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ESKILLS FOR GROWTH

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Contents

Commission measures progress on e-skills flagship initiative

A little over one year after the European Commission launched a partnership to tackle the lack of digital skills in Europe and hundreds of thousands of unfilled ICT-related vacancies, almost 50 organisations have become involved in the initiative and made pledges.

Photo: Tashatuvango /Shutterstock

In March 2013, the EU executive, spearheaded by the commissioner for the Digital Agenda, Neelie Kroes, launched the Grand Coalition for Digital Jobs and Training to facilitate collaboration among business and education providers, public and private actors to attract young people into ICT education, and to retrain unemployed people.

As of May 2014, 47 pledging organisations have joined, including private ICT companies such as Google, Hewlett Packard, Microsoft, Accenture and Samsung.

The pledges also come from universities, academies and local governments as well as national coalitions which have been launched in Latvia, Lithuania, Romania and Poland. EurActiv understands that more initiatives are currently underway in Bulgaria and Spain.

Competing pledges

The Commission has published the Pledge Tracker, a tool to follow the progress and the implementation of the project.

For example, it shows that the Department of Computer Science at the University of Sheffield is to establish a Computer Science Ambassador Scheme for 45 secondary school pupils, involving 60 hours guided experience of digital opportunities. The project, which will deliver short 'hands on' courses in core computer science for pupils aged 14-15, will run until 2015 and so far half of the target has been met.

Another pledge comes from Microsoft Europe which aims to increase the number of their high quality apprenticeships and internships by half over three years, from the current 9,000 to 13,500. So far the company has reached between 25-50% of its target, according to the pledge tracker.

Afke Schaart, senior director for EU Institutional Affairs at Microsoft, told EurActiv that in January the company committed to a further two pledges focused on fostering entrepreneurship and coding skills among European youth by setting up a coding cup across eight countries in

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a six-month-long competition, rewarding national finalists with a camp to enthuse teachers and students to engage with computer science in a fun way.

Schaart said that the Commission has rightly promoted digitalisation and its adoption by society as one of the most important sources for growth and employment. Therefore, an initiative such as the Grand Coalition is "crucial".

"We believe that the Grand Coalition has set a great example of how public-private partnerships can set the right incentives to boost digital skills and create opportunities for youth, while helping Europe to reap the benefits of the booming digital economy," Microsoft's senior director for EU institutional Affairs said.

John Higgins, director general of Digital Europe, the association for the digital technology industry in Europe, said that the initiative had already created competition between actors involved on pledges.

"It's good that a space has been created that allows people to highlight and showcase and show off what they are doing," Higgins told EurActiv.

Digital Europe is supporting the initiative and though it may not be the whole answer to the sector's employment problems, Higgins said, it is a good and important part which has already raised awareness of the issues.

Five policy areas

The EU executive has identified five ICT policy themes that need to be addressed by the member organisations and EU officials: training, new forms of education, mobility, certification and awareness raising.

The Commission wants to scale up current student placement programmes to give students the skills they need to fill the vacancies in the ICT sector. But the focus should also be on a long-term strategy for new forms of education, with the curriculum created through better co-operation between education providers and industry.

At European level, a higher degree of mobility for ICT practitioners should allow for a better match of demand and supply in EU countries. A cap of a European certification scheme should also identify the people who have the skills required to fill the skills gap.

Employers also have to be better at explaining that the opportunities in ICT are attractive, go beyond one sector and include jobs within for example the music, video and medical technology industry. This is particularly relevant to young people.

Keeping the momentum

A Commission spokesperson told EurActiv that the EU's executive is "definitely" viewing the Grand Coalition initiative as a success so far. Despite the upcoming European Parliament elections and the imminent end to its mandate in December, the Commission is trying to keep the momentum. The efforts will continue over the coming months to make the Coalition sustainable by enhancing the commitments for additional training, internships and jobs that can be "counted in hundreds of thousands instead of thousands".

EU officials are particularly focusing on seeking commitments from political leaders to pledge substantial support for the Coalition, and widening the membership to ICT-using companies. The Coalition plans to reach out to more of the companies' HR managers and the public, as well as private employment services.

Employers tackle 'unpredictable' skills mismatch in ICT sector

Although ICT experts disagree on how big the future skills gap in the sector will be, they are convinced that employers need to tackle the issue today through better training programmes, better start-up environments, and recruiting more women.

The past years' financial crisis is still reflected in the overall unemployment rate in the EU's 28 member states which at the start of the year was at around 10%. In Greece, however, the unemployment rate is closer to 30% and in Spain, one in four is unemployment. The figures for youth unemployment are even more devastating; 59.2% and 54.3%, in those two countries, respectively.

At the same time, digitisation created six million jobs globally in 2011, despite the economic downturn, as ICT is widely adopted in all corners of society. Experts believe a new wave of big data and smartphone applications has the highest potential in terms of job creation.

Filling the gaps

Moreover, the ICT sector will be in a desperate need for skilled workers, according to experts. But how big the skills gap will be is impossible to forecast in an ever-changing business environment. Last year, the European Commission said the EU would lack 700,000 workers in the ICT sector by 2015.

Since then the consultancy Empirica has predicted that about 900,000 jobs should remain unfilled by 2020, mostly in the higher-end segment of the market, a figure that may vary according to the pace of the recovery.

John Higgins, director general of DigitalEurope, an industry trade group, cautioned not to over-simplify forecasts, saying employment issues in the sector are

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much more sophisticated, with situations varying considerably across segments and countries. For example, the Commission expects the EU's app sector to employ 4.8 million people by 2018 and contribute €63 billion to the economy, with a positive impact on youth unemployment.

"The real issue is that there are going to be skill gaps. There are people out of work in Europe and we ought to be doing everything we can to address both of those problems; filling the gaps and getting people out of unemployment and into work," Higgins told EurActiv in an interview.

Afke Schaart, senior director for EU Institutional Affairs at Microsoft, said that the growing integration of ICT across various sectors, the lack of skilled professionals is of major concern to European competitiveness, not only in the ICT sector itself, but for the economy as a whole.

"We need more highly specialised computer engineers. The ICT sector currently lacks people with the right skills to accomplish a number of functions, from developing software, applications and security systems, to providing lower-end support services such as systems and network administration and user support," Schaart told EurActiv.

No image problem

Higgins said that employers face a big challenge in communicating what sort of exciting job opportunities the industry is providing, especially since fewer people study computer science.

While the industry still has an image problem of only employing the stereotypical tech geek, Higgins added that many young people are unaware that a computer programme degree can lead to jobs making music videos, computer games or developing medical technology.

However, many ICT-related educations are not providing the ICT sector workers that suit the industry needs, making them unemployable in the worst case. The solution could be better cooperation between employers and the academic sector when designing courses. A common certification for standards across countries and the industry would also result in more people getting employed, Higgins said.

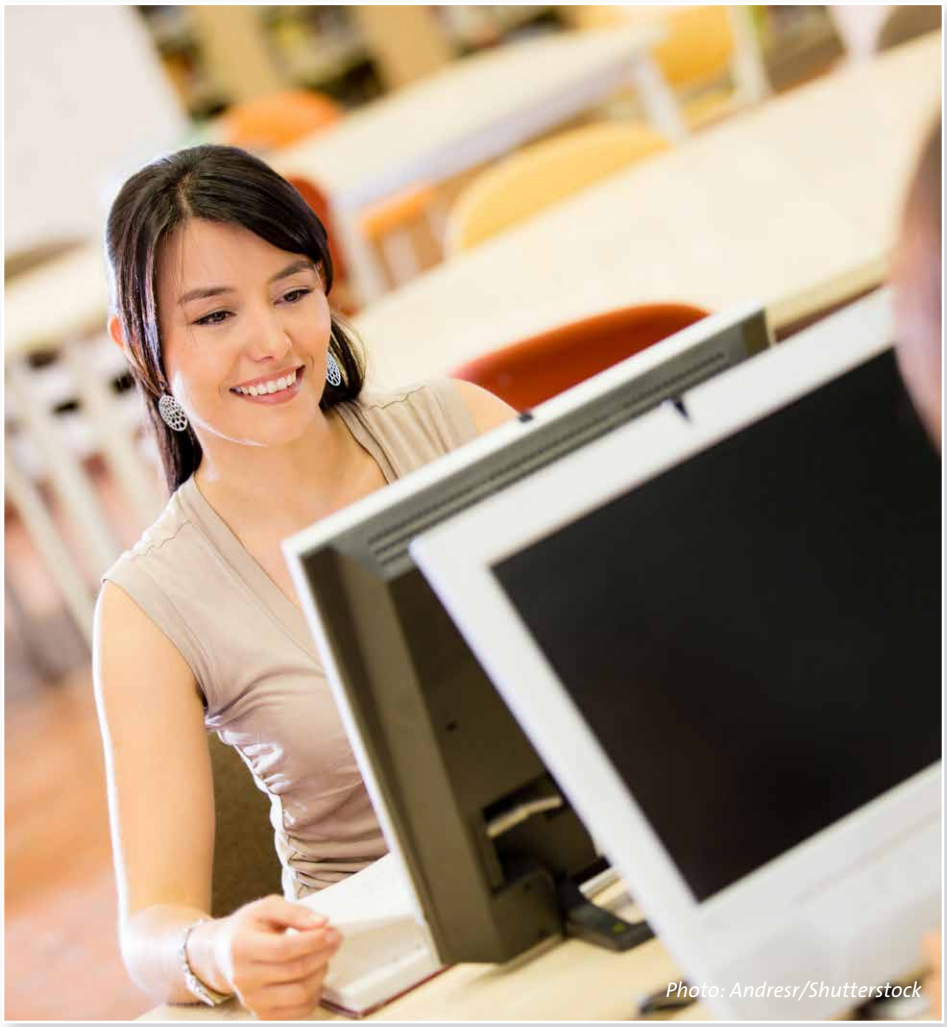
Photo: Andresr/Shutterstock

Supporting eco systems

At the same time as Europe is struggling to provide the right educations and ICT courses, many of those who fit the existing job market or can create their own start-ups, leave for the single US market which is still widely seen as more attractive.

Currently, there are ICT hubs in London and Berlin which can compete with the US, but in general, a better support ecosystem has to be promoted across the EU, experts claim.

"We need that whole support infrastructure, mentors, access to finance. It should be easier to set up a business, and there should be access to a network with people who are doing the same thing as you. There has to be a stronger network," Higgins said.

"Things may have to happen at a local level, but there may be things that could be done at a European level and we should also encourage things there through legislation or best practice," he added.

The networks also need to be expanded to especially include women in ICT, a group which is seen by the Commissioner for the Digital Agenda Neelie Kroes as crucial to solving the skills-gap problem.

Women are under-represented in ICT jobs across Europe, according to statistics from 2013 published by the Commission. Women make up less than 30% of the ICT workforce, and only 19% of ICT managers. Less than 10% of app developers are female and only 20% of computing graduates each year are women.

According to Microsfot's Schaart, the technology sector's gender gap is a serious loss for the European economy and for millions of customers who could benefit from ideas contributed by talented women.

EU's 'digital champions' make plea to next Commission

The European Union's "digital champions", an industry coalition, wrote an open letter Monday (5 May) to the lead candidates vying to become the next European Commission President.

The 19 leading industry figures, advisors to the Commission, called on the presidential candidates to "present a digital strategy fit for the 21st Century."

"There can be no convincing strategy for delivering growth and creating jobs without significantly accelerating Europe's performance on digital advancement," the letter read. The digital sector is expected to grow seven times faster than overall European Union gross domestic product in the coming years, it added.

Commission Vice-President Neelie Kroes is in charge of the executive's wide ranging digital agenda, which is held by supporters to be an integral part of Europe's economic recovery. Digital entrepreneurship is an important part of this effort.

The letter stated that tech entrepreneurship will power the economic recovery. The app economy workforce is predicted to triple its revenues from €17.5 billion to €63 billion from 2013 to 2018. That translates to 4.8 million jobs by 2018, according to the EU executive.

The strategy also aims to "digitise" existing traditional businesses. For example, an Italian furniture-maker can transform itself into a business creating custom-made furniture for online clients across Europe and the globe.

Irène Braam is Vice-President for Government Relations at Bertelsmann, a worldwide publishing group. She's seen a large switch to digital publication in recent years.

"Digitalisation is very clearly the main focus of the company," she said.

But European policymakers face considerable challenges in delivering a unified approach across the EU.

Challenges

The digital agenda already cuts across a number of different Commission directorate-generals, with responsibility for employment, industry and education.

Entrepreneurs met recently in Brussels at a conference, New Frontiers for European Entrepreneurs. Varying national rules on taxation and data protection ran the risk of stifling the growth these tech businesses can create, they said.

Mike Sikorski is CEO of Huggity, a company that takes giant photos at events like football matches. Fans are able to find themselves in the crowd at the match and share the pictures with their friends.

"Take data protection," he said, "there is one EU data commissioner but the legislation in countries is still different.

"When we go to Germany, the legislation is completely different. So why do you have the European one? Either you have it or you don't."

Mario Campolargo is the Director of Net Futures at the commission's DG Connect. He said, "Entrepreneurship in the EU is a very large challenge. That comes from education, taxation, innovation […] unlike the US, we are a multi-national integrated market that is not yet perfect.

"We have to have a look at the regulatory framework we have in place."

Taxation is an area which poses particular difficulties when it comes to harmonisation, as any EU tax law requires unanimity from all member states to become law. That has historically proved very difficult to achieve.

Campolargo added the EU was trying to identify the different elements that needed to be harmonised to promote entrepreneurship.

"We support entrepreneurship but we also have to create conditions of the wealth of all of society in general. We can't boil the whole ocean," he said.

Finance and training

Start-up companies can't begin without investment. Access to finance for business is another policy area that requires serious attention. European business has traditionally relied on bank financing but, since the financial crisis, banks are not lending as they used to.

"The only difference between us and the US," Sikorski said, "is about five times less money."

Barriers created through different languages was another reason cited for Europe's relative lack of success compared to the US.

There is also a knowledge gap between the number of people who could be employed by digital ventures and those who have the skills to actually do those jobs.

Campolargo said, "Even though we now have huge youth unemployment, there is not quite yet a perfect match between skills and workforce."

The commission yesterday launched an eSkills campaign under the umbrella of the EU's Grand Coalition for Digital Jobs (read more here). DG Employment is also running an initiative called New Skills for New Jobs to develop better matching-up of skills and labour market needs. The commission already runs a series of initiatives across different departments, aimed at promoting innovation and fostering a culture of European entrepreneurship.

Startup Europe introduced a commission one-stop website for entrepreneurs. Other forums include the Web Investors Forum, a crowdfunding network and Tech Allstars group run by DG Connect.

The conference was chosen to

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launch Watify, a new platform to address doubts entrepreneurs may be having about setting up their own company. An Erasmus exchange program for young entrepreneurs is also underway.

Since 2010 the European Institute of Technology has provided entrepreneurship training for more than 1,000 students and contributed to the creation of more than 100 start-ups.

In March, The European Commission created a new forum dedicated to enhancing digital entrepreneurship in Europe, and picked John Higgins, director general of trade association DigitalEurope as its president. The forum brings together large corporations, SMEs, trade unions, civil society, policy makers, academia, as well as digital entrepreneurs.

Member states

The Commission also needs to bring member states on board if it is to be successful.

Campolargo told delegates, "We are talking about the more significant instruments to work with member states and the council and define a playground where innovation can emerge."

Successful entrepreneurs have written the Startup Europe manifesto of 22 recommendations to encourage innovative new business.

That has already had an influence in countries such as Greece, Campolargo said. Business leaders have taken aspects of the manifesto to their government like a tax break for the first four months of business.

Digital entrepreneurship cuts across a huge amount of policy areas and national and European responsibilities. This leads to the risk of digital issues falling through the cracks, while politicians such as Kroes argue it should be hardwired into all policymaking.

Her digital champions have called for the next president of the commission to streamline the digital portfolio across all policy dossiers. They want the successful candidate to take personal responsibility for success in this "crucial area".

Shortly after the letter was published European People's Party candidate Jean-Claude Juncker said he would become the commission's first "digital president". The other leading candidates soon made similar comments.

A president taking personal responsibility would be an important advantage for those trying to create a new culture of European digital entrepreneurship. It's a driving force that will be needed to overcome the obstacles that exist at national and European level.

Photo: Digital Commissioner Neelie Kroes. European Parliament

Economist editor: Big data is a goldmine for companies

Computer algorithms are better at diagnosing severe cancer than humans, Kenneth Cukier told Euractiv, and big data can predict crimes before they are committed and earn businesses money.

Kenneth Cukier is data editor at The Economist and co-author with Viktor Mayer-Schönberger of Big Data: A Revolution That Will Transform How We Live Work and Think. Translated into 20 languages, the book was a New York Times Bestseller. He spoke to EurActiv's James Crisp about what big data can teach us.

What is big data?

Well there's no single definition, which is probably a good thing, because to define it is to constrain it. Broadly speaking, though mankind has more information now than ever, and these huge amounts of data can teach us things that are extremely interesting, in fact things we would never have been able to find out with smaller amounts. That's done by placing different algorithms onto these large amounts of data.

Let me give you an example. Google handles more than a billion searches in the United States every day and stores them all. It took the 50 million most commonly searched terms between 2003 and 2008 and compared them against historical influenza data from the Centers for Disease Control and Prevention. The idea was to see whether certain searches made in a certain area coincided with flu outbreaks. The CDC tracks patient visits to hospitals and clinics, but the information suffers from a reporting lag of a week or two, an eternity in the case of a pandemic. Google's system could work in near-real time.

Google ran all the terms through an algorithm – a way of making a calculation - that ranked the terms by how well they correlated with flu outbreaks. Then, the system tried combining the terms. With a billion searches a day it would have been impossible for a person to guess which ones might work best.

After running half a billion calculations against their data, Google identified 45 terms that strongly coincided with CDC's data on flu outbreaks.

The Google trends method has been criticised, because its been wrong in some instances. However that is not the whole story. It's only been wrong like a weather forecast is wrong, when it is sunny when it is meant to be 90% certain of rain. If one takes the research and blends it with the CDC, it improves the focus of both, which shows it is still a valuable resource.

Another good example is Lufthansa. The autopilot system on their airplanes collects data. Some of the data it collects has actually improved the accuracy of German weather forecasting by 7%, which is a considerable improvement.

Lufthansa now sells that data to a meteorological company, which is a great example of how big data can be commodified.

So big data can be sold?

Absolutely. In fact big data is a potential gold mine. There are a few forward-thinking companies who have realised they can sell the data they collect as they go about their everyday work. It will be a revenue generator. In the future I expect to see companies employing data or chief information officers, who will be responsible for this.

It's not just companies. In the future, each of us will be able to sell our data. People will upload data to online data exchanges, neutral platforms which can bring the data to the marketplace for a fair price. And there will be a market for this data, as people realise the enormous potential of big data.

Will there be an impact on how people work?

There will be a significant impact. This will be a revolution in the workplace. Both white colour and blue collar jobs will be replaced by big data, but that destruction will also create jobs.

It's a demonstrable fact that a computer algorithm is better at diagnosing severe cancer than a human. But in in a world where data shape decisions more and more, what purpose will remain for people, or for intuition, or for going against the facts?

Personally, I believe there will always remain a need for the human touch. But it is hard to predict the impact of the big data revolution.

What can policymakers do to ensure that the power of big data can be exploited?

The issue of data privacy and protection has been deservedly getting a lot of attention recently. What needs to happen is a change in law to reflect the reality of this type of statistical collection and ensure it is aligned with our values.

Current laws are broadly based on the idea of notice and consent. Essentially, this means that if you want to use someone's data, you have to tell them what you are collecting and why.

That isn't really feasible with big data.

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For a start, it is impossible to know what purpose the data will be used for.

Small data is like a waltz. There's a clear tempo with known steps. Big data is like a mosh pit or jazz-improv. No one knows what's coming next.

So regulators need to support this new reality, not least because of the huge potential of big data.

We need to move from a notice and consent to a system of consent which allows a person to give consent, for that data to be used and reused and reused without knowing what the specific purpose is.

What are the dangers of big data?

Of course there are risks, and there will be challenging questions for us to answer as we enter this new reality, a time when the "information society" truly fulfills its potential.

Big data could be used to predict which people are most likely to commit murder. That throws up interesting questions.

Should the person be arrested because they are likely to kill? Or do the authorities have to wait until he or she actually does it? How is that fair on the victim?

There are dangers. There is an argument to suggest that the 2008 Financial Crisis was in a way a crisis of big data. Decisions were made on economic models that turned out to be false.

But despite that I am convinced big data will change the world for the better.

Boosting e-skills in European higher education requires political will at national level

With 25% of adults in the European Union lacking the necessary digital skills to effectively use information and communication technologies, according to a report by the Organisation for Economic Cooperation and Development (OECD) published in autumn 2013, the European Commission is facing various challenges in order to bridge the competitive gap with the rest of the world.

On top of the differences with third countries, broad disparities are found between EU member states themselves, the study showed with countries like Spain, Italy or Poland where almost one adult in five has no computer experience.

Age disparities were also detected with high school pupils having sometimes better skills than higher education graduates.

From the lack of access to digital equipment in schools and higher education institutions to the lack of access to open education resources and effective e-skills, the European Commission has identified a number of priorities for the coming years through its 'Opening up Education' strategy.

Digital divide

A study by the Commission on ICT in education also showed dramatic results in EU countries: between 50% and 80% of students never use digital textbooks or exercise softwares while 70% of teachers are asking for training to improve their digital skills. And while more than 90% of pupils are likely to have internet access at school, the number drops to 45% in Croatia and Greece.

In an attempt to reduce the digital divide looming over Europe, commissioners Neelie Kroes in charge of the digital agenda and Androulla Vassiliou, responsible for education, launched the joint long-term initiative 'Opening up Educaiton' in September last year.

"The aim of the strategy is to encourage member states to invest time and money in training students and teachers but also the use of free to use education resources," Dennis Abbott, spokesperson for commissioner Vassiliou explains.

E-skills in higher education will have to become a priority if Europe is to fight against unemployment and remain competitive at a global level, experts warn.

As researchers from the Belgian university KUL stressed in a study recently, high-tech education is increasingly becoming key in every single aspect of society, meaning that "policy-makers will have tp focus on providing the population with the required high-tech education and not just in STEM occupations," which also means that life-long learning will become indispensable.

"Retraining will have to happen several times in the course of a career," one of the authors, Maarten Goos, said.

When launching the "Opening op Education" strategy, Vassiliou noted: "It's not enough to understand how to use an app or program; we need youngsters who can create their own programs. Opening up Education is about opening minds to new learning methods so that our people are more employable, creative, innovative and entrepreneurial."

But because disparities are so wide

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between member states and the European Commission does not have much of a say in educational policies, which are entirely in the hands of national government, the only way to push them to do more, Vassiliou's spokesman said, is the good old "naming and shaming" tool, by publishing surveys and studies in which the worst performers would feel pushed into a race to the top.

Open educational resources

Another feature of the new European digital strategy focuses on making education content freely available, "while ensuring authors' rights are respected", the Commission spokesman assured.

When the idea was launched, the Commission who is tabling on a significant rise of studnets in higher education in the next decade, the need for online learning possibilities such as the ' Massive Open Online Courses' (MOOCs) is seen as a priority, to "allow individuals to access education anywhere, anytime and through any device. But many universities are not ready for this change," Commissioner Vassiliou's statement read.

For the Commissioner, skills are as important as equal access to educational content, Abbott added.

"She is not advocating that everything should be free but it should be made free to the final user and the authors properly remunerated."

But open educational resources are not just a recommendation from the Commission, they will also be treated as criteria to get EU funding for education digitalisation projects, Abbott explained.

"It's a deal, you want the money, you have to have open educational resources."

Funding

The Commission is putting a number of funds at the disposal of EU member states to help them reach the aforementioned objectives on training, learning and equipping education institutions, students and teachers, such as Erasmus+, Horizon 2020 and the European structural funds.

"All educational materials supported by Erasmus+ will be freely available to the public under open licences," the rules state.

"The EU can provide a lot of funding in training, the key issue is telling member states they have to take it seriously to remain competitive. Higher education is a super-competitive area worldwide, it's about attracting the best students, the best teachers," the spokesman said.

Member states will have to apply for the money available from all of these sources, having in mind that Erasmus+ is one of the rare programmes which got a 40% increase in an overall smaller European budget, Abbott reminds.

Commenting on the fact that the Commission will not be able to do much more on advancing the state of digitalisation of higher education than this, let alone any kind of harmonisation, the spokesperson explains that such strategy is "the result of consultations with member states," and results can already be seen in certain countries.

"'Opening Up Slovenia' is a model at EU level," Abbott says.

The project was launched earlier in April in the capital Ljubljana with the aim of "create-ing an open educational system in parallel to the formal one, and to exploit all aspects of open education."

"For example, it will encourage rigorous, transparent and replicable testing of open learning environments, open education theories, new business models, open education computational tools, and new and emerging technologies in the educational technologies market-place," the Commission said at the launch of the event.

The platform involves all Slovenian universities and other educational institutions. In other words, the project is exactly what the Commission want to see in other member states in terms of priorities.

Photo: Mihai Simonia/Fotalia.com

EU attempts to bridge e-skills gap between north and south

The EU is betting on rapidly developing e-skills among the workforce in order to adjust it to the digital economy. Every year, approximately 100,000 new vacancies are created in an attempt to fill the gap between the 'e-skilled south' and 'e-demanding north' of Europe.

Yannis Sirros, head of the Federation of Hellenic ICT Enterprises (SEPE) told EurActiv Greece in an interview that Europe will need 900,000 skilled ICT workers by 2020. To address the issue, the SEPE together with Digital Europe on Tuesday (6 May) hosted the conference "E-Skills for Jobs 2014 Grand Event: Mobilising to Support Job Creation and Upskilling of the Workforce" in Athens, Greece.

Sirros said that due to the crisis, the European south has decreased its speed in developing technology comparing to Northern Europe.

"Therefore, the jobs that are being created by Northern Europe can, via outsourcing services and service-level agreement (SLA), create collaboration with Southern Europe, in order to ensure a competitive Europe with innovative services and products," the SEPE head said, adding that the e-skills conference tries to address this development.

According to a recent report published by the World Economic Forum (November 2013), Greece ranked seven out of 148 countries when it comes to in e-skills of its scientists and engineers.

"Greek professionals in the ICT sector are in the top 10 of engineers on a global level," Sirros stressed.

Athens signs National Coalition for Digital Economy

Greece is also signing the National Coalition for the Digital Economy, which is part of the Grand Coalition for Digital Jobs and Training, launched by the Commissioner for the Digital Agenda, Neelie Kroes, in March 2013, Sirros stated.

"The National Coalition for Digital Economy is our commitment. We mean it when we say that the digital literacy is on the top of our agenda," said Greece's minister for Development, Competitiveness, Infrastructure, Transport and Networks, Kostis Chatzidakis.

Greek minister for Education Konstantinos Arvanitopoulos, told EurActiv Greece that the EU is not efficiently prepared for the challenges of the digital economy, despite the fact that in the future, "90% of jobs will require at least some basic digital skills."

"In Europe, 25% of adults do not know how to use basic digital technology, whereas more than 50% of students do not make any use of digital textbooks and other digital educational resources," the minister continued.

Arvanitopoulos underlined though that the Greek education system is getting prepared for the new digital era.

"We are developing a common education platform and digital content in the primary and secondary education, by using interactive means in the classrooms and ensuring high-speed internet in all schools," he said.

Regarding higher education, he stressed, students will benefit from the creation of e-courses and e-textbooks in an effort to make them familiar with new tech trends.

"Need is the mother of innovation"

Chatzidakis noted that the revenues from "big data" are expected to amount to €16 billion on a global level, creating additional 4.4 million jobs over the next two years.

"In addition, the creation of a digital single market in the EU could add up to €800 billion in the European economy. The data mentioned is catalytic and shows us that this is the direction we need to move in," he continued.

The Greek minister also quoted Plato, saying that "need is the mother of innovation", referring to the crisis that helped his country and the EU to orient towards innovative solutions and the digital agenda.

Regarding e-skills, he mentioned that it is an issue that is a concern for everyone and not only governments.

"E-skills are an issue that concerns everybody, research centres, universities, private companies, and citizens [...] not only the governments," he concluded.

Sarantis Michalopoulos and Yannis Roubatis