Spring Reloaded

The Spring Newsletter is special in drawing attention to two interrelated areas of paramount importance to the European Union – the Digital Single Market and the necessary eSkills to support its growth.

The Digital Single Market agenda is the setting for the preparations of the forthcoming 7th IT STAR WS on Electronic Business on 3 & 4 May 2013 in Bari, Italy. Its program and debate would connect with an increasing impact to competitiveness and job-creation in the Euro-zone. Several abstracts of invited presentations are published in this issue for a flavor of the forthcoming debate and expressing the viewpoint of academics, industry leaders and eSkills certification experts. Another perspective is contained in the IPTS article on eCommerce.

The EC launched a Grand Coalition for Digital Jobs with the strategic objective to build a multi-stakeholder partnership for increasing the number of professionals with ICT Skills. A partner of the coalition is the CEN Workshop on ICT Skills, soon to celebrate its 10th Anniversary of operations. To commemorate the occasion we publish an overview of the WS milestones of development, achievement, challenges and specifics during the last decade, which provides a concise record of its history, as seen by the WS Chairs who facilitated its work up until now.

Take the Journey,

The Editor

IT STAR representatives

Austria/OCG-E. Mühlvenzl, **Bulgaria**/BAS-K. Boyanov, **Croatia**/CITA-M. Frkovic, **Cyprus**/CCS-P. Masouras, **Czech Rep.**/CSKI-J. Stuller, **Greece**/GCS-S. Katsikas, **Hungary**/NJSZT-B. Domolki, **Italy**/AICA-G. Occhini, **Lithuania**/LIKS-E. Telešius, **Macedonia**/MASIT-P. Indovski, **Poland**/PIPS-M. Holynski, **Romania**/ATIC-V. Baltac, **Serbia**/JISA-D. Dukic, **Slovakia**/SSCS-I. Privara, **Slovenia**/SSI-N. Schlamberger

Contents

eBusiness Strategies to face the European Union Structural Crisis

Bruno Lamborghini

Prof. Lamborghini is Chairman of the European Information Technology Observatory (EITO). Bruno was president of AICA until 2010 and is currently Vice President of AICA and professor of Information Society at the Catholic University of Milan.

Moving out from the Big Recession, the European Union was the only world region to show an unexpected double dip decline with dramatic evidence in 2012-2013 and an uncertain recovery perspective in the second part of the decade.

The question: is the EU suffering a negative economic cycle, or has it entered into a deep structural crisis related to socio-political imbalance?

When it appears that even strong economies like Germany or France have moved from 2 or 3% growth rate in 2010-2011 to zero growth in 2012-2013, the second point has to be taken into serious consideration.

Compared to other world regions, the European Union shows political constraints, less freedom to change, a low political unification, a common currency (15 members) without a common fiscal and banking policy and an overwhelmingly heavy budget regulation.

Europe is facing zero growth *vis-à-vis* 8% in China and India, 5% in Latin America and in sub-Saharan Africa and between 2%/3% in the USA.

This means zero growth or minus 3 or 4% also for the ICT markets for Europe, where computers are falling, software and services are weak, telecommunications services are declining, not being able to invest and take advantage of new opportunities coming from an exciting phase of the digital revolution.

There is an increasing relation between investing in new digital technologies and economic development.

Countries unable to take active part to the new digital scenario will be marginalized with increased unemployment and reduced competitiveness and quality of life.

Europe is facing such a risk if no action is taken.

The road to follow is to apply digital technologies and eBusiness diffusion to renew the European Union, maximizing the intersectoral ICT applications and utilization across all citizens, all education systems, all public institutions, all private companies.

EDITORIAL POLICY

This Newsletter maintains a world-class standard in providing researched material on ICT and Information Society activities from the perspective of Central, Eastern and Southern Europe (CESE) within a global context. It facilitates the information and communication flow within the region and internationally by supporting a recognized platform and networking media and thus enhancing the visibility and activities of the IT STAR Association.

The stakeholders whose interests this newspaper is addressing are

- IT STAR 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 could be negotiated.

The newsletter is circulated to 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 info@starbus.org.

7th IT STAR WS on Electronic Business

3 & 4 May 2013, Bari, Italy

Hosts and co-sponsors:

AICA   **Politecnico di Bari**

PROGRAM

09.30   Opening and Setting the Scene
Panel on "*Internet Empowerment for Doing Business*"
Bruno Lamborghini, EITO Chairman and AICA Vice-President
Alexander Riedl, EC DG CONNECT - Deputy Head of Unit *Knowledge Base*
Panelist (t.b.d.)

Topic I. National Strategies and eBusiness
B2c e-Commerce Practices: A SWOT Analysis
Nicola Costantino, Rector, Politecnico di Bari
eBusiness in Croatia: A Critical Overview
Ranko Smokvina, Consultant and CEN CIM for Croatia
The Impact of the new Slovak eGovernment Legislation on Business Entities
Pavol Fric, Vice-President of DITEC a.s.
Security for eBusiness
Gintaras Ciurlionis, Director of IT & Comm. Dept., Lithuanian M-ry of the Interior

Topic II. Reengineering the Enterprise: eBusiness Strategies and Solutions
Disruptive B2B2C eBusiness Solutions on Next-generation Mobile-empowered Business Web
Martin Przewloka, Senior Vice-President, SAP
From Postal Innovation to e-nnovation
Massimo Bollati, ICT and Digital Director at TNT Post
Intellectual Property Rights in eBusiness of Intangible Digital Goods
Vilma Misiukoniene, INFOBALT Association
Speaker (t.b.d.)

Topic III. Education and Skills
Eskills for eBusiness
Denise Leahy & Dudley Dolan, CEN WS on ICT Skills and Trinity College, Ireland
CEPIS and AICA Services for eBusiness
Giulio Occhini & Roberto Bellini, AICA
Security Issues and eBusiness Skills
Giuseppe Mastronardi, Politecnico di Bari
Speaker (t.b.d.)

Conference Statement and Wrap-up

Satellite events
2 March (afternoon) AICA/Politecnico di Bari event on ICT Skills and Digital Forensics
4 March (morning) Poster session (t.b.c.)
4 March (morning) IT STAR Business meeting (members only)

The eBusiness language should become the European common language, which could permit the building of a real European federation, the Unites States of Europe, from North to South, from West to East.

This requires the capacity to permanently adapt to change at a speed imposed by technological development and by global competition; to refuse conservatism in organizations, in government, in public and private services.

Also a dramatic change in education, jobs and careers is needed. We have only to imitate what is happening in new emerging areas.

Wide diffusion of eBusiness driven by new digital technologies and applications, like Cloud applications, Big Data, Analytics intelligence, Application Data-warehousing, advanced Security could permit Europe to face the dramatic structural crisis and restart a new life.

Security systems are an absolute requirement for the growing network interconnections, the data/privacy protection and against the increasing risk of data hacking, considering the widening of network access through mobile devices and wide diffusion of any form of apps.

Virtualization of all documents, no paper transmission, though the public administrations and citizens of various European countries will impose full harmonization/standardization of procedures and a common language and rules.

We are in the middle of a revolutionary change in eBusiness providing new forms of interactive relations based on mobile devices in a mix of online transactions, online banking, online value chains and online information and entertainment.

It is an extraordinary opportunity for Europe to change old models. The European Digital Agenda, Horizon 2020 could represent a useful frame if it could be considered by the European Commission and national member states as the most strategic priority on the table and not only a list of prescriptions and obligations.

At country level, the Digital Agenda should be under the responsibility of prime ministers as main driver of social and economic development, efficiency and cost saving.

The digital target is often focused only on broadband communication infrastructures, but it should require more investment in "human infrastructures", new cultural attitudes, new business models, new open innovation approaches. There are good examples in CEE countries where some of them appear to understand better than others the way out of the crisis.

I feel that real change in Europe can only come through a bottom-up approach; this means that organizations like IT STAR, AICA and CEPIS, representing the fundamental needs of people and firms, have a major role and responsibility to play.

We need to diffuse an open learning and interconnecting approach to learn each other and to harmonize our efforts toward a common project.

eBusiness and new digital technologies are here to help us. We should not miss them. ∎

Disruptive B2B2C eBusiness solutions provided on next-generation mobile empowered Business Webs

Martin Przewloka

Prof. Dr. Martin Przewloka *serves as Senior Vice President at SAP and is world-wide responsible for the Global SAP Program of Mobile Empowerment. During his tenure with SAP, he held various management roles. Previously, he was the Senior Vice President of Showroom & Trial Solutions as part of SAP Marketing; responsible world-wide for all SAP demo and presentation solutions, infrastructures, and services. Formerly, Prof. Przewloka was responsible for several SAP industry solutions as well as for SAP ERP, the SAP flagship product.*

Prof. Przewloka is based at the SAP headquarters in Walldorf, Germany, additionally, he holds university degrees in physics, economics, and medical sciences from the universities of Giessen/Germany, Geneva/Switzerland and Kaiserslautern/Germany. Furthermore, he holds a professorship in mathematics from the Technische Hochschule Mittelhessen/Germany and a professorship in computer sciences from the Provadis School of International Management & Technology Frankfurt/Germany.

It is an undisputed fact that the Internet is becoming the centre of new and innovative businesses. While mobile business is growing dramatically fast, and social networks are continuously expanding their reach into the Internet, we all expect that not only the consumers, but also the business users will soon use mobile devices for their daily work and coordinate their collaboration through the Internet, enabling value chains to be created quickly with a variety of delivery channels and business models. SAP has introduced the concept and the vision of a Business Web to offer a real-time, trusted marketplace of services, accessible on any device to enterprises, governments, and citizens. The presentation will outline the key ideas of the Business Web vision and will showcase, based on concrete use cases and prototypes, how a mobile-enabled Business Web allows seamlessly integrated information processing resulting into innovative and disruptive B2B2C business models.

The presentation is divided into the following 3 key areas:

- Next-generation Business Webs in the Digital Ecosystem
- From Apps to Services to Solutions

- Concrete B2B2C use cases and prototypes (Urban Management = Smart-Cities, Future Energy = Utilities, Information as a Service) incl. first customer driven project experiences/results.

Cities and communities form the nucleus of our modern society. In modern urbanizations the need for cross-organizational processes and management tasks has grown ever more in the recent years. Consequently, there is a strong need for disruptive, mobile empowered concepts for collaboration processes between citizens, local governments and companies. Smart Cities require smart energy infrastructures which includes for example the de-carbonization of road transport and new consumer energy management services. Last but not least, same applies to Urban Security: mobile empowered collaboration processes between security & safety agencies, protection of critical infrastructure (e.g. energy supplies, transportation systems) will be key.

Concrete scenarios and use cases illustrate our research and advanced development strategy, and they are also used to explain how we instantly build and deliver those sustainable solutions based on a cloud-based universal platform, called the Business Web.

Furthermore, the presentation will include some challenging socio-economic aspects as they get more and more importance to future (e)Businesses: mobile solutions to empower businesses and consumers/citizens have to become more relevant to the users and to create additional value. The winners in the market will be those who provide innovative and disruptive solutions that deliver significant more value to the users instead of just 'translating/converting' existing scenarios/use cases and make them consumable on a mobile device. Consequently, mobiles will play one of the most important roles to mitigate or even overcome some of the 'grand challenges', such as the aging problem, the challenges in context with urbanization and future energy supply as well as to allow the emerging countries to leapfrog steps on their social and economical development. The 3rd part and main part of the presentation will therefore showcase concrete examples of SAP projects (incl. prototypes) but also describe obstacles and lessons learned in those areas. ∎

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b2c e-Commerce Practices: a SWOT analysis

Nicola Costantino

***Prof. Ing. Nicola Costantino** is Certified Cost Engineer ICEC and Fellow of the Royal Institution of Chartered Surveyors. He is full professor of Management and Economics in Politecnico di Bari, Italy, where he is serving as Rector from 2009. Author of more than 200 books and papers, his main research area is supply chain management, particularly in the construction industry.*

In the last few years, while the macroeconomic parameters were decreasing almost all over the world, data about b2c e-commerce revealed a strong increasing trend, although in a very differentiated way.

Such a differentiation seems to depend both on subjective (age and clients' instruction level) and objective (connection facilities, product features, and so on) parameters. This is true also for Italy, a country that presents traits in some mode intermediate between more digitalized and "traditional" countries.

On the whole, e-commerce is going to dramatically change commerce practices in almost all market sectors, albeit in many distinguished ways: sometimes, replacing "traditional" physical market models with (often totally different) virtual ones; in other cases supporting "as usual" business approaches with ICT virtual tools, particularly for CRM (Customer Relationship Management).

So, it can be interesting to develop a synthetic S.W.O.T. (Strengths, Weaknesses, Opportunities, Threats) analysis of b2c e-commerce current practices, as a way to describe their possible next evolutions.

Strength factors of b2c e-commerce are principally connected with its dramatic scale effects: in a virtual store it is possible to extend the "shelves" of offered products with no space limits, and catch up with people everywhere in the world at a very low cost. So we can develop profitable business also by offering virtual products for free to most "clients", as long as some client (also a relatively small percent) is willing to pay for an "improved" (or "professional") version of the same products, or for the possibility to propose their advertising to the "for free" clients (as for search engines and social networks).

On the other side, the weaknesses of b2c e-commerce for all "physical" products depend on the absence of a direct, material contact between the potential client and the offered goods. This limit is particularly important for fashion and handcrafted products, where the fitting and "touching" experiences can be critical for the buying decision. Furthermore, the delivering process can be another important limit of b2c e-commerce of physical products, for the connected cost and time problems, and for the necessity of an efficient logistical chain.

The more important opportunities of b2c e-commerce are connected, of course, with the impressive global diffusion

of internet connections (that enlarge the potential markets), and with the possible passing of physical limits: if we can download a software or a song, or a book, once sold in "material" forms (CD, paper, and so on), one of the two principal weakness factors is totally passed.

Eventually, the more important threats are probably connected to the difficulties to solve the above-illustrated weaknesses (physical contacts and logistic processes), and to the vulnerability of the web to criminal activities (identities' thefts, paying processes, etc). The reputational features of the commercial relationship are also very important: in the early stages of e-commerce it was, perhaps, the most important obstacle to the large diffusion of some e-business activity, because it seemed very difficult to substitute the shared knowledge of "neighbour" communities about the commercial reliability of sellers. Nowadays, moreover, the massive use of reputational on line tools seems to be able to constitute a good virtual substitute of the traditional "word of mouth" development of the commercial reputation of a supplier.

Summarizing, we can conclude that b2c e-commerce will probably meet – in next years – a broader diffusion both by a geographical and a typological point of view. ∎

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e-Skills for e-Business (with a focus on e-Leadership)

Denise Leahy & Dudley Dolan

Dr. Denise Leahy is Associate Professor at the Department of Computer Science, Trinity College Dublin, Ireland. Denise is a Fellow of the Irish Computer Society and her research interests are in the fields of Digital Literacy and Information Technology in Education.

Dudley Dolan is a retired Associate Professor from the Department of Computer Science, Trinity College Dublin. Dudley has been a Vice-President and Honorary Secretary of CEPIS, Trustee of IFIP and Managing Director of the ECDL Foundation. He is a Founder and Distinguished Fellow of the Irish Computer Society and is currently Chairman of the CEN Workshop on ICT Skills.

The paper discusses the e-skills required for e-Business with an emphasis on e-Leadership Skills. The role and responsibilities of an e-Leader are discussed and the need for awareness of emerging information technology is examined. Unemployment in the EU reached 10.7% by December 2012, which is an increase of 0.7% since December 2011. The number of digital jobs is growing at a rate of 3% per annum, in spite of the recession. This is a situation, which must be addressed. Any solution will require e-skills.

Technology is used in all parts of business and is accepted as being necessary for future competitiveness and innovation (EU, 2013). The combination of business skills and technological knowledge required to take advantage of ICT is often referred to as "e-Leadership". The e-Leader is a person who can lead and also understands the benefits of using ICTs in an innovative manner.

The skills required to be an e-Leader can be found not only in ICT specialists but also in many areas of business. In fact some people feel that the restrictive nature and disciplined approach of the academic education of ICT practitioners makes them less likely to be leaders with vision. This would indicate that for e-Leaders we might need to look for charismatic, entrepreneurial paragons and educate them to the benefits of ICT. Using technology can often involve new ways of working, a need for new skills, even a new corporate culture; this can be a major concern to all affected by such change.

Leadership can come from all levels within an organisation; the ICT user who can see how to improve the efficiency of their work is as much an e-Leader as the CIO who makes policy decisions for the same reason.

e-Leadership skills are more and more required from decision makers and leading professionals, who must be able to convince others that technology can be of benefit to them.

E-leadership skills are also required of ICT practitioners. According to ZDnet's (2013) Strategic priorities for the CIO in 2013, "As CIO, your most important job is helping lead the business in change and innovation. If the business isn't ready, which may be likely, then your challenge becomes helping preparing the ground for future change."

An e-Leader should be comfortable with examining emerging Information Technology and Systems and should be able to recognise where opportunities may arise.
Amongst the major issues, at the time of writing are:

• Big Data
• Consumerization of IT
• Security
• Business value of the Cloud
• Social Media in business

What does an e-Leader look like? What skills must he or she possess? The diagram below attempts to identify the skills and knowledge areas required of an e-Leader.

Figure 1 e-Leadership capability requirements

The paper discusses each of the above skills and investigates the requirements for e-Leadership for competitiveness, innovation and growth in Europe, showing that such capability and skill can come from all levels and all parts of the organisation. In order to produce the required talent to meet the above objectives we recommend a number of initiatives. ∎

IPTS

Digital Economy: Cracking the eCommerce Code

Marc Bogdanowicz

Marc *is Action Leader in the Information Society Unit, IPTS – Seville, Spain.*

One of the most important EU economic policy domains is the Single Market policy that seeks to eliminate barriers to cross-border flows of goods, services, capital and labour between the 27 EU Member States. In the digital age, these "four freedoms" should be extended to cover digital products and services: hence, the notion of a Digital Single Market (DSM) as a policy priority in the Commission's Digital Agenda for Europe.[1]

Baseline, EU Single Market rules should be updated to encompass digital technologies. Despite the promise of digital technology for a border-free world where geographic distance can be overcome with a mouse click, there is a strong perception that a variety of regulatory obstacles, interoperability problems and market segmentation strategies still stand in between online consumers and their potential suppliers across the border.

In this context, JRC/IPTS had initiated a Digital Economy Research Program on behalf of DG CONNECT, offering groundbreaking economic research to investigate the new dynamics generated by the broad utilisation of ICT. It intends currently to tackle 4 research questions: what is the size of the Digital Economy? How Intellectual Property Rights affect the digital economy? How Privacy rights affect the Digital Economy? And finally: What are the real drivers and impediments to on-line cross-border trade?

According to IPTS estimates, total EU e-commerce reached around 240 billion € in 2011, of which 44 billion € was cross-border trade between EU Member States and 6 billion € imports from outside the EU. This compares to offline trade between EU Member States (for the same goods) of about 490 billion €. Today, online cross-border trade in the EU accounts for only 8.7 percent of all intra-EU offline trade (for the same goods). Obviously, there is room for growth.

Our studies, together with most recent research on patterns of cross-border e-commerce observe that cross-border e-commerce significantly reduces distance-related trade costs, mainly because information costs are reduced. However, other culture-related trade costs play a more prominent role online, including the cost of overcoming linguistic and cultural barriers. On balance, there is no evidence yet that suggests that consumer preference for domestic over foreign purchases is lower online than offline. The promise of the "death of (geographical) distance" may to some extent be replaced by a strengthening of cultural and linguistic distance. Online infrastructure components such as an efficient parcel delivery system and interconnected electronic payments systems may somewhat reduce trade costs and facilitate cross-border e-commerce but they are unlikely to fundamentally change the observed behavioural patterns.

The EU Digital Agenda has set a number of policy targets for e-commerce in terms of the use of online trade. By 2015, the EU would like to have 20 percent engaged in cross-border online trade. Reaching the first target will largely depend on consumers feeling comfortable in online activities and their trust in online transactions. The target however is very much determined by the extent of home bias in consumer preferences. The cultural barriers that attenuate the beneficial impact of reduced distance costs in online trade fall largely outside policy makers' reach. Also, those are volume-related targets.

However, even if the shift from offline to online transactions would not fundamentally affect the balance of trade costs or consumer preferences for domestic suppliers, there are other sources of consumer welfare benefits to be expected from this shift. Increased price competition in online and offline markets, increased variety of supply and consumer choice available through online suppliers, and reductions in consumer transaction costs (time gains, transport costs) could still constitute important sources of welfare gains. Some preliminary and partial estimates point in that direction but there is still some way to go to build up robust empirical evidence in this regard.

Consequently, policy measures to promote online trade should not only seek to increase the volume of cross-border e-commerce per se but to boost the consumer welfare impact of cross-border e-commerce. The European Commission adopted an e-Commerce Communication [2] in January 2012, which contains 16 actions aimed at doubling the volume of e-commerce in Europe by 2015. This Communication includes proposals related to what are seen main barriers and drivers: postal delivery services, initiatives in the area of card, electronic and mobile payments and an overall strategy on internet security in Europe. Fortunately, it also proposes measures to boost price transparency, to increase the variety of online supply by reducing regulatory barriers

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1 For further details, see http://ec.europa.eu/digital-agenda/en/our-goals/pillar-i-digital-single-market

2 See "Communication on e-commerce and other online services" at http://ec.europa.eu/internal_market/e-commerce/communications/2012/index_en.htm

and to improve consumer confidence in online transactions. These issues probably offer a robust path to boost consumer welfare gains in eCommerce.

Ten reports of the Digital Economy Research Program will be progressively made public in 2013 on the JRC/IPTS website: http://ipts.jrc.ec.europa.eu/. The first one, on eCommerce, is available at: http://ipts.jrc.ec.europa.eu/publications/pub.cfm?id=5959. ∎

The CEN WS on ICT Skills 2003 – 2013

CEN is the European Committee for Standardization. Its mission is to assist the European economy in global trading, the welfare of European citizens and the environment by providing a platform for the development of European standards, technical specifications, reports and CEN workshop agreements.

One of the workshops within CEN focuses on ICT skills. From its establishment in 2003, this Workshop provides a forum to stakeholders from industry, human resources, academia, international and IT national associations. It contributes to the Digital agenda of the European Commission by addressing e-Skills shortages, gaps and mismatches that affect productivity, competitiveness, innovation, employment and social cohesion.

In May 2013 the Workshop will celebrate its 10th Anniversary. To commemorate the event, we invited the Workshop Chairs to share their thoughts about development, achievement, challenges and specifics during their terms so as to put together a concise record of the WS's history and the issues that were important then, now and in future.

This is their story.

Plamen Nedkov
NL Editor,
CEN WS on ICT Skills Steering Committee member

2003 – The Start of an Open Consensus Process

Wolffried Stucky *is Full Professor of Applied Informatics. He was head of Institute of Applied Informatics and Formal Description Methods (AIFB) of the University of Karlsruhe, Dean of Faculty for Economics and Business Engineering, Director in Department for Software Engineering of FZI (Forschungszentrum Informatik) and member of the executive board of FZI. He is a Founding Member of the CEN Workshop on ICT Skills.*

The CEN Workshop on ICT Skills and Curricula was proposed by the European Centre for the Development

of Vocational Training (Cedefop), the Council of European Professional Informatics Societies (CEPIS) and the ICT industry, represented by the Career Space (Industry) Consortium in 2001/2002. At this time I was president of CEPIS (2001– 2003) and past president (2003–2004) and CEPIS decided to be more active in Brussels. CEPIS was involved in many activities concerning IT education, certification and IT professionalism: beginning, in the mid 90-ies with the founding of the ECDL Foundation; participation at eLearning Summits; supporting the ICT Skills Study of Matthew Dixon; starting the EPICS, resp. the EUCIP project (European Certification of Informatics Professionals) in 2002, supported by the European Commission; staying in contact with EICTA, now DIGITALEUROPE, and being member of ELIG (European Learning Industry Group) – most of these activities supported by Dudley Dolan (now chair of the Workshop) and Peter Bumann (at this time CEO of CEPIS); co-sponsoring of the eSkills Summit, Copenhagen, and participating at the IFIP-OECD-WITSA Joint Working Conference "Meeting Global IT Skills – the Role of Professionalism", both in October 2002. In June 2002, CEPIS joined Career Space and was a member of the Steering Committee and of some working groups.

The Workshop was kicked-off in April 2003. Its main goal was to validate the "ICT profiles" and the "ICT Curriculum Development Guidelines", published by Career Space and Cedefop in 2001 and 2002. I was elected as chairman, responsible for the academic part of the ICT curricula, and Burkart Sellin from Cedefop as vice chairman, responsible for the vocational IT job profiles. The output of this first phase were two workshop agreements: our first CEN Workshop Agreement (CWA) "Generic ICT Skills Profiles for the ICT Supply Industry – a Review" (March 2004) and CWA "ICT Curriculum Development Guidelines for the ICT Supply Industry" (May 2004). Both deliverables constitute a review of the previous activities and results of the Career Space work (2001-2002).

These CWAs concluded the first phase of the workshop. In 2005, I was happy to welcome and host the CEN Workshop on 14/15 February 2005 at the University of Karlsruhe, Germany and to kick-off the second phase of the workshop, which was chaired by Burkart Sellin. I was acting as vice chair.

Another pivotal initiative, in parallel to the CEN Workshop, was the European e-Skills Forum (ESF) and its follow-up activities. The ESF provided an important platform, which stimulated multi-stakeholder partnerships in the field of e-skills in Europe. André Richier from EC DG Enterprise was always supportive of the CEN Workshop and the ESF Community, which organized e-Skills Conferences in 2004, 2006 and 2008 at the Cedefop premises in Thessalonica,

Greece. This led to the launching of such activities as the Harmonise project implemented by a European consortium led by CEPIS. "ICT Certification in Europe", a survey realized by CEPIS for Cedefop and finally the publication of two CWAs "ICT Certification in Europe" (2009) and "ICT Certification in Action" (2011, CWA not yet published).

Technically, we faced one of our most demanding tasks during the period February - November 2005, as the Workshop decided working towards an ICT Skills (Meta/ Reference) Framework. Finally, we were able to finalize this challenging task thanks to Matthew Dixon and Yosh Beier and the common effort of a Task Force formed to support the experts to deliver the CWA "European ICT Skills Meta-Framework – State-of-the-Art Review, Clarification of the Realities, and Recommendations for Next Steps". This CWA constituted a major milestone and prepared the way for the following development of the European e-Competence Framework.

Some results of all these activities of the Workshop are described in the papers listed in "References".

The Workshop was able to attract good attention, started a variety of different initiatives and activities all addressing the needs of the involved stakeholders. I would like to see that as well in future with more and more influential stakeholders expressing their interest to support the Workshop's work. Nevertheless, the Workshop needs as well to adapt to changing conditions, new developments and actual trends. The Workshop will find its way, so far I am convinced and I hope to see more CWAs published in the near future.

References

[1] Wolffried Stucky/ BurkartSellin/ Peter Weiss (Eds.):eEurope - IT Skills: Challenging Europe's Economic Future. Workshop Proceedings Vol. 1, e2003 eChallenges Conference, 22 October 2003, Bologna, Italy. Published by CEPIS, Cedefop and AIFB.
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[4] Peter Weiss, Dudley Dolan, Wolffried Stucky, Peter Bumann: ICT Certification in Europe; Cedefop Dossier Series, No. 13, Luxembourg: Office for Official Publications of the European Communities, 2006.
[5] Wolffried Stucky: E-Skills in the Knowledge-Based Economy. Presentation at workshop "Creating Jobs in the Knowledge-Based Economy", European e-Skills Conference 2004, 20 September 2004, Thessalonica.

2003 – 2006 "Pioneering Work"

Burkart Sellin was until 2006 a senior expert at Cedefop. He is presently an independent consultant on EU education and training matters and a member of the Berlin based European School Working Group (SESB), established within the Europa Union Berlin, to promote state-run bilingual education from kindergarten up to high-school graduation.

This was an important phase, if not a pioneering one, marked by an increasing and voluntary cooperation of ICT professionals, social partners and officials from Member States, European Union level organisations and from professional bodies or informatics societies. The results of this phase were setting the ground in establishing a kind of roadmap for its further development and ongoing work.

The main focus of the deliberations in this phase from experts from many Member States and ICT professional organisations, including from sector specific social partner bodies, was primarily on basic definitions and terminology on IT professions, user and e-business skills and knowledge, skills and competences in general. This is why Cedefop[1], the European Centre for the Development of Vocational Training, was invited to contribute to this Workshop not only on behalf of CEN, but also on behalf of the European Commission (Directorate General on Education and Culture- DG EaC - and DG Enterprise). As Project Manager responsible within Cedefop for these issues I attended the initial ICT skills working group meetings and was asked in the following to take on board the Workshop´s chair by 2004 taking over from Wolffried Stucky, former President of CEPIS. This task was quite demanding seen the different interests and professionals represented in the workshop. The latter came from numerous Member States of the EU and from European level non-governmental bodies, from global players in the ICT field and national training organisations or universities. In early 2006 I had to pass this task on to Mr. Geoff McMullen from the UK, by that time serving as CEPIS – President, because I reached the retirement age later in 2006.

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1 Cedefop: The European Agency "European Centre for the Development of Vocational Training" set up by Council regulation in 1975, since 1995 moved to Thessaloniki, Greece

The work was unique for us in Cedefop in many ways:

- Cedefop was a major actor in support of the European Commission to establish a "European Qualifications´ Framework (EQF)" by defining levels of knowledge skills and competences. This approach was, however, based on the concept of learning outcomes and not on competences of practitioners.

- Cedefop also supported work towards a European Credit Transfer System for vocational education and training qualifications on sub-degree level in complementing the Credit Transfer Scheme for Higher Education Qualifications (ECTS), which was introduced earlier under the so-called Bologna Process improving the comparability of University and Higher Education Competences and Skills at the wider European (Council of Europe) level.

- Cedefop finally was accompanying and supporting the work undertaken by ICT Professionals, e.g. by CEPIS, on certification and mutual cooperation of major ICT education and training organisations.[2]

This parallel work was an incentive on the one hand, but also delimiting the space of discussion, because the terminology and semantics in the IT sector were rather different from those used in the general education and training field. This because the non-formal education and training was playing an important role in the less predetermined IT-sector within which people without formal degrees and certificates and people from Non- IT disciplines had a major chance to be accepted and even to contribute to its development. It was decided by the end not to speak about qualifications and e-skills but rather about "competences"(see the major workshop agreement approved by the end of my term in early 2006 with all its definitions including a presentation of different national or organisational approaches[3]).

In that initial phase of its first years of existence of the Workshop it was decided to concentrate on IT Practitioners´ competences, while acknowledging that the IT- sector would also be marked by additional IT user and e-business skills or competences. This ("Meta-") Framework on European level Skills or Competences, however, ranged from levels 3 to 7 of the European Qualifications Level Framework; a linkage could thus be established allowing comparison to other sectors and to the general qualifications framework (EQF). This latter was proposed by that time by a working group steered by the European Commission

with the support of Cedefop´s expertise and additional consultants from universities involved in the Bologna Process on Higher education. I was on behalf of Cedefop delivering this support to both the EQF-level work group and the credit transfer on VET[4] work group, which were both steered by the European Commission (DG EaC).

To repeat, the major motivation and problem area for this engagement of actors and voluntary bodies I mention the following in quoting from the publication edited by CEPIS and Cedefop in 2004 for the Vienna Conference workshop:

- "How to achieve transparency, comparability, transferability and recognition of competences and/ or qualifications between different countries and at different levels of achievement!"

- "To support learners and employees mobility and the development of a European space for education, training and skills through credit transfer and reference frameworks!"[5]

Have these objectives been achieved in the meantime?

2006 – 2008 "Expanding Community"

Geoffrey McMullen *has worked in computing for 50 years. His positions include customer services director for UNIVAC UK, CIO for Shell UK, and Chairman and CEO of JANET, the UK educational Internet. He has been chairman of the UK IT National Training Organisation, vice President and President of the British Computer Society and President of CEPIS. He is a liveryman of the IT company of the City of London and trustee of several charities.*

I took over the chair of the workshop from Burkart Sellin in September 2006, as President of CEPIS, and handed over to Paolo Schgör in mid 2008, after I completed my term as President. Under the joint chairmanship of Herr Sellin and Professor Stucky, the workshop had delivered three project outcomes and developed a work plan, which we inherited and pursued.

The work plan was documented in a formal proposal discussed and generally accepted in Brussels in March 2006. The work plan was based on a set of objectives agreed in January 2006 at a meeting in CEN jointly chaired by the two founder chairmen, which were:

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2 See Burkart Sellin: " Towards European e-Skills and Qualifications Frameworks, state of the art linked to current work" in: Wolffried Stucky, Burkart Sellin, Peter Weiß (Eds.): Towards European Standards for eSkills and Qualifications, workshop proceedings from the eChallenges e-2004 Conference 28 October in Vienna, Austria / Frankfurt 2005 (ISBN 3-00-015981-9)
3 CEN Workshop Agreement CWA 15515 from February 2006

4 VET: Vocational Education and Training
5 Burkart Sellin op. cit. p. 30

- *Continue the development of an EU e-Skills Framework which will support the development of EQF.*
- *Ensure that the framework supports HR activities in resource planning and career/ competence development.*
- *Help individuals to develop and to maintain employability.*
- *Promote use of the framework particularly in types of enterprises where current lack of use reduces productivity and increases risk.*
- *Support training providers in developing and maintaining education and training provision.*

We spent a good deal of our time attempting to create and maintain an effective community in support of these aims. It proved quite easy to recruit:

- Technical experts with an interest in the field
- Bodies across Europe which had already created their own analyses of skills required and frameworks in which to express them
- Some companies interested in the commercial opportunities arising from building products linked to any frameworks that might be produced at a European level to facilitate recruitment, career development and training programmes

However, other recruits were harder to find. SMEs by and large could not afford to release people for the time needed. Multinational companies were hard to convince that in this field there exists a European layer between the global and the national application of their global standards. Mostly, we had to accept the lack of experts from these organisations, other than through representatives from employer organisations whose members included such companies.

Funding was also a recurrent topic of discussion. Projects were supported by DG ENTR grants, but the core administration of the workshop cost some € 5,000 to 10,000 a year, requiring a subscription of € 600 a year per workshop member. We managed after some discussion to achieve an adequate level of funding through this approach.

Untroubled by these potential difficulties, we proposed and delivered a number of projects. Initially, we concentrated on "Towards a European e-competence framework", then added proposals for a "Practical Tool – eCareer Services", while continuing to look at the need for, and mode of integration of, a user skills framework, a review of „ICT Certification in Europe", growing out of the earlier "Harmonise" project. The ICT certification and Practical tool projects received funding, while the user framework

was referred back for further study.

I stepped down from the chair at a meeting in Paris on 23rd September 2008. The first phase of the project: "Towards a European e-competence framework" had by that stage received the support of workshop members, and the others were in progress. Given the complex organisational, theoretical, and political background, I was extremely impressed by the dedication and commitment of the workshop members, as well as with the quality of the outcomes. CEPIS exists to promote cross-fertilisation in Europe in the field of IT professionalism, so from a CEPIS point of view, the creation of a network of individuals across Europe working in this field and naturally disposed to cooperate was a most valuable result of the workshop.

2008 – 2010 "Challenging Times"

Paolo Schgör is ECDL and EUCIP Certification Manager at AICA.

My term as Chairman of the Workshop started in the second half of 2008, when the financial crisis that originated from the USA in 2007 was turning into a long global recession.

I'm not sure about a precise cause-effect relationship, but – as a matter of fact – some key stakeholders such as Cisco and Microsoft were paying much less attention to our Workshop than they had done earlier. Therefore, in September 2008 I shared with the Steering committee and the whole Workshop a vision of how to pursue our mission, and we set 3 goals:

1) Enlarge participation and commitment (ICT industry, SMEs, national bodies...)
2) Work in a "customer-centric" approach:
- Test results with organisations that can benefit
- Listen to their needs
- Look at what is happening in the world (ISO/IEC 24773, IP3 at WCC2008, CEPIS & EUCIP, news from Italy...)
3) Address the issues about ownership and maintenance of our deliverables.

About the first goal, the absence of ICT industry representatives in the Steering Committee was not acceptable, so my most urgent objective was to find a new Vice-Chair to fill in this gap: a few months later I

was proud to have Johannes Förner (Microsoft Learning EMEA) as Vice-Chair, in addition to Hubert Delafon (representing large ICT-user companies). More in general, we had an increase in stakeholders' participation, with some interesting new Workshop Members.

The second goal was about an open approach to stakeholders, well beyond official Workshop Members. We established links to ISO/IEC JTC1/SC7 (thanks to Juan Garbajosa), to ISO/IEC JTC1 SC36, plus a formal liaison with CEN TC 353 (thanks to Christian Stracke).

We shared our work with a number of experts and stakeholders by organizing Workshop plenary meetings in different cities (not only Brussels, but also London and Paris) and by participating in some key events (such as the EMF/Uni-Europa conference at the European Parliament, the IPROF-09 conference in Arnhem, the Polish Information Processing Society Congress in Warsaw, the ECDL Forum in Athens, the AICA Congress in Rome, the CEPIS Symposium on IT Professionalism in Brussels, the IT STAR Workshop on Skills, Education and Certification in Rome, the e-Skills Week 2010, etc.)

Thanks to Plamen Nedkov, we published various articles promoting the Workshop and its projects in the IT STAR Newsletters, thus enlarging our audience to ICT professionals in new EU countries.

However, the customer-centric approach was also meant to affect projects, and this was really challenging. Years 2009 and 2010 were indeed a key period for our CWA production, as the Workshop was managing more projects than ever before:

- 5 CWAs had been produced in the first 6 years of activity;
- 2 CWAs were released at the end of 2009;
- 4 CWAs were prepared for official release at the end of 2010 (including the e-CF 2.0 and the End Users e-Skills Framework)
- Finally, 4 more CWAs were planned for release in autumn 2011, as a result of the projects starting in the first quarter of 2010.

I was particularly glad to see that the project for contextualization of the e-CF for SMEs – originally conceived as a local initiative by AICA in collaboration with PIN-SME – had finally been presented and approved as a real international project managed under CEN rules with European Commission funding. Moreover, this project was really a perfect example of the concept that we should *"test results with organisations that can benefit"* and *"listen to*

their needs", as written above.

Another satisfactory result was the start of the project about user skills: during the conference at Arnhem, I had insisted on the idea that *"user skills and professional competences are likely to become a continuum for future generations"*, thus recommending a comprehensive approach to ICT and digital competences.

However, I have to admit that the initial goals were only partially achieved. About "openness", some projects were (and are still) rather managed as personal belongings. Moreover, our third goal, i.e. ownership and maintenance of our Workshop's deliverables, was perhaps too ambitious, and it has not been achieved so far; however, some initial progress was already made in 2009: the "e-CF Governance" task force was created (thanks to Peter Hagedoorn), and the discussion about the opportunity to transform some of our CWAs into formal "EN" standards started.

In conclusion, in spring 2010 I was glad to hand over to Dudley Dolan; I was convinced from the start that my role as Chairman was mainly meant to fill gaps and to allow the Workshop to operate at full speed in spite of the hard times.

Chair since April 2010 "Fulsome Support"

Dudley Dolan is a retired Associate Professor from the Department of Computer Science, Trinity College Dublin. Dudley has been a Vice-President and Honorary Secretary of CEPIS, Trustee of IFIP and Managing Director of the ECDL Foundation. He is a Founder and Distinguished Fellow of the Irish Computer Society and is currently Chairman of the CEN Workshop on ICT Skills.

I was honoured to be elected Chairman of the CEN Workshop on ICT Skills in April 2010. The workshop was very active at the time and a busy schedule of future work had been created under the leadership of Paolo Schgör. The start of my Chairmanship was inauspicious as I missed the first meeting due to the ash cloud from Eyjafjallajökull in Iceland.

The workshop has concentrated on the three areas of ICT Skills defined by the eSkills Forum namely

- ICT Practitioner Skills
- End User ICT Skills
- e-Business Skills (sometimes called e-Leadership Skills)

Much progress has been made with ICT Practitioner skills and the e-CF (European e-Competence Framework) version 2.0 was published in 2010. e-CF has become the foundation for many European funded projects as it is gaining credibility as one of the few frameworks which has the potential for widespread use throughout Europe and beyond. Indeed the e-CF will figure in the Grand Coalition for ICT Jobs, which will be launched on 4th/5th March in Brussels.

e-CF version 3.0 is currently being developed and there is considerable support from many stakeholders to support the implementation throughout Europe. The e-CF is a major success for the participants of the CEN Workshop on ICT Skills and shows what can be achieved by enthusiastic stakeholders, supported by funding from the European Commission.

Another area of work has been the development of an e-Competence Framework for ICT Users; this will be published in 2013 and will extend the role of the workshop into the second area of ICT skills mentioned above. This work has been ongoing for some years and it will be good to see a CEN Workshop Agreement (CWA) this year.

The workshop has looked at e-Leadership skills and indeed includes some of them in the e-CF and perhaps more in e-CF version 3.0. However it is my intention that more work will be done in this area during the next year of my Chairmanship.

Since 2010, the following CWAs have been produced:
CWA 16213:2010 End User e-Skills Framework Requirements
CWA 16234-1:2010 European e-Competence Framework 2.0 - Part 1: A Common European Framework for ICT Professionals in All Industry Sectors (under revision)
CWA 16234-2:2010 European e-Competence Framework 2.0 - Part 2: User guidelines for the application of the European e-Competence Framework 2.0 (under revision)
CWA 16234-3:2010 European e-Competence Framework 2.0- Part 3: Building the e-Competence Framework- a Combination of Sound Methodology and Expert Contribution (under revision)
CWA 16367:2011 Implementing e-Competence Framework into SME's
CWA 16458:2012 European ICT Professional Profiles
(2012) ICT- Certification in Action

Since Spring 2010 a great deal of time and effort went into the revision of the Business Plan for the workshop. This required much liaison with the European Commission as one of the aims of the workshop is to support European Policy on ICT Skills. The new business plan was eventually produced with the help of a small team of supporters.

The output from the CEN workshop has been recognized by a number of important initiatives and it is heartening to see the e-CF playing a role in the development of a European ICT Professional. The e-CF will also play a role in e-Leadership and in Curriculum Guidelines for ICT Skills Education. It also features with a role in proposed Quality Labels for ICT.

I am very thankful for the support of the members of the workshop. The meetings always have a very full attendance with an average of some 35 people present. The number of registered members is increasing steadily and now stands at 24.

AFNOR provide the secretariat, which ensures that the workshop runs smoothly, and our liaison with CEN is also very secure.

I have great support from CEPIS, without which I would be unable to fulfill this role. And finally I wish to acknowledge the fulsome support of the European Commission without which none of the projects, which we undertake could happen. ∎
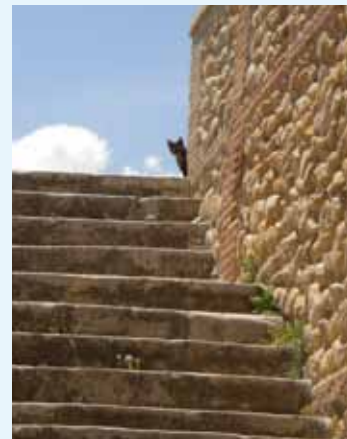
Member Society News & Events

Lithuania

Multi-event "Computer Days - 2013" (KoDi'13)
19-21 September 2013, Šiauliai, Lithuania
http://www.liks.lt/kodi_en

Organizers: Lithuanian Computer Society and Šiauliai University

Contact:
Computer Days - 2013
Lithuanian Computer Society
Geležinio Vilko str. 12-113, LT-01112 Vilnius, Lithuania
Phone: (370 5) 210 9342
E-mail: liks@liks.lt

Slovenia

20th Jubilee Conference „Days of Slovenian Informatics"
15 – 17 April 2013
Grand Hotel Bernardin, Portoroz, Slovenia
http://dsi2013.si
Contact: dsi@drustvo-informatika.si

Italy

DIDAMATICA 2013
7-9 May 2013
Pisa, Italy
http://didamatica2013.sssup.it/

Mondo Digitale

http://mondodigitale.aicanet.net/ultimo/index.xml

Mondo Digitale and IT STAR NL have agreed to collaborate closely in the publications field. ∎

Forthcoming IT STAR Events

7th IT STAR WS on Electronic Business II

Teatro Margherita: source - italianvisits.com

3-4 May 2013, Bari, Italy
www.starbus.org/ws7
(*Program on p. 3*)

2014 IT STAR Conference on History of Computing
August 2014, Szeged, Hungary ∎

Other Events

UNESCO hosted the World Summit of the Information Society (WSIS) +10 Review Event on 25-27 February in Paris.

The event adopted a final statement INFORMATION AND KNOWLEDGE FOR ALL: AN EXPANDED VISION AND A RENEWED COMMITMENT, which is posted at http://www.unesco.org/new/fileadmin/MULTIMEDIA/HQ/CI/CI/pdf/wsis/WSIS_10_Event/wsis10_final_statement_en.pdf

The EU Conference "Filling the Gaps: e-Skills and Education for Digital Jobs" was held on 4 and 5 March 2013 in Brussels.

It was hosted by

- **Neelie Kroes**, Vice President of the European Commission in charge of the Digital Agenda for Europe
- **Antonio Tajani**, Vice President of the European Commission in charge of Industry and Entrepreneurship
- **Androulla Vassiliou**, Commissioner for Education, Culture, Multilingualism and Youth
- **Laszlo Andor**, Commissioner for Employment, Social Affairs and Inclusion

This event officially launched a Grand Coalition, whose mandate would be for the period 2013-2015 with action areas for activities in training, mobility, awareness, certification, and innovative learning.

The President of the European Commission addressed the event. President Barroso's speech at this event is posted at http://europa.eu/rapid/press-release_SPEECH-13-182_en.htm ∎

Type of organization

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

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, E. Mühlvenzl
- Bulgaria (2003) K. Boyanov
- Croatia (2002) M. Frkovic
- Cyprus (2009) P. Masouras
- 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
- Poland (2007) M. Holynski
- Romania (2003) V. Baltac
- Serbia (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:

2012   Bratislava, **Slovakia** (April)
2011   Portoroz, **Slovenia** (April)
2010   Zagreb, **Croatia** (November)
2009   Rome, **Italy** (November)
2008   Godollo, **Hungary** (November)

2007   Genzano di Roma, **Italy** (May)
Timisoara, **Romania** (October)
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
2010 –   Igor Privara
2006 – 2010   Giulio Occhini
2003 – 2006   Niko Schlamberger
2001 – 2003   Plamen Nedkov (cur. Chief Executive)

Major Activities

- 6th IT STAR WS on Digital Security - http://www.starbus.org/ws6
- IPTS - IT STAR Conference on R&D in EEMS -
- http://eems.starbus.org
- 5th IT STAR WS and publication on Electronic Business - http://starbus.org/ws5/ws5.htm
- 4th IT STAR WS and publication on Skills Education and Certification - http://starbus.org/ws4/ws4.htm
- 3rd IT STAR WS and publication on National Information Society Experiences – NISE 08 http://www.starbus.org/ws3/ws3.htm
- 2nd IT STAR WS and publication on Universities and the ICT Industry
- http://www.starbus.org/ws2/ws2.htm
- 1st IT STAR WS and publication on R&D in ICT http://www.starbus.org/ws1/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

Periodicals

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

Web-site

www.itstar.eu   ■

IT STAR Member Societies

Austrian Computer Society – OCG Dampfschiffstrasse 4, 8. – 9. floor, A-1030 VIENNA, Austria Tel. +43 1 512 0235 Fax +43 1 512 02359 e-mail: ocg@ocg.at www.ocg.at	**Bulgarian Academy of Sciences – BAS** Institute for Parallel Processing Acad.G.Bonchev str.Bl.25A SOFIA 1113, Bulgaria Tel +359 2 8708494 Fax +359 2 8707273 e-mail: boyanov@acad.bg www.bas.bg
Croatian IT Association– CITA Ilica 191 E/II, 10000 ZAGREB, Croatia Tel. +385 1 2222 722 Fax +385 1 2222 723 e-mail: hiz@hiz.hr www.hiz.hr	**The Cyprus Computer Society – CCS** P.O.Box 27038 1641 NICOSIA, Cyprus Tel. +357 22460680 Fax +357 22767349 e-mail: info@ccs.org.cy www.ccs.org.cy
Czech Society for Cybernetics and Informatics – CSKI Pod vodarenskou vezi 2, CZ-182 07 PRAGUE 8 – Liben Czech Republic Tel. +420 266 053 901 Fax +420 286 585 789 e-mail: cski@utia.cas.cz www.cski.cz	**Greek Computer Society – GCS** Thessaloniki & Chandri 1, Moshato GR-18346 ATHENS, Greece Tel. +30 210 480 2886 Fax +30 210 480 2889 e-mail: epy@epy.gr www.epy.gr
John v. Neumann Computer Society – NJSZT P.O. Box 210, Bathori u. 16 H-1364 BUDAPEST, Hungary Tel.+36 1 472 2730 Fax +36 1 472 2739 e-mail: titkarsag@njszt.hu www.njszt.hu	**Associazione Italiana per l' Informatica ed il Calcolo Automatico – AICA** Piazzale R. Morandi, 2 I-20121 MILAN, Italy Tel. +39 02 760 14082 Fax +39 02 760 15717 e-mail: g.occhini@aicanet.it www.aicanet.it
Lithuanian Computer Society – LIKS Geležinio Vilko g. 12-113 LT-01112 VILNIUS, Lithuania Tel. +370 2 62 05 36 e-mail: liks@liks.lt www.liks.lt	**Macedonian Association for Information Technology – MASIT** Dimitrie Cupovski 13 1000 SKOPJE, Macedonia e-mail: indovski.p@gord.com.mk www.masit.org.mk
Polish Information Processing Society ul. Puławska 39/4 02-508 WARSZAWA, Poland Tel./Fax +48 22 838 47 05 e-mail: marek.holynski@gmail.com www.pti.org.pl	**Asociatia pentru Tehnologia Informatiei si Comunicatii – ATIC** Calea Floreasca Nr. 167, Sectorul 1 014459 BUCAREST, Romania Tel +402 1 233 1846 Fax +402 1 233 1877 e-mail: info@atic.org.ro www.atic.org.ro
JISA Union of ICT Societies Zmaj Jovina 4 11000 BELGRADE, Serbia Tel.+ 381 11 2620374, 2632996Fax + 381 11 2626576 e- mail: dukic@jisa.rs www.jisa.rs	**Slovak Society for Computer Science – SSCS** KI FMFI UK, Mlynská dolina SK-842 48 BRATISLAVA, Slovak Rep. Tel. +421 2 6542 6635 Fax +421 2 6542 7041 e-mail: SSCS@dcs.fmph.uniba.sk www.informatika.sk
Slovenian Society INFORMATIKA – SSI Litostrojska cesta 54 SLO-1000 LJUBLJANA, Slovenia Tel. +386 123 40836 Fax +386 123 40860 e-mail: info@drustvo-informatika.si www.drustvo-informatika.si	