participation of a EUREKA project allow very rapid processing of proposals by EUREKA project members. In 60% of cases, EUREKA is able to assign its label in just four months from the date of submission. This allows for development of marketable products in three to four years. On average, a EUREKA project lasts 30 months, includes three to four participants and costs €2 million.⁸

EUREKA's unique position, long-standing experience of European research and innovation, flexible structure and close approach to the needs of market participants, allows the Initiative to adapt more quickly to their needs and thus deliver better targeted and marketable products, processes and services.

EUREKA acts as a successful platform through which companies can initiate networks, support the ERA and participate in other collaborative R&D programmes.

3.3. RELATIONSHIP BETWEEN EUREKA CLUSTERS AND UMBRELLAS AND EUROPEAN TECHNOLOGY PLATFORMS

3.3.1. EUREKA Clusters and Umbrellas⁹

EUREKA Clusters are long-term, strategically significant, industry-led initiatives, aimed at developing generic technologies of key importance to European competitiveness. Initially concentrated in the ICT sector, these programmes played and continue to play a key role in the construction of efficient cooperation throughout the value chain, e.g. by generating synergies between manufacturers of equipment for semiconductors, hardware producers, semiconductor manufacturers, electronics companies and design houses. At present, eight EUREKA Clusters, in areas ranging from microelectronics to sustainable energy, are operational, and two Clusters, in biology and medicines, are in the definition phase.

Name	Area	No. of projects	Amount (€Million)
MEDEA+	Microelectronics	68	3,786
ITEA	Embedded Systems	82	1,420
CELTIC	Telecommunications	26	138
EURIMUS II	Microsystems technology	26	162
PIDEA+	Packaging and interconnections	34	281
EUROGIA	Sustainable energy	4	25

⁸ 1985-2005 20 Years statistical presentation

⁹ Detailed examples of EUREKA Clusters and Umbrellas can be found in the Annex to this report

Name	Area	No. of projects	Amount (€Million)
FACTORY DNA	Sustainable manufacturing	1	10
EUROFOREST	forestry	6	9

Source: EUREKA database as of May 2006 (finished and running projects)

Figure 1: EUREKA Clusters in 2006

Clusters involve large number of participants bringing large and small stakeholders together, not only do they allow the sharing of risks and benefits of innovation, but play a key role in promoting a particular industrial sector and can successfully persuade national governments for financial support.

EUREKA Clusters work on the basis of a four-year established roadmap defining the most important strategic domains. Cluster projects are developed and encouraged through regular calls for participants from around Europe, to meet the needs of this strategic review. Each year the roadmap is updated in order to respond better to the rapidly changing technological development. Such flexibility allows for maintaining leadership in specific areas, while encouraging participants to prolong their commitment.

EUREKA Umbrellas are networks that focus strategically on a specific thematic area of technology and create pan-European synergies between organisations. Their key objective is to facilitate the generation of EUREKA projects in their own target area, bringing together cross-sector stakeholders with common objectives.

Name	Area	No. of projects	Amount (€Million)
FACTORY	Manufacturing	135	523
EUROENVIRON	Environmental technologies	138	318
EUROAGRI+	Agriculture, Food, and Feed	29	47
EUROTOURISM	Tourism	17	38
LOGCHAIN	Freight transport	17	32
EULASNET	Laser technologies	12	18
ECONTEC	Digital media technologies	2	3
INNOFISK	Fish breeding		Starting
ENIWEP	Tribology		Starting

Source: EUREKA database as of May 2006 (finished and running projects)

Figure 2: EUREKA Umbrellas in 2006

The funding for new projects that reinforce the working of the Clusters and Umbrellas is ongoing and sums offered reflect the size of the project. As stated before, all EUREKA projects concentrate on pre-industrial R&D and are designed to produce marketable results quickly.

3.3.2. Complementarities with European instruments: ETPs and JTIs

European Technology Platforms¹⁰ (ETPs) focus on strategic issues where achieving Europe's future growth, competitiveness and sustainability depends upon major technological advances. They bring together stakeholders, led by industry, to define medium to long-term research and technological development objectives and lay down markers for achieving them. The success of ETPs is based on such factors as: flexibility, clear rules of participation, wide stakeholder involvement, strong commitment of national authorities, mobilisation of private and public funding, and real Community added value.¹¹ The achievement of these objectives will significantly improve the daily lives of the European citizen in many areas.

European Technology Platforms follow a general three-stage roadmap; first, stakeholders get together to identify their vision for the future development of the field concerned and launch the Platform; second, the Strategic Research Area (SRA) is defined; and third, the SRA is implemented, with clear operational and financial commitment from the stakeholders. The vision document adopted at the launch of ETPs delivers a 10-, 20- and sometimes 50-year perspective on the given technology. Regular meetings allow the stakeholders to define the SRA and change its scope. In ETPs, the results of the collaborative research becomes operational only at the last implementation stage of the platform development, at which point suitable financial support and collaborative research instruments are sought.

To be introduced in the forthcoming FP7, **Joint Technology Initiatives** (JTIs) are designed to further the key projects. JTIs are coherent, large-scale structures, which can be set up to support the implementation of a part of a limited number of research agendas, which are of such ambitious scale that the mobilisation of very high public and private investments, as well as huge material and human resources are necessary. The European Satellite Navigation Project, GALILEO, in its development phase of A&B, is an example of a JTI. Since JTIs aim at the implementation of a key project with a clear objective to introduce an innovation to the market, EUREKA Clusters and Umbrellas are closer to JTIs than ETPs. At the same time, the possible synergies between both instruments should preserve the autonomy of EUREKA schemes.¹²

¹⁰ Based on the leaflet published by the European Commission "European Technology Platforms – knowledge for growth" 2005

¹¹ "Development of Technology Platforms – Status report", European Commission, DG Research, February 2005, p4, Available at: http://www.fp6.org.tr/web/e_dokuman/FP7/tps_status_report_final_090305.pdf

¹² Based on the Portuguese contribution to the report

EUREKA Clusters are currently participating in some of the European Technology Platforms and contributing to define medium to long-term research and technological development objectives. For example, the EUREKA Cluster MEDEA+ is a member of the ETPs ARTEMIS and ENIAC, while the EUREKA Cluster ITEA 2 is a member of the ETP ARTEMIS. The new EUREKA initiative EURIPIDES will be strongly linked to the ETP of Smart System Integration EPoSS and the EUREKA Cluster CELTIC will support the ETPs NEM, e-mobility and possibly NESSI in the future.

The EUREKA experience suggests the following:

- The objectives set for the ETPs and those of the industry participants of EUREKA Clusters and Umbrellas, are very similar. Taking into account the successes already achieved by EUREKA Clusters in involving multiple stakeholders, attracting national funding and securing long-term operational and financial commitment and thus increasing the R&D investments of European industry, the cooperation and sharing of expertise between the two can bring a great benefit to European industry and citizens.
- ETPs and JTIs should benefit from EUREKA's experience to create networks of participants close to the market, and thus be responsive to the changing nature of the technological development in Europe and in the world.
- Continuity in ensuring a faster transformation of knowledge into innovation for the benefit of the European economy may be achieved through a closer cooperation between EUREKA Clusters, EUREKA Umbrellas, ETPs and JTIs.
- EUREKA and FP need to cooperate further to secure better and equal involvement of SMEs or their associations in Clusters, network initiatives, and collaboration activities.
- The contribution of EUREKA Clusters in the new context of the ETPs, and JTIs, should be further enhanced using the possibilities of Article 171 of the Treaty.

Suggestions from the EUREKA Working Group "Positioning EUREKA Clusters and JTI's in the field of Information Communication Technologies (ICT):

- To create better links between EUREKA Clusters in the field of ICT and ETPs in similar areas, including potential JTIs using the potentialities of Art. 171.
- To build on the assets of EUREKA Clusters in the ICT field and their experience, in the well understood goal to reinforce the European industrial competitiveness.
- To support the concept of JTI, notably in the area of Nanoelectronics (ENIAC) and Embedded Systems (ARTEMIS).
- When a JTI and a Cluster address the same part of an SRA, they should try to define common roadmaps for calls, coordinating their calls whenever possible. The JTI and the Cluster may issue calls for proposals on different parts of the SRA.
- EUREKA Clusters are asked to consider projects that passed the JTI technical evaluation but cannot be financed within the JTI. In this case, evaluation

procedures and labellisation within the EUREKA Cluster should rely as much as possible on the evaluation performed within the JTI framework.

- Member States should make best efforts to synchronize the timing of national procedures to start the selected projects, both for JTIs and EUREKA Clusters.

3.4. PARTICIPATION OF SMEs

The European Union's SME¹³ population is extremely large and very heterogeneous. There are some 23 million SMEs in the EU, providing around 75 million jobs, and with their contribution of up to 80% in employment in industrial sectors, such as textile, construction or furniture, they are a key element of European industry.¹⁴

3.4.1. SMEs in EUREKA

Under the EUREKA Initiative, SMEs participate in equal proportion with large companies as well as research centres and universities to lead and be part of EUREKA projects, representing a significant advance in their particular sector.

EUREKA assesses the technological capacities of participating SMEs to ensure they can commercialise their research results faster in the market and move often from the start-up phase to that of a growing company. In 20 years of EUREKA's existence, 1,125 SMEs have participated in individual and Cluster projects, which represents over 40% of the total participants of EUREKA projects.¹⁵

The benefits of SME participation in EUREKA stem from the fact that EUREKA has a strong involvement of innovative high-tech SMEs¹⁶ in its projects. Moreover, EUREKA provides involvement in large, collaborative projects, where resources and know-how as well as the risks associated with the innovation process can be shared between the participants. The EUREKA Network provides easy access to projects, and flexible and simple mechanism of participation which is attractive to SMEs. Finally, EUREKA recognises each year with the "Lynx Award" a fast-growing, high-tech SME that has recently brought a successful innovative venture to the market.

3.4.2. SMEs in EU R&D Programmes

¹³ EU defines SMES as an enterprise with less than 250 employees with additional criteria related to turnover and independence

¹⁴ Based on the Speech by Mr. Mario Ohoven, CEA-PME President, Confédération Européenne des Associations de Petites et Moyenne Entreprises, 6 December 2005, Available at: http://cea-pme.org/index.php?option=com_content&task=view&id=40&Itemid=40

¹⁵ EUREKA 20 years Anniversary Report

¹⁶ High Tech SME has an in house R&D capability that can contribute to the technological aspects of a project, both enabling and application technology. On the other hand, a Low Tech SME is a potential end user of an application or service which will enable it to develop or optimise their existing business.

SMEs have two possibilities for participating in the EU Framework Programmes. First, there are specific programmes reserved for them: cooperative (CRAFT) and collective research. Second they may participate in the other thematic programmes that are open to all firms.¹⁷

Research for the benefit of SMEs includes actions designed to support SMEs or SME associations in need of outsourcing research to universities and research centres. Extending SME networks, better exploiting research results and acquiring technological know-how are also supported. The target group is mainly low to medium tech SMEs with little or no research capability, although research-intensive companies in need of complementing their core capabilities may also participate.

In a parallel initiative to FP7, the Competitiveness and Innovation Programme (CIP), to run for the period 2007-2013, will provide support to networks of intermediaries and national schemes for actions to encourage and facilitate the participation of SMEs in the Framework Programme. Especially the Entrepreneurship and Innovation Programme, one of three specific initiatives included in CIP, will provide the instruments to develop and sustain a supportive environment, ensuring that SMEs in particular can benefit from simple, clear and efficient access to the programmes and opportunities offered by the EU.¹⁸ Compared to the Framework Programmes, CIP will not formally be bound by the pre-agreed priorities and it will have a different objective as it will partly focus on later stages of the innovation process and partly continue the existing small-scale programmes.¹⁹ While the extent of CIP's success in widening the notion of innovation remains to be seen, EUREKA's experience and ability to include both private and public actors in a project could be of benefit.²⁰

In addition, to involve SMEs in the policy-making process at an early stage, the Commission communication from November 2005 proposes specific action promoting entrepreneurship and skills, better SME access to markets and growth potential, and cutting red tape.²¹

Both EUREKA and the Framework Programmes recognise the importance of dynamic SMEs as a key element of creating a successful knowledge economy.²²

¹⁷ "EURAB report on SME and ERA", EURAB 04.028-final, European Research Advisory Board, Available at: http://ec.europa.eu/comm/research/eurab/pdf/eurab_04_028_sme_era.pdf

¹⁸ "Competitiveness and Innovation Programme 2007-2013" COM (2005)121, 06.04.2005, Available at: http://europa.eu.int/comm/enterprise/enterprise_policy/cip/docs/com121_en.pdf

¹⁹ Based on the contribution of the General Secretariat of the Council of the European Union to the report

²⁰ Based on the contribution of the General Secretariat of the Council of the European Union to the report

²¹ "Implementing the Community Lisbon Programme - Modern SME Policy for Growth and Employment" European Commission Communication: COM (2005)551 final, 10 November 2005

²² Based on the Speech by Mr. Mario Ohoven, CEA-PME President, Confédération Européenne des Associations de Petites et Moyenne Entreprises, 6 December 2005

	EUREKA projects
SME involvement	> 40%
Type of SMEs involved	No focus
Special Treatment	None – on a par with other project participants
Special Measures	Eurostars programme (in preparation) dedicated to research performing SMEs, with proven potential for growth

Figure 3 – SME participation in EUREKA

EUREKA targets all kinds of SMEs with proven ability to secure the EUREKA quality label for their project. Innovation increasingly requires close links with customers, suppliers and with regulators who shape the market. In this open innovation system, the kind of cooperation supported by EUREKA is even more important.

By exchanging experiences and learning from the success of EUREKA involving of SMEs in R&D projects, EUREKA and FP can achieve the objective of mobilising SMEs towards the completion of the Lisbon objectives.

The EUREKA experience suggests the following:

- The open-innovation initiative, bottom-up as well as top-down, needs to be encouraged, so that technology developments can be supported by infrastructure at the European as well as National level to allow industry and SME participants equal access to this innovation process.
- Research-performing and innovative SMEs will be amongst the drivers of economic growth for Europe in the future. It is essential that this group collaborates internationally.
- To foster competition in the market, create employment and maintain a high level of growth, SMEs need to be on an equal platform with large industry. The Eurostars programme (Art. 169) proposes greater SME contribution to competitiveness in Europe.

3.5. FUNDING SCHEMES

3.5.1. EUREKA funding

EUREKA funding comes from the national research and development budgets of the member countries, decided autonomously according to their own procedures. Participating countries can allocate a considerable amount of public funding for EUREKA projects as well as extending support to the National Project Coordination centres, which administer the projects by preparing proposals, evaluating its funding possibilities and investigating its

results. The national funding can be received under different conditions, such as grants or loans. In this, they are similar to the Framework Programmes.

In many Member countries, EUREKA projects can compete for funding supervised by several Ministries, or one national ministry supported by federal counterparts. For example, in the Czech Republic, the Ministry of Education, Youth and Sports, responsible for the international collaboration of the Czech Republic in R&D, includes particular funding means in its budgetary chapter. This specific support is provided from the state budget in the form of a grant (i.e. non-returnable loan) to organisations ranging from large industry through SMEs to research institutes and universities.²³

Given that the EUREKA label can be assigned to projects in just four months from the date of submission, national policy-makers have the opportunity to revise their financial contribution to EUREKA on an ongoing basis. This way, annual budgets can be more responsive to the needs of market participants. Such a situation occurred in Estonia in 2005, where the national budgetary allocations fell short of a sharp rise in interest among entrepreneurs towards undertaking ambitious R&D projects, resulting in a number of EUREKA projects slightly lower than optimal. Having learned from this, Estonia has planned a remarkable rise in national resources to be used on international projects in the next financing period.²⁴

	EUREKA projects
Selection criteria	Operational minimum
Member State support	National and annual Direct – EUREKA funding allocations included in the national budgets
Grants	Variable – following national rules
Funding form	Grants, non-refundable loans
Support for risky projects	From national budgets and private sources
Ability to revise the research funding	Annual as member countries can adjust their budget

Figure 4 – EUREKA funding

Programmes jointly implemented by several Member States can be co-funded by the national funding bodies and the European Commission. This is the area where EUREKA and FP have common ground. Co-funding of projects approved by the High Level Group of the EUREKA Initiative is carried out once in a year in the form of tendering a selection procedure. Each country can participate in these projects according to rules established by the national funding authorities. It is common for countries to support projects in which

²³ Based on Czech contribution to the report

²⁴ Based on Estonian contribution to the report

local companies or institutes participate. Eurostars, which will bring 21 EUREKA countries and the Commission together, could be an example of co-funding.

3.5.2. Envisaged co-funding initiatives

EUREKA and the European Commission are developing a common funding programme – Eurostars - to support projects in innovative, R&D-performing SMEs under Article 169 of the Amsterdam Treaty.²⁵

Eurostars offers a tailor-made R&D funding programme for SMEs, which demonstrate high growth potential, are capable of leading the international consortium and can market their results within a realistic timeframe. The programme aims for further innovations by encouraging the companies to venture into technological risks and by improving the market perspectives along their own IPR agreements, but is also open to societal or more basic problem-solving approaches. The projects to be supported by Eurostars are expected to be highly accessible, and a funding decision should be made within 3 months from application.

Another benefit of Eurostars is that it offers a real chance for synchronisation and harmonisation of national R&D programmes in Europe. Under Eurostars, participating national authorities will earmark an annual specific budget for Eurostars, which will be based on existing and accessible national R&D programmes, with participants able to rely on the EUREKA Network of experienced national agencies and central assessment by an independent panel of experts that will deliver uniform and transparent planning, eligibility and evaluation criteria.

To date, 21 EUREKA Member States and the European Commission have expressed their interest in participating in Eurostars, and are setting up a common financing facility ranging from €40 to €100 Million per annum, which will support up to 100 projects annually. The programme is expected to start in 2007.

The EUREKA experience suggests the following:

- Financial contributions from the FP and EUREKA into the Eurostars programme would develop the potential of SMEs to engage in cross-border networks allowing a widening of their innovation.
- Eurostars would help create a balanced project environment for SMEs through earmarked budgets, fast decision-making and easy access through national agencies.
- Following the Aho report recommendation²⁶, EUREKA can be a great stimulus to encourage the European Venture Capital system to increase its involvement in industrial research and high-end technology.

²⁵ The Amsterdam Treaty: a Comprehensive Guide, European Commission, Available at: <http://europa.eu.int/abc/obj/treaties/en/entoc.htm>

3.6. EVALUATION OF RESEARCH RESULTS

3.6.1. EUREKA's 'whole-life' approach to evaluation

To secure the high standard and high value of the EUREKA label and to mobilise substantial private and public funding for projects with such a label, it is of utmost importance to be able to assess the quality of submitted projects and their results. To ensure the common understanding of project quality, EUREKA has a "whole-life" approach to evaluation.

The 'whole-life' approach to project quality assurance involves ex-ante assessment, monitoring and ex-post evaluation. EUREKA ex-ante assessment has a form of national assessments and the new Network-level (Project Assessment Methodology – PAM). Ongoing monitoring by National Offices takes place during implementation on newly started projects using an Early Progress Check procedure. Ex-post impact measurement is supported by the Continuous and Systematic Evaluation system – CSE – national impact assessments and greater attention to the exploitation of results in the years after project completion.

EUREKA's evaluation procedures include measurement of the added value achieved through international collaboration in EUREKA R&D projects, accumulating evidence that public and private funding in EUREKA projects is well spent as well as identification of success stories which facilitate the smooth implementation of projects. The whole project cycle with a view to achieving ongoing improvement in the quality of the portfolio brings continual enhancement of the value of the EUREKA label.²⁷

Of particular interest is the Project Assessment Methodology (PAM), which became mandatory for all EUREKA projects participants on 1 January 2004. PAM is a project rating system based on a number of key criteria, such as the project structure, type of technology developed and market reach, identified as essential for success. It is fully complementary to national procedures in place and allows for a joint assessment by National Project Coordinators involved. This way, the communication between the EUREKA stakeholders at the national and project level is enhanced. Such harmonised evaluation methodology allows EUREKA to focus on the most innovative solution for Europe and to deliver accurate results.

Type of evaluation	EUREKA projects
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²⁶ "Creating an Innovative Europe", Report of the Independent Expert Group on R&D and Innovation appointed following the Hampton Court Summit (also known as the Aho Report), January 2006, Available at: http://europa.eu.int/invest-in-research/action/2006_ahogroup_en.htm

²⁷ EUREKA Impact Report, July 2002 to June 2003, page 4, 9

Type of evaluation	EUREKA projects
Ex-ante	PAM - Project Assessment Methodology
Ex-post	CSE - Continuous and Systematic Evaluation System
Monitoring	EPC - Early Progress Check, National Project Coordinators
Commercial impact	Market Impact report
Socio-economic impact	Final report
Evaluator	External
Level of evaluation	Project-level and participant's level

Figure 5 – Research evaluation of EUREKA

EUREKA and the Framework Programme should work together to share best practice and experience in order to address challenges and continue to develop appropriate ex-ante and ex-post evaluation systems. Moreover, the results of assessment reports need wider communication and dissemination for European decision-makers and European citizens to understand the added value of international co-operation in R&D.

3.7. COMPLEMENTARITY OF EUREKA AND EU R&D PROGRAMMES

In order to promote the complementarity and efficiency of the ERA actors, EUREKA and the European Union shall keep the intensity of their mutual dialogue in order to coordinate their actions. There are a number of complementarities between the EUREKA Initiative and other programmes and initiatives supporting collaborative R&D at the European level. For example, EUREKA, COST and the Framework Programmes all aim to increase the SME participation, are dependent on the funding provided by the Member States and aim to increase European knowledge and competitiveness. These complementarities will bring all partners closer and enhance the effectiveness of their involvement in achieving goals of the Lisbon strategy.

Areas	EUREKA projects
Structure	Bottom-up
Funding bodies	Industry, Member States, and private institutions
Network(s)	EUREKA Clusters, EUREKA Umbrellas

Areas	EUREKA projects
Main drivers	Industry-driven
Involvement of SMEs (%)	> 40%
Approach to evaluation	PAM, CSE, EPC, Market Impact and Final Reports
Main Orientation	Innovation and Market oriented
Participating Countries	35 Countries, European Commission + Associated Countries
Type of Research	Market oriented

Figure 6 – Summary of the EUREKA Initiative



4. ACHIEVING LISBON OBJECTIVES

4.1. EUREKA AND LISBON OBJECTIVES

The Lisbon Strategy, established by the European Council in 2000, aims to make the EU "the most dynamic and competitive knowledge-based economy in the world capable of sustainable economic growth with more and better jobs, greater social cohesion and respect for the environment by 2010".²⁸ Based on the economic concepts of innovation as the motor for economic change, the "knowledge economy" and social and environmental renewal, the Lisbon Strategy intends to deal with the low productivity and stagnation of economic growth in the EU, through the formulation of various policy initiatives to be implemented by all EU member states. The project of creating a European Research Area is one of the cornerstones of achieving the Lisbon goals.

Through its network, EUREKA involves all EU Member States and associated countries in projects, resulting in the introduction of new products and processes on the market more rapidly, to the benefit of European citizens. By 2005, 1,800 projects had been finished and 700 are still ongoing.²⁹ This means that 1,800 new products or processes have been or in the near future will be introduced to the market in Europe and beyond.

EUREKA exists to raise the productivity and competitive performance of European industry through its support for R&D and innovation. In the latest analysis of project final reports, covering 678 participants in 328 projects that finished between 1 January 2001 and 31 December 2005, almost two thirds of the EUREKA project participants expect to exploit their results in the market and 29% had already done so at the point of project completion.³⁰ SMEs are particularly fast in bringing their innovations to the market. In terms of sales, individual project participants achieved €635 million additional turnover with €1.823 billion expected within 3 years. This translates to an annual ratio of return on R&D project cost through direct sales of 57% on completion and a phenomenal 219% within 3 years.³¹ While EUREKA Cluster projects participants have a longer time-to-market, the technologies developed account for significant shares (around 20%) of the firm's revenues in very large markets.

Case studies show that the effects of EUREKA support go far more deeply, affecting firm strategies in a positive way and giving them technological and managerial competences that they exploit across the business, generating further returns. For example, many individual EUREKA projects create pathways to transform participating firms' strategies raising their technological base and allow them to internalise the benefits of improved organisation and methods induced by the project. Likewise, EUREKA Cluster projects

²⁸ Conclusions of the Lisbon European Council, 2000

²⁹ The EUREKA Initiative 2005 - Annual Review

³⁰ Annual Impact Report of EUREKA, 2005-2006, June 2006

³¹ idem

mobilise large sectors, build new networks, allow for broader application of technologies, and can establish new and de facto market standards.³²

Thus, the positive effects of EUREKA activities on economic growth cannot and should not be ignored.

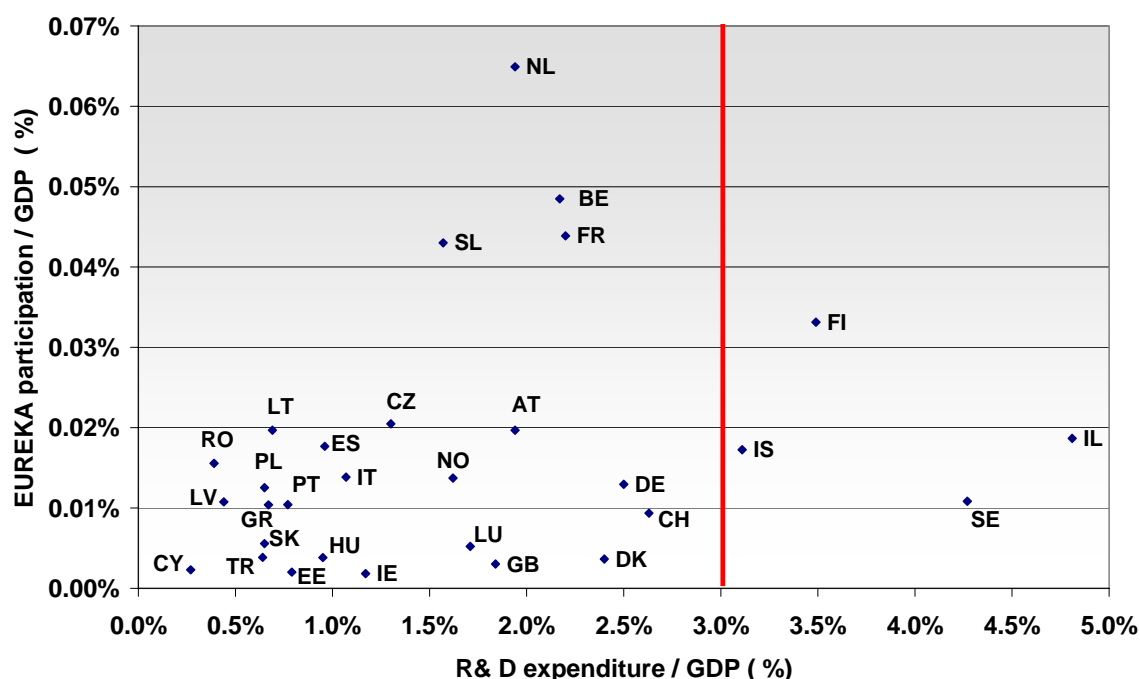


Figure 7 – Contribution of EUREKA to the 3 % objectives³³

EUREKA's market-driven approach has supported economic growth in Europe. The positive correlation between the Initiative and national GDP in the EU Member States makes EUREKA a relevant actor in the European Research Area providing good leverage effect, bringing the level of investment in Europe closer to the objective of 3% expenditure of GDP on R&D.

The fact that large and small firms, research centres and universities, can participate in EUREKA projects, contributes to the creation of new jobs in Europe. For example, in the period 2003-2006, under CELTIC, a EUREKA Cluster in the field of telecommunications, close to 40 projects will be completed, generating 1,000 person-years in 30 participating EUREKA countries.³⁴ Similarly, the ITEA 2 EUREKA Cluster in the field of embedded, Software-Intensive Systems aims to mobilise a total of 20,000 person-years over the eight-year period of its activity on the market (2006 – 2014).³⁵ There is a clear socio-economic impact one year after EUREKA project completion, as on average four jobs are created

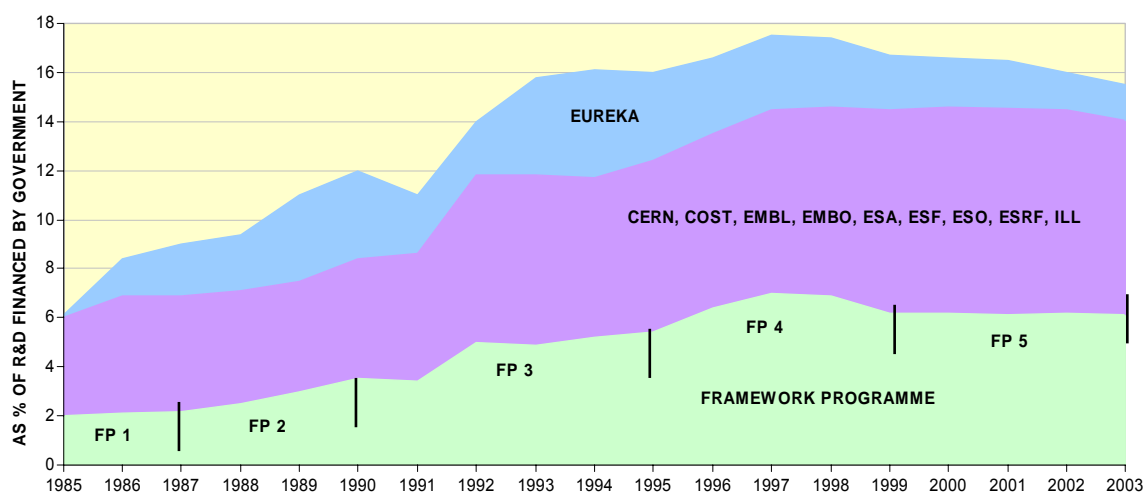
³² Annual Impact Report of EUREKA, 2005-2006, June 2006

³³ Based on the latest available Eutostat data for 2004 as presented to the Brussels European Council, 23-24 March 2006

³⁴ Based on CELTIC contribution to the report

³⁵ Based on ITEA 2 contribution to the report

and an average of €1 million additional turnover is generated per project participant. In the period 2001-2005, 895 new jobs were created in firms participating in EUREKA projects and additional 1748 jobs are expected in non-participants.³⁶ The ratio of qualified scientists and engineers increased as well, as firms become more innovative and specialised. This facilitates “keeping the European researchers at home”.



Source: European Commission, DG Research

Figure 8 – Cooperative research as a percentage of government R&D expenditure in EU-15 and EFTA countries³⁷

The intergovernmental research performing organisations, such as EUREKA, have managed to spend a small amount of funding to generate a considerable investment. For example, it is estimated that €1.2 Million for the period 2003-2006 spent under the EUREKA Initiative generates about €850 Million each year.³⁸ In addition, since its launch, EUREKA has contributed to approximately 2 to 4 percent of total national R&D expenditure on cooperative research.³⁹ Therefore, EUREKA, with its large industrial participation, has managed to increase the impact and visibility of European research worldwide and makes a particularly important contribution to the 3% Barcelona objective.⁴⁰

The EUREKA experience suggests the following:

- EUREKA is a relevant actor in the European Research Area, providing good leverage effect, bringing the level of investment in Europe closer to the objective of 3% expenditure of GDP on R&D.
- National governments need to consider EUREKA in their funding distribution.

³⁶ Annual Impact Report of EUREKA, 2005-2006, February 2006

³⁷ Impact assessment and ex ante evaluation – Annex to the Proposal for the Council and European Parliament decisions on the 7th Framework Programme, p. 38

³⁸ idem, p.37

³⁹ Based on the data from Figure 8

⁴⁰ Impact assessment and ex ante evaluation – Annex to the Proposal for the Council and European Parliament decisions on the 7th Framework Programme, p.37

- To encourage the European Commission to contribute substantially to the Eurostars programme.
- The clear socio-economic impact of EUREKA projects should be considered.

4.2. EUREKA AND BARCELONA TARGETS

The Barcelona targets, agreed two years after the launch of the Lisbon process, reinforce the essential objective of fostering better and more investment in R&D in Europe. They state that not only European R&D investment should be increased to approach 3% of national GDPs by 2010, but also that two-thirds of this new investment should come from the private sector. To this end, effective research as well as innovation policies, public funding, catalysing new methods of private sector participation and reduced administrative barriers promoting entrepreneurship are necessary to create an investment-friendly internal market.

EUREKA's primary goal is to raise the productivity and competitiveness of Europe's industries and national economies on the world market. To reach this goal, substantial public and private funding has been mobilised over nearly two decades in support of the research and development carried out within the EUREKA framework. Over the past 20 years, more than €24 billion of private and public was invested in EUREKA projects.⁴¹

EUREKA has been most successful in encouraging the creation of public-private partnerships. The EUREKA quality label greatly aids these partnerships. To qualify for this label, as described in the rules of participation section of this report, an innovative project must demonstrate interest in collaboration, aim to contribute to substantial technological progress and carry a significant financial engagement by the partners. While obtaining the EUREKA label does not mean that the project will be funded by the Member countries, high visibility and quality of the label can facilitate the receipt of public research funding. For example, in Portugal both the Ministry of Economic and Innovation and the Ministry of Science, Technology and Higher Education, are working to provide easier access to funding for Portuguese enterprises and the EUREKA label is seen as a means through which favourable conditions for technological development and innovation can be created.⁴² Therefore, the EUREKA label allows the participants to create effective public-private partnerships as it promotes projects that can attract public funding, can encourage the industry to participate and fund specific EUREKA projects of interest.

However, EUREKA's flexible mechanisms and project quality is no panacea for Europe's delay in boosting European competitiveness and achieve the Lisbon objectives. Further actions aimed at encouraging entrepreneurial activity and start-up businesses, improvements in the regulatory environment, widening communication and dissemination

⁴¹ EUREKA 2005 Annual Report

⁴² Based on Portuguese contribution to the report

of results and greater public support to projects, could work towards filling the gap between R&D and European (and world) markets.

The EUREKA experience suggests the following:

- EUREKA contributes essentially to the goals of the ERA as one public euro invested in EUREKA is coupled with two private euro invested, bringing Europe closer to the Barcelona objectives.
- EUREKA strengthens the cooperation and dialogue with the EIB by setting up new and strict rules of cooperation for funding of most innovative projects.
- EUREKA cooperates to attract venture capitalists to invest in research projects, as well as stimulates healthy competition among companies and increases co-operation between different projects.

5. CONCLUSIONS

There are many complementarities between the EUREKA Initiative and the other EU R&D programmes such as COST or the Framework Programmes. Further collaboration between EUREKA and the European policy-makers is vital for the creation of the ERA and to increase European competitiveness.

EUREKA Initiative proposes the following ideas to be considered:

- Since its creation, EUREKA has been a tool to promote European competitiveness. Its ability to create advanced market-oriented industrial projects has been unique for several years, as has been its capability of involving partners beyond the EU.
- EUREKA looks forward to the opportunity of strengthening the coordination between member countries, improving its image and credibility, getting additional financing through the participation to Art. 169 initiatives (Eurostars), JTI, ERANET+ and the coordination with COST.
- Further funding ought to be invested in existing networks to stimulate them to collaborate and invest more in new products and services to continue to be innovative and competitive.
- To foster competition in the market, to create employment and to maintain a high level of growth, SMEs need to be on an equal platform with large industries. The Eurostars Programme based on the Art. 169 of the Treaty advocates greater SME contribution to competitiveness in Europe, and ought to be sufficiently supported by all members of EUREKA and the European Commission.
- EUREKA's bottom-up approach in involving participants should not be limited to addressing future market needs and priorities, but, in the long-term, should go beyond the market to the actual needs of consumers and citizens. Innovation trajectories that are not commercially exploitable at present need not be disregarded as they may offer promising solutions for the future. For this reason, the potential of public-private partnerships needs to be explored further.
- All innovation activities, undertaken under the auspices of EUREKA projects should be supported by offering adequate infrastructure, and competent service centres, creating an agglomeration effects and fostering local, regional, and national development of European economies.
- It is essential that EUREKA remains a separate mechanism and that, while exploiting synergies, it is not merged with other EU R&D programmes.

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The present report is a summary of the past discussions, resolutions, conferences, and high-level meetings between EUREKA stakeholders and decision-makers at the national and European levels. Recalling:

1. The Hannover Declaration of 6 November 1985, setting the objectives, of EUREKA and criteria for project implementation and co-ordination, and the relationship between EUREKA and the European Communities and existing European co-operative arrangements for the first time;
2. The guidelines EUREKA 2000plus, of the 18th Ministerial Conference in Hanover, on 23 June 2003, which set the EUREKA guidelines for supporting strategic projects, increasing SME participation and providing a fresh impetus for a dialogue between industry, scientific community and decision-makers;
3. The framework of cooperation for an operational arrangement between EUREKA and DG Enterprise and Innovation of the European Commission, of January 2002, which identified important synergies which could be achieved through closer cooperation between EUREKA and Innovation Relay Centers (IRCs) and other innovation programme support services;
4. The Resolution of the EUREKA Inter-Parliamentary Conference in Copenhagen in June 2003 that looked into ways of providing stronger support for innovation in Europe at a political level, bringing together local, regional, national and European policies;
5. The conclusions of the EUREKA Ministerial Conference in Paris in June 2004 that focused on exploring concrete financing mechanisms for creating coherence between EUREKA and the EU Framework Programme, especially in the field of SMEs and European Technology Platforms;
6. The conclusions of the Informal Competitiveness Council in Maastricht in July 2004 that stressed the importance of stimulating innovative and research-intensive entrepreneurship and strong public-private partnerships at the European level, taking into account the merits and positive experiences of EUREKA;
7. The conclusions of the meetings of European Ministers responsible for industry of the Euro-Mediterranean Partnership held in Malaga (2002) and Caserta (2004), that invited the Ministers present and the European Commission to exploit the synergies with EUREKA and to help Euro-Mediterranean industry to face the increasing international competition through cooperation in innovation and technology transfer;
8. The conclusions of the Spring Council of 22 and 23 March 2005, that, on the basis of the Mid-Term Review of the Lisbon process by Mr Kok, acknowledged the importance of the knowledge economy for European competitiveness and the necessary political commitment for all policies focusing on knowledge for growth and employment;
9. The letter dated 17 September 2004, addressed to Mr Kok as President of the High-level Group on the Mid-term Review of the Lisbon strategy, by the Dutch

Minister of Economic Affairs Laurens Jan Brinkhorst, as the Chair Minister responsible for EUREKA, pointing out the important role EUREKA can play in creating a European knowledge economy and reaching the Lisbon targets;

10. The conclusions of the Competitiveness Council on the Communication '*Science and technology, the key to Europe's future – Guidelines for future European Union policy to support research*' (COM(2004)03053) that underlined the importance of coherence and synergy between European programmes;
11. The Report of the Committee on Industry, Research and Energy of the European Parliament of February 28 2005 (A6-0046/2005), of which Mrs Pia Elda Locatelli was the Rapporteur, which supported these Council conclusions;
12. The Commission's Communication on FP7 '*Building the Europe of Knowledge*' of April 6 (2005 COM (2005)119);
13. The commitment to the development of an Article 169 SME initiative for research-performing SMEs supported by 27 EUREKA member countries during the informal HLG meeting in Schiphol, Amsterdam on 25 January 2005;
14. The supportive letter, dated 11 February 2005, addressed to the Member of the European Commission Janez Potočnik, relating to the initiative for an Article 169-based action in favour of 'research performing SMEs', by the Dutch Minister of Economic Affairs Laurens Jan Brinkhorst, as the Chair Minister responsible for EUREKA, and the reaction of Mr. Potočnik on 8 March 2005;
15. The resolution of the 15th EUREKA Inter-Parliamentary Conference of 26-27 May 2005 in the Hague, "*Commitment of the European knowledge economy, the role and position of EUREKA*", which underlined the importance of creating public-private partnerships at a European level, and stressed that EUREKA should be revitalized as a major facilitator to develop technology and convert technology to business;
16. The Prague Resolution of the EUREKA Forum of 21 October 2005, "*Competitiveness of Tomorrow Depends on Research and Innovation Today*", which calls for creating an appropriate conditions for generating projects for collaboration of EUREKA Clusters and Umbrellas with European Technology Platforms and Joint Technology Initiatives, and urging to strengthen the partnership between EUREKA and the European Commission and its Framework Programmes to further exploit EUREKA's unique expertise;
17. The report "Creating an Innovative Europe" Report, of the Independent Expert Group on R&D and Innovation appointed following the Hampton Court Summit, on January 2006, known as "the Aho report", which presented a strategy to create an innovative Europe, calling for a Pact for Research and Innovation fostering the paradigm shift while it is still possible to do so;
18. The working lunch in the European Parliament on 7 February 2006, which confirmed EUREKA's successes in raising the competitiveness in Europe, and recommended the creation of this report, supported by the host, Mrs. Avril Doyle, MEP.



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Annex to the Report

– EUREKA Clusters and Umbrellas –

– Brussels, May 2006 –

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The views expressed in this document have no legal basis and are based on the experience of their contributors and on the discussion maintained during the EUREKA lunch at the European Parliament hosted by Mrs. Doyle on the 7th February 2006

“Competitiveness of tomorrow depends on research and innovation today”

- EUREKA Czech Chairmanship, EUREKA Forum, October 2005 –

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EUREKA Cluster – MEDEA+



Rationale

Electronics is the favoured vehicle of the 21st century intelligence revolution. It manages, memorizes, transforms and transports information. Its key ingredient is microelectronics. Cooperative research is key for European success in microelectronics. The programmes launched as part of the EUREKA initiative, JESSI, then MEDEA and MEDEA+, complementing the Framework Programmes of the European Commission, backed up the industrial efforts both politically and financially.

JESSI, MEDEA and MEDEA+ have demonstrated through their success that cooperative R&D work is the best scheme to:

- Implement industry-driven projects, with time-to-market in mind
- Create the necessary critical mass (large, focused projects)
- Facilitate exchanges between all the actors in the microelectronics "value chain"; to involve SMES as well as Universities and Institutes
- Promote both horizontal and vertical cooperation
- Enhance platforms and Standards for future market products

Global results

The above-mentioned programmes, widely recognised as successful, did more than provide indispensable financial support: they played a key role in the construction of efficient cooperation throughout the value chain, by generating synergies between manufacturers of equipment for semiconductors, hardware producers, semiconductor manufacturers, electronics companies and "design houses".

JESSI (1989-1996) primarily focused on closing the technology gap with the US and Japan, MEDEA (1997 – 2000), thanks to the platform laid by JESSI, has been able to play a more forward-looking role by strengthening R&D cooperation of System suppliers and Semiconductor companies. MEDEA+ (2001 – 2008) will help Europe to become a leader in System Innovation on Silicon with a strong leverage effect on industry, economy and the society at large. The programmes enabled the European semiconductor companies to take an early leadership in strategically chosen core competences: multimedia, communications, automobile and traffic applications, design techniques and libraries, CMOS based technology platforms and equipment and manufacturing technologies. Europe now has three semiconductor companies in the world top ten: STMicroelectronics, Infineon Technologies and Philips Semiconductors ranked 6th, 7th and 10th by the end of 2003, fighting their way up from 13th, 16th and 10th, respectively, in 1989.



And the success of Europe's chip industry has also brought success to its partners, customers and suppliers:

- Customers such as Alcatel, Bosch, Bull, Ericsson, Nokia, Philips Consumer Electronics, Siemens and Thomson multimedia, and many SMEs as well, have benefited by increased competitiveness. European systems companies now lead the world in GSM telephony and access networks, smart cards, automotive electronics and digital consumer products.
- Suppliers such as Air Liquide, ASML, ASMI, Carl Zeiss, Leica, M+W Zander, Jenoptik, Philips Electron Optics, Recif, Schlumberger, Sorep, Steag, Wacker and many others have benefited by strengthening their position as suppliers to semiconductor companies across the globe.
- Research institutes and universities have also participated directly in the growth of the European microelectronics industry.

All this has been achieved through a greatly increased willingness to cooperate. Indeed for EUREKA, JESSI, MEDEA and MEDEA+ are the leading model for trans-national, cooperative, pre-competitive research in the world, demonstrating how cooperation cuts development time, risk and cost.

The European microelectronics industry major positioning is on the markets of the future: communication, automotive electronics, digital consumer applications (audio, video). These are very demanding mass markets, both in terms of volume and price. The only way to succeed is to increase faster than competitors the "intellectual property on the chip", and therefore its R&D content.

Direct and indirect employment creation

The European economy has benefited considerably from the success of its semiconductor industry. In the last ten years, this sector has invested between \$30 and \$35 billion in factories, laboratories and research and development teams, thereby creating more than 50,000 very qualified direct jobs and inducing, with a threefold trickledown effect, additional locally created jobs.

The EUREKA programmes JESSI, MEDEA and MEDEA+ boosted the local infrastructure around the big European microelectronics sites, safeguarding the electronics supply chain, the delivery of goods and services, and contributing to regional development.

This radiating effect has resulted in intensive subcontracting, support and service activities in areas such as Catania (Italy), Crolles (France), Dresden (Germany), Leuven (Belgium) and Nijmegen (Netherlands).

The Next Step

A clear vision of the future for the nanoelectronics industry demands a horizon of at least a decade. We know this decade should not mean a continuation of past policies, although these have proved highly successful. A much broader initiative is needed to match bigger



challenges and bigger opportunities. Industry has begun too participate in discussions within the European Commission, regional organisations and national governments in order to develop a broad-based initiative. It suggests that the method used in EUREKA programmes, plus the accumulated learning, might be integrated into any new initiative.

Source: O. Laaff (MEDEA+ Communication Officer)

EUREKA CLUSTER – ITEA 2



ITEA 2 - Leadership in Software-intensive, Systems and Services

Embedded, Software-intensive Systems (SiS) are a crucial and growing element of Information and Communication Technologies (ICT). They are a cornerstone of Europe's most competitive industries and a growth engine for Europe's economy. SiS are a vital driver of innovation in sectors such as the automotive industry, communications, aerospace, healthcare, consumer electronics and environmental management. Europe has leading positions in all these industries.

Over the past decade, there has been an explosion in embedded SiS now at the heart of a wide range of products and services, affecting all aspects of our everyday lives. We have witnessed a dramatic increase in the use of electronics and SiS in cars, aircraft, medical systems, mobile communications and household appliances such as televisions, DVD players and refrigerators.

The revolution in SiS offers Europe a unique opportunity to strengthen its leadership, fuel economic growth and create hundreds of thousands of new jobs. SiS will be the battlefield where Europe has to prove its mettle vis-à-vis old competitors (the US) and new ones (China and India). If we fail to meet the challenge, Europe's competitiveness will be severely damaged, with negative consequences for economic growth and jobs.

ITEA, the predecessor to ITEA 2, has played a very positive role in fostering European R&D in SiS. ITEA has become Europe's leading cross-border, public-private R&D partnership in the field of SiS. Among its accomplishments, ITEA has established a common vision for Europe's future in Software-intensive Systems, shared by public authorities and private enterprises and underpinned by the ITEA Technology Roadmap (which has become widely recognised as a landmark). A focus on Europe's key industries that develop and use SiS to remain competitive was an essential part of this vision. In essence, ITEA has put Europe back on the map in the emerging 'embedded intelligence' revolution.

ITEA also showed that public financial support can indeed be a great catalyst for private R&D efforts. The programme proved that cross-border cooperation between big companies, SMEs, research institutes and universities actually works. Out of 85 ITEA projects, 45% of participants were SMEs and 28% were research institutes or universities. The organisation of the programme follows lean and industrial strength procedures.

ITEA's success is mainly due to the bottom-up, industry-driven approach. The technology roadmap and specific proposals for ITEA-projects were generated by companies themselves, some of the projects including Open Source. Hundreds of product references, licenses and open source programs were generated, 150 standardisation procedures were

launched and over 1,650 references to ITEA-projects were made in publications and conferences.

As the successor of ITEA, ITEA 2 aims to strengthen further Europe's position in the area of embedded SiS, driven by a top selection of leading companies in Europe's key industries. The ITEA 2 programme is an even more ambitious one, aiming to mobilise a total of 20,000 person-years over the full eight-year duration (2,500 person-years per year) and an investment of more than €3 billion. This level of ambition follows from the experience in ITEA, the need to close further the gap in R&D investments (3% of GDP, Lisbon objective) and the ever growing importance of SiS.

Like ITEA, ITEA 2 also seeks to unify Europe's fragmented R&D efforts, while broadening even further the role of academia and SMEs in its projects. The programme will pay particular attention to projects that can strengthen Europe's position in the negotiation of worldwide standards in the field of SiS.

It will maintain ITEA's successful focus on the SiS industries that depend on embedded software, extending the scope by an additional open domain to address novel emerging applications in, for example, cognitive, bio- and nano-technologies. ITEA 2 will also continue ITEA's proven bottom-up approach and further develop ITEA's roadmap.

Particular attention will be paid to the improvement of Europe's performance in time-to-market and to fighting the 'European Paradox', (i.e. excellent science & technology but the translation into commercially successful new products and services could be improved). On the one hand, ITEA 2 will extend its scope to include more downstream activities, moving from R&D to R&D&D (Research and Development and *Demonstration*). On the other hand, ITEA 2 aims to introduce greater flexibility and agility in order to speed up its own procedures, while maintaining ITEA's low overheads.

EUREKA CLUSTER – CELTIC



About CELTIC

CELTIC is a EUREKA cluster programme, which initiates and runs privately and publicly funded R&D projects in the field of telecommunications. The initiative is supported by most of the major European players in communication technologies. CELTIC projects are focusing at telecoms networks, applications, and services based on a complete-system approach.

CELTIC is the only European R&D programme fully dedicated to complete system-integrated telecommunications solutions. The size of the CELTIC budget is in the range of 1 billion euro. CELTIC is open to any kind of project participants from all EUREKA countries. So far, 30 countries participate in CELTIC. CELTIC is operated and supported by the following major players in telecommunications: Alcatel, BT, Ericsson, Eurescom, France Telecom, Italtel, Nokia, RAD, Telefónica, Thomson, and recently joined Deutsche Telekom. CELTIC projects allow all players in the European telecommunications sector to collaborate in advanced R&D projects. CELTIC is open to other large companies, small and medium-sized enterprises, research institutes, and universities. In fact it is the first time that a strong R&D commitment at European level could be achieved between manufacturers, operators, and service providers.

The unique value of CELTIC lies in the pre-competitive development of comprehensive, integrated communication system solutions, including platforms and test vehicles. The main priorities of CELTIC are services and applications, broadband infrastructures, and security. This value will be further increased by the establishment of the pan-European laboratory (Panlab), which is currently being further defined by a project within FP6.

Since CELTIC started in 2003, it has gained much momentum and attention. By the end of 2006 close to 40 projects will be running with an annual effort of about 1000 person-years and 100 million euro annual budget figures. The integrated R&D efforts of the European telecoms industry and the public authorities within CELTIC are providing a major push for innovative communication services in Europe.

This push will be enhanced through the cooperation between CELTIC and the European Technology Platforms NEM (Networked and Electronic Media), eMobility, and NESSI (Networked European Software and Services Initiative) in the context of the forthcoming 7th EC Framework Programme for Research. The scope of topics includes a number of next-generation broadband and multi-media and new mobile services, novel solutions for Digital Rights Management, and a range of technologies for enhancing the capabilities of telecommunication networks.



After about 20 months, after the launch of CELTIC, the running projects have achieved already an impressive number of important results, submissions to standards bodies, and publications. Also the first product developments, based on the current results, are already in progress. Particular highlights, among many others, are new technologies in broadband access networks, advanced services for better usability of broadband and mobile services for the customers, and quality assured and content protected streaming over those networks, including mobile-TV.

Eureka, as a common framework for the ICT clusters, represents an efficient and well recognised mechanism, which is also highly appreciated by the participating companies. Its bottom-up approach for defining new project activities complies well with the requirements from industry and SME and the low administrative overhead makes it attractive for the industrial partners.



“Bringing European electronic industry at the forefront of development and production of electronic miniaturized systems by mastering high density Interconnection and Packaging technologies, this is the challenge of PIDEA”

– Patrick Druenne – PIDEA+ President

About PIDEA+

PIDEA+ is a strategic EUREKA Cluster Programme for Interconnection and Packaging (I&P) enhancement. It was given the Official EUREKA label in June 1999, after its registration as EUREKA project **E!1888** in September 1998. Awarded the EUREKA label in 19 March 2004, PIDEA+ is the following of PIDEA, and it was awarded. It is a 5 year programme with a total budget of €600 million.

I&P technologies cover the field of electronic components, systems and sub-systems, which constitute

PIDEA contributes to European competitiveness in electronics sector through the improvement in Interconnection & Packaging technologies.

- Objective – Bringing European electronic industry to the forefront by increasing the European capabilities in high density Interconnection and Packaging (I&P).
- Rationale – The increasing performances of semi-conductors require high-end I&P technologies and components.
- Action – Cooperative R&D projects between components manufacturers, electronic systems and laboratories.
- Areas – Information and Communication Technologies, Transport, Security, I&P manufacturing processes.
- Technological challenges – to develop new I&P solutions answering to the highest market constraints in terms of costs, miniaturization, portability, speed, power, environmental protection etc.
- Applications – high-speed networks, high-speed data processors, consumer electronics, smart cards, automotive, aerospace, railways etc.

PIDEA+ Projects

200 partners from 15 European countries work in PIDEA. Apart from the industry leaders, the participants include SMEs (44%) and universities and research laboratories (21%).

Until December 2005, the PIDEA+ Council has awarded its label to 54 projects. There are now 20 projects running and 5 have been recently labelled. The programme is open to new partners.

The two examples of success stories and added value of transnational innovation within the PIDEA+ Cluster are in TIGER and WALPACK projects.

TIGER project: Developing the wireless GNSS (GALILEO) portable receiver for topographic application and guidance, this project involved Austrian, Finish and French industrial companies.

WALPACK project: Wafer Level Packaging process for smart card, wireless communication, automotive. This project as been mainly conduct by France and Germany, and its results are expected to be used by major SI players both in France and Germany for System in Package application for communication products.

PIDEA+ and EUREKA

EUREKA, through PIDEA+ Cluster, is an efficient tool for European industry (driven by industry for industrial application, with industrial tools and methods)

For each selected project, PIDEA+ focuses on main selection criteria:

- Innovation
- Cooperation added value
- Related company strategy to the project
- Road for dissemination and exploitation

EUREKA UMBRELLA – EUROAGRI+



Scope of EUROAGRI+ and economical importance of the concerned sectors

EUROAGRI+ is the EUREKA umbrella specifically dedicated to Agriculture, Food and Feed industry. It covers the entire food chain often referred to as “field to table”. The main goal of EUROAGRI+ is to strengthen the whole agri-food chain, helping agriculture and food companies to develop products and technologies with the highest value in terms of quality and safety, helping thus to improve the quality of life of the European population.

Agriculture is an important economic sector in Europe. In 2004, the total production of agricultural goods amounted 320 billion euros for the EU-25. Roughly 55% originated from crop and 41% from animal production. Services accounted for 4%. Globally speaking, the total turnover of agricultural products accounted for 2% of the GDP (1% in UK; 2.6% in France; 3.7% in Spain and 7% in Greece). The total surface dedicated to agriculture is about 200 million hectares, split in more than 15 million farms. Only 5% of those have a greater size than 50 hectares. About 10 million people, calculated in FTE, are employed in the European agriculture.

The food and drink sector is one of the major pillars of the European economy. With a yearly turnover of 815 billion euros and employing around 4 million people, the food and drink industry is the leading manufacturing sector in Europe. With 13.6% of total turnover in the EU-25 manufacturing sector, the food and drink industry ranks first ahead of the automobile (12.4%) and chemical industries (10.4%). The food and drink industry is also the largest employer. However, R&D intensity, expressed as the R&D expenditure in the food and drink industry as an output percentage, remains lower in the EU in comparison with other countries.

The EU average was around 0.24% in 2001 compared to 0.35% for Europe’s main competitors (0.35% for the USA) and to close to 0.8% for Japan. The R&D intensity is quite variable from one EU country to the next. The Netherlands, Finland and UK are close or slightly above 0.5%, France 0.3%; Germany 0.2% and Italy slightly above 0.1%. A joint venture “EUREKA” and FP-7 would boost these figures! Looking at the trends in food innovation in the USA, it is interesting to see that 77% of the food products launched in 2004 were innovative in formulation and only 1.5% of them were innovative in technology.

This is another clear sign of the importance of applied R&D. (For additional information, please refer to : Data and Trends of the EU food and drink industry 2005, published by the Confederation of the food and drink industries of the EU http://www.ciaa.be/pages_en/documents/brochures_list.asp).

EUROAGRI+ at a glance

EUROAGRI+ is a very active umbrella of the EUREKA programme. It generated over 15 projects within the last few years and, by doing this, brought an important contribution in turning science into innovative products for the benefits of agriculture and food industry.

Due to the increasing importance of the food sector in all European countries, EUROAGRI+ is a growing umbrella. At the end of 2005, the umbrella was supported by 11 member countries (Austria, Croatia, Finland, Hungary, Israel, Netherlands, Romania, Serbia & Montenegro, Spain, Switzerland, and Turkey). Portugal has just joined the umbrella (early 2006) and more countries have expressed their interest to become members.

The great challenge of the future: Bridging basic research and applied research for the benefit of the European Food industry and the consumers.

Among European academics, industry is quite often considered as a “dirty” world and fundamental research as a “clean” world, thus widening the existing gap between research and application. This is very damaging to the European economy. The fact that European universities are less industry-focused than American or Asian universities worsens the situation. The damageable gap problem between research and application has been very often mentioned by industry representatives.

This message is also clearly visible in the two recent publications enclosed (Prof. Brian McKenna former EFFoST chairman and Dr. Daniela Israelachwili, actual director of the important Confederation of the European Food and Drink Industry).

Bringing together basic searchers and market minded searchers would certainly allow the above mentioned gap to be bridged. This could be done by implementing more innovation and Technology Transfer aspects in terms of deliverables in research programmes such as the forthcoming FP-7. It is very important that the market minded people are participating from the very early stage in the research project and this for two key reasons:

- Ideas have to be turned out in innovation as soon as they are born. Working in sequence, that means picking up the idea from a publication, does not lead to the same results due to the lack of interactions between the two different searchers communities. EUROAGRI+ tried late 2004 to “dig out” of FP4/5 and COST finished projects the ones that could be, with additional input in terms of applied research, within a short period of time, transformed into marketable new and innovative products and or processes by the Food industry. The result was quite disappointing!
- The input that can be given during the course of the research project by the market oriented searchers to basic research people is usually very challenging and lead without any doubts more directly and more rapidly to substantial innovations that are of great use for the industry

For these reasons, necessary incentives should be given by the “designers” of research programmes to stimulate this type of collaboration. The Food industry could be a good platform to test such a collaborative model.

Visions for the future

In a document recently published by the Confederation of the Food and Drink Industries of the EU called “European Technology Platform on Food for Life – Vision for 2020 and beyond”

(http://www.ciaa.be/pages_en/documents/brochures_list.asp?lang=&year_crit=2005) 6 key interactive areas are proposed to improve the quality of life of Europeans and underpin the growth and competitiveness of the agro-food industry by innovation.

These 6 key areas are: Food and Health, Food Quality and Manufacturing, Food and Consumer, Food Safety, Sustainable Food Production and Food Chain Management. These areas will be supported by effective strategies for Communication, Training and Technology Transfer. This vision will have an important impact not only on the forthcoming FP-7 but also on EUROAGRI+ activities. Taking into account the high scientific level of these challenging priorities and the urgent need for the European Food industry to quickly move ahead on these topics, such key areas are in fact ideal frames to bring together Networks of Excellence and the industrial expertise of the EUROAGRI+ network for the benefit of the Food industry and the European consumers.

The Idea of LOGCHAIN

The EUREKA umbrella project LOGCHAIN was initiated in June 2000 by the German Ministry for Education and Research (BMBF) on the occasion of the EUREKA Ministerial Conference in Hanover.

The central objective of LOGCHAIN was to improve international freight transport within Europe through the development and optimisation of continuous logistic chains between shipper and receiver. This was to be achieved by integrating innovative techniques, advanced forms of organisation, efficient operating procedures, and novel IT applications. Central to the initiative was the concept known as intermodal transport – a mixture of different modes of transport (i.e. over-the-road, water and rail).

The overriding political objective of LOGCHAIN was to shift freight traffic from Europe's roads and highways to rail and waterways – thereby contributing to the achievement of a better balance between the modes of transport. In order to effect such a shift, the umbrella focussed in particular on linking rail transport more efficiently to other carriers of freight.

In the course of the first phase of the umbrella (2000-2005), LOGCHAIN succeeded in developing a network of 16 member countries and 17 R&D projects.

Results of LOGCHAIN Projects

During this period, the sub-projects of the umbrella concentrated primarily on efforts to shift cross-border freight from road to rail. These projects can be classified into four general types of activity:

1. Studies (freight flows, feasibility studies)
2. Development of Innovative Forms of Organisation in Cross-border Transport Chains (Demonstrators)
3. Development of Innovative Technologies, Procedures or Tools for Optimising Transport Chains
4. Support to Policy Makers

Typical examples of these four types of activity are described below.

Within the framework of the project East-West CARGO FLOW ($\Sigma!$ 2453) – an example of the first type of activity – researchers carried out an extensive analysis of current trends and future demand for international logistics services in selected East-West corridors. The first analysis of its kind for Central and Eastern Europe, this ground-breaking study

provides quantitative market data (cargo volume, costs, preferred modal choice of shippers) on cargo flows in these regions – a prerequisite for the reengineering of transport chains which make greater use of more sustainable modes of transport (rail and water). The project East-West CARGO FLOW provided the inspiration and formed the statistical foundation for two further LOGCHAIN projects: East-West LAND BRIDGE and East-West TWO-WAY INDUSTRIAL NET.

The project MUSIC (Σ! 2388) – a typical example of the second type of activity – succeeded in doubling intermodal freight train capacity on a trade route from Scandinavia to Germany by developing and implementing an innovative rail production scheme supported by software packages to aid freight and port management. The partners in the project developed a new intermodal service between Duisburg and Lübeck in Germany making use of a system of permanent round-trips – including daytime block train service.

This system was designed in such a way so as to ensure efficient interfacing with ferry services connecting Germany (Lübeck) and Sweden (Trelleborg). The partners are already profiting from increased capacity along this route and have established a blueprint for further routes. The Control Management System for ferry ports computerises the storage, management, movement, loading and unloading of containers. Such systems were previously only available to large ports, but are now available to smaller ports as a result of the project.

In the project TRANSCOLOG SAFETY (Σ! 2635) – an example of the third type of activity – researchers developed and demonstrated a satellite-based telematic system for monitoring rail freight. It enables rapid response to alarms and should reduce unit loss during a journey. The system is particularly interesting for dangerous goods shipments where swift reaction is crucial for limiting the impact of accidents (e.g. derailment, spillages, leaks and fires) on the environment and human lives. Being satellite-based, the system is not dependent on terrestrial GSM communication – which still is not a completely reliable form of communication in some regions relevant for European shippers, particularly in Eastern Europe and Russia. TRANSCOLOG SAFETY has created an effective instrument for reliable tracking, tracing and monitoring of rail vehicles in seamless, cross-border transport chains.

In a determined effort to support the further development of public policy in the area of infrastructure pricing, the partners in the project FOOTPRINT (Σ! 2486) are developing an innovative and cost effective method to quantify the impact of specific vehicles on road and rail infrastructure. The project represents an important first step towards achieving a consensus and a legal basis for a European standard for measuring the environmental “footprint” of various vehicles. FOOTPRINT is helping to encourage a switch to modes of transport which are more environmentally-friendly. FOOTPRINT continues to run successfully and ends in 2008.

POLCORRIDOR (E! 2727) is a large project which integrates all four of the general types of activities pursued within LOGCHAIN. The project aims to establish a new freight transport corridor linking the Nordic region with South-East Europe. The goal is to utilise the latest technologies in freight management, intermodal infrastructures and information system architecture. The corridor concept integrates the sea connection between Poland and the Nordic countries with an innovative block train concept (the “Blue Train Shuttle”)

as a high-speed freight connection through Poland and the Czech Republic to a hub in Vienna, Austria. From this hub, distribution is planned to Hungary and other countries in South and South Eastern Europe. This new trans-European freight network should contribute to the opening of new markets and the increase of trade all along the supply corridor in Northern, Central and Eastern Europe.

The project partners in POLCORRIDOR utilised LOGCHAIN to develop the concept for the corridor and bring together the necessary stakeholders for implementing the transport chain. Progress made within POLCORRIDOR formed the basis for a subsequent project funded by the European Commission (FP6) called REORIENT – Implementing Change in the European Railway System. REORIENT has the goal of developing a business plan suitable for implementation of this and other cross-border corridor solutions in Europe.

Benefits of the LOGCHAIN-Umbrella

The EUREKA umbrella LOGCHAIN – which came to an end in January 2006 – succeeded in generating 17 R&D projects carried out by international consortia. Four of these projects have led to market implementation of innovative technologies and logistic processes, ten have led to realizable concepts, and three projects are still running.

As a key European network for R&D in the area of freight logistics, LOGCHAIN has established lasting contacts between national funding programmes and facilitated the exchange of information with other relevant European initiatives (e.g. ERA-Net Transport, ERTRAC, ERRAC, Waterborne) – thereby making a significant contribution to the establishment of the European Research Area.

Contact with these initiatives will be maintained and strengthened during the second phase of the umbrella – LOGCHAIN+ – which was launched in February 2006.

Source: Felix Fiseni

EUREKA UMBRELLA – EuroEnviron

Green Innovation for the Future
EuroEnviron²⁰¹⁰

Why EuroEnviron?

A substantial number of companies and research organisations have already - if not found happiness - established good and fruitful co-operations through the international EuroEnviron network. New environmental technologies are now conquering the market as the overall result of these joint ventures. EuroEnviron offers a network that makes it possible to join collaborations with industries and research organisations from all over Europe.

The basic idea behind the launch of EuroEnviron is to assist European enterprises and research organisations to find suitable partners for participation in a EuroEnviron EUREKA project aimed at developing new environmental products or processes. In some countries the participation in a EuroEnviron EUREKA project will also have the possibility of Government assistance through public funding.

EUREKA-EuroEnviron Mission Statement

There is a wide range of opportunities to counter environmental problems in the EUREKA countries, but solutions can only be identified and implemented using many different specific approaches. Pollution prevention rather than clean-up is regarded as the future at all political levels and will therefore receive special attention in the targeted project generation activities within the EUREKA EuroEnviron Umbrella.

However, in order to offer the needed range of options for both short-term and long-term pollution problems within many areas (sector wise as well as nationally) there will be a continuous need for the further development of clean-up and end-of-pipe technologies.

Life cycle perspectives, framed by Integrated Product Policies by EUREKA countries and the European Union, and Life Cycle Management approaches applied by industries, together with sustainable development are guiding principles in the search for solutions. These should contribute to strengthening the position of European industry in delivering sustainable products and services.

With this in mind EuroEnviron works to:

- Generate, promote and facilitate the establishment of “market-driven”, co-operative, environmental RTD projects involving industry and research institutes across Europe
- Carry out networking activities emphasizing the new environmental focus as outlined in EU and national environmental policies and directives
- Generate and promote RTD projects under the Integrated Product Policy (IPP) Approach aiming at the development of intelligent product design / eco-design

that reduces the environmental impacts of products and services through their entire life cycle:

- use of fewer resources
 - avoidance or limitation of emissions of dangerous substances
 - improvement of recycling
 - sustainable use of renewable resources
 - increased product life time
 - increased “service” value of products = dematerialisation
 - minimisation of waste
- Promote sustainability and life cycle assessment as integrated elements in all innovative developments
 - Encourage co-operation on environmental RTD between companies and research organisations in different regions of Europe
 - To promote an open dialogue between the different actors from industry, research, governments and other interested parties within and across the different industrial sectors and countries of the EUREKA EuroEnviron network
 - Co-operate with relevant European and international organisations and research programmes (other EUREKA umbrellas, EU Framework Programmes, COST, CEN, UNEP, etc.)

EuroEnviron Action Plan 2004-2008

During spring 2004 EUROENVIRON has finalised its 2004-2008 Action Plan which will form the basis for the network's activities in the coming years.

Introduction to the Action Plan

New and innovative environmental technologies can add to economic growth in a number of ways. They will increase the effectiveness of environmental protection, reducing the cost burden to industry by enabling requirements to be met for a lower cost and increased value for money in protection. This releases resources for use elsewhere in the economy. They also help to uncouple environmental pollution and resource use from economic growth, allowing economies to have more scope to grow in the long run while still remaining within the limits of the environment. This is central to sustainable development.

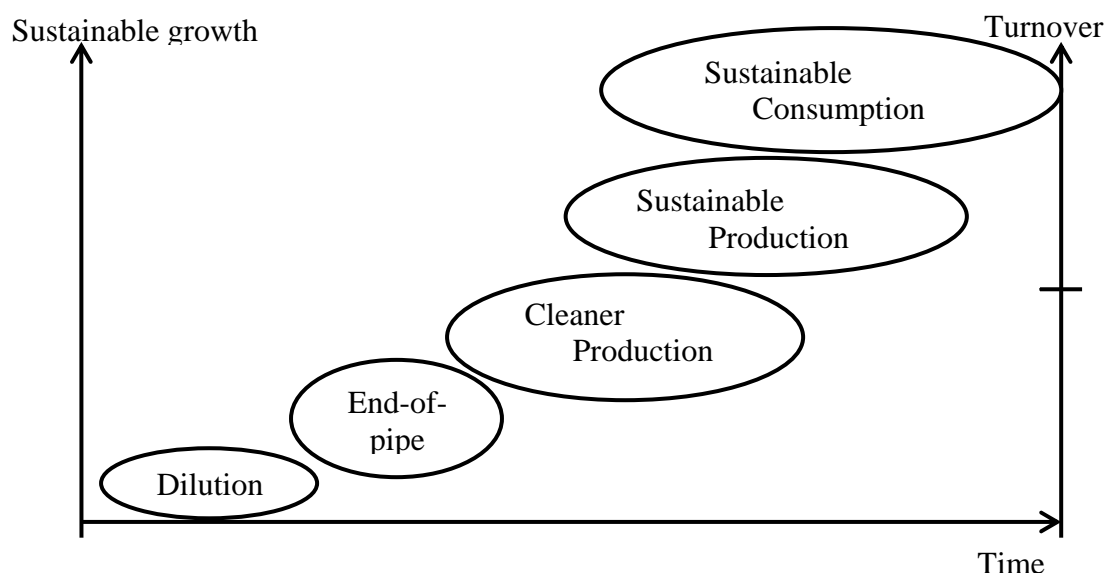
Finally, an innovative environmental technology sector can help underpin growth if it is capable of tapping into rapidly growing export markets. Trade in advanced technologies can be good both for the EU and for other countries that need such technology to help them tackle their own environmental problems. By developing better and more cost-effective technologies we open up a wider range of options to countries that are experiencing the same environmental constraints that we are facing.

It is clear that when we talk about environmental technologies we mean far more than ‘end-of-pipe’ devices to clean up pollution. Environmental technologies include ‘integrated’

technologies that prevent pollutants being generated during the production process, as well as new materials, energy and resource-efficient production processes, environmental know-how, and new ways of working. In short, we should take a broad view of environmental technologies as, from a policy perspective, our concern should be for the use and potential of environmental technologies throughout the economic system.

In particular, the enlargement of the EU and the investments needed to comply with the environmental standards and regulations provide a great opportunity for the old EU Member States, the new Members and the Candidate Countries to increase their uptake of environmental technologies and contribute to sustainable development.

The Environmental technologies industry is already growing rapidly. Rising demand for a better environment has led to an expanding supply of environmentally friendly technologies, products and services in both the industrialised and developing countries.



The above figure provides a schematic description of the relationship between sustainability and prospective growth in the European share of the world market for innovative environmental technologies.

In 1999, the overall turnover of the EU15 eco-industry sector was € 183 billion (a figure corresponding to 2.3% of EU GDP) and some 1.6 million people were directly employed in this sector (1% of total employment). The turnover of the EU15 eco-industries relating to pollution management, cleaner technologies and products was € 127 billion (equivalent to 1.6% of GDP), employing around 1 million people. The biggest area of expenditure is wastewater treatment closely followed by solid waste management. Other areas of expenditure include noise and vibration; monitoring analysis and assessment; clean up of contaminated soil; environmental R&D and administration and management. In other words, production of environmental technology is spread across the economy and includes both low and high-tech applications.

Resource management activities accounted for another 650,000 jobs and an additional € 56 billion turnover (equivalent to 0.7% of GDP) in the EU15. More specifically, this consists

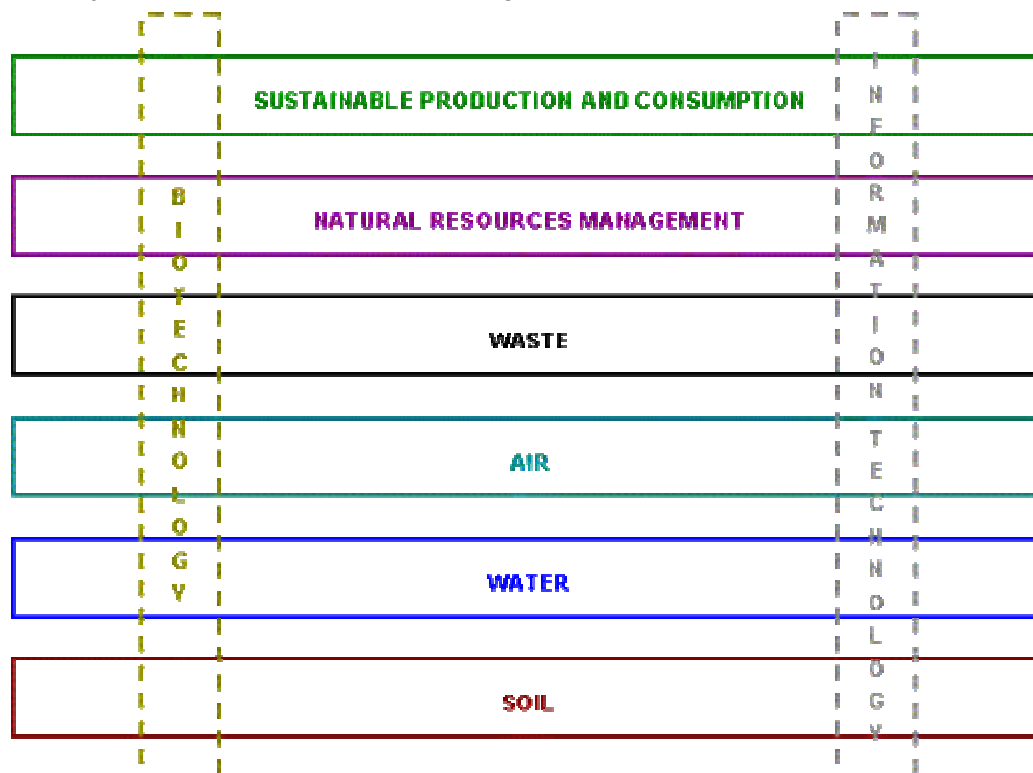
of water supply (€ 33 billion), recycling of materials (€ 14 billion), and nature protection (€ 7 billion). These estimates do not include the renewable energy sector. Water supply is a relatively mature area of activity for the EU 15, but is one of the fastest growing market segments in a global context.

According to some estimates the global market for environmental technologies is worth around € 550 Billion, with the EU making up approximately one third of this market. The USA, EU and Japan dominate the global environmental market, accounting for 85% of it. The largest export markets for the EU15 eco-industry are the US and the Candidate Countries, followed by South East Asia, South America and the Middle East. In general, the evidence is that the EU has a competitive and diverse eco-industrial exports sector, and is a major global player.

To find new and better solutions in the areas mentioned here will help us to contribute to growth while at the same time improving the environment and protecting natural resources. The overall goal will be to increase Europe's share of the global market for environmental technologies.

The integration of cross-cutting technologies such as biotechnology and IT will be paramount to promoting the required sustainable solutions. The challenge lies not only in developing new technologies, but also in assisting and motivating companies to implement them in new production processes. Biotechnology and IT are essential in the technological evolution that seeks to improve the sustainability of industrial systems, products and services.

On this basis, over the next few years, EuroEnviron has decided to put special focus on six subject areas, with two cross-cutting themes as follows:



Collaboration, Co-ordination and Dialogue with EU

In 2002 the European Council placed the creation of the European Research Area (ERA) on the Agenda in order to establish a better co-ordination between the numerous different research activities in Europe today at national and international level. The creation of the ERA aims to promote a more effective transfer of knowledge from basic research to innovation and to establish a better co-ordination between national and international funding sources and mechanisms.

From R&D to Market

