

Policy Brief

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This Policy Brief has been elaborated under the EU-funded project **PLATON+** (www.platonplus.net) which aims to:

- a) **communicate** socio-economic research results to policy makers, Civil Society Organisations and business communities across Europe, and
- b) **show ways** of collaboration and **bring into contact** socio-economic researchers and researchers from other disciplines.

PLATON+ Policy Briefs communicate socio-economic relevant research issues and key policy recommendations in a concise and non-technical format to policy-decision makers and Civil Society Organisations (CSOs) at European, national and regional level but also to researchers from other disciplines.

The role of socio-economic research in the Information Communication Technologies (ICT) research domain

SUMMARY

Objective of this Policy Brief

The present Policy Brief provides an overview of the European funding structure in the "Information and Communication Technologies - ICT" domain (as it is reflected in the respective workprogrammes under the 6th and 7th Framework Programmes), [regarding the extent to which key socio-economic issues are addressed](#). The aim is to illustrate how Socio-economic Sciences and Humanities (SSH) can contribute useful knowledge to the ICT research field in an interdisciplinary manner.

By analysing the respective workprogrammes under FP6 and FP7, namely FP6-IST for the period 2002-2006 and FP7-ICT for the period 2007-2008, the PLATON+ partners have undertaken an analysis of demand and offer of Socio-economic Sciences and Humanities.

As can be demonstrated, the European Framework Programmes (FPs) encourage the interdisciplinary orientation of collaborative research. As one of the purposes of the FPs is to support the EU policies, the research areas 'devised' are set up in relation to the EU policy goals and in accordance with the European scientific communities. Hence, the Calls for Proposals reflect what EU Commission, the stakeholders and the scientific communities have seen as important.

Note: only the first calls of FP7-ICT were analysed as the programme for the period 2009-2010 was not yet available.

European added value

The analysis carried out offers an "easy access" to information normally obscured in the long and complex official documents, namely the workprogrammes of the Framework Programmes' "priorities" and "themes". It also shows that SSH is a "safe guide" which can always be referred to and addressed when the European Commission requests that such aspects are to be included in a future research project.

Key message

The Framework Programmes reflect the commitment of the European Commission to multi- and inter- disciplinary. The cooperation between researchers from all disciplines is a central element of the European funding strategy. Thus, [the analysis of the ICT-relevant workprogrammes targets:](#)

- the “SSH research community” in order to shed light on hitherto disregarded and unnoticed fields of activities, revealing funding research opportunities to contribute to other domains;
- the “ICT research community” to illustrate areas where SSH knowledge and expertise may be exploited in future research activities; and
- the [policy/decision makers at national and/or regional level](#) to provide ‘case studies’ of inter-disciplinary research.

SCIENTIFIC APPROACH

Methodology

The methodological approach for the task at hand was pretty straightforward: as a first step, the workprogrammes of the “Information Society Technologies” under FP6 (FP6-IST) and “Information and Communication Technologies” under FP7 (FP7-ICT) were “screened”, thereafter calls relevant for the social sciences and humanities were mapped. The project refers to these as “hot topics” for Socio-economic science and Humanities at the European level.

As a subsequent step content analysis was performed in order to identify:

- a) the Strategic Objectives addressing Socio-economic aspects or including specific knowledge from Social Science or Humanities;
- b) patterns on how Social Science or Humanities are addressed in the Calls.

Considerations For the purpose of the analysis, the Strategic Objectives of the two ICT-relevant workprogrammes under consideration that include an SSH perspective, were grouped into the following categories:

- Addressing issues of Socio-economic research directly: including Strategic Objectives in which SSH aspects are the main or an important aspect, or SSH issues are addressed additionally to the main task but with a certain emphasis.
- Addressing Socio-economic issues indirectly: including Strategic Objectives in which Socio-economic or Humanities aspects are addressed very indirectly (they are conceived as an ‘added task’ accompanying the more important central project tasks) or are simply included as an assumed precondition.

RESULTS OF THE ANALYSIS

SSH ‘hot’ topics

As outlined, the term “SSH hot topic” is used to describe a topic with important social, economic, political or cultural impacts. Where SSH aspects were directly addressed we consider them as “hot”. The following aspects can be found in the ICT programmes:

- Identification and analysis of relevant legal, regulatory, ethical, psychological and socio-economic issues associated with development and [deployment of](#)

ambient assisted living technologies and services for the elderly, that require organizational and financial re-engineering.

- The regulatory, social, cultural and economic obstacles to [e-business take-up within the enlarged Europe](#)
- [ICT research for innovative Government](#): modernise and innovate public administrations at all levels, to foster good governance, to provide citizens and industries with new service offers, and thus create new public value.
- Improvements in the security, performance, dependability and resilience of [complex and interdependent critical infrastructures](#) while considering as well organisational dynamics, human factors, societal issues and related legal aspects.

FP7-ICT theme (for the period 2007-2008)

Quoting the respective workprogramme addressing SSH aspects directly and indirectly:

[Challenge 1: Pervasive and Trusted Network and Service Infrastructures](#)

[ICT-2007.1.2: Service and Software Architectures, Infrastructures and Engineering](#)

Improving the competitiveness of enterprises and the efficiency of organisations in Europe.

New opportunities, notably for SMEs, through open and standard platforms interfaces for: software and service development; middleware for resource sharing; and next generation operating systems.

[ICT-2007-1.3: ICT in support of the networked enterprise](#)

Improving the competitiveness of enterprises in Europe by fostering the creation of new networked applications and services capable of interoperation across a wide variety of business domains and organisations of all sizes.

[ICT-SEC-2007-1.0-04: ICT support for first responders in crises occurring in critical infrastructures](#)

Significant improvement in the security, performance, dependability and resilience of complex and interdependent critical infrastructures while considering as well organisational dynamics, human factors, societal issues and related legal aspects.

[ICT-2007.1.5: Networked Media](#)

To offer a seamless, personalised and trusted experience of i) multimedia services and applications; ii) home management and control services; iii) media content, for users in a variety of roles (consumer, producer or manager of communication and media), locations, contexts and mobility scenarios;

Widespread adoption of new digital media consumption and production patterns. Enhanced quality of life through new usage forms contributing to social, intellectual and leisure well-being. New opportunities for content production and exploitation.

Challenge 4: Digital Libraries and Content

ICT-2007.4.1 (ICT-2007.4.3): Digital libraries and technology-enhanced learning

Unlocking people's and organisations' abilities to access content, master it, transfer it to the desired contexts and preserve it over time. Widespread use of these resources in the collaborative creation of cultural experiences.

ICT-2007.4.2 (ICT-2007.4.4): Intelligent Content and Semantics

Advanced knowledge management systems for information-bound organisations and communities, capable of extracting actionable meaning from structured and unstructured information and social interaction patterns, and of making it available for activities ranging from information search through conceptual mapping to decision making.

Challenge 5: Towards sustainable and personalised healthcare

ICT-2007.5.1: Personal Health Systems for Monitoring and Point-of-Care diagnostics

Chronic disease management: Proposed solutions will have potential for integration in the healthcare process, including nursing care, primary or secondary healthcare and homecare. Intelligent closed-loop approaches will detect and assess trends and episodes, facilitate adaptive care (e.g. drug administration or new treatment regime) and promote doctor-patient interaction. This will be done, where clinically valid, remotely, anytime, anywhere, avoiding hospitalisation of patients.

Improving the productivity of healthcare systems by facilitating of patient care at the point of need and through better health information processing. Accelerating the establishment of interoperability standards and secure and seamless communication of health data between all involved partners, including patients.

ICT-2007.5.2: Advanced ICT for Risk Assessment and Patient Safety

World-leading levels of patient safety with fewer medical errors and optimised medical interventions resulting in savings of lives and resources.

ICT-2007.5.3: Virtual Physiological Human

New environments for predictive, individualised, evidence based, more effective and safer healthcare. Reduced medical errors and improved patient safety through simulation of adverse drug effects on patient models. Accelerated development of safer drugs and medical devices through in-silica environments

Challenge 7: ICT for Independent Living and Inclusion

ICT-2007.7.1: ICT and Ageing

Increased personal independence, prolonging active participation in society and integrated care processes for the ageing population.

Reinforced European academic and industrial knowledge base and excellence in multi-disciplinary research on ICT for independent living and active ageing.

ICT-2007.7.2: Accessible and Inclusive ICT

Targeted and exploratory ICT research on innovative communication and shared creative environments aimed at facilitating social inclusion of marginalised young people.

Horizontal support actions

ICT-2007.9.1 (ICT-2007.9.2): International cooperation

Language and speech technologies with particular focus on Arabic-speaking regions / countries (including Mediterranean Partner Countries and ACP countries). The overall objective is to reduce language barriers and broaden access, usage and interaction between ICT services and applications.

Wider diffusion of the information society, especially in developing countries and strengthened EU policy for development.

FP6-IST priority (for the period 2005-2006)

Quoting the respective workprogramme addressing SSH aspects **directly** and **indirectly**:

Research Action 1. Applied IST research addressing major societal and economic challenges

2.6.2: Ambient Assisted Living (AAL) for the Ageing Society

It also covers means to improve access to social, medical and emergency services, and to facilitate social contacts as well as access to context-based infotainment and entertainment.

Identification and analysis of relevant legal, regulatory, ethical, psychological and socio-economic issues associated with development and deployment of ambient assisted living technologies and services for the elderly, including required organisational and financial re-engineering.

2.4.13 Strengthening the Integration of the ICT research effort in an Enlarged Europe

To develop and validate innovative and efficient ICT-based systems and services in key application areas for the **societal and economical development of the enlarged Europe**, with a view to strengthening the integration of the IST European Research Area.

The regulatory, social, cultural and economic obstacles to e-business take-up within the enlarged Europe should be given special attention as well as the interoperability of proposed enterprise applications.

2.5.8 ICT for Networked Businesses

To develop software solutions adaptable to the needs of local/regional SMEs, supporting organisational networking and process integration as well as improving adaptability and responsiveness to rapidly changing market demands and customer requirements.

2.5.9 Collaborative Working Environments

To develop next generation collaborative working environments, thereby increasing creativity and boosting innovation and productivity. These environments should

provide collaboration services to make possible the development of worker centric, flexible, scalable and adaptable tools and applications.

2.5.11 e-Inclusion

To develop next generation assistive systems that empower persons with (in particular cognitive -) disabilities and aging citizens to play a full role in society, to increase their autonomy and to realize their potential.

Activities should address the socio-economic, regulatory and policy dimensions, to ensure availability of information society services for all at a reasonable cost.

2.4.9 ICT research for innovative Government

To modernise and innovate public administrations at all levels, to foster good governance, to provide citizens and industries with new service offers, and thus create new public value. To contribute to easing mobility of European citizens within the Internal Market, making European Citizenship a reality, and supporting them as active citizens through innovative government services and through participation in decision making processes.

2.4.10 Technology-enhanced Learning

To explore interactions between the learning of the individual and that of the organisation in order to improve how current or emerging ICT can mutually enhance the learning processes for the individual and for the organisation. To contribute to new understandings of the learning processes by exploring links between human learning, cognition and technologies.

Research Action 2. Communication, computing and software technologies

2.4.4 Broadband for All

To develop the network technologies and architectures allowing a generalised and affordable availability of broadband access to European users, including those in less developed regions, peripheral and rural areas.

Research Action 4. Knowledge and interface technologies

2.4.7 Semantic-based Knowledge and Content Systems

Knowledge acquisition and modelling, capturing knowledge from raw information and multimedia content in webs and other distributed repositories to turn poorly structured information into machine-processable knowledge.

2.4.8 Cognitive Systems

Focus is on research into ways of endowing artificial systems with high-level cognitive capabilities, typically perception, understanding, learning, knowledge representation and deliberation, thus advancing enabling technologies for scene interpretation, natural language understanding, automated reasoning and problem solving, robotics and automation, that are relevant for dealing with complex real world systems.

Key policy implications / recommendations

Only very few calls of the ICT priority address socio economic and humanities aspects directly. Most calls rather included SSH aspects as an additional task or as an assumed precondition but not as equally important contributor to the subject

matter. The potential of SSH research to provide knowledge about social, economic and legal structures, about attitudes and behaviours and about (decision making) processes remains mostly unused.

More emphasis should be put on a wide range of topics and research areas 'requesting' these types of knowledge and 'demanding' an interdisciplinary approach. Important topics may include:

- **Impact of ICT on working conditions:** Information and communication technologies have already changed working conditions for nearly all employees and employers. A comprehensive analysis and identification of past and upcoming work changes related to ICT developments necessary to understand the impact of ICTs on the organisation of working time, routines and production procedures. Research in this field will be useful for the developers of ICTs solutions as well as the employers and their associations.
- **ICT as major teaching and learning device:** As the use of ICT in education and training is becoming more common, their potential and impact should be analysed and elaborated in more detail. A foundation for the proper use of ICT in teaching and training should be established and offered to teachers and trainers. On the other hand, proper technologies should be created to fulfil teachers' and trainers' needs. On this subject, a close cooperation between educational science, ICT scientists, and teachers/trainers is inevitable.
- **Acceptance of ICT solutions:** Not all products and wider technological developments in ICT are accepted by potential users and some are even explicitly rejected. On the other hand, some desired developments are not being realised. In order to be able to better address users' requirements the patterns and reasons for acceptance and rejection of certain ICT developments should be identified and analysed jointly by SSH and ICT researchers, producers and users.
- **The ICT labour market:** As an innovation driven market the ICT sector, is exceptionally dynamic and demanding for both employees and employers. Highly skilled and motivated employees are currently required to be very flexible with their working times and places and precarious employment conditions seem to be common in this sector (self-employment, short term contracts, etc.). The effect of these working conditions on the innovation potential for ICT enterprises should be analysed to gain insights about sustaining the long term productivity of this sector and to devise concepts of better policies for ICT in Europe. Remaining obstacles for woman, if any, to participate in the ICT labour market should also be identified and potential solutions should be elaborated.

Further reading

FP6 workprogrammes: http://cordis.europa.eu/fp6/sp1_wp.htm

FP7 workprogrammes: http://cordis.europa.eu/fp7/wp_en.html#cooperation