Newsletter - *Calibrated for Creative Communications*

Vol. 11, no. 3, Autumn 2013

Bliss Street, Autumn's Corner

Autumn is bliss for the color palette and a preferred time for international events. This Fall is no exception and one of the largest ICT related activities is planned for 6 – 8 November in Vilnius, Lithuania, in conjunction with the Lithuanian EU Presidency. The Lithuanian Ministry of Transport and Communications has kindly contributed to this issue with an overview of this major event involving a conference, exhibition, networking, an entrepreneurship investment forum and special opportunities for students and young researchers.

Another event to expect is the conference dedicated to the 110th Anniversary of John Vincent Atanasoff (JVA) and organized in Sofia on 4 October by the Bulgarian Presidency. On this occasion Blagovest Sendov and John Vincent Atanasoff II take a view at JVA's life and achievement.

The Newsletter revisits IOI and Young Talent in Informatics with an article by Franco Filippazzi, Giulio Occhini, Plamen Nedkov and with further input from Federico Glado and Eduard Kalinicenko.

There is much more, including information from Smaranda Pantea about a recent IPTS publication on income-based/education-based digital divide in the use of the Internet, and a presentation of the latest IT STAR book on Electronic Business.

Take the Journey,

The Editor

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Editor

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Letters to the Editor

[Extracts from e-mails re. the Bari eBusiness II post-conference proceedings]

"Many thanks for sending me a very nice post-conference book. I hope we shall cooperate in future."

Ranko Smokvina
ICT Consultant, CEN Exert from Croatia

"Thanks a lot. Hope to see you next time."

Prof. Dr. Neki Frasheri
Center for R&D on IT - Polytechnic University of Tirana, Albania

"Once again, thank you for your effective commitment and your efficient dedication. The result was excellent so that we all have been able to appreciate."

Prof. Dr. Giuseppe Mastronardi
Vice-President of AICA and Professor at Politecnico di Bari

Autumn for Sale

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

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.

John Vincent Atanasoff (1903-1995)

On the occasion of his 110 Anniversary

Opening the Door of the Information Society

Blagovest Sendov

Prof. Blagovest Sendov *was Rector of Sofia University, President of the Bulgarian Academy of Sciences, President of the International Association of Universities (IAU) and the International Federation for Information Processing (IFIP). He was Chairman of the Bulgarian Parliament and Bulgarian Ambassador to Japan.*

"Man can demonstrate greatest bravery not in open space but in thinking."

J. V. Atanasoff

One of the biggest achievements in the past century is the use of electronics for digital information processing. The digital electronic computers become universal instruments for transformation of information. It is a question of great cultural and historical interests how this happened and who made the first steps.

John Atanasoff (JVA) made the breakthrough. Some difficulties for JVA to get full recognition for this monumental achievement is the attempt to name him "The father of the Computer", see for example *Clark Molenhoff*, "*Atanasoff, Forgotten Father of the Computer*", published in 1988.

To evaluate the achievements of JVA, we have to make a difference between a *method of computing* and a *computer* using this method. John Atanasoff understood this very well, choosing the title of his major article in Annals of the History of Computers, 6, # 3 (1984), namely "Advent of the Electronic Digital Computing". JVA is discussing not computers, but computing.

Where is the point? For thousands of years Humanity uses devises for automatic calculations, starting with the abacus and coming to the IBM tabulators. All these devises, without exception, use a mechanical medium to carry the numbers. John Atanasoff recognized that the digits, with which the numbers, taking part in computing, are always memorized by means of the position of some mechanical part.

The mechanical medium has stable and easily controllable states, which provide absolute memorization of numbers. But their interaction in the process of computing is limited by the very nature of mechanical motion in space and time.

The interaction of the electronic states is very flexible, fast and simple, but the electronic states themselves are not so stable to guarantee absolute security for computing.

John Atanasoff made the decisive steps towards the success of his invention. He concluded that the medium memorizing the numbers must be absolutely stable only *within a defined limit* and only *for a defined time*.

It is not necessary that it has a strictly fixed state and this state is preserved for an indefinite time, as with mechanical medium. This is so simple and logical – that is why it is brilliant.

The daring of John Atanasoff to discard the stable and secure but very slow mechanics and to choose the flexible and fast electronics opens for people the doors to the present Information Age.

A factor for the belated recognition of John Atanasoff's contributions is that it started as a conflict between his small machine ABC and ENIAC in a court case. We cannot say that everything in the ENIAC is borrowed from ABC. What is borrowed, however, are fundamental principles such as the electronic medium of computing and the regenerating memory.

The ENIAC is a big next step in the development of electronic digital computers. This is a colossal machine, finally completed in February 1946. It contained 18 600 electronic bulbs in a construction 25 m long, 2.5 m high and weighing more than 27,000 kg.

There are fundamental differences of the motivation and the financing of ABC and ENIAC: The first was built for scientific purposes, with poor financial support, and not patented. The second was built for military needs to aid the computing artillery shutting tables, very well financed as a top secret project and duly patented.

The first public recognition that John Atanasoff received was in Bulgaria, where his father was born. In December 1970 he was awarded the highest Bulgarian order for science and culture, order Cyril and Methodius - First Class.

Exactly twenty years after, on November 13, 1990, John Atanasoff was awarded the National Medal of Technology by President George Bush in a Ceremony at the White House.

Today, the world is a world of digitalization, because the digits are carried by an electronic medium. Imagine that they are carried by a mechanical medium – how could you carry your Smart phone?

John Atanassoff is not just one of the many fathers of the modern computer: He opened the door to the Information Age and to Digitalization. ■

The Inventor of the Electronic Digital Computer – Private Side

John Vincent Atanasoff II

***John Vincent Atanasoff II** is son of John Vincent Atanasoff (JVA), named the inventor of the first automatic electronic digital computer. John managed companies involved in designing computer-controlled equipment, computer graphics and software for medical device applications, including Oxberry, which designed the equipment for Terminator II.*

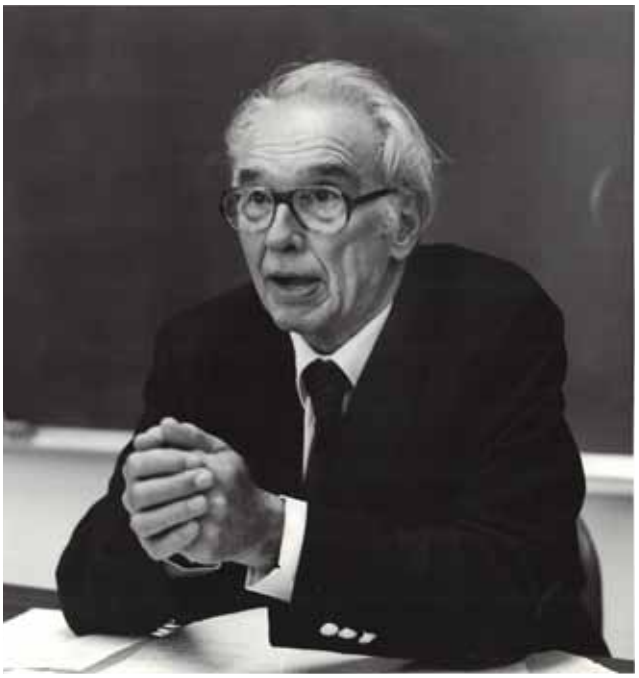
My father, John Vincent Atanasoff (JVA), was a theoretical physicist, with supreme self-confidence, amazing intellect over a wide range of subjects and a near photographic memory. He used these assets coupled with his tremendous energy and perseverance to solve many problems that he faced throughout his life. When he had a goal, it was going to happen!

JVA's father, Ivan, was of Bulgarian ancestry who came to the United States at the age of thirteen to escape the ravages of the Turkish Bulgarian conflict. His father worked his way up from washing dishes to graduating from Colgate University in the 1901. At the same time, he married, Iva Purdy,a lovely Englishwoman, daughter of a preacher and was quite intelligent. JVA's parents had nine children, John was the oldest, and they lived under fairly difficult and meager conditions in central Florida. However, in spite of these conditions and limited resources, he thrived. Some of the milestones he achieved thorough out his life included:

JVA age two

- At the age of nine his father purchased a slide rule and he learned to calculate with it and developed an understanding of algebra, logarithms and exponential bases.
- When he was eleven he helped wire and established electrical power in his family's home and solved many of the initial electrical circuit difficulties.
- At twelve, much to his teacher's consternation, he crocheted and knitted in competition with the girls in his class. He figured he could indulge if the girls were allowed too.
- To provide funds for college, he worked in a phosphate mine for a year after high school and later surveyed the streetcar tracks in Jacksonville, Florida during the summers.
- As a college student, he breezed through school earning a Bachelor of Science in Electrical Engineering from the University of Florida and a Master's of Science in Mathematics from Iowa State University, while teaching.
- While earning his Doctorate degree at the University of Wisconsin, he arrived four weeks late for the semester due to previous teaching obligations and his professor said he couldn't take the difficult Quantum Mechanics course. In spite of the professor's strenuous objections, he took the course. Only five of the twenty students passed the course and he received the highest grade.
- As a Physics Professor at Iowa State, he was an advisor for graduate students performing their thesis work. To accomplish this, they needed to solve linear algebraic equations with twenty-nine unknowns. It was a laborious task requiring three to four weeks to solve each equation with accuracies of up to 6 to 8 decimal places. Atanasoff decided there must be a much better way and after two years of intensive brain storming and development work (1939), he demonstrated the First Electronic Digital Computer, which could solve these problems much more rapidly and accurately. This computer, the Atanasoff – Berry Computer, provided the fundamental concept and architecture of most computers today. It was: 1) electronic, 2) digital 3) with a refreshed capacitor memory and 4) used electronic logic for operation.
- In late 1942, JVA joined the World War II effort as an Acoustic Scientist for the Navy. This led to increasingly challenging assignments as Director of Science at The Naval Ordnance Laboratory and Chief Scientist to General Mark Clark in the Army.
- After the War, he started an engineering company, TOEC, which developed military products and computer-controlled material handling systems. He later sold this company to Aerojet/General Corp. and retired to his farm in Monrovia, Maryland in 1960.
- Finally in 1967-1973, thirty years after JVA had invented the Electronic Digital Computer, the Federal Courts reached a decision. In the case of Sperry Rand vs. Honeywell, it was decided that Sperry's ENIAC was derived from one John V. Atanasoff and the ENIAC patents were voided. This permitted all computer companies to use this technology and hastened the development of computers.

JVA age twenty three at ISU



JVA age eighty giving speech

Throughout Atanasoff's life, he repeated this pattern as a theoretical physicist challenging the unknown and providing new solutions to the problems he faced. While the invention of the electronic digital computer received the most recognition, he made significant contributions in acoustics, agriculture equipment, nuclear instrumentation, weapon systems, material handling systems, and languages. He believed there were few problems he couldn't make a contribution to and thrived on the challenges. He had over thirty patents, but the most important one, the Electronic Digital Computer, was never granted due to the neglect of the University to file the patent application.

JVA with his motorcycle garden tractor invention

JVA playing three dimensional tic-tac-toe with grand-daughter Nancie

JVA also had strong social beliefs in religion, equal rights and education. While impatient with conflicting views, he was well ahead of his time in anti-segregation, equal rights for women and education for the poor. In his later years he had an Afro-American assistant with no formal education. He trained James Brown to do most of the tasks he needed assistance with and marveled at his competence.

JVA left a great legacy for the computer era, disadvantaged youths, Bulgarians and his son, which was that significant goals could be made with an inquisitive mind, hard work and supreme confidence. However, he believed the most important thing in life was "feeding babies". ■

International Olympiads in Informatics Revisited

Franco Filippazzi, Giulio Occhini, Plamen Nedkov

***Franco Filippazzi** is member of AICA's Board and Editor of Mondo Digitale. Franco provided methodological leadership to the AICA – IT STAR Survey on Young Talent in Informatics.*

***Giulio Occhini** is AICA's Chief Executive Officer and representative to IT STAR. He provided methodological leadership to the AICA – IT STAR Survey on Young Talent in Informatics.*

***Plamen Nedkov** is Chief Executive of IT STAR and served as project coordinator of the AICA – IT STAR Project on Young Talent in Informatics.*

On the occasion of the 24th International Olympiad in Informatics (IOI), 23 – 30 September 2012 in Lombardy, Italy, AICA and IT STAR conducted a project and survey on Young Talent in Informatics to identify the success factors for the remarkable achievement of countries from the region in IOIs on the basis of the experience of six countries – Bulgaria, Croatia, Latvia, Poland, Romania and Slovakia.

The most important factors that contribute to their successful participation were summarized as:

- Tradition
- Good mathematical base
- Focused out-of-school activities
- Early start and participation in competitions
- Solid network of IOI related institutions and management
- Motivation and reward.

The full report is available at *http://www.aicanet.it/eventicontestuali/allegati-eventi-2012/IOI_Survey-final.pdf*. The findings were presented and debated during the International Conference on Young Talents in Informatics, held in conjunction with the 24th IOI in Italy, and also presented on other occasions, most recently during the 20th Annual conference of the Slovenian Society INFORMATIKA (April, 2013).

The 25th IOI was held from 6 to 13 July in Brisbane, Australia. The Gold medallists in Brisbane and their results are as follows:

Rank	Name	Team	Score	
1	L. Chen	CHN	**569**	Gold
2	M. Qiao	CHN	**557**	Gold
3	N. Kalinin	RUS	**555**	Gold
3	H. Xu	CHN	**555**	Gold
5	S. Wu	USA	**554**	Gold
6	H. Venev	BGR*	**548**	Gold
7	G. Bae	KOR	**524**	Gold
7	R. Ferreira	BRA	**524**	Gold
9	F. Glaudo	ITA**	**518**	Gold
10	K. Huang	TWN	**516**	Gold
11	K. Wang	CHN	**515**	Gold
12	K. Semenov	RUS	**509**	Gold
13	S. Valizadeh-Toosi	IRN	**507**	Gold
14	J. Brakensiek	USA	**505**	Gold
15	D. Gorbunov	RUS	**504**	Gold
16	T. Kumazaki	JPN	**501**	Gold
17	S. Choi	KOR	**500**	Gold
18	D. Hadas	ISR	**495**	Gold
19	R. Buhai	ROU*	**492**	Gold
20	S. Kulik	BLR	**490**	Gold
20	M. Wiman	SWE	**490**	Gold
22	E. Batmendijn	SVK*	**485**	Gold
22	V. Gavrilă	ROU*	**485**	Gold
24	J. Šafin	SVK*	**483**	Gold
25	Y. Kalaycõ	TUR	**480**	Gold

Source: www.ioi2013.org/competition/results
* Countries represented in our survey on Young Talent in Informatics highlighted in blue
** Italy highlighted in red

These results show that the national teams from the IT STAR region remain in the IOI elite. The nice surprise is Italy, which we contribute to the gained experience from IOI 2012. Poland (2 silver, 2 bronze) and Croatia (2 silver (1 bronze), were not as successful this time, though they still remain among the best performing teams.

Raising the level of digital literacy in Europe is a critical target for national governments and the European Commission. To be successful to this end, there is a need for concerted actions in awareness raising, sound policies and significant investments in ICT Education and in new forms of training, attestation and certification of e-Skills across Europe. Looking into best practices and the experience of countries in various areas related to digital competences is certainly part of the process and countries in Central, Eastern and Southern Europe have much to offer with respect to the process of preparing talented youngsters for international ICT-related competitions.

The AICA – IT STAR Project on Young Talent in Informatics is an open-end initiative and the intention is to continue investigating best practices and training methodologies in raising the savvy and competences of young people in social and economic fields, which increasingly are dependent on new technologies.

Spotlight

Italy

Italy takes part in the International Olympiad in Informatics since the year 2000, thanks to a partnership between the Ministry of Education and AICA, which jointly take care of all related aspects such as selection, organization and costs.

The excellent results of the Italian team at IOI 2013 are obviously due to the young Italian talented participants that achieved them but we also think this is due to an improvement of the selection process in Italian schools.

The selection and training of the Italian team is the task of a Committee made up of teachers from school and university, jointly appointed by the Ministry and AICA. It is not an easy job due to the low attention attributed to informatics in the Italian basic school programs. Presently, the selection process is based on the following four phases:

- Firstly, there is a selection among schools taking part in the initiative. About 10,000 students from 500 schools participate in the online tests.
- The second phase involves approximately 1,000 students who have passed the first selection. The problems for solving are in the middle-range difficulty. At the end of this phase about 80 students are selected.
- They participate in the third phase ("Italian Olympiad in Informatics"), at which the problems are as difficult as these at international competitions.
- The first 20 finalists of the national competitions are invited to participate in the fourth and final phase of selection (residential seminars and online activities). This phase ends with the selection of the 4 participants of the Italian team for international games.

Q & A

with **Federico Glaudo (Italy)**
Gold Medallist at IOI 2013 in Brisbane, Australia

Please present yourself briefly.

I am a 19 year-old high school graduate with a strange passion for mathematics.

When did you start with computers?

I got my first computer during junior high school and started soon after with programming (web languages at the beginning).

Any courses in informatics in the schools you attended?

Not that I am aware of, but I followed some lectures at the Rome University in view of the Olympiad in Informatics.

How were you accepted as a member of the Italian IOI 2013 team?

Participants of the Italian Olympiad in Mathematics were invited to the selection stages of the IOI and I was one of them. I entered the IOI in 2012 and 2013.

You participated successfully in the Italian Olympiad in Mathematics. Are there any relations between abilities in mathematics and informatics?

Mathematics and informatics are strictly connected. Having a good preparation in mathematics helped me a lot for the Olympiads in Informatics; at the same time some techniques of informatics are also very useful for mathematics.

What job would you like to have after graduating?

I would like to become a theoretical mathematician, but this is not the only option that would make me happy. I would be also very glad if I could work as a researcher with informatics companies or as a mathematician in financial companies. ■

Participants' Corner

*One of the students who participated in our Survey on Young Talent in Informatics is **Eduard Kalinicenko** (Latvia). Eduard is 21 years old and currently studies Computer Science at Cambridge, UK. He was bronze medallist at IOI 2008, silver medallist at IOI 2009, silver medallist at IOI 2010, and gold medallist at IOI 2011.*

Before leaving for Cambridge, he spent a year as a student of Computer Science at the University of Latvia. On his way to the UK, Eduard joined us for the Conference on 26 September 2012 in Milan, as a panelist.

We recently made contact with Eduard asking him about Cambridge and his comparison of ICT-related university education in the UK and his home country. Another question was about the success of Eastern European participants in the International Olympiads in Informatics.

We are pleased to share his responses:

<u>ICT university education in Latvia and the UK</u>

First of all, there exists a trend amongst the young generation to avoid studying in Latvia at any cost, and that anywhere else is better. I highly disagree with that opinion. From my experience, I have met a fair amount

of excellent lecturers at the University of Latvia who are also willing to assist you beyond the regular courses. I would say that if one really wants to learn the subject, there are definitely opportunities to do so. I would advise everyone to seriously consider education in his/her home country and not to automatically deny it because "it has to be bad".

Having said that, it's not a wonder that there are some universities on a different level. I decided to choose the University of Cambridge for reasons I will elaborate below. But before going into that, I would like to touch one of the major differences between education in the UK and Latvia. In Latvia, there are quite a lot of places funded by the government, while in the UK there aren't any, as far as I understood. However, it doesn't automatically mean that it's better in Latvia. What happens if you don't get to funded places differs a lot. In the UK, even though the education is more expensive, you'll get a loan from a company specializing on that. Even better, you'll only start repaying it when you begin working and earning more than a set threshold. This way, you can dedicate yourself to studies and not constantly worry about repaying your education. In Latvia, however, things are different. As I heard, you can get a loan, but you'll have to repay it very quickly, regardless of what will happen after you graduate (or don't). So, many people choose not to take it and are working while studying instead, leading to tough times with little time available. So it's not that easy to say which system is better.

Regarding education itself, it's hard for me to compare universities of the two countries since the University of Cambridge differs from the majority of UK universities. I will comment on what is different in Cambridge from back at home. There is definitely more content in Cambridge. It is practically impossible to memorize everything for exams, which is why you have to understand topics to be able to analyze and deduce answers where your memory fails. Speaking of exams themselves, it's very common in Latvia that there is an exam session after each semester. In Cambridge it's only once a year, meaning that you have to incorporate revision for the exam in your study procedure to succeed. In my opinion, this has a few advantages. First of all, it allows for shorter sessions, meaning that all exams are fit in two weeks at most, and Computer Science students in following years have all of their exams in 3-4 consecutive days. Secondly, there is much less assessed work during studies, allowing you to concentrate on studies themselves. Finally, in Computer Science there are only written exams (practical work is treated as obligatory and has to be done during the semesters) with well-structured questions. This unified approach allows exams to combine the subjects, contrary to Latvia, where every lecturer sets his own exam and you have to go to loads of them as a result.

About lectures, I would say that I haven't noticed a dramatic difference - we have excellent lecturers in Latvia as well, who were inspiring for the subject. However, what brings Cambridge to a different level, in my opinion, is the supervision system. When you apply to Cambridge, you actually apply to one of the many colleges. The University is responsible for the lectures but your college takes over for the supervisions.

What is supervision? Basically, the college finds a person knowing the subject well and then you have one-hour sessions with him in a small group of 2 or 3 people. This means that you can get much more personal feedback and material on the topic. There is also work set for almost every supervision, and you also get detailed feedback on that, which is often very helpful.

Occasionally these supervisions become alternative lectures, but you can shape them according to your needs and ask the questions you're interested in. I often feel that supervisions are the place where I actually learn the subject, as I feel this personalized approach suits me greatly.

And then, because there are many colleges, you don't get that many people studying the same year of your course in your college. In my year, there are 6 people including me. This means we are often communicating, helping each other out and so on. Having relatively a small amount of people also helps fellows of the college and we can easily get access to them if any problems or questions arise. So, overall, I get the feeling that my education in Cambridge is going much more personal, and I can easily focus on things I don't understand more than on things I do.

And one more thing: I found out that there is a huge difference studying in your hometown and anywhere else. In Riga I was just going to lectures and then going back home. In Cambridge, everyone stays at the college campus, so I feel that in Cambridge I have much more social experience, which I do enjoy. So that might be another thing to consider when one is making the decision about a university.

Reasons for the success of Eastern European participants in IOIs

I can only judge from a Latvian perspective and this success is supported in my opinion by the following:

First of all, we have a great coach of the team, Sergey Melnik, who is doing this for many years and has amazing experience when it comes to Olympiad programming. This brings me to the second point - we have accumulated experience, which is crucial. And I'm not talking only about Sergey, who has indeed accumulated an amazing experience in how best to develop young talents so that they show results without being overworked. I'm also talking about past contestants, who are willing to share their experience with newcomers. Last time we had a completely new team was in 2002, so nowadays, there is always someone who has been there before. Also important is that past contestants often help with the organization of national Olympiads, allowing keeping the high standards. Thirdly, and this time I can comment on behalf of all Eastern European countries, we do participate in regional competitions (i.e. Baltic Olympiad in Informatics, Central European Olympiad in Informatics, etc.) and this is a valuable experience for the contestants.

All in all, these three reasons in my opinion definitely help Eastern European participants being successful in IOIs. ■

ICT2013: CREATE, CONNECT, GROW

*This material is submitted to the IT STAR Newsletter by the **Ministry of Transport and Communications of the Republic of Lithuania** with the kind assistance of the President of LIKS, IT STAR's Member Society from Lithuania.*

The leading forum for Europe's Research and Innovation – ICT2013 will be held in Vilnius, Lithuania from Wednesday 6th to Friday 8th November 2013. The title of the event is **ICT 2013: Create, Connect, Grow** reflecting the visions underlying the new open transformed ICT research and innovation.

The event will bring together Europe's best and brightest in ICT research and innovation constituency with businesses old and new, web start-ups and digital strategists to chart a path for Europe's ICT research policy, it will be a place to share people vision for the future with EU policy-makers, and see the latest advances in EU-funded ICT research. This event is organized by the European Commission, Ministry of Transport and Communications of the Republic of Lithuania and Ministry of Foreign Affairs of the Republic of Lithuania.

Background

The ICT 2013 event will be the first opportunity to learn the details of research funding for ICT-related projects under Horizon 2020, the EU's new research program for 2014-2020. The European Commission proposed an €80 billion package for research and innovation funding, as part of the drive to create sustainable growth and new jobs in Europe. Horizon 2020 will support the development of ICT in Science (in future and emerging technologies or e-Infrastructures); in industrial leadership (such as smart systems, robotics, photonics, etc.) and in societal challenges (such as eHealth, eGovernment and eSkills.)

ICT2013 includes:

Conference

The conference will feature top ICT professionals from industry, academia and research.

The Vice President of the European Commission, *Neelie Kroes* and the President of the Republic of Lithuania, *Dalia Grybauskaitė* will open the conference.

Speakers from across the ICT sector will address a range of issues from cloud computing, broadband, ICT infrastructures, ICT skills, cyber security, long term visions on the future and much more. Experts will present details on how to participate in the next EU's Research Programme - Horizon 2020.

Three thematic plenaries and three parts focusing on different themes of ICT research:

- ICT for Excellent science;
- ICT for Industrial Leadership;
- ICT for Societal challenges.

A special focus will be on Digital Futures - a journey into 2050's futures and policy challenges.

Exhibition

ICT 2013 in Vilnius is a unique opportunity for projects and companies to showcase their research, ICT products and innovative creations.

More than 270 proposals were submitted for the ICT 2013 exhibition. 185[1] projects are selected to showcase the latest findings in advanced research, technologies, new systems, innovation in services & business and ICT products just coming to market.

The exhibition will be grouped according to 5 themes:

- Digitally empowered citizens;
- Smart and sustainable cities for 2020+;
- Industry and business for tomorrow;
- Intelligent connecting intelligence;
- Culture, science and creativity.

Networking

The European Commission selected 153 participants for networking sessions.

The 40 minutes or 90 minutes networking sessions will provide participants with the opportunity:

- To share their own ideas on a particular policy, technology or research and innovation theme in the context of Horizon 2020;
- To be exposed to the views, perspectives and ideas of other participants and engage in a constructive dialogue with them;
- To meet delegates with common or similar topical interests with whom they could collaborate in the future.

1 https://ec.europa.eu/digital-agenda/sites/digital-agenda/files/ICT2013%20Exhibition%20-%20Proposals%20selected%20_0.pdf

Entrepreneurship and Investment forum

The forum will host coaching and pitching sessions with investors for startups and innovative SMEs. It will also allow networking between researchers, entrepreneurs, start-ups, innovative companies, students, investors and EU / EIB/ EIF officials.

Special opportunities for students & young researchers

ICT 2013 is an opportunity for students and young researchers to learn about ICT research opportunities and meet with researchers, entrepreneurs, strategy and policy makers.

Students and young researchers will have different roles at ICT 2013:

- Student ambassadors will report about ICT2013 online. They will meet high-level policy makers, Digital champions, Young advisors, top researchers, and successful entrepreneurs.
- Student and young researchers will present their own ICT projects. Finalists from the Student ICT research project competition are invited to Vilnius and the best projects are awarded. Also other projects from young innovators will be demonstrated in the event.
- Students and young researchers can visit the event on their own or ask for a guided tour for a group of students. The conference will have a specific area for young people where speakers and conference delegates come to meet and exchange ideas with the young. ■

Partner Publication

Mondo Digitale

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

MultiCulti

Samson parade

Dorothy Hayden

The village "Krakaudorf" in Styria, Austria celebrates Oswaldisonntag on the first Sunday of August. The festival in honor of St. Oswald begins with a procession.

The Samson figure parade has its roots in the 17th century. Many myths and legends are associated with it. Samson is as much as 6.5 m tall and weighs around 85 kg. In the inner Alpine region, there are twelve such figures. The sight of Samson, accompanied by the Guard and the town band, is truly impressive as he parades through the village streets. ■

Member Society News & Events

Bulgaria

110th Anniversary of John Vincent Atanasoff
4 October, Sofia

Italy

The 50th National Congress of AICA, organized in collaboration with the University of Salerno, will take place in Fisciano (SA) from September 18 to 20, 2013. Theme of the congress is "Digital Frontiers: From Digital Divide to Smart Society".
More info: www.aica2013.it

Lithuania

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

Organizers: Lithuanian Computer Society and Šiauliai University

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ICT 2013 - Create, Connect, Grow, in Vilnius
on 6-8 November, 2013
More than 4000 researchers, innovators, entrepreneurs, industry representatives, young people and politicians are expected in Vilnius. The event will focus on Horizon 2020 - the EU's Framework Programme for Research and Innovation for 2014-2020.
More information is provided at

https://ec.europa.eu/digital-agenda/node/39748

■

Forthcoming IT STAR Event

8th IT STAR Workshop on History of Computing
21 – 22 September 2014, Szeged, Hungary

■

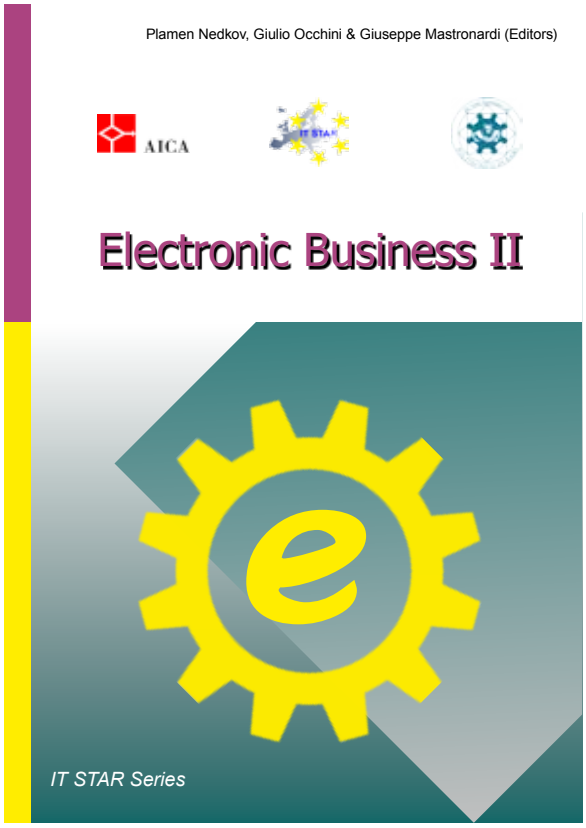
Other Events

The following information is posted on the site of the Grand Coalition for Digital Jobs - http://ec.europa.eu/digital-agenda/en/grand-coalition-digital-jobs-0:
The Grand Coalition for Digital Jobs acknowledges that the ICT skills gap cannot be fixed without collective action. Stakeholders will be encouraged to take action if they see that others are too. Hence we invite stakeholders to pledge what they will do to address the ICT skills gap. Stakeholders can start new actions, engage in existing schemes or collaborate with other stakeholders by adding new initiatives.

Example: company A pledges to make its existing online courses freely available, or available in several member states instead of one. The employment service of country B agrees to refer candidates to this platform.

Pledges should concern activities starting before the end of 2013.

Pledges can be entered via e-mail, using the pledge form, to CNECT-GRANDCOALITION@ec.europa.eu. ■



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CONTENTS

Has the Digital Divide been reversed?

Evidence from five EU countries

Smaranda Pantea

***Smaranda Pantea** is a scientific officer at the Institute for Prospective Technology Studies, European Commission. Her current research focuses on policy related economic analysis of consumers' behaviour online. She obtained a PhD in Economics from the University of Nottingham. Before joining IPTS, she taught at the University of Bristol and the University of Nottingham.*

A recently published JRC-IPTS working paper examines whether there is an income-based or education-based digital divide in the use of internet (in general and for specific purposes) in five EU countries. This research is motivated by the existing concern that people with low income and education levels may not able to use effectively the internet and therefore to benefit from the opportunities it facilitates. Also, contrary to what one would have expected, there is only scarce *empirical* evidence on this topic available in Europe.

This paper uses a dataset from Nielsen Clickstream, which covers the entire clickstream of some 20,000 internet users in France, Germany, Italy, Spain and United Kingdom during 2011. Such source of information is unique as it informs directly on the real activity of all the users of the sample, rather than relying on users' responses to a questionnaire survey.

Figure 1: Time spent on different websites and household income1 and Figure 2 Time spent on different websites and education levels2 show the average time spent online (overall and on specific type of websites[1]) by internet users with different income and education levels.

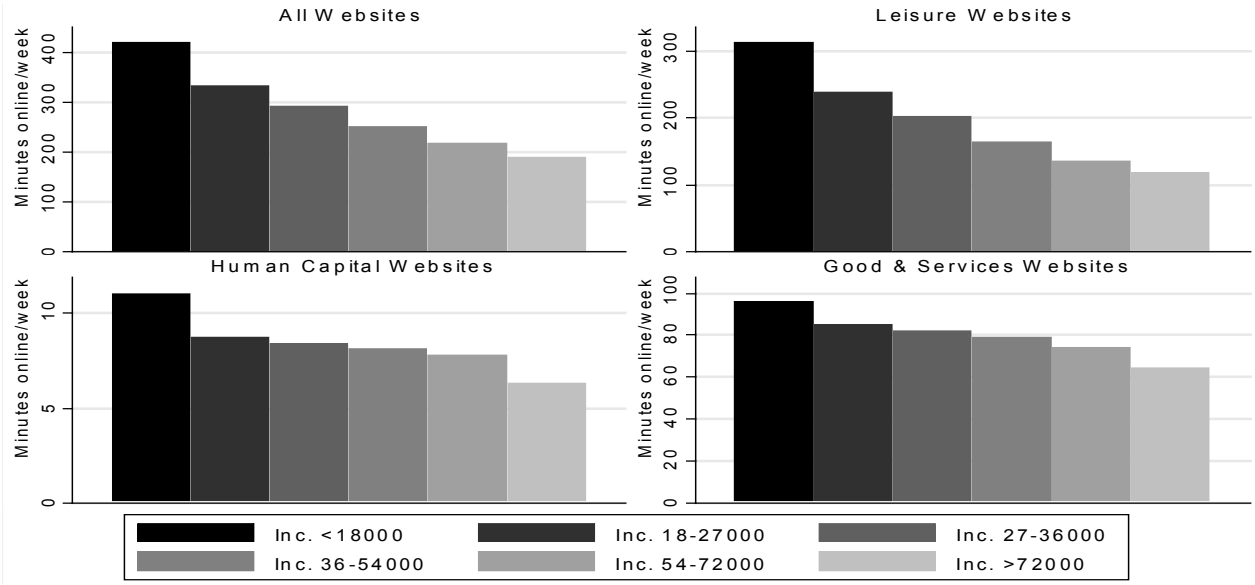
These figures suggest that:

- there is a negative relationship between income and time spent online. This appears to be true for all websites and this relationship is particularly strong for leisure websites.
- but there is a positive relationship between education level and time spent online on websites related to human capital (career, education and health websites), and to a lesser extent with time spent online on websites obtaining goods and services, which include eCommerce, government services and online banking.

The IPTS study confirms these relationships using a variety of econometric methods. The main finding is that, for those who have access to internet, the income-based digital divide in internet use has been reversed: low income internet users spend more time online than high income internet users on all types of websites considered. However, we find evidence that there may be an education-related digital divide for

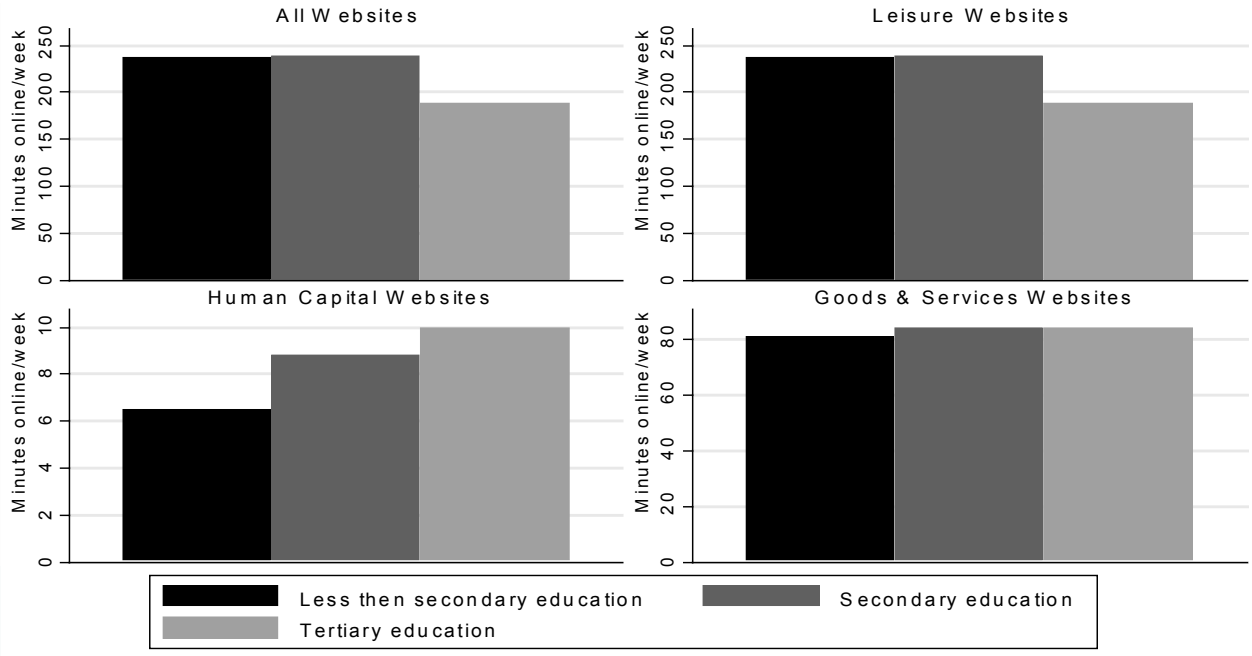
1 The classification into leisure, human capital and goods & services websites is based on the categories pre-defined by Nielsen: leisure (Entertainment, Family and Lifestyle, News & Information, Member Communities and Targeted Member Communities from Portals & Communities Internet Services), human capital (Education & Careers, Corporate Health, Nutrition and Safety) and goods & services (Home & Fashion, eCommerce, Travel, Government & Non-profit, Finance, Search Engines, General Portals & Search, Special Occasions, Automotive, Computers & Electronics).

Figure 1: Time spent on different websites and household income



Source: Author's calculations based on Nielsen Clickstream data

Figure 2 Time spent on different websites and education levels



Source: Author's calculations based on Nielsen Clickstream data

specific internet uses such as websites related to human capital and to obtaining goods and services. Our robustness checks show that these results hold true for a variety of subgroups: internet users in each of the five countries, internet users who are employed, unemployed and out of the labour force (unemployed, students, retired people and homemakers), internet users in one person households and internet users with different intensity of internet use.

Overall, the results suggest that for those with access to internet, there is a reversal in the income-based digital divide and that currently the main digital divide in internet use is driven by education and that it concerns not the internet in general, but specific uses such as those related to career, education and health and obtaining goods and services. These results highlight the importance of education for enabling internet users to participate in online activities generally regarded as valuable.

The dataset used includes only internet users in five high-income economies in Western Europe. In a future study, it would be interesting to study whether these findings apply to internet users in other countries, including internet users in transition economies in Central and Eastern Europe, and to examine how country characteristics affect digital divide in the use of internet.

The paper is available at http://ideas.repec.org/p/ipt/wpaper/2013-06.html. ■

Other IPTS publications

Public ICT R&D Funding in the European Union

Author: Juraj Stancík
EUR Number: 26019 EN
Publication date: 7/2013

Abstract

The report provides a detailed analysis of the state of public Information and Communication Technologies (ICT) Research and Development (R&D) expenditures in the European Union (EU). We also provide an interim assessment of the Digital Agenda Target about doubling public ICT R&D expenditures. Furthermore, besides focusing on the EU, we put these expenditures side by side with public ICT R&D expenditures in the EU's main counterpart, the United States of America (US).

Our analysis, covering the period 2004-2011, shows that EU ICT GBAORD has been steadily growing and in 2011 it reached € 6.9 billion which represented over 7% of the whole public R&D funding. Regarding the comparison with the US, we conclude that the US government devotes more ICT R&D funds than all EU Member States governments together but this gap has been closing down and over the period 2004-2010 it decreased by 50%.

The report is available at http://ipts.jrc.ec.europa.eu/publications/pub.cfm?id=6319 ■