Increasing Europe's competitiveness through co-operative research

Europe is at a crossroads, facing unprecedented opportunities and challenges in our increasingly globalised world. The goals set by EU leaders at the 2000 Lisbon Summit – higher growth, stronger competitiveness, more and better jobs – are a road map for the future. But the key to success is the innovation that has traditionally sparked Europe's competitiveness and is continuing today through ambitious R&D programmes.

The EUREKA Initiative, launched in 1985, is helping achieve these ambitious goals. Its declared objective is "to raise the productivity and competitiveness of Europe's industries and to boost national economies on the world market, and hence strengthen the basis for lasting prosperity and employment". To achieve this, EUREKA's framework empowers market-oriented R&D through trans-national and collaborative projects involving large businesses, SMEs, research centres, universities and governments/national administrations – the five 'pillars' of EUREKA's success.

Timing is critical in the fiercely competitive global marketplace. EUREKA projects focus on cutting-edge R&D that is close to the market. Michel Vieillefosse, Head of the EUREKA Secretariat in Brussels, says: "EUREKA reacts quickly to market change. In a three- to four-year timeframe, more than half of the projects give birth to a tangible, marketed product. We drive to produce concrete results. This is the reason for our success."

A catalyst for innovation

EUREKA's added value is its collaborative underpinning as the five 'pillars' work together to define common architectures, languages and databases with the aim to increase market reactivity and productivity. Vieillefosse points to the showcase EAST-EEA (Electronics Architecture and Software Technology – Embedded Electronic Architecture) project as an example of such productive, innovative synergy, which has significantly strengthened the competitiveness of the European automotive industry.

"Partnerships enable risk and benefit sharing amongst industry," he says. "Companies, particularly SMEs, face challenges such as access to the European market, language and cultural barriers. Together, they overcome the problem of location to create strong eco-systems within which they collaborate."

EUREKA invests in sectors where Europe is already a world leader, such as aeronautics, the automotive industry, smart cards, telecommunications and consumer electronics. Projects have contributed to this success while strengthening industry giants such as Nokia, Siemens, Philips, Ericsson, STMicroelectronics and EADS, to name a few. "These companies invest about 20% of their turnover in R&D," Vieillefosse says. "EUREKA is proud to be part of that by fostering the co-operation that results in common tools they are willing to share."

Strategic networks of innovation

There is strong evidence that the commercial position of many SMEs is strengthened by participating in a

A common European automotive software for 2009

EAST-EEA results allow the European automotive industry to maintain and expand its position in global automotive markets.

The achievements of the EAST-EEA project represent a major step forward for the European automotive industry. An ITEA Achievement Award 2004 recipient, this project offers possibilities for dramatic cost reductions. Faster time-to-market and improved quality is expected to significantly strengthen the sector's competitiveness, thus securing the lead of European car manufacturers and suppliers well into the future.

One of the main challenges facing manufacturers is integrating the different electronic systems, subsystems, modules and components delivered by various

EUREKA project, particularly in terms of access to new markets in Europe and beyond. Innovative projects, mainly involving SMEs, contribute to improved wellbeing, security, environment and employment. The estimated average increase in annual turnover is about €1 million per participating SME, with four jobs being created within one year of the project ending.

"There is a strong evidence that many SMEs are strengthened by participating in a EUREKA project in terms of access to new markets"

Clusters bring together EUREKA partners to focus on developing and commercially exploiting new technologies. Their ultimate goal is to ensure that Europe maintains its lead in the world market. Clusters exploit technologies developed through existing national and European programmes. They develop generic technologies that drive European standards and the interoperability of products in several sectors, including information and communications technologies (ICT), the automotive industry, energy and biotechnology.

Within the EUREKA framework and in close collaboration with national funding authorities, industry works in Clusters that benefit from the programme's flexibility. R&D is continuously adapted in response to the accelerating pace of technology and changing market demands.

"Cluster projects play an important role within EUREKA and are leading the way forward," Vieillefosse points out. "They are long-term, strategically significant initiatives that contribute to Europe's success every day."

ICT Clusters:

› MEDEA+ (2001-2008) – Microelectronics Development for European Applications. Investment: €4,000 million. Goal: Advanced co-operative R&D in microelectronics to make Europe a leader in system innovation on silicon.

www.medeaplus.org

› ITEA (1998-2008) – Information Technology for European Advancement. Investment: €3,000 million. Goal: Seeks to build a digital future by helping Europe become a leader in software embedded systems.

www.itea-office.org

› CELTIC (2003-2008) – Co-operation for a Sustained European Leadership in Telecommunications. Investment: €1,000 million. Goal: Telecommunications solutions through collaborative research.

www.celtic-initiative.org

› PIDEA+ (2004-2009) – Packaging and Interconnection Development for European Applications. Investment: €600 million. Goal: The electronics industry's development of innovative I&P (Interconnection and Packaging) technologies.

www.pidea.com.fr

› EURIMUS II (2004-2008) – EUREKA Industrial Initiative for Microsystems Uses. Investment: €500 million. Goal: The development of generic microsystems.

www.eurimus.com

The numbers tell the story

Since 1985, substantial public and private funding has been deployed to support critical research and development. According to EUREKA's Statistical Report (July 2003-2004), the numbers reveal a growing success story:

› Within the EUREKA framework, 1,600 projects have been completed for a total value of more than €22,000 million.

› Some €1,800 million of additional turnover has already been reported by project participants. A further €6,000 million per annum is expected within three years of project completion. On average, the reported increase in turnover is more than €1 million achieved per annum per participant and about €3.5 million expected per annum per participant.

› The value of ongoing projects is more than €2,500 million for Cluster projects, primarily in the information technology field and €2,000 million for innovative projects.

› The public funding invested is returned less than two years after project completion.

› Today, 678 EUREKA projects are running with a total budget of some €1,900 million. There are 2,826 organisations involved: 645 large companies, 1,184 SMEs, 504 research institutes, 422 universities and 71 governments/national administrations.

suppliers. EAST-EEA, successfully addressed the need for interoperability by developing an integrated platform based on open systems architecture. Innovative processes and tools were validated in all car domains: Body electronics, power train, telematics, human-machine interfaces and chassis.

Twenty-three partners collaborated, representing all of the major players in the sector, including manufacturers, suppliers, SMEs with essential software expertise, and academics.

"EUREKA has been instrumental in bringing together a representative cross-section of the automotive community to define and realise a common language for a European electronic vehicle architecture in 2009," explains project manager Joachim Irion.

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A remarkable spin-off

The Automotive Open System Architecture (AUTOSAR) partnership was formed in July 2003 as a spin-off from the EAST-EEA project and is fully funded by industry. "It is remarkable that the results of a research project have found their way into an industrial development project in such a short time," he says.

The goals of the partnership include standardising basic system functions and functional interfaces, integrating and transferring functions, as well as substantially improving software updates and upgrades over the vehicle lifetime. The partnership brings together the top 10 players in this field: BMW Group, Bosch, Continental, DaimlerChrysler, Ford, Opel, PSA Peugeot Citroën, Siemens VDO Automotive, Toyota, and Volkswagen AG.

› www.east-eea.net/