LAC-ACCESS
Connecting high-quality research between the European Union and Latin American and Caribbean Countries

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THEMATIC REPORT on Information and Communication Technologies (ICT) / Technology-Enhanced Learning (TEL)

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The Centre for Social Innovation (ZSI) is a self-determined, politically independent scientific institution, asserting thematic leadership in Europe to advance social innovation and to foster an overt and solidly united society.

ZSI is a not-for-profit research institute, established 1990 as a private association under Austrian law. Work is organised and financed project by project, resulting from participation in competitive Calls for Proposals and Calls for Tender published by public authorities on national, European and international levels. Since the beginning, the ZSI is a strong and well received partner in steadily expanding international networks. Scientific expertise of the 40+ employees encompass labour market, governance and partnerships, migration research, technology enhanced learning and other IT applications, European Research and Technology Development (RTD), knowledge economics, technology assessment and impact analysis.

The ZSI applies socio-scientific research, education, advisory and networking services to reduce the gap between social needs and potentials of the knowledge based information society. By connecting its scientific basis with practical applications the ZSI provides an interface across scientific disciplines and sectors (trans-disciplinarity).

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1 Introduction

The Thematic Report on Information and Communication Technologies (ICT) / Technology-Enhanced Learning (TEL) is produced in the context of the project LAC-ACCESS, which is funded by the 6th Framework Programme for Research and Technological Development (FP6). The project's central objective is to bridge high-quality research organisations in Latin America and the Caribbean (LAC) with those of the European Union (EU), focusing in particular on the 7th Framework Programme for Research and Technological Development (FP7). The project's duration is 28 months (January 2007 – April 2009).

The purpose of this report is to facilitate and provide useful information on existing initiatives, support programmes and current research activities on EU level with a special focus on TEL (eLearning). The major programmes, supporting initiatives and instruments (e.g. ERA-NET, Joint Technology Initiatives) are listed and key research players and organizations presented in a structured way. The report concludes with an overview and description of selected projects implemented in the EU but also informs about projects linking EU and LAC's countries in this scientific field.

This report is based upon the desk research and provides information gathered from diverse European sources. The report was compiled in summer 2008.
Similar reports are produced also in the fields of energy/biofuels, agriculture and research focusing on public health.

1.1 ICT Technology-Enhanced Learning (TEL)

Technology-enhanced learning (TEL), formerly entitled eLearning, has the goal to provide socio-technical innovations (also improving efficiency and cost effectiveness) for learning practices, regarding individuals and organizations, independent of time, place and pace.

European research on technology-enhanced learning (TEL) investigates how information and communication technologies can be used to support learning and teaching, and competence development throughout life. TEL research is interdisciplinary, integrating the expertise of pedagogy, cognitive science, neuroscience and computer science.

1.2 ICT- eLearning Portals

Apart from information provided on ICTWeb of the Community Research and Development Information Service webpage (CORDIS - informing about Framework Programmes' calls and their work programmes)[1], ERAWATCH[2] (offering information

[1] http://cordis.europa.eu/fp7/ict/

[2] http://cordis.europa.eu/erawatch/

related to research programmes and capacities) and in the RTD info[3] (Magazin on European Research - a quarterly magazine published by the EC), there are several webportals providing useful information related to TEL (in alphabetical order):

1.2.1 Elearningeuropa.info - Promoting innovation in lifelong learning[4]

The European eLearning portal provides in-depth look into the current situation and trends in elearning across Europe. The platform is divided in 3 sections: eLearning Papers, eLearning Community and eLearning Directory and is translated in 19 languages including Spanish.

The eLearning papers add a new dimension to the exchange of information on e-learning in Europe and stimulate research. The scope of the eLearning Papers reflects the four interest areas of elearningeuropa.info: schools, higher education, training and work and learning and society.

The eLearning Community offers several fora in order to discuss and share ideas and comments with fellow elearning community members and provides also databases:

- Database of projects undertaken by various European actors in all elearning areas;
- Database of online universities, institutions, organisations and agencies related to elearning that belong to the EC or EU Member States; and
- Virtual newsstand allowing access to publications related to elearning, ranging from official documents and books to journals, newsletters and blogs.

The elearningeuropa.info Newsletter is published regularly every months and a calendar of events featuring principal conferences and activities related to e-learning taking place in Europe can be viewed on the platform too.

1.2.2 Ideal-ist[5]

The webportal Ideal-ist addresses ICT companies and research organisations worldwide wishing to find project partners for a participation in FP7. Ideal-ist offers a quality-labeled partner search and other services helping to ease participation in FP7. By collaborating with other European projects, Ideal-ist is continuously extending the access to its partner search service.

The Ideal-ist network is co-financed by the EC and has 49 national representatives in all Member States, Candidate Countries and Associated States, as well as Western Balkan Countries, Newly Independent States and Mediterranean Countries.

[3] http://ec.europa.eu/research/rtdinfo/index_en.html
[4] http://www.elearningeuropa.info/

[5] http://www.ideal-ist.net/

1.2.3 epractice.eu[6]

The ePractice.eu is an online community where professionals related to eGovernment, eInclusion and eHealth can share experiences, contacts and resources with peers around the world. The portal was created and is supported by the EC.

The webportal maintains a comprehensive online calendar with the major eGovernment, eInclusion and eHealth related events scheduled across Europe. A directory of documents on eGovernment, eInclusion and eHealth is provided as well as a combination of online with offline activities, e.g. workshops reflecting current topics and offering a platform on which participants are able to discuss the latest issues and cases face-to-face.

1.2.4 ICT Results[7]

The ICT Results is an editorial service developed in 2003 for the European Commission's Directorate-General Information Society and Media in order to showcase EU-funded ICT research and activities. Since 2007 the webportal is operated by a consortium with experience in research, editing, communication and marketing services (ESN and partners Assystem).

The ICT Results features online news and analysis on the emerging results from ICT research. It reports on prototype products and services ready for commercialisation, as well as work in progress and interim results with significant potential for exploitation.

The service comprises of articles on specific projects or ICT market application areas, regular news and events from the Information Society portal, regular e-mail bulletin providing a digest of the latest news and features, Press Desk - information and facilities for the Press and Media, Investors Room, comprehensive links to IST projects and other useful websites and monthly Editorial Calendar.

1.2.5 TeLearn – bring worldwide visibility to your TEL research[8]

The TeLearn is an international open archive, established by the Kaleidoscope Network of Excellence, dedicated to research in the field of technology enhanced learning (TEL). Relevant research publications or videos can be submitted to the open archive after institutional as well as individual registration.

Visitors of this platform can find research papers and videos in various languages and the TeLearn archive offers currently approximately 1300 research publications and 120 videos.

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[6] http://www.epractice.eu/

[7] http://cordis.europa.eu/ictresults/

[8] http://telearn.noe-kaleidoscope.org/

2 Relevant EU support mechanisms/programmes and initiatives

2.1 FP7 Programme[9]

The Framework Programme (FP) is the European Union's main instrument for funding research and development (R&D).

The 7th Framework Programme (FP7) bundles all research-related EU initiatives together under a common roof playing a crucial role in reaching the goals of growth, competitiveness and employment; along with a new Competitiveness and Innovation Framework Programme (CIP), Education and Training programmes, and Structural and Cohesion Funds for regional convergence and competitiveness. It is also a key pillar for the European Research Area (ERA).
The FP7 is operating for seven years from January 1, 2007 with a budget of approximately EUR 50.5 billion.

The broad objectives of FP7 have been grouped into four categories – programmes:

- 'Cooperation';
- 'Ideas';
- 'People'; and
- 'Capacities'.

All specific programmes work together to promote and encourage the creation of European poles of (scientific) excellence. The non-nuclear research activities of the Joint Research Centre (JRC) are grouped under a specific programme with individual budget allocation.

The programme **'Cooperation'**[10] covers collaborative research, carried out in trans-national cooperation (consortia) and Joint Technology Initiatives (based on Technology Platforms) and covers following themes: Health; Food, Agriculture and Fisheries, and Biotechnology; **Information and Communication Technologies (ICT)**; Nanosciences, Nanotechnologies, Materials and new Production Technologies; Energy; Environment (including Climate Change); Transport (including Aeronautics); Socio-Economic Sciences and the Humanities; Space and Security.

The programme **'Ideas'** covers basic, frontier research, carried out across all fields by individual teams.[11] For its implementation, a European Research Council (ERC), consisting of an independent Scientific Council and a dedicated implementation structure, has been established by EC and more detailed can be found in the chapter 3 Key EU research initiatives, players and agencies.

[9] http://cordis.europa.eu/fp7/home_en.html

[10] http://cordis.europa.eu/fp7/cooperation/home_en.html

[11] http://cordis.europa.eu/fp7/ideas/home_en.html

The programme **'People'** focuses on strengthening the human potential in research (activities supporting training and career development of researches) and detailed description of Marie Curie Actions is provided on the FP7 programme webpage.[12]

The programme **'Capacities'** supports research infrastructures, research for the benefit of SMEs and the research potential of European regions. Description of the areas is also available on the FP7 webpage.[13]

The European Commission (EC) has made international cooperation a major aspect of FP7. Open to participation from nearly every country in the world, FP7 is the largest international R&D programme worldwide. Participation of the Latin America and the Caribbean (LAC) countries is specifically encouraged and there are different categories of countries which may have varying eligibility for different specific and work programmes. The list of International Co-operation Partner Countries (ICPC) is always in annex of each work programme for individual themes.

Comprehensive information resource containing strategic documents and action plans, publications and newsletters on technology-enhanced learning (TEL) is available in the CORDIS Library - ICT.[14]

2.1.1 FP7 Cooperation, Theme 3: Information and Communication Technologies (ICT)

The primary objective of ICT research under the FP7 is to improve the competitiveness of European industry. FP7 research activities strengthen Europe's scientific and technology base and ensure its global leadership in ICT, help drive and stimulate product, service and process innovation and creativity through ICT use and ensure that ICT progress is rapidly transformed into benefits for Europe's citizens, businesses, industry and governments.

The overall budget earmarked for funding of the theme 3 for the period 2007 - 2013 is EUR 9.1 billion, which equals 28% of the 'Cooperation' programme budget (app. EUR 32 billion) and represents the largest research theme in this framework programme.

The ICT Work Programme under FP7 is divided into seven 'Challenges' of strategic interest to European society, plus research into 'Future and emerging technologies' and support for horizontal actions, such as international cooperation:

- Challenge 1 - Pervasive and trusted network and service infrastructures;
- Challenge 2 - Cognitive systems, interaction and robotics;
- Challenge 3 - Components, systems and engineering;
- **Challenge 4 - Digital libraries and content;**

[12] http://cordis.europa.eu/fp7/people/home_en.html

[13] http://cordis.europa.eu/fp7/capacities/home_en.html

[14] http://cordis.europa.eu/fp7/ict/newsroom/library_en.html

- Challenge 5 - Sustainable and personalised healthcare;
- Challenge 6 - Mobility, environmental sustainability and energy efficiency;
- Challenge 7 - Independent living and inclusion;
- Future and emerging technologies (FET); and
- Support for horizontal actions (e.g. international cooperation).

The actual ICT Work Programme 2007-08 is in line with the main ICT policy priorities as defined in the i2010 initiative - a European Information Society for Growth and Employment.[15]

According to the information from EC, the ICT Work Programme 2009-10 will be published in November 2008.

2.1.2 FP7 Cooperation, Theme 3: ICT, Challenge 4: TeLearn - European research on technology-enhanced learning[16]

In the first ICT Work Programme under FP7, which defines the research priorities for 2007-08, technology-enhanced learning research is part of Challenge 4, 'Digital Libraries and Content'. One of the objectives under Challenge 4 covers 'Digital libraries and technology-enhanced learning'.

The work programme aims at stimulating research that leads to the creation of responsive environments for technology-enhanced learning and, at longer-term, the development of adaptive and intuitive learning systems.
Responsive environments for TEL should be pedagogically sound and compatible with business processes and human resources management systems of organisations. They should exploit, where relevant, interactivity and collaboration of learners. In particular, they should be able to:

- motivate, engage and inspire learners;
- accommodate personalisation to respond to specific learning needs and contexts (mass-individualisation);
- support the transformation of learning outcomes into permanent and valuable knowledge assets; and
- enhance competence, skills and performance.

Adaptive and intuitive learning systems, resulting from longer-term research efforts, should be able to configure themselves according to their understanding and experience of learners' behaviour. These systems should:

- identify learner's requirements from monitoring progress in an intelligent way;
- make best use of the individual learning and cognitive abilities of the learner; and
- give meaningful advice to both learners and teachers.

The first call (FP7- ICT-2007-1) addressing 'Digital libraries and technology-enhanced learning' (**ICT-2007.4.1**) under FP7 was announced on December 22,

[15] http://ec.europa.eu/i2010/

[16] http://cordis.europa.eu/fp7/ict/telearn-digicult/

2006 with the deadline on May 8, 2007. Projects resulting from this call (five small or medium- scale focused research projects and one large- scale integrating project) started its operation between February and April 2008 and are supported via following funding schemes: Collaborative projects (CP), Networks of Excellence (NoE) and Coordination and Support Actions (CSA).

The third call (FP7- ICT-2007-3), which was open between December 4, 2007 and April 8, 2008 includes as one of its objectives also technology-enhanced learning (**ICT-2007.4.3**) and the projects are supported in the schemes: Collaborative projects (CP), Networks of Excellence (NoE) and Coordination and Support Actions (CSA). Selected projects should start at the end 2008.

As indicated in the draft version of the ICT Work Programme 2009-10, it is planned to support technology-enhanced learning in the fifth ICT call (**FP7-ICT-2009-2**), which should be published in June 2009 with expected closure date on September 22, 2009. International cooperation will be specifically encouraged in several objectives and the programme continues to use the funding scheme types: large-scale integrated projects' (IP) and 'small or medium-scale focused research actions' (STREP), Networks of Excellence (NoE), Coordination Actions (CA) and Specific Support Actions (SA).

The 2009-10 Work Programme for ICT research will be presented in detail at the conference 'Inventing the Future', which will be held in Lyon, France on November 25 - 27, 2008.[17] Other sources of EU research funding for ICT will also be examined, including the new Joint Technology Initiatives (JTIs) and the Competitiveness and Innovation Programme (CIP). During the Lyon event, a special attention will be paid to the Latin American delegates. A stand entitled 'Latin America ICT Gateway' will be the point of reference for all Lyon participants willing to have information on LA ICT competencies & capacities and willing contacting LA potential project partners present there.

More information related to theme 3, detailed description of mentioned areas, Work Programme 2007-08 Information and Communication Technologies (ICT) with listing all relevant, actual Calls for Proposals for ICT under FP7 including all funding mechanisms be can be downloaded on the CORDIS webpage[18].

2.1.3 International cooperation in FP7 – possibilities for LAC in FP7 Cooperation, Theme 3[19]

International cooperation between EU and non-EU countries is an important aspect of FP7 and is also an integral part of theme 3 - Information and Communication

[17] http://ec.europa.eu/information_society/events/ict/2008/index_en.htm

[18] http://cordis.europa.eu/fp7/ict/

[19] http://cordis.europa.eu/fp7/ict/international/home_en.html

Technologies (ICT). The whole ICT theme is open to third country participation (including LAC).

Projects specifically promoting EU-Latin America ICT research cooperation were supported by FP6, e.g. WINDS LA and SOLAR-ICT. For more details about those projects, please see the chapter 4.3 International eLearning projects linking European Union and Latin American countries.

The main objectives of international co-operation in Information Society Technologies are to:

- support and promote European competitiveness through strategic research partnerships with third countries by engaging the best third country scientists to work in and with Europe; and
- address specific problems the third countries are facing or having a global character, on the basis of mutual interest and mutual benefit.

International cooperation in the ICT Work Programme 2007-08 is implemented through:

- The **opening of all ICT programme objectives** to the participation of third country organisations from all International Cooperation Partner Countries (ICPC) and industrialised countries. In addition, for several objectives of the work programme, the participation of third country partners is particularly encouraged.
- **Specific International Cooperation Actions (SICAs)** consisting of collaborative projects with ICPC countries in areas of mutual interest and dedicated to cooperation on topics selected on the basis of their scientific and technological competences and needs. The SICAs have specific rules for participation.

The three main objectives of the international cooperation activities covered in the ICT Work Programme 2007-08 are to:

- improve cooperation in the development of standards and interoperable solutions and in roadmapping in order to enable the wider uptake of the results of European research and to improve the competitiveness of European industry. This objective is implemented by supporting mainly Coordination and Support Actions (CSA) bringing together European and international stakeholders and targeting industrialised regions (USA, Japan) and/or emerging economies such as China, Russia, India and Latin America.
- improve scientific cooperation for the mutual benefits of Europe and target regions. This is implemented with third countries where there is clear reciprocity in knowledge sharing and in the areas where there is value for European and third country organisations to cooperate. Support is provided to SICAs in the areas of 'ICT for risk assessment and patient safety' and 'ICT for environmental disaster reduction and management'.
- support activities linked to ICT-based research infrastructures.

In order to support coherence at the Framework Programme level, coordination will be sought with ICT-related international cooperation activities launched under the Capacities and People Specific Programmes.

2.2 Information Communication Technologies Policy support Programme (ICT PSP)[20]

The ICT Policy Support Programme (ICT PSP) under the Competitiveness and Innovation Programme (CIP), as a one of the main financial instruments of i2010. This new strategic framework (i2010 – A European Information Society for growth and employment) was adopted by the EU in 2005 and promotes an open and competitive digital economy and emphasizes ICT as a driver of inclusion and quality of life. The ICT Policy Support Programme (ICT PSP) aims at stimulating innovation and competitiveness through the wider uptake and best use of ICT by citizens, governments and businesses, particularly Small and Medium-sized Enterprises. The approach is based on leveraging innovation in response to growing societal demands.

The two main themes which are supported through pilot and thematic network projects in 2008 are:

- ICT for user-friendly administrations, public services and inclusion; and
- ICT for Energy Efficiency and Sustainability in urban areas

The ICT PSP is open to all legal entities established in the EU Member States and associated countries (Iceland, Lichtenstein, Norway and Croatia) to the ICT Policy Support programme.

Rules for participating in the ICT PSP and calls announced are available on the programme webpage[21] and Mexico (University of Sonora) has already indicated interest in joining a consortium and participate in ICT PSP projects.

2.3 eContentplus Programme[22]

The four-year programme (2005-2008) intends to tackle organisational barriers and promote take up of leading-edge technical solutions to improve accessibility and usability of digital material in a multilingual environment. The eContentplus Programme addresses specific market areas where development has been slow:

- Geographic information (as a key constituent of public sector content);
- Educational content; and
- Digital Libraries (cultural, scientific and scholarly content), in particular the creation of the European Digital Library.

In the area of 'Digital Libraries', eContentplus supports the creation of the European Digital Library as well as the maximisation of the impact of European research results.

[20] http://ec.europa.eu/information_society/activities/ict_psp/about/index_en.htm

[21] http://ec.europa.eu/information_society/activities/ict_psp/participating/index_en.htm

[22] http://ec.europa.eu/information_society/activities/econtentplus/index_en.htm

The budget allocated to the eContentplus Programme for the four year period is EUR 149 million.

Participation in the programme is open to legal entities established in the EU Member States, EFTA States which are contracting parties to the EEA Agreement (Norway, Iceland and Liechtenstein) and legal entities established in the candidate countries (Croatia, Turkey and the Former Yugoslav Republic of Macedonia) can take part in a proposal, but will only receive funding if a bilateral agreement with the relevant country has been concluded to this effect.

Participation of legal entities established in LAC region is welcomed but they may take part in projects at their own expense.

2.4 Lifelong Learning Programme (LLP)[23]

The aim of the Lifelong Learning Programme, which was published in the Official Journal of the European Union on November 15, 2006, is to contribute through lifelong learning to the development of the Community as an advanced knowledge society, with sustainable economic development, more and better jobs and greater social cohesion. It aims to foster interaction, cooperation and mobility between education and training systems within the Community, so that they become a world quality reference.
LLP is the successor to the current Socrates, Leonardo da Vinci and eLearning programmes and is composed of four sectoral sub-programmes, four transversal programmes and the Jean Monnet programme[24], focusing on European integration and support for certain key institutions and associations active in the field.

Four sectoral programmes focus on:

- School education (Comenius)[25];
- Higher education (Erasmus)[26];
- Vocational training (Leonardo da Vinci)[27]; and
- Adult education (Grundtvig)[28].

As already indicated, LLP is completed by four transversal programmes, covering activities in four themed areas across all sectors of education and training:

- Key Activity 1 - Policy cooperation and innovation in education and training;
- Key Activity 2 - Languages and language learning;
- Key Activity 3 - **Development of ICT-based content and services[29]**; and

[23] http://ec.europa.eu/education/programmes/newprog/index_en.html

[24] http://eacea.ec.europa.eu/llp/jeanmonnet/index_en.htm

[25] http://eacea.ec.europa.eu/llp/comenius/comenius_en.htm

[26] http://eacea.ec.europa.eu/llp/erasmus/erasmus_en.htm

[27] http://eacea.ec.europa.eu/llp/general_information/leonardo_da_vinci_en.htm

[28] http://eacea.ec.europa.eu/llp/grundvig/grundvig_en.htm

- Key Activity 4 - Dissemination and exploitation of results of the programme.

LLP is managed by Education, Audiovisual and Culture Executive Agency (EACEA), which was created by the European Commission and the budget available for the Lifelong Learning Programme is EUR 7 billions in the period 2007-2013.

Information about funding opportunities 2008 including all call for proposals are downloadable on the EACEA webpage.[30]

2.5 European Technology Platforms (ETPs)

The European Technology Platforms (ETPs) provide a means to foster effective public-private partnerships between the research community, industry and policy makers in order to deliver the impetus to mobilise the research and innovation effort towards achieving a common goal. The role of Technology Platforms in stimulating more effective RTD, particularly in the private sector, can contribute directly to achieving the Lisbon objectives, developing the European Research Area (ERA) and increasing investment in R&D towards the 3% of GDP target.

A Technology Platform (TP) is a mechanism to bring together all interested stakeholders to develop a long-term vision to address a specific challenge, create a coherent, dynamic strategy to achieve its vision and steer the implementation of an action plan to deliver agreed programmes of activities and optimise the benefits for all parties. The elaboration and follow-up of a Strategic Research Agenda (SRA) form a crucial part of the implementation strategy, to optimise the contribution of RTD to the process. In achieving its wider goals, a TP should, in a medium to long term perspective, generate sustainable competitiveness and world leadership for the EU in the field concerned, by stimulating increased and more effective investment in R&D, accelerating innovation and eliminating the barriers to the deployment and growth of new technologies.

Technology Platforms follow three stages of development:

- Agreement on a common vision for technological development in the sector;
- Definition of a Strategic Research Agenda (medium and long-term);
- Mobilization of financial and human resources to implement the Strategic Research Agenda (SRA).

Nowadays, there are 30 European Technology Platforms (ETPs) created so far and detailed information on individual platforms is available at CORDIS webpage.[31]

[29] http://eacea.ec.europa.eu/llp/ka3/key_activity_3_en.htm

[30] http://eacea.ec.europa.eu/llp/funding/2008/index_en.htm

[31] http://cordis.europa.eu/technology-platforms/individual_en.html

There are several technology platforms dealing with ICT, but not with TEL directly, therefore no more information abut individual platforms provided in this thematic report. To mention some of the ETPs in operation (a selection):

- **eMobility Platform**[32] bringing together European organisations to address the challenges of future networks and building on Europe's success in mobile communications.
- **EPoSS**[33] aiming at strengthening Europe's capacity to organise and to deliver innovation in the area of smart systems technologies and integration.
- **Integral Satcom Initiative (ISI)**[34] addressing broadcasting, broadband, and mobile satellite communications, as well as their convergence, in integration within the global telecommunication network infrastructure.
- **Networked and Electronic Media (NEM) Initiative**[35] representing the convergence of existing and new technologies, including broadband, mobile and new media across all ICT sectors, in order to create a new and exciting era of advanced personalised services.
- **Networked European Software and Services Initiative (NESSI)**[36] dealing with software and services and defining the NESSI Strategic Research Agenda on new generation of ICT infrastructures.

2.6 Joint Technology Initiatives (JTIs)[37]

Joint Technology Initiatives (JTIs) are one of the major elements of the 7th Framework Programme for Research and Technological Development (FP7). They provide a way of creating new partnerships between publicly and privately-funded organisations involved in research, focusing on areas where research and technological development can contribute to European competitiveness and quality of life. The approach proposed by the JTIs signals a real change in how Europe promotes industry-driven research, designed to establish European leadership in certain technologies that are strategic to Europe's future.

In its structure, JTIs are independent legal entities managing research projects in an integrated way, with industry joining forces with other stakeholders. JTIs organise calls for proposals, oversee selection procedures and put in place contractual arrangements for projects set up to implement the JTI research agenda. JTIs will thus allow funds from different sources to be jointly managed and will be responsible for communication and dissemination activities.

[32] http://www.emobility.eu.org/

[33] http://www.smart-systems-integration.org/public

[34] http://www.isi-initiative.eu.org/

[35] http://www.nem-initiative.org/

[36] http://www.nessi-europe.eu/Nessi/

[37] http://cordis.europa.eu/fp7/jtis/about-jti_en.html

Each JTI includes a Governing Board, an Executive Director as well as other bodies, covering advisory bodies, depending on its specific operational and governance needs.
There have been six initiatives identified in the 'Cooperation' Specific Programme, and one of them, **'Embedded Computing Systems (ARTEMIS)'**[38], deals with ICT but does not focus directly on TEL. Therefore the thematic report is not providing detailed information about this JTI.

2.7 ERA-NETs

European Research Area Networks (ERA-NETs) is a scheme encouraged by the EC under FP6 and FP7 with the objective to support the co-operation and co-ordination of research activities carried out at national or regional level. ERA-NETs are financial supported by the FPs through SSA (Specific Support Action) during the preparatory phase and CA (Coordination Action) during the implementation.

Only 'Programme owners' (typically national ministries/regional authorities) and 'Programme managers' (such as research councils or funding agencies) are considered as eligible partners in an ERA-NET action. It should be stressed that research organisations or universities which are not programme owners or managers are not eligible partners for ERA-NET actions.

The mission of all existing ERA-NETs is to:

- propose actions to better co-ordinate research activities;
- launch call for proposals to support research activities in some EU Countries and regions and for a specific sector.

Detailed information about ERA-NETs supported within FP6 is available on the CORDIS webpage.[39]

In FP7, new ERA-NET actions will be supported and existing ERA-NET actions may re-apply to receive EC support to extend and/or reinforce their integration e.g. by broadening their partnership or increasing the type of collaborations. EC plans to support the organisation of joint calls between national research programmes by 'topping-up' joint trans-national funding with EC funding in a new module, so called 'ERA-NET Plus'. More information about recent development in FP7 related to ERA-NETs is available on the internet.[40]

There is no ERA-NET directly dealing only with technology-enhanced learning (TEL).

[38] http://www.artemis-office.org/

[39] http://cordis.europa.eu/coordination/era-net.htm

[40] http://cordis.europa.eu/fp7/coordination/eranet_en.html

2.8 European Cooperation in the field of Scientific and Technical Research (COST)[41]

Founded in 1971, COST is an intergovernmental framework for European Cooperation in the field of Scientific and Technical Research, allowing the co-ordination of nationally funded research on a European level. COST Actions cover basic and pre-competitive research as well as activities of public utility. COST is managed by the European Science Foundation (ESF) and receives funding from the EC under the framework programmes (FP).

COST has a geographical scope beyond the EU and welcomes the participation of interested institutions from non-COST member states without any geographical restriction.

As a precursor of advanced multidisciplinary research, COST plays an important role in the realisation of the European Research Area (ERA). It anticipates and complements the activities of the EU Framework Programmes, constituting a "bridge" towards the scientific communities of emerging countries. It also increases the mobility of researchers across Europe and fosters the establishment of scientific excellence in nine key domains:

- Biomedicine and Molecular Biosciences;
- Food and Agriculture;
- Forests, their Products and Services;
- Materials, Physical and Nanosciences;
- Chemistry and Molecular Sciences and Technologies;
- Earth System Science and Environmental Management;
- **Information and Communication Technologies;**
- Transport and Urban Development; and
- Individuals, Societies, Cultures and Health.

COST ICT[42] covers all COST activities in the field of ICT, from fundamental research to services and applications. ICT Actions have successfully contributed to the aims of the European Research Area (ERA) by bringing a large set of national, industrial, and university research in the field together into a common framework of research objectives.

COST finances networking of nationally funded activities in supporting meetings, conferences, short term scientific exchanges and outreach activities. COST supports the networking of specific research themes but does not fund research projects themselves. Currently more than 200 actions are supported and it is expected that every year approximately 50 new actions will be approved. On average financial support of some EUR 100.000 p.a. as grant for normally 4 years can be expected.
More information related to open COST calls for Proposals to support Scientific and Technical Collaboration in Europe is available on the webpage.[43]

[41] http://www.cost.esf.org/

[42] http://www.cost.esf.org/ict

[43] http://www.cost.esf.org/index.php?id=opencall

2.9 EUREKA[44]

EUREKA is a pan-European network for market-oriented, industrial R&D. Created as an intergovernmental Initiative in 1985, EUREKA aims to enhance European competitiveness through its support to businesses, research centres and universities who carry out pan-European projects to develop innovative products, processes and services.
EUREKA promotes cross-border, market-oriented, collaborative R&D and simplifies access to national funding for industry and research institutes from 39 member countries (none of them is from LAC) in a bottom-up approach to developing and exploiting innovative technology.

Projects supported within EUREKA are covering following areas: **Electronics & ICT[45];** Industrial Manufacturing, Material & Transport; Other Industrial Technologies; Energy technology; Chemistry, Physical & Exact Sciences; Biological Sciences; Agriculture & Marine Resources; Agrofood Technology; Measurements & Standards; and Technology for protecting humankind & the environment.

Detailed information about individual projects is available on the EUREKA webpage.

3 Key EU research institutes and organisations

Name:	**Joint Research Centre (JRC)**
Contact:	SDME 10/78, B-1049 Brussels, Belgium
Email:	jrc-info@ec.europa.eu
Website:	http://ec.europa.eu/dgs/jrc/index.cfm

The mission of the European Commission's Joint Research Centre (JRC) is to provide customer-driven scientific and technical support for the conception, development, implementation and monitoring of EU policies. As a service of the EC, the JRC functions as a reference centre of science and technology for the European Union. Close to the policy-making process, it serves the common interest of the Member States, while being independent of special interests, whether private or national.

The JRC provides scientific-technical support mainly to the following policy areas of the European Commission: Chemicals legislation; European Research Area (ERA); Internal market (financial services, system of common standards); Energy policies (Clean and sustainable energy production and conversion; safe and secure energy supply: energy efficiency, renewable energies, nuclear energy); Sustainable transport; **Information Society (competitiveness, innovation and inclusion)**;

[44] http://www.eureka.be/

[45] http://www.eureka.be/thematic/showThematic.do?area=t01

Common Agricultural Policy (rural development, sustainable agriculture); Maritime Strategy (fisheries, marine policy, security); Environmental policies (support to various legislative acts such as on fuels, soils, water, forests, air quality); Infrastructure for spatial information in Europe; Climate change (Kyoto protocol and post-Kyoto policy options); Health and consumer protection (food and feed safety and quality, cosmetics directives); Internal and global security; and Nuclear policies.

More information dedicated to Joint Research Centre (JRC) and its institutes all across Europe dealing with ICT (e.g. Institute for Prospective Technological Studies[46]) can be downloaded on the webpage.

Name:	**European Research Council (ERC)**
Contact:	Secretariat to the ERC Scientific Council and the ERC Board, Place Madou 1, MADO 06/64, 1049 Brussels, Belgium
Email:	rtd-erc@ec.europa.eu
Website:	http://erc.europa.eu/index.cfm

The European Research Council (ERC) is the first European funding body set up to support investigator-driven frontier research. The ERC complements other funding activities in Europe such as those of the national research funding agencies, and is a flagship component of the 'Ideas Programme' of the European Union's 7th Research Framework Programme (FP7). More information about 'Ideas' is provided in the chapter 2.1 FP7 Programme.

Its main aim is to stimulate scientific excellence by supporting and encouraging the very best, truly creative scientists, scholars and engineers to be adventurous and take risks in their research. The scientists are encouraged to go beyond established frontiers of knowledge and the boundaries of disciplines.

Being 'investigator-driven', or 'bottom-up', in nature, the ERC approach allows researchers to identify new opportunities and directions in any field of research, rather than being led by priorities set by politicians. This approach ensures that funds are channeled into new and promising areas of research with a greater degree of flexibility.

Participation from third countries (International Cooperation Partner Country – ICPC) in the ERC funding schemes is encouraged as a Principal Investigator (PI). The researcher may be of any age and nationality (with PhD or equivalent degree) and may reside in any country in the world at the time of the application. PI, who is coming from a third country, must establish a research team and activity at a host institution in a member state or associated country.
Depending on the specific project and field, the level of ERC grants may be up to around EUR 3.5 million for a period of 5 years. Normally, however, grants will be

[46] http://ec.europa.eu/dgs/jrc/index.cfm?id=1560&lang=en

limited to a maximum of around EUR 2.5 million unless the application involves specific features requiring a higher level of support.

All practical information on ERC Grant Schemes is available in structured way on the webpage.[47]

Name:	**Education, Audiovisual & Culture Executive Agency (EACEA)**
Contact:	Avenue du Bourget 1, BOUR, 1140 Brussels, Belgium (postal address)
Email:	eacea-info@ec.europa.eu
Website:	http://eacea.ec.europa.eu/

The Education, Audiovisual and Culture Executive Agency (EACEA) is responsible for the management of certain parts of the EU's programmes in the fields of education, culture and audiovisual. EACEA is fully operational from January 2006 and works under supervision from its three Directorates-General: Education and Culture (DG EAC), Information Society and Media (DG INFSO) and the EuropeAid Cooperation Office (DG AIDCO). The mission of the agency is to implement a number of strands of more than 15 Community funded programmes and actions in the fields of education and training, active citizenship, youth, audiovisual and culture. The agency is in charge of most management aspects of the programmes, including drawing up calls for proposals, selecting projects and signing project agreements, financial management, monitoring of projects (intermediate reports, final reports), communication with beneficiaries, and on the spot controls.

EACEA was also responsible for the **eLearning Programme**[48], which was a part of Education and training programmes in 2000-2006. The eLearning Programme was the European programme in the field of ICT for education and training promoting the inclusion of ICT in all learning systems and environments (formal, non-formal, informal – school, higher and adult education and training). Projects funded under the eLearning Programme are downloadable on the EACEA webpage.[49]

There are several EU initiatives announced just recently which represent major milestones in the way the EU conducts target-oriented research by partnering with the industry. One of them is the European Institute of Innovation and Technology (EIT), which will increase the overall resources available for R&D and will allow for better coordination with national and regional programmes available for R&D.

[47] http://erc.europa.eu/index.cfm?fuseaction=page.display&topicID=23

[48] http://eacea.ec.europa.eu/static/en/elearning/index.htm

[49] http://ec.europa.eu/education/programmes/elearning/projects/index_en.html

Name:	**European Institute of Innovation and Technology (EIT)**
Contact:	Budapest, Hungary
Email:	via internet (using EIT Contact form)
Website:	http://ec.europa.eu/eit/

The European Institute of Innovation and Technology (EIT) is a major EU initiative which aims to foster excellence in European innovation and to provide new solutions for major challenges, such as climate change, renewable energies or the next generation of information and communication technologies. The EIT is the first European initiative to integrate fully the three sides of the 'Knowledge Triangle' (Higher Education, Research, Business-Innovation) and seeks to stand out as a world-class innovation-orientated reference model, inspiring and driving change in existing education and research institutions.

By boosting the EU's capacity to transform education and research results into tangible commercial innovation opportunities, the EIT will further bridge the innovation gap between the EU and its major international competitors. The EIT will favour sustainable economic growth and job creation throughout the Union by generating new products, services and markets responding both to public demand and to the needs of the knowledge economy.
Based on partnerships known as 'Knowledge and Innovation Communities' (KICs) – highly integrated public-private networks of universities, research organisations and businesses – the EIT's activities will be coordinated by a Governing Board ensuring its strategic management. Direct involvement of business stakeholders, including SMEs, in all strategic, operational and financial aspects of the Institute is the corner stone of the initiative.

The EU Member States decided unanimously on June 18, 2008, that the European Institute of Innovation and Technology (EIT) will have its headquarters in Budapest, Hungary.

The inaugural meeting of the newly appointed Governing Board of EIT was held in the Institute's host city of Budapest on September 15, 2008 and was preceded by a ceremonial opening in the presence of Hungarian Prime Minister Ferenc Gyurcsány, Commission President José Manuel Barroso, and Commissioner for Education, Training, Culture and Youth, Ján Figel', among others.

According to the EIT's webpage[50], the Governing Board will be responsible for steering the EIT's strategic orientation and for the selection, monitoring and evaluation of KICs. At the inaugural meeting in September 2008, the Governing Board members, consisting of 18 experts worldwide, unanimously elected Prof. Dr. Martin Schuurmans, a Professor of Physics and former Executive Vice President of Philips Research, as Chairman of the EIT's.

[50] http://ec.europa.eu/eit/news_en.htm#eit006news

3.1 International organisations/networks focusing on TEL

(in alphabetical order)

Name:	**Association for the Advancement of Computing in Education (AACE)**
Contact:	AACE, International Headquarters, P.O. Box 1545, Chesapeake, VA 23327-1545, USA
Email:	info@aace.org
Website:	http://www.aace.org/

The Association for the Advancement of Computing in Education (AACE) is an international, not-for-profit, educational organization with the mission of advancing Information Technology in Education and eLearning research, development, learning, and its practical application. The association was founded in 1981 and has its international headquarters in Chesapeake, USA.

AACE serves the profession with international conferences, high quality publications, leading-edge Digital Library, Career Center, and other opportunities for professional growth.

Name:	**ELearning Industry Group (ELIG)**
Contact:	ELIG secretariat, c/o Richard Straub, 63, rue Rambuteau, 75 004 Paris, France
Email:	STRAUBR@fr.ibm.com; annemie.boonen@europace.org
Website:	http://www.elig.org/

The European Learning Industry Group (ELIG) is an open industry group with members representing the ecosystem for the 21st century learning solutions. ELIG seeks to promote innovation in learning, knowledge creation and dissemination thought Europe.

ELIG's mission is targeted towards the following areas:

- Providing policy input at a European level and as appropriate at country/region level;
- Acting as a communication channel to the marketplace, highlighting innovative developments and directions and giving orientation to market participants and stakeholders; and
- Constituting a platform for cooperation, sharing and concerted action for its members.

Name:	**European Association of Technology-Enhanced Learning (EATEL)**
Contact:	c/o Forschungszentrum L3S, Appelstraße 9a, 30167 Hannover, Germany
Email:	via webpage
Website:	http://www.ea-tel.eu/

The European Association of Technology-Enhanced Learning (EATEL) supports a network of European research laboratories and groups via free services, sponsoring high profile TEL events, a knowledge interchange, and a set of very active Special Interest Groups.

The objective of EATEL is to promote education and continuing education in the area of TEL and to support science and research in this area. The following principles form the basis for fulfilling the association's objectives:

- Promoting knowledge, education and continuing vocational education as a fundamental social objective;
- Fostering cooperation among researchers, providers and users of TEL;
- Disseminating high-quality resources about technology-enhanced professional learning topics to as many interested communities as possible;
- Facilitating the continuous and rapid transfer of research results into deployment for the general public; and
- Striving towards the development, conversion and adoption of standards for TEL.

Name:	**European Distance and E-Learning Network (EDEN)**
Contact:	EDEN Secretariat, Budapest University of Technology and Economics, Egry J. u. 1., 1111 Budapest, Hungary
Email:	secretariat@eden-online.org
Website:	http://www.eden-online.org/

The European Distance and E-Learning Network (EDEN) was established in 1991 as a not-for-profit organisation, registered as a limited Company under English law. EDEN is an international educational association open to institutions and individuals dealing with eLearning, open and distance education. Providing versatile expertise, the Association embraces all levels of formal and non-formal education and training. EDEN is fostering developments and collaboration in the constantly evolving field of eLearning and distance education by shaping European policy and offering services in a non-hierarchical manner.

Since 1997 the Secretariat of the Association has been hosted by the Budapest University of Technology and Economics.

Name:	**European Foundation for Quality in eLearning (EFQUEL)**
Contact:	via website
Email:	info@qualityfoundation.org
Website:	http://www.qualityfoundation.org/

The European Foundation for Quality in eLearning (EFQUEL) is a European membership organization, based in Brussels, Belgium. EFQUEL is built on principles of dialogue and inclusiveness to promote excellence and innovation to achieve Learning Europe. The Foundation serves as sustainable and proactive network (60 member organizations) and provides services to the European eLearning community. The purpose of the foundation is to involve actors in a European community of users and experts to share experiences on how eLearning can be used to strengthen individual, organisational, local and regional development, digital and learning literacy, and promote social cohesion.

The Foundation's initiators are the European Institut for eLearning, the European Schoolnet, FIM Newlearning, the MENON Network, the University of Duisburg-Essen, Germany and the University of Reading.

Name:	**MENON Network EEIG**
Contact:	35, Rue des Deux Eglises, B-1000 Brussels, Belgium
Email:	menon@menon.org
Website:	http://www.menon.org/

MENON is a European innovation and research network providing information and advice to policy makers and authorities, education communities, and the ICT and media industry on issues related to innovation and changes in Education and Training, Lifelong Learning and Knowledge Society developments in Europe and worldwide.

MENON, established as a European Economic Interest Group (EEIG) since 1999 in Brussels, provides insight for all stakeholders in Europe to better understand the ICT market for education and training and the prevailing changes, to enhance a value-oriented and innovative use of eLearning, and to develop useful eLearning applications and services of better quality.

MENON aims at:

- Facilitating the evolution of Education and Training in the Knowledge Society in Europe and the world;
- Making learning a priority issue on the policy agendas about human capital and economic development at national and international level;
- Improving the quality of learning opportunities in Europe;

- Facilitating international collaboration on Knowledge Society related issues (eLearning, eInclusion, ehealth, eGovernment);
- Enhancing the competitiveness of the European education institutions and e-Learning providers in the emerging global learning markets.

The MENON Network is active both at national level, through its members, and at transnational level, where the EEIG coordinates co-funded projects, and is active in other collaboration and support work for the European Commission and international organisations.

The members of the MENON network are the following: Lambrakis Research Foundation (Athens, Greece), SCIENTER (Bologna, Italy), Tavistock Institute if Human Relations (London, United Kingdom), FIM New Learning (Erlangen, Germany), Lifelong Learning Institute Dipoli of Helsinki University of Technology, (Espoo, Finland) and Budapest University of Technology and Economics (Budapest, Hungary). In addition to its members, there is a broad range of partners covering the whole of Europe and a number of other international environments active in the MENON network. The list of all partners is available on the webpage. [51]

Name:	**VIT@LIS network**
Contact:	Via webpage
Email:	beatrice.niyibigira@menon.org
Website:	http://www.red-vitalis.org/

The VIT@LIS network is an association of European and Latin American and Caribbean institutions and individuals active in subjects related to the Information Society (e-learning, e-health, e-government, e-inclusion, etc.), committed to share information and results and to collaborate towards the creation of a more inclusive and open Information Society for all.

The VIT@LIS network is a multistakeholder aggregation of more than 300 individuals and institutions, created as a spontaneous and sustainable result of the European Commission's @LIS Programme, and aiming at fostering collaboration between Europe and Lartin America and the Caribbean in all Information Society related themes.

At the moment, VIT@LIS is active at political level. The network is involved in the governmental consultation on the future of the eLAC2010 Plan for Information Society in Latin America at research and development level.

[51] http://www.menon.org/network/

4 Projects focusing on ICT - Technology-Enhanced Learning

Listing and detailed information about projects funded under the FP5 and FP6 in the field of technology-enhanced learning (TEL) is available in the IST portal.[52] In total, 32 technology-enhanced learning research projects have been launched under the FP6 and some of them are still running up to 2010.

The projects supported, as a result from the first call for proposals, through FP7 ICT Work Programme under the ICT Challenge 4: Digital libraries and content, objective Digital libraries and technology-enhanced learning are structurally presented on the CORDIS/TeLearn webpage.[53]

4.1 EU projects – running projects (a selection)

(in alphabetical order)

Name:	**APOSDLE - Advanced Process-Oriented Self-Directed Learning Environment**
Website:	http://www.aposdle.org/
Time frame:	March 2006 – February 2010 (48 months)
Supported by:	6th Framework Programme for Research and Technological Development (FP6), IST-2004-2.4.10 Technology-enhanced Learning
Partners:	The consortium, consisting of 12 partners, is coordinated by Joanneum Research Forschungsgesellschaft mbH, Austria.

APOSDLE is an integrated project partially supported by the EC under the Information Society Technology (IST) priority of FP6. The project aims to enhance knowledge worker productivity by supporting informal learning and teaching activities in the context of knowledge workers' everyday work processes and within their computational work environments.

APOSDLE offers individual learning support to people working with information and contributing new content to an organisation's knowledge pool. These 'knowledge workers' may include e.g. engineers, researchers, software developers, consultants, or designers. It follows a 'learn @ work' approach meaning that learning takes place in the user's immediate work environment and context.

The key distinction to traditional eLearning systems is that APOSDLE provides integrated technological support for all three roles a knowledge worker fills at the workplace: the role of the worker, the role of the learner, and the role of the expert.

[52] http://cordis.europa.eu/ist/telearn/projects.htm

[53] http://cordis.europa.eu/fp7/ict/telearn-digicult/telearn-projects_en.html

This ICT support exploits synergies between learning and knowledge management by reusing content not originally intended for learning.

Name:	**iCAMP - Innovative, Inclusive, Interactive & Intercultural Learning Campus**
Website:	http://www.icamp-project.org/
Time frame:	October 2005 – December 2008 (39 months)
Supported by:	6th Framework Programme for Research and Technological Development (FP6), IST-2004-2.4.13 Strengthening the Integration of the ICT research effort in an Enlarged Europe
Partners:	The project is coordinated by Centrum for Social innovation (ZSI), based in Vienna, Austria. For project partners and project collaborators, please, consult the webpage.

iCamp, as a specific targeted research project (STREP), aims to create an infrastructure for collaboration and networking across systems, countries, and disciplines in higher education. Pedagogically it is based on constructivist learning theories that put more emphasis on self-organised learning, social networking, and the changing roles of educators. iCamp has the vision to become the 'Educational Web' for higher education in the enlarged Europe of 25+. It provides an infrastructure - the iCamp Space - for collaboration and social networking across systems, countries and disciplines. The iCamp Space builds on existing interfaces and integrates shared community features. Interoperability amongst different open source learning systems and tools is the key to successful sustainability of iCamp.

The driving principle behind the technical challenges is the innovative pedagogical model of iCamp based on constructivist learning theories. Since iCamp is not create an additional eLearning system, but facilitates interoperability, a main advantage is that universities can continue to use and further develop their systems, while at the same time connect to other systems and offer a wide collaboration space for their users.

The objectives of the project are driven by pedagogical, technical and social challenges and are the following:

- Investigating, developing and validating innovative pedagogical models for social instruction that support learners in achieving their learning goals in a self-directed manner and to establish social networks;
- Providing a validated portfolio of constructivist learning tools that support these innovative learning models;
- Providing virtual learning environment consisting of a network of learning tools, platforms and repositories;
- Developing and describing an open source code for connecting to the iCamp network and providing interoperability amongst different systems; and
- Documenting and describing the best practices from the validation for universities that might benefit from it in future.

Name:	**LTfLL - Language technology for lifelong learning**
Website:	http://partners.ltfll-project.org/
Time frame:	March 2008 – February 2011 (36 months)
Supported by:	7th Framework Programme for Research and Technological Development (FP7), ICT-2007.4.1 Digital libraries and technology-enhanced learning
Partners:	The consortium is balanced in geographical and institutional background and consists of 10 partners. The project is coordinated by Open Universiteit Nederland, Netherlands.

The objective of the LTfLL project is to create next-generation support services to enhance competence building and knowledge creation in educational and organizational settings. The services run (semi) automatically to avoid aggravating the workload of tutors.

Involving expertise in language technology (LT), cognition, and technology-enhanced learning LTfLL will design, develop and validate services which:

- Establish a starting position and recommendations for the learner on what to learn;
- Give support and feedback during learning; and
- Support social and informal learning.

The services operate in a common knowledge infrastructure to support knowledge co-construction and extraction and to create the foundation for purposeful and meaningful advice.

Name:	**LEARNOVATION**
Website:	http://www.menon.org
Time frame:	November 2007 – October 2009 (24 months)
Supported by:	Lifelong Learning Programme, Key Activity 3 ICT
Partners:	- MENON Network EEIG, Belgium (coordinator) - Scienter Soc.Cons. A R.L., Italy - Universidad Catolica Portuguesa, Portugal - European Distance and E-learning Network (EDEN), UK - P.A.U. Education S.L., Spain

The LEARNOVATION project aims to stimulate a process, at the EU level as well as at the level of the Member States, leading to a collective and consensus-based definition of a new vision of eLearning (technology-enhanced learning) in Europe, able to inspire the full exploitation of its potential to implement lifelong learning strategies and to support innovation in Europe, also beyond the borders of education and training systems.

The project intends to provide valuable inputs to new learning public policies that rely on embedded 'invisible' technologies to boost learning effectiveness, reach and productivity.

The objectives of the projects are to:

- explore, analyse and document emerging innovation paradigms in all eLearning areas of application ('eLearning territories') and to produce 12 thematic reports;
- relate the use of ICT for learning (actual and potential) to policy priorities in the field of lifelong learning and in a broader perspective (New Lisbon, Innovation, competitiveness and cohesiveness of knowledge society);
- develop a consensus-based new vision of eLearning, linked to innovation paradigms and taking into account the differentiation dimension of 'eLearning territories', by involving all EU and national actor categories that might contribute to the process – through EU and national discussion seminars and web collaboration work;
- design and activate a foresight capacity on future use of ICT to support learning processes in all aspects of European citizens' life and to produce a focused foresight report;
- propose a set of indicators and a collection and analysis process able to document achievements of ICT to support learning processes following the LEARNOVATION vision, in view of supporting the policy making process at EU and at national level;
- develop a project multiplying effect on different parts of lifelong learning systems and in the broader societal scenario, by actively involving external actors in the organisation of LEARNOVATION seminars in their own environment, guaranteeing a strong cascade effect, and the professional media campaign.

Name:	**MATURE - Continuous Social Learning in Knowledge Networks**
Website:	http://mature-ip.eu/
Time frame:	April 2008 - March 2012 (48 months)
Supported by:	7th Framework Programme for Research and Technological Development (FP7), ICT-2007.4.1 Digital libraries and technology-enhanced learning
Partners:	The consortium, consisting of 10 partners, is administratively coordinated by Centre Internacional de Mètodos Numèrics en l'Enginyeria, Spain. The scientific coordinatorion is assured by Forschungszentrum Informatik an der Universität Karlsruhe, Germany.

The MATURE project aims at establishing the foundations for making maturing processes within and across organisations more efficient, thus increasing the agility of organisations.

The planned outcomes of the MATURE project are:

- Empirical analysis of real world maturing practices, resulting in a sound conceptual model of the knowledge maturing process and ways to overcome barriers to it (particularly including motivational and social factors);
- Personal Learning and Maturing Environment (PLME), embedded into the working environment, enabling and encouraging the individual to engage in maturing activities;
- Organisational Learning and Maturing Environment (OLME), enabling the organisation to analyse and to take up community activities, to reseed innovation processes and to apply breeding strategies; and
- Reusable Maturing Services for seeding and reseeding, and creating awareness of relevant activities.

Name:	**PROLIX - Process-oriented Learning and Information eXchange**
Website:	http://www.prolixproject.org/
Time frame:	December 2005 – November 2009 (48 months)
Supported by:	6th Framework Programme for Research and Technological Development (FP6), IST-2004-2.4.10 Technology-enhanced learning
Partners:	The consortium consists of 19 partners from 9 countries and is coordinated by imc information multimedia communication AG, Germany.

The major goal of the project PROLIX is to align people and processes in complex and dynamic working situations by addressing the needs of employees and companies at the same time. PROLIX develops open, integrated reference architecture for process-oriented learning and information exchange.

PROLIX supports a complete learning process life cycle comprising:

- Analysis of complex business situations;
- Identification of individual and organizational learning goals;
- Analysis of competencies and their matching with individual skills;
- Definition of appropriate learning strategies and the simulation of learning processes;
- Execution of improved learning processes; and
- Monitoring of learners' performance according to the goals defined.

Project's methodologies and results are available to learning industry on open reference architecture for process-oriented learning (OBELIX). This reference architecture delivers answers on how business processes define the requirements for 'context-sensitive' learning. The architecture specification and results of PROLIX are the first practical implementation of the open reference architecture OBELIX.

4.2 EU projects – recently completed projects (a selection)

(in alphabetical order)

Name:	**COOPER - Collaborative open environment for project-centred learning**
Website:	http://www.cooper-project.org/
Time frame:	December 2005 – November 2007 (24 months)
Supported by:	6th Framework Programme for Research and Technological Development (FP6), IST-2004-2.4.10 Technology-enhanced learning
Partners:	The consortium of 8 partners from 5 different countries (Germany, Italy, Netherlands, Romania, and Switzerland) was coordinated by University of Hannover (L3S department), Germany.

The COOPER project was dedicated to supporting long-distance cooperation of teams of students working on complex projects in the following learning environments:

- Graduate (or post-graduate) university studies involving students and lecturers participating in focused projects (e.g. masters or specialization courses) coming from different institutions and backgrounds; and
- Company universities and company training, involving multi-national participants coming from company's sites or customers which are world-wide dispersed, participating in the launching of new product or technology, or in product- and project-centred training.

Stemming from these requirements, COOPER developed and tested a model-driven, extensible environment supporting individual and collective competency building in virtual teams, whose members were geographically dispersed, had different backgrounds and competencies, working together in projects to solve complex problems.

The achieved outcomes of the project:

- Reference model for cooperative teamwork processes developed;
- Interoperable and validated pedagogical scenarios and assessment strategies created;
- Tools to support knowledge co-construction, sharing and re-use were creted and tested;
- Common COOPER software platform in which models, scenarios, strategies and tools were integrated developed;
- Requirements, pilot results and evaluations in representative case studies were gathered; and
- Protected, shared COOPER environment, that can be deployed over any University's or Company's Intranet was created.

Name:	**KALEIDOSCOPE - Concepts and methods for exploring the future of learning with digital technologies**
Website:	http://www.noe-kaleidoscope.org/
Time frame:	January 2004 – December 2007 (48 months)
Supported by:	6th Framework Programme for Research and Technological Development (FP6), IST-2002-2.3.1.12 Technology-enhanced learning and access to cultural heritage
Partners:	91 European partners were coordinated by FIST, S.A. - France Innovation Scientifique et transfert, Paris (France). Full list of partners available on the project's webpage.

KALEIDOSCOPE was funded as a Network of Excellence (NoE) for establishing a coherent and strong European Research Area (ERA) in the technology-enhanced learning domain. It adopted a multidisciplinary and cross-cultural perspective and contributed to shaping the scientific evolution of technology enhanced learning.

The network succeeded in integrating the leading research teams in the field and has created a community of more than 1 000 researchers, covering a large range of expertise from educational, social, cognitive and computational sciences.

Following activities were offered in the frame of the project:

- Sharing of knowledge and tools;
- Developing agreed vocabularies;
- Developing a common theoretical framework and methodologies;
- Identifying important research issues;
- Training of researchers; and
- Exploring innovation and commercialisation of research.

Name:	**L2C – Learning to Collaborate**
Website:	http://www.l2c.info/
Time frame:	March 2006 – March 2008 (24 months)
Supported by:	6th Framework Programme for Research and Technological Development (FP6), IST-2004-2.4.10 Technology-enhanced Learning
Partners:	The consortium brought together variety of scientists and practitioners from Italy, France, Germany, Austria, UK, Switzerland etc. and was coordinated by INSEAD, France.

The L2C project was built on interdisciplinary scientific/academic models and best/worst practices and experiences to identify the factors inhibiting effective collaboration ('Collaboration Traps and Challenges'), and the interventions required to reduce these risks ('Collaboration Management Competencies').

Research and development work undertaken in the L2C project aimed at specifically addressing and significantly advancing the state of the art (both theory and practice) in two relevant areas:

- Technology-enhanced learning of collaboration dynamics and competencies development; and
- Design of advanced simulations based on models of human behavior in different organizational contexts.

The direct projects outcomes:

- Dynamic online Knowledge Base for capturing the knowledge in the area of collaboration dynamics and related academic disciplines combined with best practices and experiences from a number of industry sectors;
- Virtual Learning Community contributing to the advancement of knowledge in collaboration dynamics and technologies (theory, practice and learning dimensions), and the development of interdisciplinary exchanges including knowledge creation and collaboration;
- Innovative Framework addressing the effective development of collaboration competencies and targeting the design of effective technology-enhanced learning solutions based on Advanced Organisational Simulation Games (based on computer-enhanced collaborative and experiential learning models and simulation games design principles);
- Set of widely deployable, advanced, interactive and experiential Advanced Organisational Simulation Games guaranteeing the effective understanding and internalisation of cognitive, motivational and attitudinal factors driving collaborations, complexity of knowledge integration processes and distributed, ICT-supported teamwork, and management competencies determining the success or failure of collaboration dynamics in diverse and distributed contexts;
- Online Workshop Tool to support real-time collaboration and collect users' insights in real-time to take advantage of participants' immediate feedback during the simulation game workshops.

Name:	**LT4eL - Language Technology for eLearning**
Website:	http://www.let.uu.nl/lt4el/
Time frame:	December 2005 – May 2008 (30 months)
Supported by:	6th Framework Programme for Research and Technological Development (FP6), IST-2004-2.4.13 Strengthening the Integration of the ICT research effort in an Enlarged Europe
Partners:	The consortium of 10 partners of was coordinated by University of Utrecht, Netherlands.

This Specific Targeted Research Project (STREP) used multilingual language tools (in Bulgarian, Czech, Dutch, English, German, Maltese, Polish, Portuguese and Romanian) for improving the retrieval and accessibility of learning objects through

semi-automatic metadata generation for use in connection with learning management systems.

The main contribution of the project consists in the introduction of new functionalities based on language technology which enhance the adaptability and the personalization of the learning process through the software which mediates it.

When compiling the thematic report, the project webpage was available only in German.

Name:	**PROLEARN - Network of Excellence Professional Learning**
Website:	http://www.prolearn-project.org/
Time frame:	January 2004 – December 2007 (48 months)
Supported by:	6th Framework Programme for Research and Technological Development (FP6), IST-2002-2.3.1.12 Technology-enhanced learning and access to cultural heritage
Partners:	The PROLEARN consortium was led by L3S Research Center, Germany. The full list of partners is available on the project website.

PROLEARN as a 'Network of Excellence' brought together the most important research groups in the area of professional learning and training, as well as other key organisations and industrial partners, thus bridging the existing gap between research and education at universities and similar organizations, training and continuous education that is provided for and within companies.

The project investigated issues especially relevant for professional training in SMEs and larger companies, including brokerage platforms and services, business models for specific markets, and advanced training and knowledge work management arrangements.

PROLEARN's two main horizontal activities were:

- PROLEARN Academy - funded for teaching and educating researchers and employers in the area of technology-enhanced professional learning and related issues. At the same time, it fostered the integration of researchers in the network of excellence by establishing research exchange programmes and joint research activities.
- PROLEARN Virtual Competence Centre - focused on the integration of industry. It contributed to spreading excellence to company driven competence centres, chambers of commerce, employment centres and competence centres of trade and industry associations.

PROLEARN also has established the annual EC-TEL, 'European Conference on Technology Enhanced Learning'.

4.3 International ICT/TEL projects linking European Union and Latin American countries

(in alphabetical order)

Name:	**BEACON - Brazilian European Consortium for DTT Services**
Website:	http://www.beacon-dtt.com/en/index.php
Time frame:	January 2007 – March 2010 (40 months)
Supported by:	6th Framework Programme for Research and Technological Development (FP6), IST-2005-2.6.5.1.a TV Latin America
Partners:	- Didagroup Srl, Roma, Italy (coordinator) - Instituto Presbiteriano Mackenzie, Brazil - Universita Degli Studi di Siena, Italy - Universidade Federal da Paraiba, Brazil - Didaciebe Centro Integrado de Educacao Brazil -Europa LTDA, Brazil - Technospice do Brasil Tecnologia LTDA, Brazil - Europace IVZW, Belgium - Ministero delle Comunicazioni, Italy - Fundacao de Fatima, Brazil - PF2 Software SRL, Italy - Tmira Solutions S.L., Spain

BEACON is a three year innovative research project on Digital Terrestrial Television (DTT) in Europe and Brazil dealing with 'tLearning' or 'learning through interactive digital television' (IDTV) as a subset of e-learning.

The main objectives of the BEACON project are to perform research on innovative DTT services addressed to the tLearning domain notably customized for the Brazilian specific needs related with social inclusion issues (State of Sao Paulo, Brazil); to establish a Brazilian - European Consortium which will manage the exploitation of the assets and the services implemented by the project activities; to disseminate the project results and to provide research results, feedback data analysis of pilot run to the Brazilian Public Administration in order to contribute to the relevant policy making process in the field of deploying the DTT technology and services.

The BEACON project also aims to further deepen any collaboration initiatives between the EU and Brazil.

The main expected outputs and results of the project are the following:

- Research on innovative DTT eLearning methodology and on the interoperability between the European (DVB) and the Brazilian (SBTVD) respective technologies performed;
- Innovative interoperable (DVB-SBTVD) tLearning pilot services developed (the pilot services are addressed to the Brazilian Public Administration employees and citizens in order to foster the social inclusion);

- Operating DTT platform implemented and sited in the State of Sao Paulo (Brazil);
- DTT Services Centre aimed at designing, developing and providing broadcasting of tLearning services in the state of Sao Paolo implemented;
- tLearning pilot run services delivered;
- Pilot services data collection and experimentation results gathered and available;
- Evaluation of pilot services and experimentation results performed;
- Exploitation model identified and relevant plan developed; and
- Brazilian - European Consortium established.

Name:	**SALA+ - Support Action for a European and Latin America Strategic Cooperation on Networked Media R&D**
Website:	http://www.salamas.eu/
Time frame:	March 2008 – February 2010 (24 months)
Supported by:	7th Framework Programme for Research and Technological Development (FP7), ICT-2007.1.5 Networked media
Partners:	- Asociación de Empresas de Electrónica, Tecnologías de la Información y Telecomunicaciones de España, Spain (coordinator) - Centre for Technology and Innovation Management GmbH, Germany - Queen Mary University of London, United Kingdom - Sigma Consultants, France - Rokasud S.A, Argentina - Universidad Técnica Federico Santa Maria, Chile - Superintendencia de Telecomunicaciones de Guatemala - Asociación de Reguladores (Regulatel), Costarica - Comisión Técnica Regional de Telecomunicaciones de Centro América, Honduras - Federación de Asociaciones de Latinoamérica el Caribe y España de entidades de Tecnología de la Información, Costarica - Aretel Bio, Chile - HyC Americas, Chile - Ministerio de Industria, Energía y Minería de Uruguay

The SALA+ project overall objective is to support the development of R&D cooperation between Europe and Latin America (LA) in the networked electronic media (NEM) sector.

The SALA+ project will analyse and build upon existing R&D programmes and key organisations involved in the NEM field in order to propose new thematic priorities for strategic cooperation in the NEM field and support the development of a Strategic Research Agenda for R&D cooperation between Europe and LA, taking into account the European Commission's FP7 Work Programme, and other initiatives such as the

NEM Strategic Research Agenda, etc. Specific Strategic Research Agendas for Argentina, Chile, Colombia, Costa Rica, Guatemala and Uruguay will be developed.

SALA+ will organise a number of workshops and seminars in Latin America in order to enhance awareness and promote the cooperation between EU and LA in the NEM field and provide the NEM communities from both regions with opportunities to strengthen their relations and work together on potential cooperation projects, especially in FP7.

In order to facilitate connections between European and Latin American ICT communities, a community restricted area will be opened on this website, featuring the short profiles, ID pictures and contact information of representatives from European and Latin American organisations interested in the SALA+ project.

Name:	**SOLAR-ICT Development of a knowledge platform to support Euro-Latin American research partnerships in ICT**
Website:	http://www.solar-ict.eu/
Time frame:	January 2007 – September 2008 (21 months)
Supported by:	6th Framework Programme for Research and Technological Development (FP6), IST-2005-2.6.5.2 INCO Specific Support Action
Partners:	- INNOVA S.P.A., Italy (coordinator) - Camera de Industrias del Uruguay Eurocentro UY, Uruguay - Asociacion Camera de Tecnologias de Informacion y Comunicación, Costa Rica - Instituto de Estudios Avanzados, Ecuador - Centro de Formacion de Lideres SA, Guatemala - Consejo Nacional de Ciencia y Tecnologia, Paraguay - Centro de Promocion de la Pequena y Micro Empresa, Peru

SOLAR ICT is an initiative that aims to highlight the opportunities and potentialities for European and Latin American and Caribbean (LAC) research collaboration in ICT by identifying common development goals and creating deeper strategic cooperation.

Objectives of the projects are to:

- draw a study in each of the six target countries, comprising of mapping and benchmarking to identify the primary organizations, ICT competencies and best practices in each targeted country, focusing on all potential common areas of ICT interest;
- identify and design future collaboration guidelines within the IST programme. (Six workshops in Latin America should be organized in order to raise awareness on the FP7 and discussion tables should emphases prospective benefits of collaboration in ICT between EU and the LAC region in order to delineate common development needs and opportunities); and

- develop an EU-LAC electronic platform dedicated to research cooperation in ICT presenting nt the project's outcomes and encourage information exchange on ongoing and future R&D programmes to be shared by the different stakeholders.

Name:	**WINDS-LA - Widening IST Networking Development Support - Latin America**
Website:	http://www.winds-la.eu/
Time frame:	January 2007 – January 2009 (24 months)
Supported by:	6th Framework Programme for Research and Technological Development (FP6), FP6-2005-IST-6
Partners:	- MENON Network E.E.I.G., Belgium (coordinator) - Pontificia Universidade do Rio de Janeiro, Brazil - Universidad Politécnica de Madrid, Spain - Universidad Politécnica de Catalunya, Spain - Instituto Tecnológico y de Estudios Superiores de Monterrey, Mexico - University of Duisburg Essen, Germany - Fundación Gestión y Desarrollo, Argentina

The WINDS Latin America project aims to deepen strategic R&D cooperation between Europe and Latin America in the field of ICT.

The WINDS project is seen as a 'system action' as it builds on three previously EU-supported projects targeted to Latin America (Eurolatis, EU-LAT and @LIS ISN) and is developed in a complementary way with existing EU (eEurope and i2010) and Latin American (eLAC 2007) policies. WINDS mobilizes exiting networks and research communities around the priorities of the FP7 resulting into a multinational and multistakeholder community involving EU and Latin American ICT researchers, policy makers and users.

The project identifies research issues of common interest and opportunities for cooperative R&D between EU and Latin America, setting the basis for the formulation of an EU-LA joint strategy for future research.

Activities of the WINDS-LA project cover the following:

- Information services on European and Latin American excellence, R&D actors, projects, results;
- Collaboration services facilitating the aggregation of research actors around specific themes and the preparation of collaboration projects;
- Organisation of three research conferences in Brazil, Argentina and Mexico and a final conference in Brussels; and
- Open consultation process leading to a consensus-based roadmap for future R&D in an LA-EU collaboration perspective,

The WINDS database collects Latin American institutions and projects carrying on research on ICT with the aim to present the research excellence in the region to European research communities and at the same time to identify which are the areas of excellence of ICT research in the region.

Name:	**WINDS-Caribe - Supporting ICT Research between Europe, Latin America and the Caribbean**
Website:	via http://www.winds-la.eu/
Time frame:	Not available
Supported by:	6th Framework Programme for Research and Technological Development (FP6), FP6-2005-IST-6
Partners:	- MENON Network E.E.I.G., Belgium (coordinator) - Universidad Politécnica de Catalunya, Barcelona, Spain - Networks-and-Development-Foundation (FUNREDES) - Association RIVELO, Martinique - University of West Indies (CARIMAC), Jamaica - Univerdidad Iberoamericana, Dominican Republic

WINDS-Caribe was launched in 2008 and extends WINDS-LA to the Caribbean region: Martinique, Dominican Republic and Jamaica.

The major project's activities are to:

- Identify key R&D issues on which to focus EU-Caribbean cooperation, and key actors from the Caribbean that shall be involved in EU ICT research;
- Guarantee that information on European R&D is promoted to a large number of research, policy and practice actors in the Caribbean;
- Organize three research conferences in the Caribbean, and a final Seminar in Brussels;
- Establish a sustainable open consultation process that will lead to a consensus-based roadmap for future R&D in an EU-Caribbean collaboration perspective.

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6 List of Acronyms / Definitions

AACE - Association for the Advancement of Computing in Education
ACC - Acceding and Candidate Countries
CA - Coordination Action
CIP - Competitiveness and Innovation Framework Programme
CORDIS - Community Research and Development Information Service
COST - European Cooperation in the field of Scientific and Technical Research
CSA - Coordination and support actions
DG - Directorate General
DTT- Digital Terrestrial Television
EACEA - Education, Audiovisual and Culture Executive Agency
EATEL - European Association of Technology-Enhanced Learning
EC - European Commission
EDEN - European Distance and E-Learning Network
EFQUEL - European Foundation for Quality in eLearning
EIB - European Investment Bank
ELIG - ELearning Industry Group
ERA - European Research Area
ERA-NET - European Research Area Network
ERC - European Research Council
ESF - European Science Foundation
ETPs - European Technology Platforms
EU - European Union
EUR - Euro (currency)
FP - Framework Programme
FP6 - 6th Framework Programme for Research and Technological Development
FP7 - 7th Framework Programme for Research and Technological Development
ICPC - International Cooperation Partner Countries
ICT - Information and Communication Technologies
ICT PSP - ICT Policy Support Programme
IST - Information Society Technology
JRC - Joint Research Centre
JTIs - Joint Technology Initiatives
KICs - Knowledge and Innovation Communities
LA - Latin America
LAC - Latin America and the Caribbean
LLP - Lifelong Learning Programme
LT - language technology
NEM - networked electronic media
NoE - Networks of Excellence
PI - Principal Investigator
R&D - Research and Development
SICA - Specific International Cooperation Actions
SSA - Specific Support Action
SRA - Strategic Research Agenda
STREP - Specific Targeted Research Project
TEL - Technology-Enhanced Learning
TP - Technology platform