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The Internet of the Future

15th Open European Summer School and
IFIP TC6.6 Workshop, EUNICE 2009
Barcelona, Spain, September 7-9, 2009
Proceedings

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Preface

Ten years ago, the 5th edition of the EUNICE Summer School took place in Barcelona with the motto “Broadband for all.” This year, with the broadband promise already fulfilled in the city, the international workshop returned to Barcelona in its 15th edition and focused on a polyhedral approach to the Internet of the future.

The Internet is shaping the twenty-first century information society. It has deeply transformed the way we learn, work and interact. All kinds of institutions, from universities to businesses, have been shaken by the wave of digital innovation. Leisure and social networks also have their place in the virtual world, and the younger generations cannot imagine a time when they could not be in permanent contact with friends around the globe, interchanging messages and multimedia content.

The challenge of classifying, ranking and interpreting the massive amounts of information that are being generated is breathtaking. Furthermore, the Internet is moving beyond the computer to reach mobile phones, smart gadgets and sensor networks. The pervasiveness of the Internet fundamentally changed existing business models, and the business models themselves are driving the evolution of the Internet. In this scenario of relentless change, our aim is to foresee and design the networks and applications of the future.

We received more than 60 submissions for the conference. After the review process, 23 full papers were accepted for presentation at the workshop, together with 11 posters. Every submission received at least three reviews from the members of the Technical Program Committee and/or external reviewers. Our gratitude goes to all the reviewers for their efforts.

We would like to take this opportunity to express our thanks to the sponsors and supporters of the 15th EUNICE Summer School / International Workshop: the Department of Telematics Engineering at the UPC, the Spanish Ministry of Science and Innovation, the Euro-NF Network of Excellence (funded by the European Commission), the Catalan Autonomous Government (Generalitat de Catalunya), IFIP TC6 Working Group 6.6, the i2CAT Foundation, the Universitat Pompeu Fabra (UPF), and the Universitat Politècnica de Catalunya (UPC).

September 2009

Miquel Oliver
Sebastià Sallent

EUNICE - Member Charter

European Network of Universities and Companies in Information and Communication Engineering

Mission

The European universities and companies signing this present charter are anxious to improve in a permanent manner the quality and relevance of their teaching and research in the field of information and communication technologies. They declare their desire to cooperate in the following ways:

- By jointly developing and promoting the best and compatible standard of European higher education and professionals in information and communication technologies.
- By increasing scientific and technical knowledge in the field of telecommunications and developing their applications in the economy.

Membership

The network is made up of European Universities within the European Union and outside it, whether from Western, Central or Eastern Europe. These universities are involved at their own appropriate organization level, taking into account the mission of the network. The parties signing the present charter will be the “founding partners.” Other universities, very limited in number, might be invited to join the network as “members.”

Transnational companies, working together with the universities on information and communication technologies, and representatives from the relevant commission of the European Union, will be offered the opportunity to be associate members. No institution can apply for membership.

Education

The partners will seek the development of high-level compatibility of the existing or commonly developed courses and programs, in order to facilitate their recognition by employers independently of their geographical location in Europe. To achieve this goal, the partners will, inside the network, work on mutual recognition of these courses and programs. To develop interculturality, these courses and programs will be accessible in such a way as to encourage, as far as possible, long-duration mobility for students and faculty members from one country to another (i.e., several months).

To set compatible standards, shorter-duration operations will be conducted such as:

- Summer schools for young faculty members and PhD students
- Intensive seminars, in limited numbers, for students
- Short-duration mobility for faculty members for teaching assignments
- Use of new technologies in education

Finally, the partners will take advantage of the network of relations set up as described above to develop common modules for on-site training, for the world industry.

Research

The partners will also take advantage of this network to collaborate on research and development projects which could be carried out in common by several of them and which could lead to marketable applications in particular.

Organization and Structure

To achieve the above-mentioned aims, the institutions concerned will form a flexible structure whose role will be to think about and decide on joint actions. It will be called the steering group and will meet twice a year. The network would have no legal status. However, the network may authorize a member or set of members to act on its behalf. Concrete propositions in education and research will be worked out in small working groups of at least two partners, chosen by the steering group as opportunities arise. Finally, a permanent secretariat, located at France Telecom University, will be established to co-ordinate all the information relevant to the network's activities.

Means and Finance

The institutions concerned will provide the specific financial and/or inkind support necessary for the smooth running of the network, notably human resources (research lecturers, engineers, administrators, etc.).

The partners in the network will share information about funding opportunities and seek, as often as necessary, financial aid from public authorities for its actions:

- Within each country
- From bilateral programs at a country level, whenever such financial aids exist
- At the European level by means of community schemes (ERASMUS, COMETT, TEMPUS, RACE, ESPRIT, scientific and technological co-operation with Central and Eastern Europe, human resources and mobility, etc.)

All things being equal regarding a specific action within the scope of the network, a member will prefer co-operation with other members of the network.

EUNICE Member Institutions (as of February 2009)

Finland

- Department of Information Technology, Tampere University of Technology

France

- TELECOM Bretagne (Brest)
- École Nationale Supérieure des Télécommunications (ENST Paris)
- Laboratoire Lorrain de Recherche en Informatique et ses Applications (LORIA) at the University Henri Poincaré
- Nancy Telecom INT, Evry

Germany

- Cooperation and Management (Institute of Telematics) at the Universität Karlsruhe
- Institute of Communication Networks at the Technische Universität München (TUM)
- Institute of Communication Networks and Computer Engineering at the Universität Stuttgart

Hungary

- Department of Telecommunications and Media Informatics, Budapest University of Technology and Economics

Italy

- Telecommunication Networks Group, Politecnico di Torino

The Netherlands

- Centre for Telematics and Information Technology, University of Twente

Norway

- Department of Telematics, Norwegian University of Science and Technology (NTNU), Trondheim

Russia

- St. Petersburg State University of Telecommunications

Spain

- Departamento de Ingeniería Telemática, Universidad Carlos III, Madrid
- Department of Telematics Engineering, Universitat Politècnica de Catalunya (UPC), Barcelona
- ETSI de Telecomunicación, Technical University of Madrid (UPM)
- NeTS Research Group, Universitat Pompeu Fabra (UPF), Barcelona

UK

- University of Sussex
- Department of Electronic & Electrical Engineering, University College London

EUNICE Website

<http://www.eunice-forum.org>

Organization

EUNICE 2009 was co-organized by the Network Technologies and Strategies (NeTS) Research Group at the Universitat Pompeu Fabra (UPF), and by the Broadband Networks (BAMPLA) Research Group at the Universitat Politècnica de Catalunya (UPC).

<http://www.nets.upf.edu/>

<http://plone.upc.edu/grupbampla>

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