Newsletter - *Calibrated for Creative Communications*

Vol. 5, no. 1, Spring 2007

From the Editor

We are pleased to present the Spring issue which is a major step towards the successful organization of IT STAR's UNICTRY'07 Workshop in Rome, Italy (*see p.16*). It contains five articles with views and experiences of leading experts in the field and this we hope gives good background material for further focused discussion on the University – ICT Industry partnership.

There is also an excellent article from two young researchers at the Institute for Prospective Technological Sciences in Seville, as well as news from IT STAR's member societies.

Along with the preparations of the Newsletter and the Rome workshop, the forthcoming publication of the book on "R&D in ICT – Central, Eastern and Southern Europe" (see p. 12) was a major effort.

Furthermore, several of us met recently in Vienna to develop concrete initiatives so that IT STAR could better serve its membership and the regional ICT community in future.

Spring is indeed in the Air!

Plamen Nedkov

Contents:

Letters to the Editor:

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Organization

AICA will host IT STAR for the Association's 2nd Workshop on "Universities and the ICT Industry" and business meeting. AICA's CEO kindly contributed the following article to present our Italian member society:

Introducing AICA, the Italian Computer Association

by Giulio Occhini, Director

AICA (Associazione Italiana per l'Informatica ed il Calcolo Automatico - www.aicanet.it) is Italy's most prominent Association in the Information Technology field. Founded on 4 February 1961, AICA is a non-profit association whose primary focus is the development and promotion in Italian society and among its members of cultural issues related to all scientific, technical, economic and social aspects of Information & Communication Technology.

AICA brings together and promotes cooperation between the three main institutional areas dedicated to ICT: universities and scientific research centers which contribute to theoretical and methodological advancement in this area, public and private organizations which make use of information technology, manufacturers and providers of related products and services. AICA is therefore the ideal setting for debate on the professional improvement of IT specialists and for the advancement of the ability to use IT technology and relevant skills by an ever growing number of citizens in Italian society.

The numerous projects which AICA coordinates are all conceived to take into account local requirements, while drawing on and remaining in the context of experiences and initiatives currently under way in the rest of the world, owing to AICA's strong international status (IFIP, CEPIS).

AICA's main activities

AICA is responsible for the development and management in Italy of the **European Informatics Certifications: ECDL**, the European Computer Driving Licence - oriented to the "generic user", **EUCIP**, the European Certification for Informatics Professionals, and **e-Citizen**, the certification specifically developed for people with a limited knowledge of computers and the Internet.

EDITORIAL POLICY

This Newsletter aims to maintain a world-class standard in providing timely, accurate and interesting material on ICT and Information Society activities from the perspectives of Central, Eastern and Southern Europe (CESE) within a global context. It strives to facilitate the information and communication flow within the region and internationally by supporting a recognized platform and networking media and thus promoting and improving the visibility and activities of the IT STAR Association.

The entities and stakeholders whose interests this newspaper is addressing are

- IT STAR's member societies and members;
- ICT professionals, practitioners and institutions across the broad range of activities related to ICTs in government, business, academia and the public sector in general;
- International organizations.

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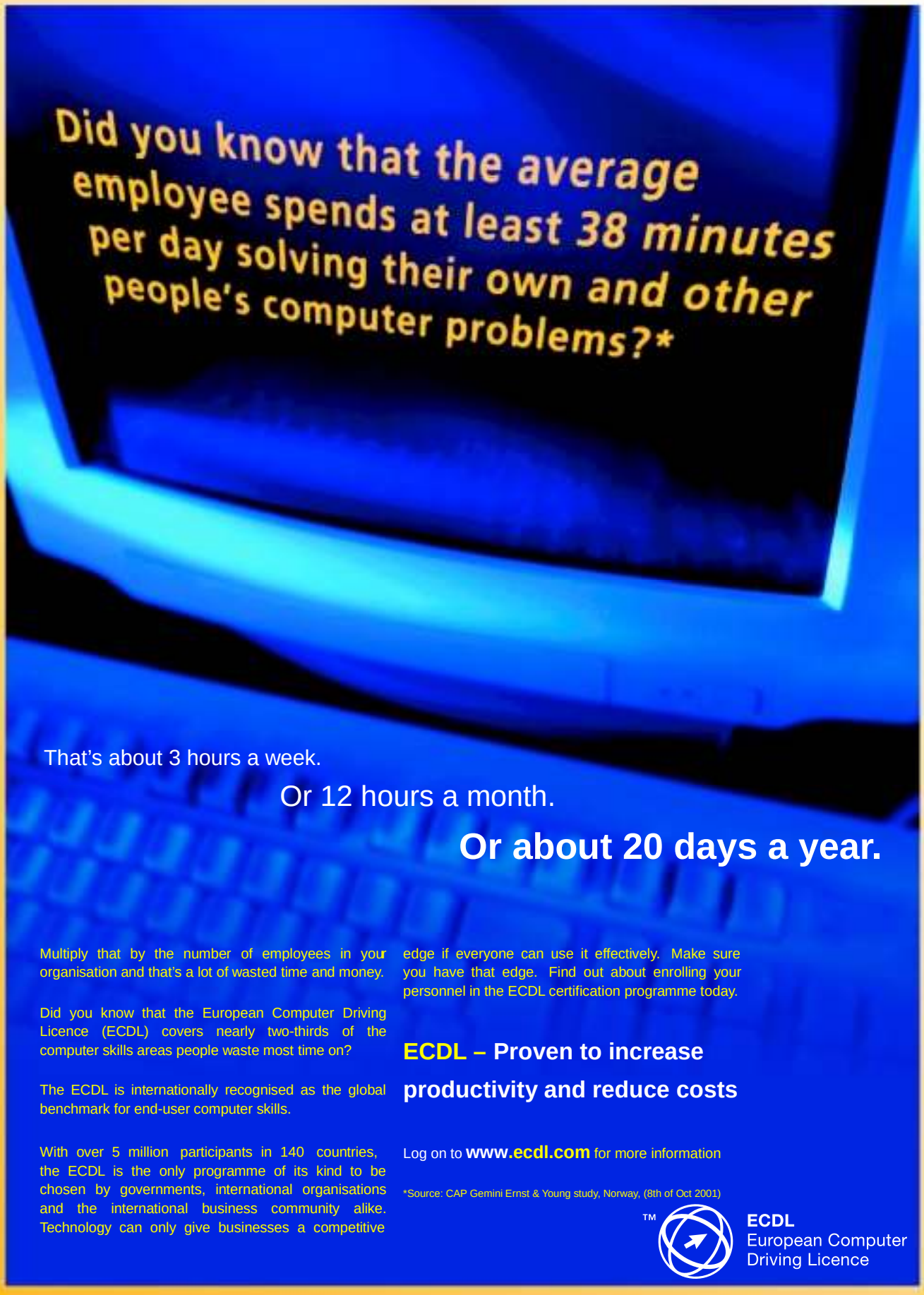
Special arrangements for the production and circulation of the Newsletter can be negotiated.

The newsletter is circulated to the leading CESE ICT societies and professionals, as well as to other societies and IT professionals internationally. Everyone interested in CESE developments and working in the ICT field is welcome to contribute with original material. Proposals for articles and material for the Newsletter should be sent two months before the publication date to editor@starbus.org. ■

Started in 1998, the success of ECDL in Italy is demonstrated by more than 1.2 million registered candidates, 2.700 test centers spread all over Italy and 100.000 tests performed monthly. With the introduction in Italy of the European Certifications, AICA gave a fundamental contribution to reduce the digital divide and increase productivity obtaining recognition by various institutions and agreements made with Italian Authorities endorsing ECDL, EUCIP and e-Citizen (Ministry, Regions, Universities, etc.).

AICA, in cooperation with SDA-Bocconi University, has started an extensive project to evaluate **the social and economic costs owing to the lack of basic IT skills or "IT incompetence"**. A first study done in 2003 focused on the labor market in general; a second study focused on the health sector and a third study on



That's about 3 hours a week.

Or 12 hours a month.

Or about 20 days a year.

Multiply that by the number of employees in your organisation and that's a lot of wasted time and money.

Did you know that the European Computer Driving Licence (ECDL) covers nearly two-thirds of the computer skills areas people waste most time on?

The ECDL is internationally recognised as the global benchmark for end-user computer skills.

With over 5 million participants in 140 countries, the ECDL is the only programme of its kind to be chosen by governments, international organisations and the international business community alike. Technology can only give businesses a competitive edge if everyone can use it effectively. Make sure you have that edge. Find out about enrolling your personnel in the ECDL certification programme today.

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*Source: CAP Gemini Ernst & Young study, Norway, (8th of Oct 2001)

ECDL™
European Computer Driving Licence

the banking sector. New surveys are in progress extending the focus to other sectors of activity.

AICA organizes two annual conventions: the **"Annual Congress",** a cultural event during which the Academic, Industrial and ICT User communities meet to exchange ideas and experiences and "**DIDAMATICA",** the event that provides an extensive and in-depth view of Informatics applied to education and teaching.

AICA publishes **"Mondo Digitale",** a quarterly magazine aiming to comment and put into focus the highlights and most current topics of debate regarding Information and Communication Technology. All AICA members receive it regularly though it is also freely accessible on www.mondodigitale.net.

AICA offers online services through its web-site. The initiative "**Cantiere dei Mestieri ICT**" provides AICA's membership a portfolio of services with useful information related to their professional activities. These include "Proximity Profile" defining the gap between the applicants skills and those required by EUCIP professional profiles, "My-Pay AICA" that supplies a personalized report with the match between the applicant salary and the market average, training paths to the EUCIP certification, on-line forum and repository.

AICA embodies direct testimony of **ICT history**. This heritage has promoted many initiatives (exhibitions, seminars, university sessions, publications) conceived to portray this history with a specific focus on the Italian involvement in the process.

Among other AICA initiatives are the **prizes granted to students** for the best theses in Informatics and Telecommunications awarded jointly with Federcomin (Italian ICT Industry Federation).

AICA promotes the use of **Open Source Software** with numerous initiatives ranging from projects designed specifically for promoting its use in schools and universities to the inclusion of Open Source platforms, alongside other proprietary platforms, in European certification programs (ECDL and EUCIP).

AICA jointly with the Ministry of Education, organizes the participation of Italian secondary high school students in **National** and **International Olympiads in Informatics,** promoting the culture of Informatics in the educational system and simultaneously discovering and fostering existing talent in our schools. More than 14.000 Italian students were involved in the 2007 edition!

AICA will organize soon several important international conferences: EUCIP Conference 2007 (Rome, March 21-23), **2nd IT STAR Workshop on Universities and the ICT Industry** (Rome, 26 May 2007) and the IFIP World Computer Congress 2008 in Milan (September 7-10, 2008).

AICA is a founding member of the Regional IT Association in Central, Southern and Eastern Europe (IT STAR) and we are honored to welcome the participants of IT STAR's **UNICTRY' 07** event and business meeting on 26 and 27 May in Rome, Italy. ■

Letters to the Editor

[We publish brief extracts from letters to the Editor with respect to the last issue of the NL. Your comments and suggestions are most welcome. The coordinates are provided on p.1]

"I agree with Niko Schlamberger's opinion (as expressed in the last issue of the Newsletter) that the NL and everything else done by IT STAR does not only meet our expectations but exceeds them greatly. I wish successful IT STAR activities in future!"

Saulius Maskeliunas, Institute of Mathematics and Informatics/ Lithuania

"The Newsletter looks nice and is very interesting."

Augusto Casaca, Senior Member of IEEE and Past IFIP TC 6 Chair/ Portugal ■

Joke of the Issue

There was once a young man whose only desire was to become a great writer. When asked to define great, he said, „I want to write stuff that the whole world will read, stuff that people will react to on a truly emotional level, stuff that will make them scream, cry, howl in pain and anger!"

Well, his future took a slightly different turn, however, he has reached his goal: He now works for Microsoft writing error messages.

[Visit www.starbus.org/jokes for the best anecdotes on the Internet] ■

The Advent of the Information Society

ICT, Productivity and the Knowledge Economy: Towards a Regional Approach

by S. Barrios, E. Navajas

Institute for Prospective Technological Studies –DG JRC (Joint Research Centre) – European Commission

[The views expressed by the authors are not necessarily those of the European Commission]

Empirical evidence shows that the contribution of ICT to European growth is increasingly more significant, although it is still smaller than in other countries and, particularly, in the United States. The explanation to this unsatisfying situation remains unclear. To begin with, the degree of specialization of ICT-producer and -user sectors is smaller in most of European countries. However, and beyond considerations over the different grades of specialization achieved by our economies, there are other structural factors that demand further analysis in order to better understand the reasons behind this insufficient contribution of ICT to overall growth.

In this sense, it is necessary, in the first place, to find out to which extent the current organization of European producing factors and markets of goods and services may hinder a more substantial impact of ICT. For instance, the possible correlation between ICT infrastructure availability and innovation and competitiveness, and the actual situation of Europe regarding this point, is one aspect that remains poorly explored, particularly from an empirical perspective.

Second, ICTs are progressively changing the patterns and ways in which knowledge is created and diffused, so in order to assess their real impact, we should go beyond the mere link between productivity and investment and focus not only on the supply side of the economy (the companies) but also on the demand side (individuals and companies).

And third, the need for better understanding of the way ICTs transform knowledge and innovation spillovers also arises when addressing a wide range of public policies (ICT-related but also non-ICT), particularly those with a regional/local scope. The technological change propitiated by ICT is already affecting the geographical location of industries, and following the same reasoning, the industrial structure of EU economies, particularly when taking into account globalisation.[1] Thus, it is fundamental to consider other factors such as regional attractiveness for private investment and business location, market access, skilled labour force availability, demographic structure and so on, that are likely to influence the ability of regions to benefit from these processes.

More generally, the causal link between economic growth and ICT needs to be better understood by fully considering the spatial dimension of knowledge and innovation flows. Existing empirical evidence shows that territorial agglomeration provides the best context for an innovation-based economy promoting localised learning and endogenous regional economic development.[2] The diffusion of new technologies and innovations appears to be largely local in nature since they involve interactions between agents within innovation systems. More generally, these innovation systems can only be properly understood by considering a broader set of actors and elements including institutions, policy makers and specific organisational features, all characterizing specific attitudes towards technological progress and its potential impact on economic development, see Koski et al. (2002).

From a policy perspective, the question arises whether there is a need to attain a certain level of ICT infrastructure/users for this to happen. Positive growth effects of ICTs infrastructures and use might be subject to having achieved a critical mass in a given country's communication infrastructure. An important question therefore is to know whether critical mass in ICT infrastructures exists see Röller and Waverman (2001). In particular, the question arises whether there is a need to attain a certain level of ICT-users for this to happen. Positive growth effects of ICT use might be subject to having achieved a critical mass in a given region's ICT infrastructure and equipment penetration rates (including firm-level ICT equipment). On the other hand, geographical agglomeration of economic activities, whose causes lie most often on conditions such as availability of intermediate products and services, skilled workers, transport facilities, etc., is bound to affect the deployment of ICT networks. In this sense, and given the complexity of factors involved for a successful ICT roll-out in a given region, it is important to consider these factors in terms of ICT adoption costs, along with other elements such as e-literacy, legacy of past industrial specialization and local know-how, the level of competition and culture regarding absorption of new technologies, local access to capital and so on.

More generally, while it is important to emphasise the regional dimension of ICT diffusion and its expected impact on economic performance, a number of broader framework conditions need to be put in place in order

[1] For recent evidence, see Koski, H., P. Rouvinen and P. Ylä-Anttila, (2002), ICT clusters in Europe: The Great central Banana and the Small Nordic Potato, Information Economics and Policy 14: 145-165.

[2] Asheim, B. (2002), Temporary Organizations and Spatial Embeddedness of learning and knowledge creation, Geografiska Annaler 84B:111-124.

to design the policies mentioned above. Firstly, when technological changes take place at a fast pace, economies require flexibility, both in markets of goods and services as well as in production factors, in order to favour structural changes allowing for a more efficient diffusion of new technologies. At the same time, this encourages *creative destruction*, thus promoting the emergence of ICT-intensive sectors with a great potential for growth.[3] Thus, one concluding remark stands for the necessity of broader and deeper changes in both the market and the private sector to bolster the contribution of ICT to competitiveness and growth in Europe. In the second place, the rapid changes induced by the advent of ICT entail even wider implications on the demand-side of the economy, particularly regarding the acquisition and diffusion of knowledge. This aspect has been so far neglected by economic research, although it is fundamental to understand how ICT may effectively contribute to economic growth. In this sense, the rapid evolution of ICT affects in a direct way the relation between demand and supply, as well as the links between innovation and knowledge as argued in a recent report by the Institute of Prospective Technological Studies (DG JRC, European Commission)[4].

How can regional policies contribute to improving the contribution of ICT to economic growth and knowledge creation and diffusion? On the one hand, the previous arguments suggest that a greater investment in ICT solely cannot improve economic performance. These investments should be complemented with substantial structural changes in our markets and economies so the adoption of new technologies effectively promotes innovation and competitiveness. On the other hand, the role played by the demand is increasingly relevant regarding the generation and spread of knowledge enabled by ICT, so public policies should help reducing the barriers for ICT access and adoption on the part of the individuals, as well as increasing the educational levels and skills to encourage the emergence of knowledge-intensive economic activities.
These policies, in particular, can be substantially reinforced by well-tailored regional policies. More specifically, at the European level, all available instruments should be deployed, including strategic use of the Structural Funds, rural development funds, national support, regulatory intervention and research. The use of these policies is self-justified given that, as argued above, the regional dimension can prove most relevant in order to favour the ICT contribution to economic growth.

These policies need to address a number of important questions. In particular public policies towards ICT infrastructures roll out and ICT adoption by firms must be designed in order to reduce the uncertainty costs related to new technologies. Policies must aim to reduce ICT adoption costs by considering all elements (education, skills, etc.) fostering the implementation and the relevant economic use of ICT. These policies must then be coordinated with other policies fostering knowledge accumulation and diffusion such as research and development policies, which must help seizing the potentials offered by the new information and communication technologies in order to make the EU a truly knowledge-based society. Sound policies also call for sound research on the local/regional dimensions of ICT diffusion as well as its link with knowledge and innovation as outlined in this paper. IPTS is currently developing a line of research on these questions and will issue reports that will be made freely available on its website in the coming months at http://www.jrc.es/index.htm. ■

[3] Denis, C., K. McMorrow and W. Röger (2004), "An Analysis of EU and US Productivity Developments", European Economy, Economic Paper #208, Directorate General for Economic and Financial Affairs, European Commission.

[4] See: *"The Future of the Information Society in Europe: Contributions to the Debate"*, R. Compañó, C. Pascu, A. Bianchi, J-C. Burgelman, S. Barrios, M. Ulbrich, I. Maghiros, Institute for Prospective Technological Studies, Directorate General Joint Research Centre, EUR No: 22353 EN, available at: http://www.jrc.es/home/pages/publications.cfm.

Higher Education and the ICT Industry

IT STAR is going forward with the preparations for the "Universities and the ICT Industry" event, which will take place in Rome, Italy on 26 May (detailed information with respect to the program and arrangements is contained on p. 16) Among the speakers and participants will be key representatives from Academia, Government and the Business sector.

To set the stage, we have invited separately the views of leading experts on matters related to the conference theme, which we publish below.

Universities and the ICT Industry

by Sokratis K. Katsikas
Former Rector, University of the Aegean, Greece

According to the *Magna Carta Universitatum* (the "constitutional chart" of European Universities), a University can be functionally defined as an institution that preserves, transfers, assesses and expands knowledge. It preserves and transfers knowledge through the educational process and it assesses and expands it through research. This definition allows the identification of two discrete but closely intertwined functions of the University, namely teaching and research. Both proc-

esses are, of course, supported by administration. Therefore, in order to discuss the relationship between Universities and the ICT industry, one has to address this relationship as it applies in teaching and in research. In the sequel, we will focus this discussion on ICT-related studies in European Universities.

The goal of the true University with respect to teaching is to produce well-qualified scientists and engineers with a strong scientific background in basic sciences, thorough knowledge of current and emerging technology, coupled with communication skills, with the ability to effectively interact and interoperate with scientists of other disciplines and with management and leadership skills. The question that has been tantalizing both Universities and ICT industry in Europe in the past years is "Do the Universities provide the kind of graduates that the industry wishes? If not, what should be done?" There is no easy answer to this question. One has, first of all, to acknowledge the fact that there is no *single* kind of ICT University graduate that the industry looks for. Large industries, particularly multinational, place more emphasis on the solid scientific background of the graduate, and are willing to undertake the cost of training these personnel to their specific work environment in turn for the ability to follow technological advance over longer periods of time, whereas SMEs would rather opt for more specialized personnel, ready to offer their services immediately. Fortunately, the diversity of European Universities allows for the provision of both requirements, even though there are very few (if any) individual Universities that can provide both. However, one should take into account the fact that, in Europe at least, SMEs form the bulk of ICT industry. Does this mean that European Universities should try to respond to the industry needs placing more emphasis on the professional training of their students rather than on equipping them with scientific knowledge? I think not. The answer lies, as in most cases, in the quest for a reasonable compromise between the perceived needs of the industry and the goals of the University. This can be achieved through an arduous but absolutely necessary process of close and continuous interaction between Universities and the ICT industry.

A true University must also be actively engaged in research. Moreover, its research must be strongly interweaved with teaching, because this will benefit both processes. With respect to our discussion, the crucial question here is "Do the Universities engage in research that is useful for the ICT industry?" Fortunately, in Europe, the answer to this question is affirmative. The European R&D framework programmes have largely succeeded in bringing Universities and industry together and in funding research that is useful to both. There is, of course, a large variety of the degree to which this cooperation has been achieved, among European Union member states.

One could safely conclude that satisfactory interaction and cooperation in research between European Universities and the ICT industry has been achieved, whereas there is still a long way to go in terms of teaching. In any case, one should keep in mind that this is a continuous process that needs to be actively and sincerely sustained by both sides. ■

Recent Advances in the Industry-University Cooperation - A Hungarian View

by Gábor Péceli

President, John von Neumann Computer Society
Head of Department, Budapest University of Technology and Economics

This contribution gives a short overview of recent and current cooperation forms of the ICT industry and the Faculty of Electrical Engineering and Informatics of BME. This Faculty was established in 1949, and rather soon, due to its special situation, became a relatively strong background institution of the Hungarian electronic industry. The reason is simple: on one hand, even up till now, this is the single faculty in Hungary, which offers MSc equivalent degree in electrical and computer engineering (5 years Diploma engineering degree). On the other hand, up until the political changes of 1989, the Hungarian measuring, and communication equipment industry was a strong and important supplier of the Eastern European market. This position was "defended" by different regulations of the regional governments. Even if this situation is already a real history, there are still imprints of these decades in our education, because our departments could serve as research and development units of various local players of the electronic industry. We were forced to be innovative due to the fact that the majority of the latest electronic components were hard to buy, and the quality of the available instrumentation was rather limited. This shortage of facilities was rather beneficial in the "education" of problem solving.

The change to a real market-oriented economy resulted in a big transient: the Hungarian measuring and communication equipment industry was almost completely destroyed. Fortunately, in the nineties, the drastic technological changes in telecommunication and computer networking have caused a very rapid development within the country's infrastructure: the design and implementation of the missing local communication networks and services have generated again real engi-

neering cooperation among university departments and the players of industry.

In recent years the frameworks of these activities have been further developed. A rather remarkable form of R&D cooperation is that of Ericsson Research and our Department of Telecommunications and Media Informatics, which involves many PhD students working on future and emerging communication problems potentially interesting for Ericsson Research in Hungary, and worldwide. Interesting R&D projects were and are conducted with Nokia, and Microsoft Hungary, as well.

Quite recently, the National Office for Research and Technology has launched new innovation centers at different local universities. The research and training activities of the Mobile Innovation Centre, established at our university, supports the local representatives of several major international companies, like Hewlett Packard, Nokia, Siemens Communications, Siemens PSE, Sun Microsystems, T-Mobile Hungary, Ericsson Hungary Communication Systems, and some others.

Another important example is the Innovation and Knowledge Centre of Information Technology, again at our university, which is involved in the development of various complex projects aiming at products and services based on novel system integration, and rapid prototyping technologies. This Centre serves a Consortium consisting of nine companies of the local ICT industry.

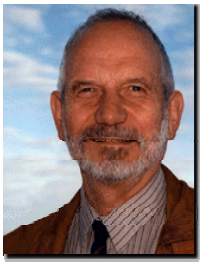
A further element of this network of ICT players and our university is the Budapest Unit of the IBM Centers for Advanced Studies, established in October 2006. This unit is in strong cooperation with our Faculty, mainly in the field of dependability issues of system design and integration.

As far as the measurement and instrumentation traditions of the country are concerned, the situation is less promising. The electronic industry in Hungary has been "transformed" into large assembly plants of major international companies, like Elcoteq, National Instruments, Bosch and several others. The departments of our Faculty can cooperate with these larger factories mainly serving their marketing purposes: donation of software licenses, laboratory equipment, etc. The average local ICT SMEs have serious financing and market problems. Industry-university cooperation in this field requires a series of small, step-by-step actions.

As a conclusion: in Hungary several promising governmental actions attempt to improve the industry-university cooperation. The majority of these programs are rather new, the outcome is hard to predict. ■

ICT-related Higher Education

by Jan Wibe



Norwegian University of Science and Technology – NTNU
Chairman, IFIP TC 3 on Education

This article is mainly based on what is happening at the Norwegian University of Science and Technology – NTNU
http://www.ntnu.no/portal/page/portal/eksternwebEN/
and focuses on the following themes:

- **Infrastructure**
- **Administrative systems**
- **Multimedia unit**
- **Courses**
- **Communication:**
- **Distance Education**
- **Dual-mode courses**
- **ICT Competence**

Infrastructure
Computer rooms are in plenty around the campus. It is now more and more common that students have their own portable computers, which they bring with them everywhere. One can log in on the university system wherever s/he is - at campus, home or any place.

Administrative systems
All employees and all students have access to email. We also have a student administrative system, which keeps track of the courses every student has signed up for. Library functions are available for everybody, students and staff. Electronic Journals are available as part of this system.

In recent years, Learning Management Systems (LMS) are more and more in common use, not only at NTNU but all over the world. At NTNU, the system contains many different functions, which I will not describe. The system is in use in nearly all courses. The staff undergoes technical training with respect to the system but few, if any training, regarding its pedagogical use.

Multimedia unit
NTNU has a multimedia unit with many functions. Lecturers come here and tape a lecture (video) for free. The video is streamed and available for students in a course, wherever they are.

Courses
Lectures are mostly given with on-site presence in university auditoriums. In few cases, lectures may be videotaped and available for students at any time by streaming. Another opportunity is to tape a lecture at the Multimedia unit.

Communication
Communication between students and between students and tutors is essential. This can of course be done by email, but if you are in a course, it is part of the LMS. Internet communication by chat, phone and video is more and more usual. The most used systems are MSN and Skype. Such systems have a great potential in tutoring.

Distance Education
It is a trend to offer Distance Education courses. This has been done for a long time in Norway since we have had a very long tradition in this area given the scattered population. Up to recently, this has been predominantly offered by private institutions. Now, universities are more and more active in this area.

Dual-mode courses
These are courses that are offered both for on-campus students and, by distance education, to students around the world. With the potential of streaming videos of lectures and using LMS, we can see a trend towards this.

ICT competence
This may be divided in two areas:

- General ICT-skills

The general skills are not subject-related and include competence in using Word, Excel, email, Internet, Multimedia (picture, sound and video) etc. What could we conclude?
Word is used by nearly everybody, Excel more seldom and very few have competence in making web-sites and in using multimedia. Digital cameras are more and more common but few people master Photo-shop to edit digital pictures and to include pictures in web-sites.

- Special ICT-skills

Special ICT-skills are related to subject teaching. This could be divided in two areas:
One is general ICT-competence, e.g. how to use Excel in mathematics and how to use multimedia. The other relates to software packages. One thing is to have competence in using these tools – another is to use them in a pedagogical way.

Industry
The technical part of NTNU is the main actor in the cooperation with Industry.

EU projects are the main activity with partners from industry and universities in this regard and. there is also local cooperation with Industry in Norway: Statoil and Hydro are two big partners.

As an example, NTNU provides technical solutions in reservoir technology. Mathematics and Informatics departments have the necessary competence in these areas. NTNU is also active in providing expertise for SMEs through a project, which is running for some years.

The Industry, competing for contracts, needs language competence - an issue for the language departments. ■

Project Management Education Using e-Learning

by Prof. Asbjørn Rolstadås, Associate Prof. Bassam Hussein

Norwegian University of Science and Technology - NTNU

There is a rising conciseness among educators, corporate executives and universities to the potentials of bringing information and communication technology (ICT) tools into education and training for higher and continuing education.

Many companies are global entities. They undertake projects all over the world. Employees from their own global organization build up their project organizations. No doubt, most companies and organizations will be in need for an update of their competence in project management. Universities, research organizations and others will be in a position to offer continued education and training to fill this gap. The problem is, however, that the people to be trained are more busy than ever and do not have time to leave their work for such an update.

The answer to this problem is a flexible continued education program that is based on distance learning. This will allow the student to obtain the training with a minimum of absence from work and travelling. Most of the training he or she will obtain in the home environment, either at work or at home. The flexibility offers the student strong influence as to when and where he or she should be trained. Yet, it is a challenge that the students shall work in geographically dispersed teams. This sets same frame conditions for their progress in the training. However, this is the situation they will meet in their future business if they have not already met it. An educational project can and will in this respect be handled like any business project.

Figure 1 shows an overview of a solution that has been used at the Norwegian University of Science and Technology.
The education is based on extensive use of distance learning. There is a mix between plenary and virtual sessions.

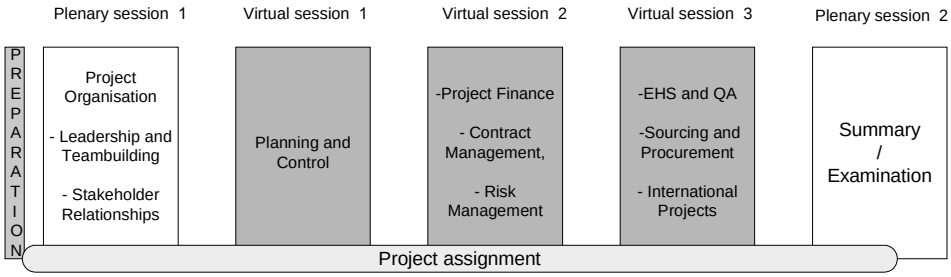


Figure 1. Example of a blended learning solution

A plenary session is based on traditional teaching methods such as lectures, assignments and group work. It is underlined that education should be interactive and aiming at activating students. This means that less time is spent for lecturing and more for training through group work. A virtual session is based on material that enables the course participant to select time and place for learning within certain limitations.

This *hybrid solution*, or if you like the *blended solution*, is primarily a cost effective way for delivering education and training for large number of distributed learners. It combines multiple instructional delivery approaches that give the learners the chance to decide the time and place for their own studies. At the same time, it gives the learners the valuable social dimension and the chance to interact and learn from each other as well as keeping the motivation high through all phases. Our university has been involved in the development and the implementation of several hybrid-learning projects for both the higher education and continuing education sector. Our experience has shown that training based on this combination of on-campus and ICT based strategies is the preferred solution specially for the continuing education sector because of the flexibility it offers with lower costs.

Having pointed out the advantages of implementing the hybrid solution to education, educators and universities and corporations should think twice before taking the step into hybrid learning. Our experience has also shown that bringing together ICT based strategies into training and education brings with it some serious challenges to the way educators and universities should organize and deliver training and education. Among these challenges:

1) It requires a fundamental *change* in the way the educators, universities and instructors think and work. It also requires a fundamental *change* in the way the learners work, interact and collaborate. Therefore *Change* is a key word for succeeding in implementing this new form of delivering education. What should be changed and how to apply and handle this change process is something managers and decision-makers in the universities and companies need to address and manage.
2) It requires tools and techniques for managing project management functions such as *scope*, *organization*, *risk*, *quality*, *cost* and *time*. Developing and applying these techniques are crucial in order to handle the large number of activities as well as the technical, administrative and academic personnel involved. On top of that comes the large amount of investments in technological platforms and infrastructure during the development and execution phases.
3) It requires clear definition and analysis of project stakeholders, including internal and external stakeholders involved in this type of projects. This is important in order to obtain valuable information about individuals and organizations that have an interest in the outcome of the project and how to optimize their contribution to the project success. ■

THE IT4PS PROJECT: Information Technology for Problem Solving

by Cristiana Alfonsi

CRUI Foundation

Dini Pedreschi & Maria Simi

Informatics Department, Pisa University

Nello Scarabottolo

Department of Information Technology, Milan University

Abstract

IT4PS (Information Technology for Problem Solving) is a joint project between CRUI Foundation (the operating body of the Italian Universities Chancellors Con-

ference: CRUI) and AICA involving several Italian Universities. The project started in the second half of 2003 and is expected to end by mid 2007.

The main goal of IT4PS is to support and to enhance the acquisition – by University students – of advanced skills in the usage of productivity tools (spreadsheets and database managers) and the application of these tools to daily problems of the students themselves. To this purpose, the project defined a learning methodology based on a problem-solving approach, using problems typical of the various University courses to introduce students to the acquisition of the above-mentioned advanced skills.

In its first phase – mid 2003 to mid 2005 – IT4PS addressed three different areas of application of productivity tools in University curricula: Economy, Medicine and Pharmacy, and Statistics for Social Sciences. In these areas, the project produced the following:

- Didactic materials, supporting teachers in their practical explanations of the problem solving approach;
- 2 authoring systems, allowing teachers to prepare guided solutions to problems (respectively, with spreadsheets and databases) and students to compare their own solutions with those of the teacher in a self-evaluating environment;
- 6 reference books (published by McGraw-Hill Italy) applying, respectively, spreadsheets and databases to the three areas of application;
- 1 reference book (again published by McGraw-Hill Italy) for the authoring systems;
- Field-testing of the problem oriented approach in some 20 Universities, involving more than 250 students.

The results of the field-testing were definitely encouraging (both students and teachers had very positive feelings about the problem oriented approach). However, the skills acquired by students were in general not sufficient to allow them to obtain an Advanced ECDL certification, mainly due to the package oriented approach of the certification itself.

To address this problem, a second phase of IT4PS has been launched, and it is expected to end in mid 2007. The aim of this second phase is to define a certification scheme specific of the IT4PS approach, where students will be asked to solve significant, context-oriented problems instead of simply demonstrating deep knowledge of the productivity tools.

References

Alfonsi, Pedreschi, Scarabottolo, Simi: PROGETTO IT4PS: IL COMPUTER PER LA SOLUZIONE DI PROBLEMI, Mondo Digitale, year 5, n.3, Sept.2006.

■

Member Society News

AICA (Italy)

Forthcoming AICA Events:

DIDAMATICA 2007
The annual congress organized by AICA provides an extensive and in-depth view on Informatics applied to education and teaching
(Cesena, May 10-12)

Olympiad in Informatics
- Italian competition, organized by AICA and Ministry of Education (Bari, March 8-10)
- International Olympiad in Informatics (Zagreb, August 15-22)

AICA Annual Congress 2007
"Digital citizenship and democracy"
Milan, September 20-21 and Mantova, September 27-28

■

Memorial Meeting at Budapest Tech In Memoriam of John von Neumann

by Dr. József Gáti, Chancellor of Budapest Tech

A memorial meeting and the inauguration of John von Neumann's statue at Budapest Tech Polytechnics were celebrated on February 8, 2007 to recognize the world-famous Hungarian scientist. The meeting was dedicated to the 50th anniversary of his passing, organized by Budapest Tech, the John von Neumann Computer Society, the Hungarian Academy of Engineering and the IEEE Hungary Section. Honorary patronage was given by István Hiller, Minister of Education and Culture, Szilveszter E. Vizi and April H. Foley, Ambassador of USA in Budapest.

After the opening speech of Imre J. Rudas, Rector of Budapest Tech, István Hiller greeted the meeting and stressed that 'the nation is proud to commemorate and honor John von Neumann'. The Minister further recalled that 'John von Neumann's idea and activity built a community ... with a global impact in the most precious sense of the word. He has launched an evolution not only in science and higher education, but with regard to human mentality and culture'. Mr. Hiller referred to Budapest Tech as the most progressive educational institution in Hungary.

Philip T. Reeker, the deputy mission leader of the Embassy of USA in Budapest, remembered the scientist who died in Washington at the age of 54 and emphasized the importance of the Hungarian-American cultural and educational cooperation. April H. Foley, the honorary patron of the meeting was substituted by Mr. Reeker who underlined that 'the USA is thankful to

John von Neumann for taking part in the theoretical work of creating the first Atom Bomb'.

After the opening ceremony, the Neumann statue, sculptured by Lajos Berek, was inaugurated by Imre J. Rudas, Rector, and László Szeidl, Dean, in the lobby of Budapest Tech. Attila Meskó, Secretary General of the Hungarian Academy of Sciences, held a speech on the career of the 'universal genius' and stressed that Neumann 'is a reference spot in the fields of pure and applied mathematics as well as physics and economics'.

Von Neumann statue

The memorial meeting proceeded with presentations to introduce the activities of von Neumann who was named by Financial Times in 2000 as the Man of the 20th Century. Von Neumann, known as one of the inventors of the computer, was born in 1903 in Budapest, studied abroad and became a professor at Princeton University, the USA at the age of 28. One of his great works was the design process of the first classical computer in 1944.

The first speaker of the meeting, Domokos Szász, Academician, Head of Dept. of Mathematics of HAS, introduced the main steps of von Neumann's life in the presentation 'John von Neumann's Challenges', then Péter Paál, President of IBM Hungary presented the connection between 'John von Neumann and IBM'. Presentations on 'John von Neumann and Today's Information Technology' by Bálint Dömölki, Honorary Chair of John von Neumann Computer Society, and 'John von Neumann and Engineering Technology' by József Bokor, Academician, were useful and interesting.

In conjunction with the memorial meeting an exhibition was prepared by the Rector's Office to display the main events of von Neumann's plentiful career. ■

OCG (Austria)

Forthcoming Publication

Preparations are underway to publish the proceedings of the 1st IT STAR Workshop on R&D in ICT (11 November 2006, Bratislava, Slovakia) in the book series of the Austrian Computer Society. The publication "R&D in ICT – Central, Eastern and Southern Europe" (P. Nedkov, B. Domolki, Eds.) ISBN 978-3-85403-218-2 will appear soon as volume 218 (books@ocg.at)

It contains an introduction, the conference documents with a series of detailed national reports outlining the R&D landscape of the countries with specific emphasis on R&D in information and communication technologies, conclusions and recommendations. The reports are presented in the context of the general situation of information society development and include information on important topical orientations and major players in the R&D scene with data and appraisals of the national R&D policies and practices.

The Mission of the Workshop was to "*investigate the current state of the ICT related R&D environment in Central, Eastern and Southern Europe so as to draw conclusions and recommendations to facilitate policy-making within the Region and the European Union*".

For more information and orders please contact:

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SSCS (Slovakia)

2007 brings several interesting activities of the Slovak Society of Computer Science (SSCS).

The following two events will be organized in a cooperation with Faculty of Science, P. J. Šafárik University in Košice. To help people socialize and exchange new ideas, both will convene with accommodation, full-board and lecture halls at Atrium Hotel, Nový Smokovec, High Tatras, Slovakia.

1. DCFS 07 - Descriptional Complexity of Formal Systems, 9th International Workshop
July 20-23, 2007, www-page: http://dcfs07.ics.upjs.sk

The area of interest covers descriptional complexity in various areas, e. g. automata and languages, Boolean functions and circuits, formal systems, unconventional models of computing, as well as the relationship to structural, computational, and Kolmogorov complexities.

DCFS and its predecessors DCAGRS (Descriptional Complexity of Automata, Grammars and Related Structures) and FDSR (Formal Descriptions and Software Reliability) were previously held in Paderborn (1998); Magdeburg (1999); Boca Raton (1999); London/Ontario (2000); San Jose (2000); Vienna (2001); London/Ontario (2002); Budapest (2003); London/Ontario (2004); Como (2005); and Las Cruces/New Mexico (2006).

2. SOFSEM 08 - Software Seminar, 34th Conference on Current Trends in Theory and Practice of Informatics
January 19-25, 2008, www-page (in progress): http://www.sofsem.sk

SOFSEM (SOFtware SEMinar) is an international conference devoted to the theory and practice of software systems. Its aim is to foster cooperation among professionals from academia and industry working in various areas of computer science.
SOFSEM offers a unique opportunity to obtain quickly a representative overview of the areas of computer science, which are selected as the topics of the year. Proceedings containing the invited and contributed papers will be published by Springer-Verlag in the Lecture Notes in Computer Science (LNCS) series and distributed at the conference.

The conference provides an optimal framework for discussions, meetings, establishing contacts, and socializing. SOFSEM is especially suited for young computer scientists. More information about last conference SOFSEM 07 you can find at http://www.cs.cas.cz/sofsem/07/.

Scientific tracks of the 2008 conference:

a. Foundations of Computer Science
b. Computing by Nature
c. Web Technologies
d. Networks, Cryptography and Security
e. Student Research Forum ■

SSI (Slovenia)

- Days of Slovenian Informatics, 2007

by Niko Schlamberger, President of SSI

The Slovenian Society INFORMATIKA has been running its annual conference Days of Slovenian Informatics since 1993. It has become a tradition that it takes place in the pleasant Mediterranean atmosphere of Portorož in April. This year the conference will go on from April 11 to 13. The red line of this year's event is *Informatics as a means for new business opportunities*. The programme consists of several tracks, each of which pursues an actual aspect of informatics: technology, methodologies, education, solutions, software development issues, and also its wider implications known and appreciated today as information society. The conference is visited by participants and speakers from academia, business, and administration and is regarded as an important event by users, developers and providers alike. Needless to say it offers a prospect of business and social networking which is yet another value added by the *Days* to all who will invest some of their time to see what is new in the country and abroad.

Every year a notable guest-speaker is invited to attend the opening ceremony and address the audience. This year the guest of honour will be the Minister of Public Administration, Dr Gregor Virant. We believe that his speech will be important as e-government and information services that are, or will be, offered have thorough impact on the ways how we work and live. Invited speakers come also from abroad thus providing an information on developments in their countries as well as a means of comparing Slovenian achievements with those of the countries that we believe we can learn from. It is with special pleasure that I announce an appearance of two invited speakers – professors Nello Scarabottolo of the University of Milan and Branislav Rovan of the University of Bratislava. Both are members of respectable national computer societies, Italian and Slovakian, and their coming to Portorož is yet another token of the cohesive role of IT STAR.

It goes without saying that the conference is open to all who wish to come to see and hear. For more information please visit www.dsi2007.si.

- New SSI Logo

In late 2006 the SSI Executive Council adopted this new Society Logo. It looks great! ■

SNAPSHOT

REGIONAL ICT ASSOCIATION IN CENTRAL, EASTERN & SOUTHERN EUROPE

Type of organization

Regional non-governmental and non-profit professional association in the ICT field.

Web-site

www.itstar.eu

Date and place of establishment

18 April **2001**, Portoroz, Slovenia

Membership

Countries represented (*see next page for societies*), year of accession, representatives

- Austria (2001) V. Risak, G. Kotsis
- Bulgaria (2003) K. Boyanov
- Croatia (2002) M. Frkovic, M. Glasenhart
- Czech Republic (2001) O. Stepankova, J. Stuller
- Greece (2003) S. Katsikas
- Hungary (2001) B. Domolki
- Italy (2001) G. Occhini
- Lithuania (2003) E. Telesius
- Macedonia (2003) P. Indovski
- Romania (2003) V. Baltac
- Serbia and Montenegro (2003) G. Dukic
- Slovakia (2001) I. Privara, B. Rovan
- Slovenia (2001) N. Schlamberger

Statutes

IT STAR Charter
(http://www.starbus.org/download/charter.pdf)
adopted on 23 October 2004 by the IT STAR Business Meeting in Prague, the Czech Republic.

Mission

"To be the leading regional information and communication technology organization in Central, Eastern and Southern Europe which promotes, assists and increases the activities of its members and encourages and promotes regional and international cooperation for the benefit of its constituency, the region and the international ICT community."

Governance

IT STAR is governed according to the letter of its Charter by the **Business Meeting** of MS representatives, which convenes biannually:

2007 Rome, **Italy** (May)

2006 Ljubljana, **Slovenia** (May)
Bratislava, **Slovakia** (November)

2005 Herceg Novi, **Serbia & Montenegro** (June)
Vienna, **Austria** (November)

2004 Chioggia, **Italy** (May)
Prague, **the Czech Republic** (October)

2003 Opatija, **Croatia** (June)
Budapest, **Hungary** (October)

2002 Portoroz, **Slovenia** (April)
Bratislava, **Slovakia** (November)

2001 Portoroz, **Slovenia** (April)
Como, **Italy** (September)

Coordinators

2006 –	Giulio Occhini
2003 – 2006	Niko Schlamberger
2001 – 2003	Plamen Nedkov
	(currently Chief Executive)

Major Activities

- 1st IT STAR WS on R&D in ICT
  http://www.starbus.org/r_d_ws1/r_d_ws1.htm
- IT Professional Pool Database (in progress)
- Workshop and publication on National Experiences related to the EU's 5th and 6th FP
  http://www.starbus.org/download/supplement.pdf
- Joint IT STAR – FISTERA Workshop on ICT and the Eastern European Dimension
  http://fistera.jrc.es/pages/roadshows/prague%2004/FINAL%20REPORTrevised.pdf
- Support to Member Society initiatives and events

Periodicals

The IT STAR Newsletter (nl.starbus.org) published quarterly. ■

IT STAR Member Societies

Austrian Computer Society – OCG
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2nd IT STAR Workshop

Universities and the ICT Industry (UNICTRY '07)

26 May 2007

Istituto Salesiano San Luigi Versiglia - www.ospitalitasalesiana.it

Viale Mazzini, 15, Genzano di Roma, Italy

Mission: *To investigate the current state, problems and challenges of the ICT-related higher education and the interplay between universities and the ICT industry in Central, Eastern and Southern Europe (CESE) so as to engineer visions for new relationships and facilitate policymaking within the Region and the European Union.*

ADVANCE PROGRAM

09.00 – 09.30 Opening (by a representative of the local authorities)

09.30 – 10.30 Keynote Speakers

- **Bruno Lamborghini**, President of AICA and the European Information Technology Observatory (EITO), Vice-President of the Olivetti Group
- European Commission and UNESCO (to be decided)

11.00 – 15.00 National Experiences (Lunch break from **13.00 to 14.00**)

- **Vasile Baltac,** President of ATIC Romania and representative of the Academy of Economic Studies, Bucharest
- **Juris Borzovs,** Head of Computer Department, Univ. of Latvia and Chairman, Board of Directors, RITI
- **Gerald Futschek,** President of the Austrian Computer Society, CS Department, TU-Wien
- **Gábor Péceli,** President of the John von Neumann Computer Society, Head of Department, Budapest University of Technology and Economics
- **Branislav Rovan,** President, Slovak Society for CS, Department of CS, Comenius University
- **Nello Scarabottolo,** IT Department, Milan University, CRUI representative

15.00 – 16.30 Corporate Experiences

- **Microsoft EMEA Director** (to be confirmed)
- **Ferrari** and **Italian Fashion Industry** (representatives to be confirmed)
- **Hugo Lueders**, Secretary General, e-Skills Competences Consortium

16.45 – 17.45 Panel on ICT Skills and Competencies for Europe 2010
Moderator: **Giulio Occhini,** AICA CEO and IT STAR Coordinator

17.45 – 18.00 Wrap-up and Closing

CALL FOR PARTICIPATION

The workshop is planned as a 1-day open event with **no participation fees**. Attendance is limited to the conference room capacity (130 attendees). Advance email confirmation and registration is mandatory – **Deadline is 25 April 2007** to **Host Society** - *Associazione Italiana per l"Informatica ed il Calcolo Automatico* (**AICA),** Attention Mrs. Linda Borsani <linda.borsani@aicanet.it>

Speakers and IT STAR guests will be accommodated at the Conference venue. For all other attendees Mrs. Borsani will provide, upon request, a list of nearby hotels and other practical information.

Further Contact

Organizing Committee Chair and AICA CEO: Giulio Occhini - g.occhini@aicanet.it
IT STAR Chief Executive: Plamen Nedkov - nedkov@utanet.at **(Program)**