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ETHICA

Ethical issues of emerging
ICT applications

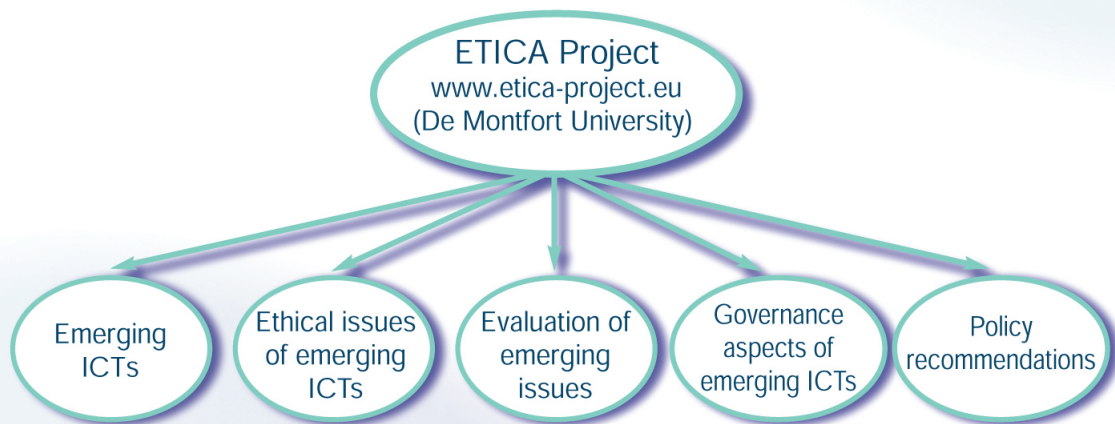
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- VTT Technical Research Centre of Finland
- Technical University of Delft
- Forschungszentrum Karlsruhe
- University of Namur
- Steinbeis Hochschule
- Eotvos Karoly Public Policy Institute
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- Teleregions Network



By understanding the ethical issues of emerging technologies, ETICA intends to develop guidelines for policy makers on how ethical issues in ICTs can be addressed.

www.etica-project.eu

Mapping the moral future of ICTs

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Novel technologies present us with great opportunities and allows us to do many things in a more efficient, timely and convenient manner. At the same time, they present us with tough and challenging questions when we consider some of the ethical implications associated with the various technologies we currently have or are likely to have at our disposal in the future. For example, a *New York Times* online edition published on 11 June 2006, revealed that human resources officers are increasingly rejecting job applicants because of material they found on them on social networking sites.

However one may evaluate this development, it shows that new information and communication technologies (ICTs) such as social networking sites have ethical relevance. There is a host of ethical issues that are typically associated with ICTs. Prominent among them are issues of privacy and data protection. However, ethical issues of ICT go beyond these areas. Another area of concern is that of intellectual property. IP has gained high importance in modern knowledge societies. Much of it is linked to ICTs or can be incorporated in electronic form. This raises the problem of copying and distribution.

Ethical issues of ICT can be found in many other areas. A cross-cutting issue is that of access and digital divides. Given the growing importance of being able to interact electronically, it is generally accepted that lack of access can be an ethical problem. The different distribution of material and other resources required to engage online then becomes an ethical issue that needs to be addressed by governments, organisations, or international bodies. In addition to these issues where ICT plays an obvious role, one can also find ethical implications of ICT that arise from its ubiquitous use and reflect ongoing ethical questions. These include for example the way in which power is distributed in organisations. Where previously the time an employee spent at work could be measured, it is now easy to log key strokes as a measure of productivity. ICTs can be used to conduct surveillance, including automated surveillance, which can benefit or disadvantage whole sections of the population.

While the problems of evaluating ethics of ICT is significant for current ICTs, it becomes more pressing, but also more difficult, for emerging ICTs. If societies want to be proactive in addressing possible ethical issues, they need to have some reliable way of identifying these technologies. These emerging technologies then need to be evaluated from an ethical perspective. This ethical evaluation can then inform ways of addressing these issues. The ETICA project aims to do just this. It will identify emerging ICTs and their related potential ethical issues. These will then be evaluated and ranked according to their gravity.

Such identification of emerging ICTs and associated ethical issues will lead to policy advice on appropriate governance structures and/or processes of ethics of future technologies that ETICA will recommend for consideration to the European Commission. This magazine gives an insight in progress and findings of the project and introduces the partners and their roles. Current information on the project can be found on the project website at: www.etica-project.eu.

The multi-faceted benefits of technologies will only be realised if legitimate social concerns are taken into consideration

visions are then compared and contrasted with strategic documents emanating from research institutions. Such documents include research strategies or vision statements from leading ICT research centres.

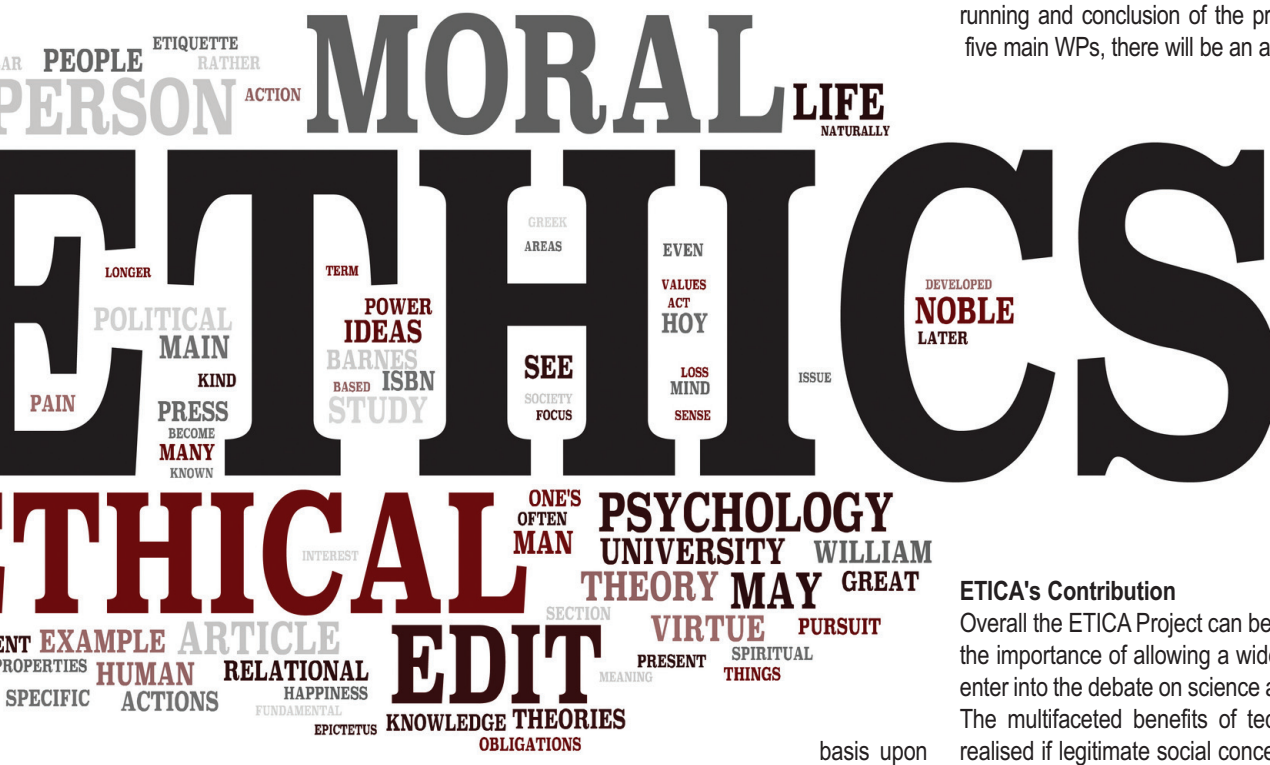
The justification of concentrating on these two types of sources for analysis of likely futures is that, in conjunction, government and scientific visions are likely to shape the nature of emerging ICTs. By limiting the temporal horizon of the investigation to the medium term future, namely 10 to 15 years, it is plausible that the ETICA project will be able to identify relevant emerging ICTs. This discourse analysis will lead to the development of a list of emerging technologies.

The ETICA consortium will then evaluate the ethical issues identified from a number of positions. This will allow the identification of central themes or topics with a high relevance to policy makers. In a final step the project will review governance arrangements that can be used to address ethical issues of emerging ICTs. This combination of natural knowledge of possible futures and normative guidance on acceptable governance will provide policy makers with a better

this evaluation are the University of Lodz (gender issues), the Eotvos Karoly Policy Institute (legal evaluation), and Steinbeis Hochschule (philosophical evaluation). It is likely that the number of issues identified in the first stage will preclude a detailed evaluation of all of them. Stage two will therefore include a method of grading and ranking issues, which will be used to prioritise issues that need to be addressed. The ranking is potentially contentious and it is therefore important that it be done in a transparent and open way and that dissenting views are reflected.

The third stage, the Governance stage, will start in parallel with the second stage and investigate conceptually and empirically, how ICT ethics governance is currently realised. On the basis of the critical review of current ICT ethics governance, WP4 (led by the University of Namur) will then apply its findings to the ETICA project itself. This will lead to governance recommendations to the different stakeholders of ICT research and development.

WP5 (Coordination/Policy/Recommendations, led by De Montfort University) provides support for all activities in the project, coordinates efforts and ensures the successful running and conclusion of the project. In addition to the five main WPs, there will be an advisory board.



basis upon which to construct their ICT-related policies.

ETICA Organisation

The project is divided into four main stages which are linked to individual work packages. During the Identification stage, WPs 1 (Emerging Technologies, led by VTT) and WP2 (Ethical Issues, led by the Technical University of Delft) will collaborate closely in the development of the identification of emerging ICTs and their ethical evaluation. The methodology of this stage has been agreed by the consortium and work is currently under way to finalise the identification of emerging ICTs and their ethical evaluation.

During the following stage, WP3 (Evaluation, led by the Karlsruhe Institute of Technology) will undertake a multi-disciplinary and multi-perspective evaluation of the issues identified in the first stage. Partners involved in

ETICA's Contribution

Overall the ETICA Project can be seen as an example of the importance of allowing a wider range of concerns to enter into the debate on science and technology policies. The multifaceted benefits of technologies will only be realised if legitimate social concerns are taken into consideration. ETICA will undertake important research to improve our understanding of emerging ICTs and their ethical consequences that will support governance recommendations on the European, national and industry level. ETICA contributes to a wider discourse on the ethics of technology and the question how democratic societies can ensure that the beneficial potential of technologies is leveraged while addressing problematic consequences. ■

The research leading to these results has received funding from the European Community's Seventh Framework Programme (FP7/2007-2013) under grant agreement n° 230318.

www.etica-project.eu

Rigorous research into ICT and social responsibility

De Montfort University's Centre for Computing and Social Responsibility is the largest department of its type in the UK and it is the co-ordinator for the ETICA project

DE MONTFORT University (DMU) is a leading research-oriented University in the UK with approximately 20,500 students, 3,240 staff and an annual turnover in the region of £132.5 million. De Montfort University has a dedicated and experienced Research and Development Office which supports the administrative aspects of the ETICA project and takes responsibility for the non-academic side of project management.

The Centre for Computing and Social Responsibility (CCSR), one of DMU's Department of Informatics two research centres, is the largest research centre of its kind in the UK and one of few in Europe and the world. The centre comprises a Director, a Professor, a Reader, a Senior Research Fellow, two Research Fellows, a Project Administrator and 12 Research Associates who are full time members of staff. In addition it has two visiting professors and six international visiting fellows. The CCSR runs the Information Society Doctoral Programme which currently includes 15 full-time and 10 part-time research students.

The CCSR has undertaken funded research for a range of stakeholders including private organisations, professional bodies, NGOs, the UK government and the EU. As one of the leading research centres in the field, the CCSR has set up and continues to run the ETHICOMP conference series. CCSR operates the world's leading web portal for computer ethics.

CCSR was part of De Montfort University's submission to Unit of Assessment 23, Computer Science. The research profile was assessed as 10% 4*, 35% 3*, 40% 2* and 15% 1*. This confirms CCSR as an excellent international research centre undertaking world-leading research in terms of originality, significance and rigour.

Contribution to ETICA

As a member of the ETICA consortium, DMU's role is that of facilitator and Coordinator. As Coordinator, DMU ensures that as a group, all the various arms of the project are well coordinated in order to meet the outcomes of the

project. It liaises with the different work packages (WPs) as individual work groups, as well as facilitating and supporting all the WPs to successfully transition their work into the ETICA project as a whole. This ensures that all the different WP components flow coherently in order to meet the aims and objectives of the project.

Current state of the contribution

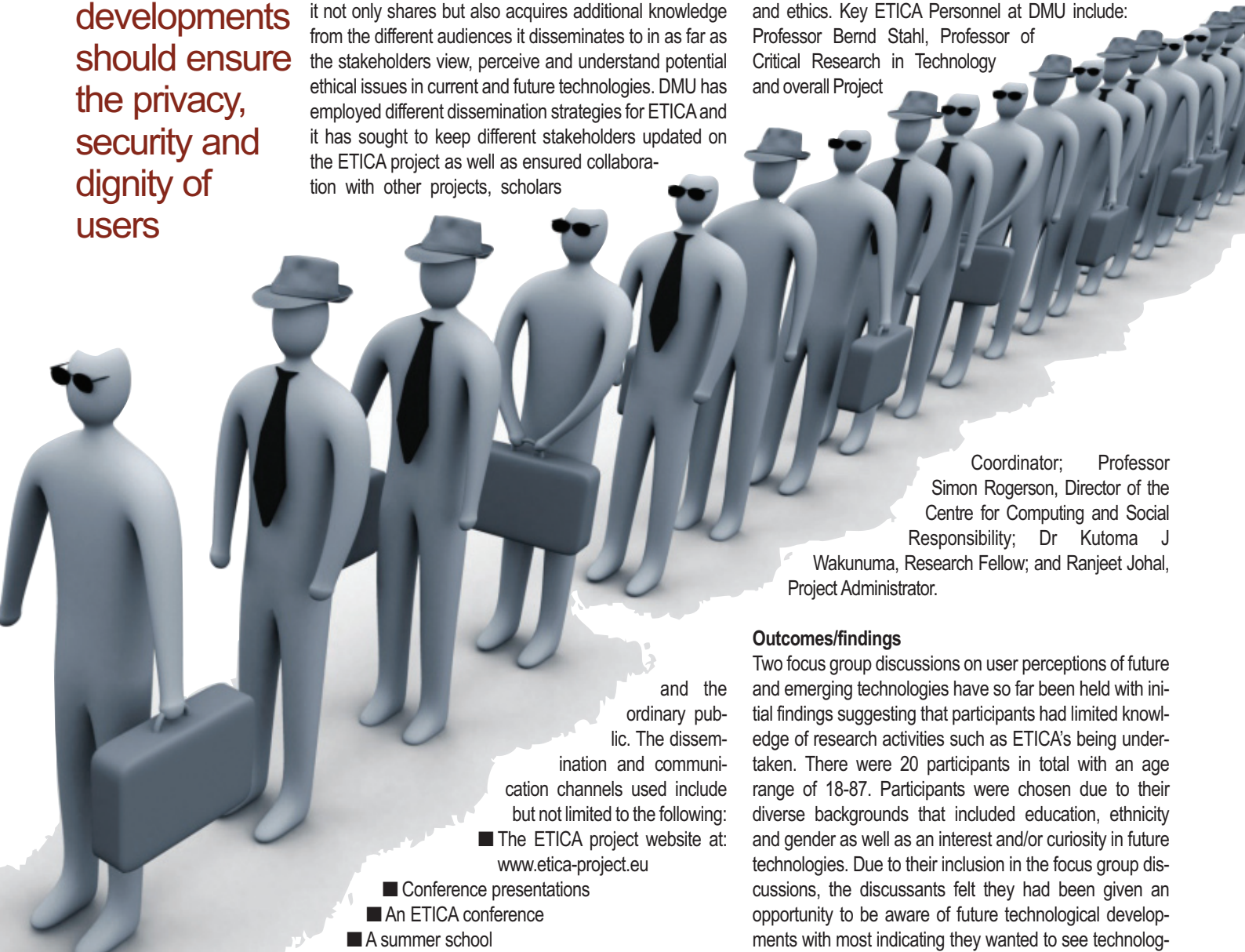
As part of its contribution to ETICA in its capacity as Coordinator of the project, DMU also endeavours to communicate, relay, and share ETICA's research to a wider audience through various dissemination strategies. These are not only intended to get the ETICA project in the public domain, but to share and make different stakeholders



Future technological developments should ensure the privacy, security and dignity of users

aware of potential ethical issues of future and emerging technologies that may affect them. In addition, DMU believes that, through its various dissemination strategies, it not only shares but also acquires additional knowledge from the different audiences it disseminates to in as far as the stakeholders view, perceive and understand potential ethical issues in current and future technologies. DMU has employed different dissemination strategies for ETICA and it has sought to keep different stakeholders updated on the ETICA project as well as ensured collaboration with other projects, scholars

understanding will enable the project to be able to come up with robust informed recommendations for the EC for possible consideration in future policy implementations of ICTs and ethics. Key ETICA Personnel at DMU include: Professor Bernd Stahl, Professor of Critical Research in Technology and overall Project



Coordinator; Professor Simon Rogerson, Director of the Centre for Computing and Social Responsibility; Dr Kutoma J Wakunuma, Research Fellow; and Ranjeet Johal, Project Administrator.

and the ordinary public. The dissemination and communication channels used include but not limited to the following:

- The ETICA project website at: www.etica-project.eu

- Conference presentations
- An ETICA conference
- A summer school
- Book publication
- Policy briefing session
- Focus group discussions

The employment of the above outlined dissemination strategies mean that DMU has ensured the ETICA project is relevant to a cross-section of stakeholders. For instance, academic researchers with interest in technology and ethics have been offered a platform at the ETICA conference to share their work, as well as learn about the ETICA project. PhD and Masters students on the other hand have been invited to ETICA's 1st international Summer School, which the project will host collaboratively with PrimeLife, an EU FP7 funded project together with IFIP Working Groups.

The ETICA project has also been keen to get policy makers and industry personnel, especially those working in the ICT sector and Small and Medium Enterprises (SMEs) to be a part of the process via the policy briefing sessions. In addition, ordinary citizens have been incorporated in the ETICA research through focus group discussions. The outcome of such diverse dissemination strategies is to be able to have a far reaching audience and subsequently a holistic understanding of future and emerging technologies. Such

Outcomes/findings

Two focus group discussions on user perceptions of future and emerging technologies have so far been held with initial findings suggesting that participants had limited knowledge of research activities such as ETICA's being undertaken. There were 20 participants in total with an age range of 18-87. Participants were chosen due to their diverse backgrounds that included education, ethnicity and gender as well as an interest and/or curiosity in future technologies. Due to their inclusion in the focus group discussions, the discussants felt they had been given an opportunity to be aware of future technological developments with most indicating they wanted to see technological developments that took into consideration energy efficiency use to combat climate change, as well as technological breakthroughs in medicine to improve health care. They further added that they wanted to see future technologies that were easy to use, affordable and relevant to day to day life.

Participants were also keen to state that future technological developments should ensure the privacy, security and dignity of users. These findings only offer an initial pointer into ordinary user's views and perceptions of future technologies. DMU will further develop on these findings when it conducts additional focus group discussions during the duration of the project.

Findings such as those realised from focus group discussants as well as those that will be realised from the forthcoming policy briefing sessions offer important insights and potential lessons that can be applied when considering aspects of future technologies and related ethics because they reflect what users would like to see as technologies are being designed and developed. ■



Bernd Carsten Stahl:
Professor of Critical Research in Technology

Contact: www.etica-project.eu,
www.dmu.ac.uk

VTT – identifying the next big thing

Part of the Finnish innovation system controlled by the Ministry of Employment and the Economy, VTT produces research, development, testing and information services for both the public and private sector



VTT TECHNICAL Research Centre of Finland (VTT) is an impartial multi-disciplinary expert organisation and the biggest contract research organisation in Northern Europe, employing around 2800 people and having an annual turnover of approximately €230 million. VTT's special strength is its ability to create new, globally competitive technologies and innovations by combining knowledge and expertise in different fields.

With its know-how VTT produces research, development, testing and information services for the public sector and companies as well as international organisations. VTT is a part of the Finnish innovation system under the domain of the Ministry of Employment and the Economy. VTT is a non-profit-making research organisation and has been given an ISO9001:2000 certificate. The R&D projects range from industrial developments projects to national and international joint research projects and to internal research projects. Participation in European research programmes is an important part of the activities at VTT.

The main contribution from VTT to ETICA comes from the human-driven design team, which takes user needs and expectations as the starting point of service development process, and evaluates design solutions with potential users throughout the design process. The human-centred design approach at VTT is based on the ISO standard (ISO 13407:1999, Human-Centred Design Processes for Interactive Systems). VTT has considerable experience in applying a human-centred design approach to designing service concepts, service components and the actual services, especially mobile, media and ambient intelligence services. In user evaluations, the focus is on the user experience and user acceptance. The 'Design for All' principle ensures the equal benefit of new technologies for different user groups. As information technology is increasingly embedded in our everyday life, ensuring ethically acceptable solutions and user trust are central research themes.

Human-driven design at VTT includes close cooperation with technology, marketing and business research

and also targets for digital services that facilitate meaningful practices for users and successful business for companies.

VTT has been active in research on ethical issues, for example with regards to ICT and older people and technology in many different fields. It has developed safety and security systems for people with memory disorders, accessibility services, web-based services for the elderly, safety wristbands mobile services for the elderly travellers and smart home and ambient intelligence concepts. VTT has also started its own groups (Ethical Computing Group - ECG, since 2004) and projects (NEAT - Network of Ethic, Aging and Technology 2006-2007) which aim to aggregate networks for discussing ethical issues related to human-technology interaction in general.

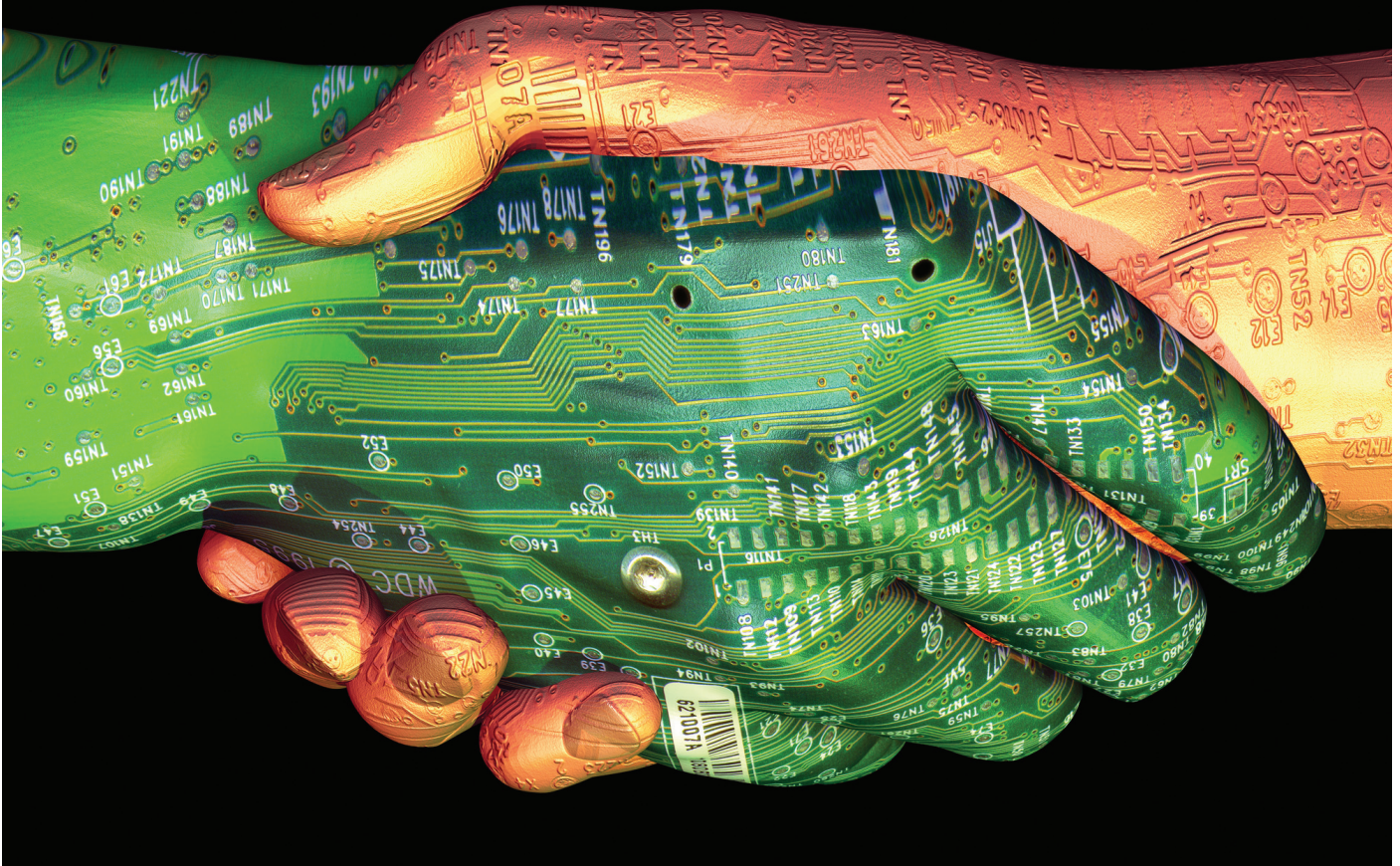
Contribution to ETICA

WP 1 will identify emerging ICTs and likely areas of applications of these technologies. The emerging ICTs that ETICA is focusing on are those that are currently being developed and hold a realistic potential to become reality within the next 10 to 15 years. This limitation is justified because established foresight methodologies allow for claims using this horizon and also because technology development programmes have a comparable time frame.

Such emerging technologies are very likely to be found in those academic and business projects where further development of concepts such as ambient intelligence, ubiquitous computing, autonomous systems, emotional computing, location sensitive devices, service robotics, convergence of ICT with other technologies, e.g. nano technology, or human implants are done. A list of such emerging technologies will be developed by Work Package 1, which will be led by VTT in Finland and is based on analysis of policies, strategies and visions presented in various available documents and resources related to the ICT research and development. At the same time when collecting a list of emerging ICTs we will review the assumed application areas that are foreseen to these technologies.

The main contribution from VTT to ETICA comes from the human-driven design team

Technology is not neutral – it can either help or hinder us



The technologies themselves are not neutral

Current state of the contribution

As ETICA's goal is to offer a comprehensive overview of ethical and social issues in ICT that are likely to develop in the medium-term future, the challenge for VTT is to collect comprehensive but manageable data for the identification of emerging ICTs. As ICT is developed with great resources, the issue of the selection of representative pool of data from different application areas of ICT is quite critical. There is a huge amount of available data sources that are directly or indirectly linked to development of emerging ICTs in different application areas. In this first phase it is reasonable to start with basic documents that clearly focus on ICT and then continue to the more specific areas of certain technologies or applications. We will concentrate mainly on European sources (particularly for the validation of findings) but (resources permitting) also include American, Asian and African perspectives in order to see if there are any major differences between different geographical locations and cultural communities.

Outcomes/findings

The big visions of future ICT from ubiquitous computing to ambient intelligence have ruled the developmental landscape globally around 20 years. It is foreseeable that the further technological development of these big visions continues although some of the main socio-economical trends might change during the next 10-15 years. Main societal challenges however won't lose their impact in near future. These challenges include health and social care systems, ageing, population, energy efficiency, environmental, sustainability, education and

learning systems, better security for citizens, efficient transport and better governance.

Major enabling building blocks to realise these big visions (also called for example as Internet of Things and Future Internet) will be, for example, machine-to-machine interfaces and protocols of electronic communication, microcontrollers, wireless communication, RFID technology, energy harvesting technologies, sensors, actuators, location technology and software. Besides major building blocks it is easy to find those synergistic technologies like robotics, life recorders/personal black boxes and virtual or augmented reality that extend the scope of these visions already. Furthermore, the convergence of ICT to other technological areas brings even more developmental and application level possibilities to invent and innovate novel emerging technologies and services.

The technologies themselves are not neutral and for this reason it is important to understand the characteristics and features embedded (e.g. miniaturisation, context-awareness, personalisation, efficiency) to them. Naturally on application level main issue of technologies is still how they are utilised in different contexts of usages. This means that in real life the same technological innovation can increase quality of life for some groups, while to some other groups same technologies may lead to quite the opposite. ■

The key ETICA contact at VTT is Veikko Ikonen, Senior Research Scientist

Contact: www.vtt.fi

Visualising the ethical boundaries

Delft University of Technology is using cutting-edge programs to visualise how the key concepts studied by ETICA interact

THE RESEARCH team from Delft University of Technology, (TU Delft) is composed of Jeroen van den Hoven, Richard Heersmink and Job Timmermans. They are responsible for identifying ethical issues of emerging Information and Communication Technology (ICTs). Each of the main emerging ICTs will be independently analysed using traditional ethical analysis, but also by using cutting edge bibliometrical techniques to explore possible ethical issues.

For the latter a program called VOSviewer is employed. This is a piece of software that produces visual maps of the co-occurrence of key concepts in a dataset. They have composed a dataset based on abstracts of academic publications on ICT ethics. After having identified relevant journals such as 'Ethics and Information Technology', 'International Review of Information Ethics', 'Information, Communication & Society', 'AI & Society', and 'Science & Engineering Ethics', to name a few, they have collected more than 1000 abstracts of articles published in these journals in the last seven years. The dataset is thus a rich and elaborate source to analyse and covers a large area of what has been written on ICT ethics.

The programmer of VOSviewer has done a preliminary scan to identify key concepts in the dataset. From this extensive list of 1400 concepts, they have identified approximately 700 key concepts such as privacy, freedom, confidentiality, responsibility, ambient intelligence, robotics, software piracy and so on. VOSviewer, then, made three distinct maps based on different viewing algorithms. The program also provides association strengths between concepts, which is a statistical indication for how often concepts co-occur. The stronger the association strength, the more often the concepts co-occur. The results of the analysis can be seen on www.vosviewer.com/maps/ethicsict/. Note that Java must be installed in order to view the maps.

The basic idea of this type of analysis is that it very quickly shows which ethical issues or concepts are mentioned in relation to which (emerging) ICTs. One can for example, click on a particular concept and see which concepts are related to it. Take ambient intelligence (Aml), for instance. The analysis shows that it is related to the following ethical concepts: freedom, surveillance, data protection, rights and informed consent,

amongst others. This implies that in the dataset, Aml is often mentioned together with these concepts, and that authors in the field of ICT ethics think there is a relation with Aml.

It is, however, important to note that the bibliometrical analysis is not sufficient in and by itself to conclude that the authors in the field think there is or is not, an issue with those particular ethical concepts. The bibliometrical analysis is a heuristic and it merely indicates that discussing Aml in terms of freedom, surveillance, data protection, rights, and informed consent should be considered, even if a discussion in those terms may not be sufficient or may eventually even be thought to be spurious or inadequate. For this reason, we are doing an ethical analysis that is informed by the bibliometrical analysis, as well as existing literature on ethics of emerging ICTs.

Current state of the contribution

At this point in time, the research team from the TU Delft has composed the dataset and they have done the bibliometrical analysis. Currently, they are analysing the first emerging ICT. Identifying emerging ICTs is done by the research team from VTT, Finland. The first emerging ICT they have identified is Aml, which is a particular vision on the future of ICT. The general idea of Aml is that electronic devices in our homes, offices, hospitals, cars and public spaces will be embedded, interconnected, adaptive, personalised, anticipatory and context-aware. It envisions a future in which ICT systems monitor human behavioural patterns and bodily variables to infer what its user(s) want or need. The most well-known example is probably a refrigerator that orders products by itself without human intervention. By analysing previous consuming behaviour, the refrigerator 'knows' what its users normally consume. And it can order products from an online supermarket based on profiled consuming patterns. So, by profiling consuming patterns, it autonomously orders products from an online supermarket, thereby anticipating its users' needs.

Aml is a broad concept and has the potential to be used in many societal fields such as healthcare, workplace, households, education and transport. It is also a controversial concept and has received a great deal of attention in the ethical literature on ICT. Of all the ethical issues in relation to Aml, privacy has received the most attention. This is so because it has a strong potential to

Aml is a broad concept and has the potential to be used in many societal fields

Karlsruhe puts personal values into the mix

Karlsruhe Institute of Technology's ITAS will focus on the environmental, economic, social, political and institutional issues

KARLSRUHE INSTITUTE of Technology (KIT) is a higher education and research organisation with about 8000 employees, 18,500 students, and a total annual budget of about €700 million. KIT was established on 01/10/2009 with the merger of Universität Karlsruhe (founded in 1825), one of Germany's leading research universities, and Forschungszentrum Karlsruhe (founded in 1956), one of the largest research centres in the Helmholtz Association.

Higher education, research, and innovation are the three pillars of KIT's activities. In establishing innovative research structures, KIT is pursuing joint strategies and visions. KIT is devoted to top research and excellent academic education as well as to being a prominent location of academic life, life-long learning, comprehensive advanced training, exchange of know-how, and sustainable innovation culture. KIT has significant competencies in the fields of information and communication technologies and the inter-relations of humans and technology.

The unit working on ETICA is the Institute for Technology Assessment and Systems Analysis (ITAS). ITAS' work focuses on environmental, economic, social, political and institutional issues. ITAS supports politics, science, business and the general public in future decision making. The institute applies and upgrades methods of technology assessment, systems analysis and technology foresight. ITAS carries out self-defined research work integrated within the programmes of the Helmholtz Association, as well as third-party funded and contract research. Important external clients and sponsors in the political area are the European Commission, federal and state ministries, and authorities. In the parliamentary area, ITAS has been operating the Office of Technology Assessment at the German Parliament since 1990. ITAS also is leading a network of European parliamentary TA institutions advising the European Parliament via its Scientific Technology Options Assessment Panel (STOA).

Contribution to ETICA

ITAS is leading the third work package of ETICA, entitled Evaluation, which is to rank emerging technologies and their related ethical issues from the separate viewpoints of technology assessment, ethics, gender issues and the law with additional special focus on the New Member States. ITAS' partners in the Evaluation work package are the Steinbeis University, Berlin (Professor Rafael Capurro), Eötvös Károly Policy Institute, Budapest (Professor Iván Székely) and the University of Lodz (Professor Elébieta Oleksy).

Current state

Work Package 3 is currently developing its strategy for the ranking of ethical issues linked with specific information and communication technologies. The ethics part of the work package will concentrate on the standards documented in ethical reviews, opinions, and advisory reports at the European and national level. The part of the work package on technology assessment will endeavour to capture the ethical viewpoints of a broad range of actors and stakeholders and to outline upcoming issues that should be on the agenda of political decision-makers in the near future.

An important aspect will be to show what is acceptable to the European citizen, since delays in the uptake of technologies are often due to the development of solutions that the average citizen mistrusts or actively dislikes. Examples of this can be found in applications of information and communication technology building on the trust of its users, but not sufficiently transparent for them to know what is happening with their personal data.

The work package will use meta-vignettes prepared by work packages 1 and 2 as its point of departure. These will be evaluated for their ethical implications from the viewpoints represented in the work package, using a uniform grid. This starts with a brief description of the technology, its state of development and a roadmap for its further development in the foreseeable

An important aspect will be to show what is acceptable to the European citizen

Lack of trust: who is holding your data?

future. Among the items to be captured in the grid are the expected benefits and desired impacts of the technologies as they are described by their proponents, undesired and controversial impacts of the technologies with an

assessment of the severity of these impacts, outreach of the technology itself and similar technologies from which lessons can be learned. It is perhaps surprising to discover that many technology developers fail to learn lessons from past experience with technologies, even though it might be easy to transfer such experience from one established technology to another similar but emerging technology.

Gender

Gender aspects will be considered at all stages of ICT design, production and application. The aim is to ensure inclusiveness and equal participation in avoiding or overcoming the digital divide. Legal aspects will focus mainly on 'higher level' values, such as human rights, e.g. dignity, equality or rule of law, and to a much lesser extent on things like details of (public) administration. Values are not universal in Europe, requiring an examination of the mutual relationship between values reflected in technology and tensions arising with dominant values in the new member states.

Ranking of ethical issues is expected to be determined largely by the expected magnitude of any impacts. This can be number of persons affected or geographical outreach, but also depends on the nature of the applications and their importance for key functions or infrastructures of society.

Efforts will be made to involve external experts representing the same specialisations as the partners in the work package in the ranking of issues. The final analysis and ranking will be done jointly by all members of the Work Package team, irrespective of their specialisations. Mechanisms will also be put in place to ensure cross-checking of ratings and rankings. This means that each rating will contain references to sources which can be cross-checked to indicate why the technology received a particular rating.

Expected Outcomes

Work Package 3 will produce individual reports at the end of its activities prior to consolidation in the uniform final report of the work package focused on each specialisation, ie. ethics, gender, law and special aspects of the new member states, and technology assessment.

The members of the work package will select a short list of five to ten combinations of technologies and ethical issues they consider particularly worthy of ethical investigation and requiring the setting up of specific governance measures. The final consolidated report will synthesise the findings of the sub-work packages in an endeavour to justify the selection of this final shortlist. ■

The key ETICA contact at KIT is Dr Michael Rader. He has a PhD in sociology and has worked for more than 30 years as a researcher at the Research Centre in Karlsruhe, now the Karlsruhe Institute of Technology.

Contact: www.kit.edu



Measuring the impact of emerging ICT

FUNDP's role in the ETICA project is to reflect upon current ethical governance approaches and to advise on an ethical governance strategy

THE FACULTÉS Universitaires Notre-Dame de la Paix, located in Namur, Belgium, has a strong tradition of integrating the study and research of sciences with the reflection on social impact.

FUNDP is situated in the southern, French-speaking part of Belgium and has over 5000 students enrolled. It was founded in 1831 by the Society of Jesus, with a priority of educating students and researchers to be responsible and active members of society.

Contribution to ETICA

The ETICA project's goal is to investigate ethical governance procedures in EU research projects in order to develop an improved governance framework that allows us to identify and address potential ethical issues in new and emerging technologies.

FUNDP's contribution to ETICA is to primarily reflect on current ethical governance approaches and to advise on recommendations for an ethical governance strategy for identifying and resolving ethical issues in emerging ICTs. FUNDP has also contributed in a major way to the project's methodology and data analysis, allowing for a coherent approach to the problems identified by the project. FUNDP's contribution fits in to the ETICA project as shown by Figure 1.

The specific problem that FUNDP wishes to solve is that of the diversity of ethical approaches, according to sectorial fields of application, and, relatedly, the decisionist position, which is limited to the institution and the application of standards within a particular sector. The sectorial nature and the decisionist position have led to a restriction of ethical framing, which in turn has led to the currently common determination of ad hoc solutions and application of ad hoc actions to solve ethical issues without a solid framework underlying and founding them.

This problem is mostly due to the three pre-suppositions that underlie the relation between the theoretical level of justification and determination of ethical issues, and the complexity of the contexts of application. The

three presuppositions are called "intentionalist", "mentalistic" and "schematising" presuppositions.

The "intentionalist" presupposition is so named because the norm's effects are supposed to be deducible from the simple intention directing its adoption; and the "mentalistic" and "schematising" presuppositions are so named because what enables the determination of the effect of a norm is supposed to be linked to rules (or schemes in Kant's language) located in every mind. Therefore, in this presupposition, there is a function of mental capacities which do not at all depend on a thinking subject's exterior context. The operation of application can be considered in this case as a simple formal operation of deduction on the basis of the rule itself.

These presuppositions lead to the separation of the question of legitimisation from the question of application (Putnam's distinction). Simply choosing, from a decisionist perspective, ethical values that are presupposed, without taking into consideration the relationship between those norms and the context in reality, corresponds to the presupposition that reason by its formal characteristics can include in and by itself its condition of application. We will demonstrate that this presupposition, which can be found in all ethical theories and approaches currently used, leads to a loss of impact and an undermining of the effectiveness and role of ethics in technology development.

The way FUNDP intends to solve this problem, which is at the heart of the problem of Work Package 4, is by adopting a reflexive governance approach, which we will construct by taking a critical approach toward ethical approaches used in ICT development projects. FUNDP will also take into account the positive gain represented by the result of the analysis of all formal and procedural approaches to ethical issues in technological development, and the most advanced governance theories of today (democratic experimentalism, Louvain school or "genetic" internalist-pragmatic theory, and the overcoming of the neo-institutionalist approach).

The sectorial nature and the decisionist position have led to a restriction of ethical framing

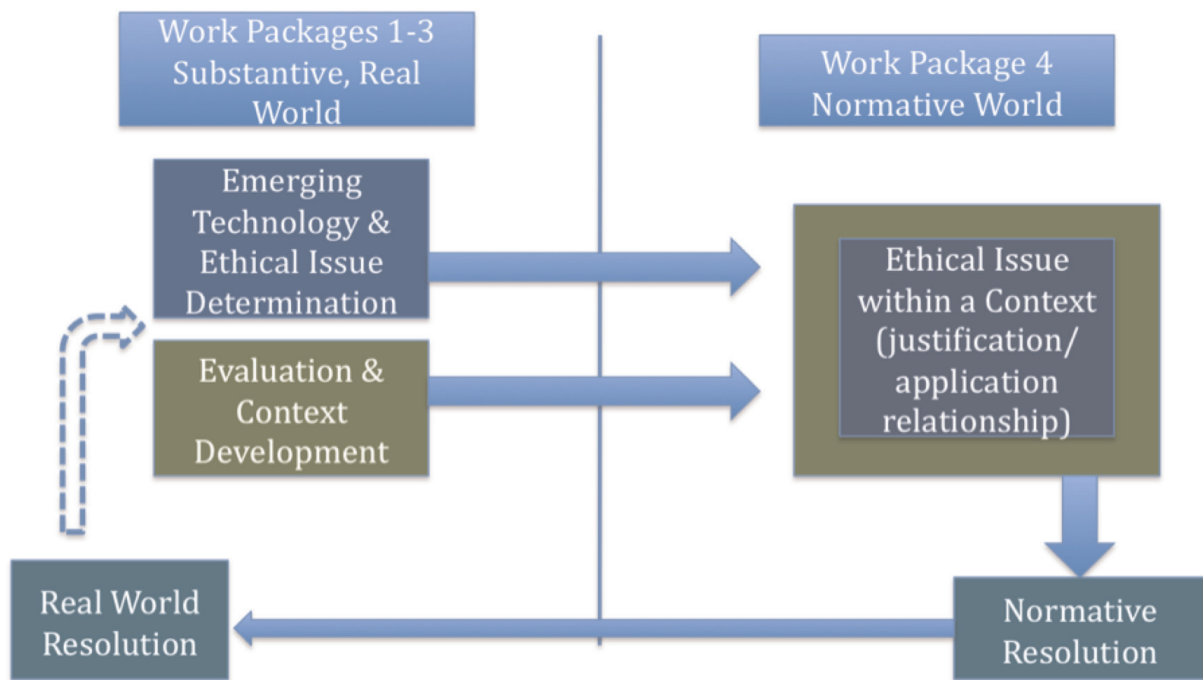


Figure 1: Relationships between WP4 and other Work Packages

This theory will allow for a reduction in the ad hoc ways of incorporating ethics into technology research projects

A reflexive governance process is needed that integrates learning through feedback mechanisms during the process of development and which broadens the view beyond the technical. It needs to ask important questions about values, how values are identified as being values, and whose values they are. It also needs to ask about the construction of the norm, and the norm's trajectory in the context.

The approach outlined above will allow for these important questions to be discussed within the context of the process which, as well as allow for these questions to be answered, with the result being a practical set of guidelines for project leaders and all stakeholders to incorporate ethical reflexivity into their research projects, and into technological development. Correspondingly, the approach outlined will allow for a set of guidelines to assess projects from an ethical perspective and to assess the efficiency of the ethical reflexivity for the European Commission. This theory will allow for a reduction in the ad hoc ways of incorporating ethics into technology research projects, and retain the impact ethics should be having on technology research.

FUNDP derives their solution by understanding the steps of the process of the production of a norm (i.e. how a norm becomes a norm) within a social context, from the beginning, including the relationship between the norm and the context. This is where the reflexivity can be incorporated, with incorporation relying on a new governance conception and arrangement. This will allow FUNDP to overcome the presupposition issues that are at the heart of the limitations of all ethical approaches in European projects.

Outcomes and Findings

Since this Work Package has only just begun, the outcomes and findings are works in progress, but a thorough analysis of current assessment processes has been conducted, with the outcomes being that by themselves, they cannot constitute an adequate ethical governance strategy, because they suffer from the presuppositions identified above.

Ongoing research into the ways of overcoming these limitations is being conducted, as well as the development of practical guidelines for ethical governance of ICT development. ■

Professor Philippe Goujon is a professor of philosophy embedded within FUNDP's Computer Science department, who has a particular interest in the relationships between science, technology, and society. His background is in epistemology and ethical reflection on emerging technologies such as Genetically Modified Organisms, as well as ethical governance of technologies, which makes him ideally placed to lead the Governance work package of the ETICA project.

Dr. Catherine Flick has a background in computer science and computer ethics, with a recently conferred PhD on informed consent in ICTs. She joins Prof. Goujon to work on ethical governance in emerging ICTs.

Contact: www.fundp.ac.be

Evaluating future developments

The Steinbeis University Berlin envisages an international and intercultural co-operation in the impact of information technology on society

THE STEINBEIS University Berlin belongs to the Steinbeis Foundation for Economic Development. It is wide network of some 700 centres dealing with knowledge and technology transfer managed by university professors. It offers a wide range of academic courses (Bachelor, Master and PhD) run by schools and institutes.

The Steinbeis Transfer Institute – Information Ethics (STI-IE) is devoted to academic research as well as to practical projects focusing on ethical issues arising particularly from digital devices. It envisions an international as well as intercultural cooperation on the impact of information technology on society. Information ethics deals with ethical questions in the field of digital production and reproduction of phenomena and processes as well as the exchange, combination and use of (particularly) digital information. Maintaining a broad focus on the corresponding ethical issues and being open for the fast developments in this field the STI-IE is particularly devoted to ethical questions of all kinds of digital devices affecting through their code and/or content social interaction.

The contribution of the Steinbeis Transfer Institute – Information Ethics to ETICA is the evaluation of emerging technologies and their moral issues from the perspective of ethics and philosophy. Building on the work of VTT and TU Delft, The Steinbeis Transfer Institute will contribute to work package 3, evaluation. The task of the work package is to critically reflect the findings of the earlier work packages and to develop a transparent and rigorous way of prioritising these results. The other partners in this task are KIT, UL, and EKINT. The overall result of this activity will be a view of which emerging ICTs and their resulting ethical issues are most significant and in need of attention. ■

Prof. Rafael Capurro is a leading scholar in the area of information ethics. He was professor of information science and information ethics at Hochschule der Medien – University of Applied Sciences, Stuttgart, Germany (1986-2009). He is the founder of the International Centre for Information Ethics (ICIE) (1999-). In addition he served as a member of the European Group on Ethics in Science and New Technologies (EGE) of the European Commission (2001-2009), is a distinguished Researcher in Information Ethics, School of Information



Studies, University of Wisconsin-Milwaukee, USA and a member of The World Technology Network (WTN) (since 2002). His editorial services cover the Journal of Information, Communication and Ethics in Society (ICES) (Member of editorial advisory board), Co-Editor of the ICIE-Series on Information Ethics (2002-) Editor-in-Chief of the International Review of Information Ethics (IRIE) (2004-). His research interests include Information Ethics, philosophical foundation of information science, information management, philosophy of media, hermeneutics. He is currently Director of the Steinbeis Transfer Institute - Information Ethics.

Contact: www.steinbeis-hochschule.de
www.steinbeis-hochschule.de/organisation/institutes/institute-der-shb.html

STI-IE is particularly devoted to ethical questions of all kinds of digital devices

Technology meets the rule of law

The Eötvös Károly Policy Institute, with its expertise in the area of informational rights and ethics, is able to bring together various fields of legal research

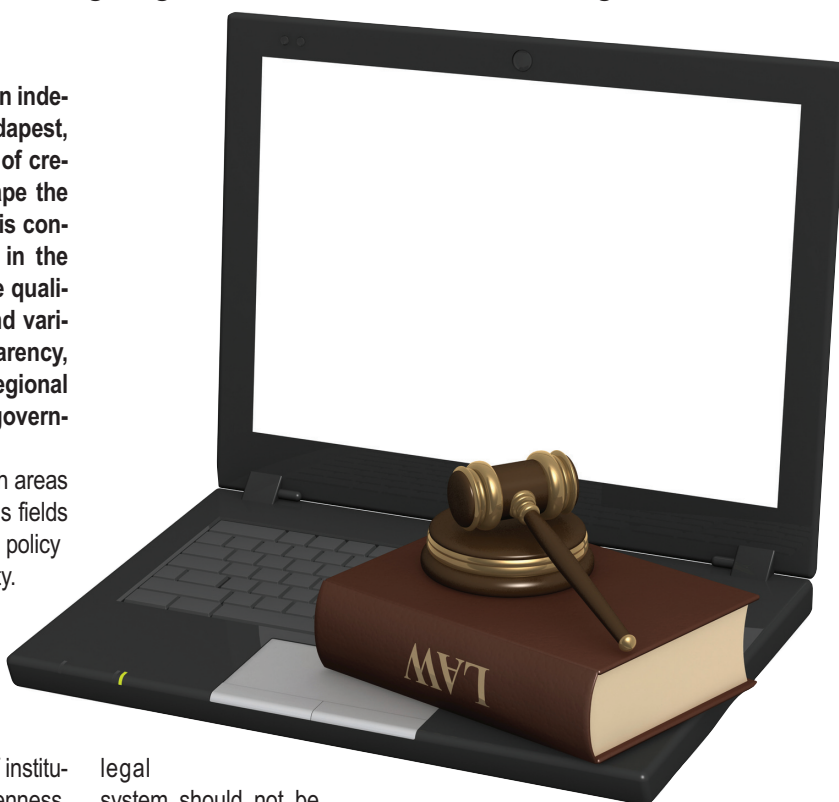
EÖTVÖS KÁROLY Policy Institute (EKINT) is an independent research organisation based in Budapest, Hungary. Founded in 2003, with the purpose of creating new institutional forms in order to shape the democratic public sphere in Hungary, EKINT is conducting policy studies and policy analyses in the areas that have the most direct impact on the quality of the relationship between the citizens and various levels of governance, such as transparency, accountability in the municipal system, regional administration, the judiciary and the central governmental institutions.

The Institute's objective is to bring together such areas of expertise that have been established in various fields of policy research and to develop wide-ranging policy alternatives as a result of this coordinating activity. EKINT has an internationally recognised expertise in the area of informational rights (data protection and freedom of information) and ethics.

The Institute is also involved in empirical social scientific research, among others, in the areas of institutional performance, local democracy and openness. EKINT is dedicated to a liberal conception of constitutionalism, to the rule of law and of individual rights, and to supporting all initiatives that are undertaken to promote a civic political culture based on the spirit of solidarity. Furthermore, the Institute seeks to combine its principled commitment to the ideas of liberal democracy with practical public action.

EKINT is participating in Work Package 3, Evaluation. Its principal role is to evaluate emerging technologies and their foreseeable impacts from a legal point of view, with special regard to the new Member States of the European Union, most of which can be considered as the new democracies of the EU. At the present stage of the project, EKINT, together with its partners who are evaluating the emerging technologies from the technological assessment, ethical and gender aspects, is working on the methodologies of evaluation. EKINT has also contributed to the drafting of the internal glossary of significant terms to be used coherently in ETICA.

The experts of EKINT are convinced that in evaluating new and emerging technologies and their impacts the fundamental aspects should be dignity, equality and rule of law. When applying these technologies the existing



legal system should not be regarded as a set of unreasonable restrictions. Since decision-making in the EU, including decisions regarding emerging technologies, is permeated by community law, and a fundamental task of community law is to represent values, including moral values, the ethical aspect must always be present in these decisions, implicitly or explicitly; sufficiently or insufficiently.

Consequently, for a lawyer, questioning whether ethical considerations are adequately observed equals questioning lawfulness. However, the sovereignty of the EU is constituted of national sovereignties, and the common moral/ethical norms can be defined on the basis of such norms of the individual member states. Still, the common European norms cannot be defined as the smallest common denominator, nor as an average of the members' ethical or constitutional norms. ■

Key ETICA personnel at EKINT include Dr Ivan Szekely, expert in multidisciplinary fields of data protection and freedom of information; and Dr Mate Szabo, Lawyer specialising in human and information rights

The fundamental aspects should be dignity, equality and rule of law

Contact: www.ekint.org

Highlighting gender issues

The University of Lodz will be examining technology assessment, ethics, legal aspects and – in particular – gender aspects of the ETICA project

THE UNIVERSITY of Lodz is one of the largest higher education institutions in Poland. Founded in 1945 it currently employs 2500 teaching staff (of which over 1200 are Ph.D. holders). The number of students is over 42,000. Research and teaching is carried out at 12 Faculties and inter-faculty and inter-disciplinary research institutes.

International cooperation has been given the utmost priority in the development policy of the University. Under the direct cooperation agreements UL collaborates with 91 higher education institutions in 26 countries. The University of Łódź is a member of such international organisations as: EUA, Association of European Schools of Planning (AESOP), Alliance of Universities for Democracy. It also operates within the network GRUPO COMPOSTELA DE UNIVERSIDADES. UL has participated in a number of international research programmes including: European Union Framework Programmes, SOCRATES Thematic Network, TEMPUS, INCO-COPERNICUS, ACE, Jean Monnet, CEEPUS, Grundtvig. Altogether, faculty members and researchers have taken part in 11 5th FPs and 21 6th FPs, of which nine are related to broadly understood social sciences and humanities.

ETICA Project's activities at UL are coordinated by the Women's Studies Center (WSC), founded and directed by Prof. Elzbieta H. Oleksy. WSC is the first university centre ever established at a Polish university. It concentrated on research and teaching of women's studies and gender studies.

ETICA's Key Personnel at UL

- Dr. Wieslaw Oleksy – ETICA coordination and research.
- Prof. Elzbieta H Oleksy – principal researcher.
- Kaja Zapadowska MA – administration and research.

UL's Contribution to ETICA.

As a member of the ETICA consortium, UL will perform the following tasks within WP3:

- 1) Identification and evaluation of gender aspects involved in ethical evaluation of ICT design, production, and access to existing and emerging technologies and their applications from the perspective of

inclusion and equal participation in the technological revolution.

- 2) Qualitative and quantitative analysis of gender-sensitivity of selected ICTs products and applications in order to draw conclusions which will be of interest to ICT stakeholders: designers, producers, equipment and services providers, users and policy makers.
- 3) Formulation of recommendations to policy makers and ICT professionals concerning gender aspects of ICTs, which will:
 - (a) lead to the increased awareness of gender issues in ICTs and
 - (b) bring about a more balanced development of human potential in the EU and globally.

Current state of the contribution

Tasks to be performed by UL in WP3 are related to the methodology and tools developed jointly by other partners in WP3, which in turn to a great extent depend on the outputs of WP1 and WP2. So far cooperation between partners within WP3 has been smooth and it resulted in the preparation of the preliminary report (Deliverable 3.1).

The share of work among the partners in WP3 involves the following topics: technology assessment, ethics, legal aspects – especially concerning the new EU member states, and gender aspects. While UL is contributing to technology assessment and legal aspects in cooperation with other partners it's current principal effort is research and data collection on gender issues and their significance in the ethical evaluation of emerging technologies.

Outcomes

UL ETICA's team has compiled a preliminary bibliography of relevant literature on gender issues in ICT's and contributed to ETICA Glossary entries which focus on various aspects of gender terminology and gender conceptual framework. UL has also participated in discussions on general, technical and methodological issues involved in the current work on ETICA. ■

International cooperation has been given the utmost priority

Contact: www.uni.lodz.pl

Ensuring risk management

The Advisory Board of the ETICA project exists to ensure that key players in ICT, such as industry and European regions, have input into the programme

AN IMPORTANT aspect of the structure of the ETICA project is the high level input from the Advisory Board. The Advisory Board represents a range of stakeholders, offers feedback mechanisms, and ensures that dissemination is successful.

Advisory Board members are full members of the project. Their contribution will be the expertise from former projects as well as the representation of important stakeholder groups such as industry, in particular SMEs, and different European regions. The advisory board also provides input from the point of view of prior European research in the area. The breadth of experience of the Advisory Board will allow its members to effectively evaluate research results and put them in the wider European perspective.

Identifying the risks

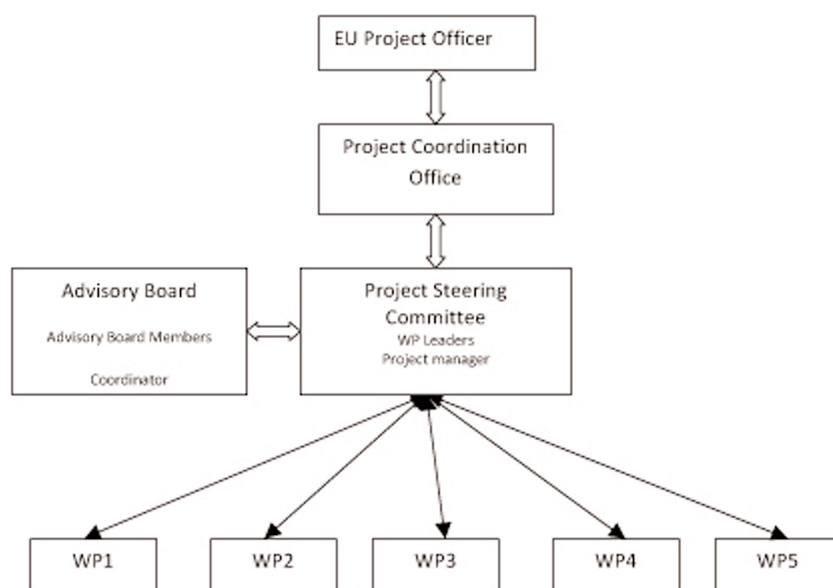
One important role of the Advisory Board when viewed from the overall project perspective is that of risk management. The project has to contend with a number of uncertainties and risks and the Advisory Board can provide valuable input in addressing these. Salient examples of such risks are:

■ **Representation of relevant stakeholders:** The risk with regards to stakeholder representation is that too large a collection will render the project unmanageable but too narrow a set will leave the project open to questions concerning its viability. The solution to this risk is in the membership of the consortium and in particular the Advisory Board that represents a number of important stakeholders.

■ **Viability of recommendations:** A further and related risk to the relevance of the project would be the creation of policy recommendations which turn out not to be viable.

This risk is addressed through the stakeholder and consultative approach taken by the project which ensures a maximum of input from a range of stakeholders. This, in turn, guarantees the maximisation of the knowledge base and an early recognition of problematic recommendations. The Advisory Board, in particular, will watch over the viability of findings and recommendations.

The bottom-up approach of the project, which will deduce policy recommendations from individual gover-



nance structures of particular issues and problems will furthermore lessen the risk of recommendations that are not grounded in political and organisational reality.

■ **Over-regulation:** There is a risk that the project will be perceived as an attempt to create more bureaucracy and that the disadvantages of the creation of governance structures and policies will outweigh the benefits. Such a view from main users (e.g. the ICT industry) could lead to user resistance and might jeopardise the success of the project.

Consultation

In order to mitigate the risk, ETICA will consult widely with a range of stakeholders including industry and SMEs, to ensure their views are considered and represented in the policy recommendation process. This is one aspect where the ETICA Advisory Board will ensure the viability of the project outcomes.

The role of the Advisory Board in the organisational structure is outlined in the above diagram. ■

The project has to contend with a number of uncertainties and risks

Contact: www.etica-project.eu

Europe's leading e-security group

Non-profit association eema has been educating and informing its members on e-identity and security issues for the past 23 years

FOR 23 years, eema has been Europe's leading independent, non-profit e-Identity & Security association, working with its European members, governmental bodies, standards organisations and interoperability initiatives throughout Europe to further e-Business and legislation.

The remit of the association is to educate and inform over 1,500 member contacts on the latest developments and technologies, at the same time enabling Members of the association to compare views and ideas. The work produced by the association with its members (projects, papers, seminars, tutorials and reports, etc) is funded by both membership subscriptions and revenue generated through fee-paying events. All of the information generated by eema and its members is available to other members free of charge.

Examples of recent eema events include: *Using RFID in Identity & Access Management*, Brussels; *Role Life Cycle Management and IAM*, Gent; *The European e-ID interoperability conference (featuring STORK, PEPPOL & ePSOS)*, Brussels; *The use of public identifiers in the private sector*, Utrecht; *The European e-Identity Management Conference (featuring STORK)*, London; *Enterprise Data Protection – Is IAM enough to meet Compliance Goals?*, London; *ISSE (Information Security Solutions Europe)*, The Hague; and *Identity in the Cloud – workshop and conference*, Munich.

The association and its members are also involved in many European funded projects including STORK, ICEcom and ETICA .

Participation

Any organisation involved in e-Identity or Security (usually of a global or European nature) can become a Member of eema, and any employee of that organisation is then able to participate in eema activities. Examples of organisations taking advantage of eema membership are: Volvo, Hoffman la Roche, KPMG, Deloitte, ING, Novartis, The Metropolitan Police, TOTAL, PGP, McAfee, Adobe, Magyar Telecom Rt, National Communications Authority, Hungary, Microsoft, HP, and the Norwegian Government Administration Services, to name but a few.

eema decided to become involved with the ETICA project as we felt it was looking to contribute an essential piece of the jigsaw, and as a member of the Advisory Board we felt we could bring a business and



practical focus to the outputs of the project, which have been achieved over the past nine months.

For example the Advisory Board may see that there may be a far more beneficial methodology available as we may be able to 'see the wood for the trees' that the rest of the partners may not. ■

ETICA key personnel: Roger Dean - played a significant role as a founder member and executive director of eema

**eema
brings a
business
and
practical
focus to
the project**

Contact: www.eema.org
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info@eema.org

Integrating the regions with ICT

TRN adopts the successful Nordic 'Triple Helix' approach to development to enhance regional opportunities in information and computer technology

TELEREGIONS NETWORK is an International Non-Profit Organisation of European Regions. It was founded in 1997 by key regions from Austria, Belgium, France, Germany, the Netherlands, Finland, Spain, Sweden and the UK. TRN has been actively participating in the field of Regional Development and Information and Communication Technologies (ICT).

The TeleRegions Network is involved in improving cooperation to enhance regional opportunities in the information society – to foster regional development in and through ICT. TRN offers practical solutions for the challenges of regional development and ICT by combining successful solutions, promising solutions and available solutions:

- Best practice solutions that have been successfully realised in the regions.
- Cutting edge research and emerging technologies, in development by the leading research institutions.
- Solutions that is available on the market, ready for implementation.

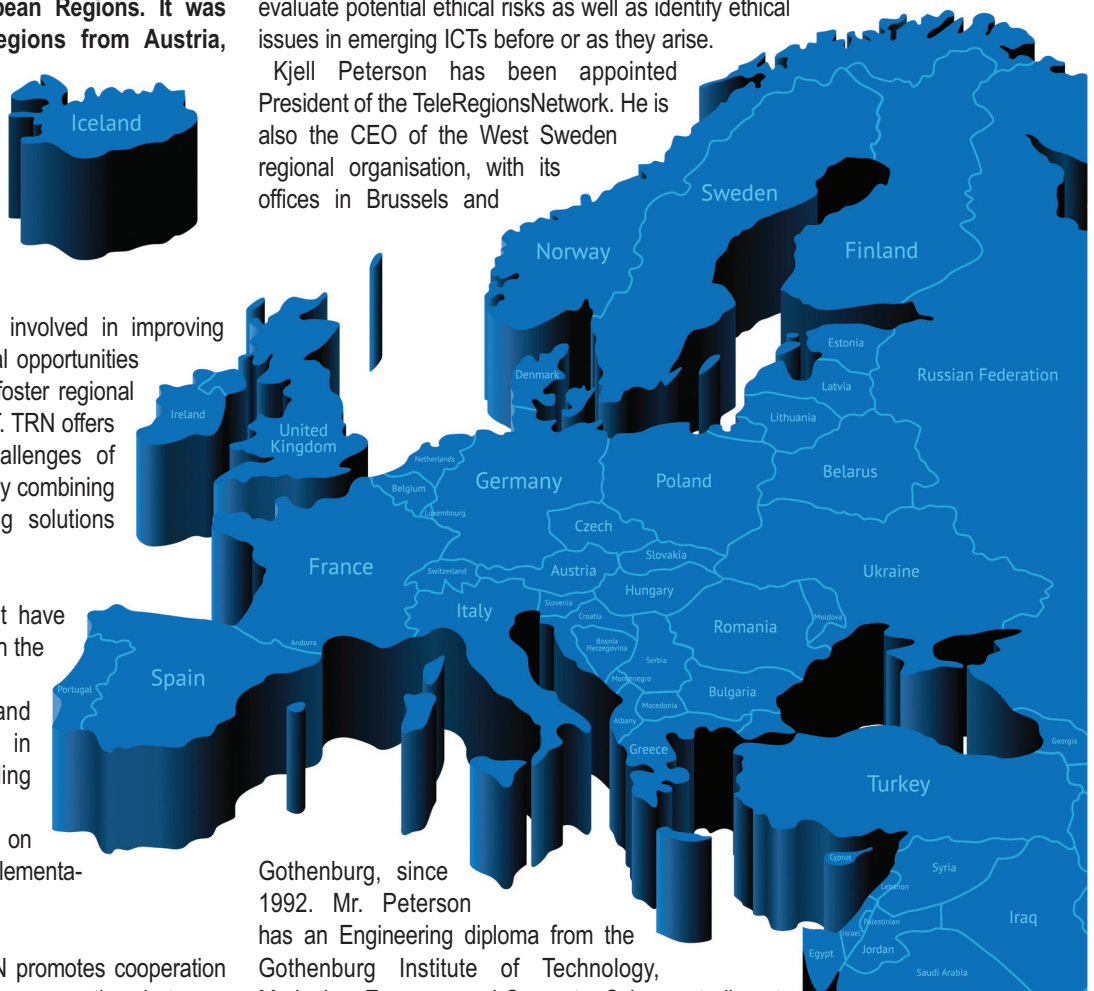
To achieve its objectives, TRN promotes cooperation between regions, as well as cooperation between regions and other stakeholders. TRN follows the successful Nordic best practice example of a 'Triple Helix' approach. A close cooperation between the public authorities, enterprises and academia appears to be the best way to successfully foster regional development. An increasingly important part of this cooperation for TRN and its stakeholders are the ethical issues.

Risks

As emerging technologies are playing an increasingly dominant role in the development the consequences of this development must be addressed. Through its participation in the ETICA project TRN and its stakeholders

have – in cooperation with experts – the possibility to evaluate potential ethical risks as well as identify ethical issues in emerging ICTs before or as they arise.

Kjell Peterson has been appointed President of the TeleRegionsNetwork. He is also the CEO of the West Sweden regional organisation, with its offices in Brussels and



Gothenburg, since 1992. Mr. Peterson has an Engineering diploma from the Gothenburg Institute of Technology, Marketing, Economy and Computer Science studies at the Gothenburg University, and an MBA from IMI (Geneva).

Mr. Peterson has accumulated a deep knowledge of industrial operations through several management positions in companies often related to ICT and research in different countries. Among them Nixdorf Computer (D), OCE (NL), Scandigrapho Group (SE), and WPM Management Consultants (UK). He has also been the World President of the Junior Chamber of Commerce International (JCI) with its headquarters in Miami. ■

TRN offers practical solutions

Contact: www.westsweden.se

Promoting SME research benefits

EurExcel helps its members adopt innovation as part of their business strategy

EUREXCEL IS an association committed to helping SMEs reach the global market and benefit from innovation and the capital available through the results of European research projects.

To best achieve this EurExcel work very closely with other professional associations, researchers, RTOs and SMEs themselves, our aim being to put real technological advance into the hands of our SME members.

Through its network activities EurExcel helps its members to adopt innovation as an essential and integrated aspect of both their business strategy and cultural relationship with their customers. This is done by improving their access to, and exploitation of, new and emerging technologies and knowledge. EurExcel also serves to better equip small firms with the skills and contacts to help them secure existing domestic European business and attract new business from other global markets.

EurExcel is an independent association made up of SMEs from all parts of the European area. The mission of the organisation is to assist SMEs in gaining benefit from the European Commission research funding, whether to complete their required research or to assist in the valorisation of the results. It is made up of members from many industrial sectors however there is a definite focus on hi-tech business areas such as ICT.

The ETICA Advisory Board provides an excellent platform for EurExcel to demonstrate its industrial perspective as applied to the ethical questions of emerging technologies. With the collective experience of a wide and varied European association, EurExcel will offer insights on the nature of SMEs when dealing with innovation and



business development and how ethical considerations fit into their processes.

The key ETICA contact is Mark Wells, who is now non-executive Chairman, splitting that role with rural regeneration projects in sub-Saharan Africa.

EurExcel will give feedback on the research as it is completed using direct opinions of its members to ensure the projects direction is valid and that results are relevant and effective. EurExcel will also provide expert advice on dissemination and exploitation having taken this role in many other FP6 & 7 projects.

In addition, EurExcel's membership database will serve as an effective dissemination route for the project results which should stimulate a high level of further activity post-project. ■

Contact: www.eurexcel.eu

EurExcel will offer insights on the nature of small- and medium-sized enterprises

Two decades of research

ANALYTICA SOCIAL and Economic Research Ltd is a small UK-based company that has been providing research and consultancy to a range of clients, including many international and national policy-making bodies, for more than two decades.

Ursula Huws, the founder and director of Analytica, has been carrying out research on the social and economic impacts of technological change since the 1970s. Ursula directed the RESPECT project (2002-2005) funded by the European Commission's DG Infoc, under the 5th Framework Programme, to develop professional and ethical codes of practice for the conduct of socio-economic research in the information

society. She also provides consultancy on research ethics to a number of bodies, including acting as an independent expert for DG Research in the evaluation of research proposals.

Ursula is also an expert on research methodology, having published on the topic and designed and taught courses on it at undergraduate and postgraduate levels. She thus brings to the ETICA project not only a deep knowledge of technology and ethics, but also considerable expertise in research design and methodology. ■

Contact: www.analyticaresearch.co.uk

Contacts

ETICA Consortium

Organisation	Region	Website
De Montfort University	UK	www.dmu.ac.uk
VTT Technical Research Centre of Finland	Finland	www.vtt.fi
Technical University of Delft	Netherlands	www.ethicsandtechnology.eu
Forschungszentrum Karlsruhe	Germany	www.kit.edu
University of Namur	Belgium	www.fundp.ac.be
Steinbeis Hochschule	Germany	www.steinbeis-hochschule.de
Eotvos Karoly Policy Institute	Hungary	www.ekint.org
University of Lodz	Poland	www.uni.lodz.pl

Advisory Board

The European Association for E-Identity and Security – eema	UK	www.eema.org
Analytica	UK	www.analyticaresearch.co.uk
EurExcel – EurExcel Membership Projects Ltd	UK	www.eurexcel.eu
Teleregions Network	Sweden	www.westsweden.se

Other useful contacts

CORDIS (Community Research and Development Information Service) http://cordis.europa.eu/home_en.html
<http://cordis.europa.eu/fp7/dc/index.cfm>

CORDIS Partners Service <http://cordis.europa.eu/partners-service/>

Open FP7 Energy Calls http://cordis.europa.eu/fp7/energy/open-topics_en.html

SME Participation in FP7 Report Autumn 2009 http://ec.europa.eu/research/sme-techweb/pdf/fp7_report_autumn_2009.pdf

IGLO – Informal Group of RTD Liaison Offices <http://www.iglortd.org/>

European Innovation Exchange <http://www.eiex.eu/>

ETICA <http://www.etica-project.eu>



ETICA

Showcase Event

To be held in Brussels
early 2011

Further details available
this Autumn at

www.etica-project.eu

