



# Европейската инициатива за масови отворени онлайн курсове и предизвикателствата за нейното осъществяване в България

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Selwyn, Bulfin, & Pangrazio (2015) state that “MOOCs are courses available to masses of online learners for little or no cost”. The boost of MOOCs initiatives in Europe, and especially in Bulgaria, is connected with several crucial issues - issue of awarding credits, the need of relevant infrastructure and appropriate business model, and last but not least issue of appropriate adaptation to the local cultural context, specific educational needs, gaps and necessities. MOOC paradigm contributes the companies, HEIs, governments and entrepreneurs to change the face of teaching and learning, the structures set up to provide these services, and the vision for lifelong learning. The number of the Massive Open Online Courses (MOOCs) is increasing exponentially across the globe.

Harvard University and the Massachusetts Institute of Technology which jointly founded the leading MOOC provider edX conducted a study called HarvardX and MITx: Two Years of Open Online Courses Fall 2012-Summer 2014 (Ho et. Al 2014). The study covers 68 courses with 1.7 million participants and 10 million participant hours and for the moment is one of the largest studies done on MOOCs. The survey report is documented that the development of MOOCs had had significant impact on regular courses in Harvard and MIT. It is said that

83% of the regular students at MIT have used the MOOC platform for substantial part of their coursework in at least one course unit. This fact shows that a proper integration of MOOCs in higher education could contribute for more effective use of teaching time and a flexible learning offer to traditional students and lifelong learners.

## MOOCs - International context

The appearance of disruptive innovation like MOOCs has the potential to transform higher education and create new competition and centres of excellence among universities worldwide (European Commission, Directorate-General for Education and Culture 2014, page 12). Concerning the European MOOCs perspective even though the MOOCs initiatives exist in Europe, the biggest shifts are taking place in other regions of the world mainly the USA and some Asia countries. For example, the three main MOOC providers in the USA offer hundreds courses, with several million users worldwide, the European universities providing MOOCs are far from these levels of achievements.

Currently MOOCs get so much attention and cause controversial discussions which gives hope that this might inspire a much broader debate on learning and teaching in higher education. In this context the two most crucial issues at stake are currently the question of the issue of awarding credits and the business model. In his paper “Massive Open Online Courses” Gaebel cites Philip Butler, senior e-learning adviser at the University of London Computer Centre, who has expressed his hope that European MOOCs initiatives “did not become a marketing exercise for more prestigious universities” which “finding themselves in a competitive market for attracting students have seen Moocs as a commercial opportunity” ...and have focused on the business goals rather than on the pedagogical aims and objectives. If this happened those universities “who have strong, established brands will hold the advantage.” (Gaebel 2013, p. 10)

## Current state of the European MOOCs initiatives

Available details concerning the current state of the European MOOCs initiatives are provided by the European MOOCs scoreboard integrated in the Open Education Europa /OEE/ portal. The aim of



the Open Education Scoreboard is to highlight the huge potential that European institutions have in the world of MOOCs and to help visualize this potential by compiling the existing European-provided MOOCs available on different open websites.

All of the MOOCs accounted for in the Scoreboard are the registered in the MOOC aggregator on the OEE website (i.e. MOOCs which are not registered are not taken into account even if provided by the European institutions). Taking into account the above could be concluded that there are

some important aspects for improvement but for the moment this is the most comprehensive source of information about the European MOOCs initiatives. The figure below, representing the data provided by European MOOCs scoreboard about the EU and Non-EU initiatives up to the middle of 2015, shows that the MOOCs are still of high and seemingly growing interest at European universities. Nevertheless the European initiatives in the MOOCs development are lagging behind the Non-EU achievements in this domain.



Figure 1 Non-EU MOOCs Initiatives versus EU MOOCs Initiatives

During the last years the efforts of the European Higher Educational Institutions regarding the development of massive open online courses started multiplying rapidly and the average growth has been steady.

The table on Figure 2 presents the most recent available data about the distribution of the European MOOCs by countries and by subject domains. The current state of the MOOCs distribution in Europa countries shows that the performance of the group of Western European countries is strong.

Spain, United Kingdom, France, Germany, and Netherland, all appear in the top 5 of the European MOOCs providers. The Nordic countries (Denmark, Finland, Norway and Sweden) have also stable performance and close the group in the sub-region. In Southern Europe, Spain is the absolute

leader in MOOCs development. Italy and Portugal improve their performance either. The available data clearly illustrate the lack of participation from The Eastern European countries lagging behind the European initiatives in the MOOCs development.

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**DISTRIBUTION OF MOOCs PER COUNTRY and SUBJECT**

Country	Subject								Grand Total
	Applied sciences	Arts	Business	Humanities	Mathematics and statistics	Natural sciences	Science and technology	Social sciences	
NHU							5		5
Austria			3	2	1	4	5	4	19
Belgium	5		3	4	1	1	6	19	59
Bulgaria							1		1
Cyprus			1						1
Denmark	4	5	6	12		5		4	36
Estonia				2	1	2		1	6
Finland					1		5		6
France	41	2	46	21	30	21	80	26	317
France/Germ.	1								1
Germany	43	3	26	16	8	20	77	25	229
International	1	1	3	3	1	3	14	2	28
Ireland	2		1	3				1	7
Italy	4	14	6	3	5	15	4	24	75
Lithuania			1				2		3
Netherlands	17		9	21	4	19	6	13	90
Norway	1		1					1	3
Outside Eur.							1		1
Plan European	1			1				2	4
Poland							1		1
Portugal				3		3	7	4	17
Russia	1		44	3	4	5	9	2	68
Spain	61	21	89	71	82	29	127	56	516
Sweden	4		3	1	1	2	2	1	14
Switzerland	15	2	8	3	9	8	48	7	90
Turkey			5		2				7
United Kingd.	82	18	43	103	12	52	58	113	481
Grand Total	263	47	245	274	154	188	455	355	2039

Figure 2 Distribution of EU MOOCs per Country and per Subject

The subject domains most well provided with European MOOCs could also be distinguished as follows: Science and technology, Social Sciences, Applied Sciences and Humanities. As is visible from the total results, the Business domain is very close to the top 5 group of best-developed domains but obviously more efforts have to be concentrated in this direction.

The first Bulgarian MOOC has been registered in the Open Education Europa portal in the second half of the 2015 (which is more than 3 years after the majority of the other EU countries).

**MOOCs – institutional recognition practice**

Despite the undisputable benefits of MOOCs quite obvious from their first appearance back in 2008 and the exponentially raised number of the unique registered learners (Dhawal 2014), on the other hand, they have also received extensive critique. Course providers have made clear from the beginning that they would not award credits for MOOCs. This is in a contradiction with the spirit of recognition of learning, regardless where and how it takes place. Daniel (2012) criticises that the award of credits is thus not determined. Among the members of the European University Association there is general consensus that the MOOCs should be closely monitored, but also that beyond the present excitement, it would be important to analyse innovative learning provision trends, and also consider implications for institutional recognition practice and definition of degrees (Gaebel et. al. 2014).

If we consider MOOC as a form of open education offered free through online platforms and taking into account the initial philosophy of MOOCs to open up quality higher education to a wider audience. It is very important to see how this paradigm is integrated in the HE systems in Europe and what is the current state regarding the recognition of the knowledge and skills gained through MOOCs. The establishment of systems for the recognition of all forms of prior learning has become one of the central themes not only in the higher education sector, but also in all other sectors of education and training. Along with the recognition of prior formal learning particular emphasis is being put on the need to enhance the recognition of the knowledge and skills gained through non-formal and informal learning (European Commission/EACEA/Eurydice, 2015). From the learner's perspective, the recognition of prior learning is most commonly undertaken with one of the following objectives:

- to gain admission to a higher education programme or
- to progress in higher education studies.

As far as alternative access to higher education is concerned, the overall picture across the European Higher Education Area /EHEA/ shows that in 22 higher education systems (most of them in Western Europe) at least one such alternative route to higher education exists, while in the remaining 25 systems for which data is available the access to higher education still depends on the possession of an upper secondary school leaving certificate (general or vocational).



Figure 3 Recognition of non-formal and informal education (European Commission/EACEA/Eurydice, 2015)

The figure above clearly shows that in more than half of the systems (28), including Bulgaria, it is still not possible for candidates to be admitted to higher education on the basis of the recognition of prior non-formal and informal learning. In those countries, all higher education candidates must hold a higher education entry qualification (or pass an entry exam).

In the report of EUA about the results of the mapping survey conducted in 2014 more than 240 HEIs from 38 European systems (EU and wider Europe) have been asked whether they would award credits for their own MOOCs. 12 of the 31 institutions said they award credits to all students (2), only to their own students (4), on a case-by case basis (1) or by means of a competence-based assessment (5). Of the 19 other institutions that do not award credits, 13 award completion certificates (although one notes that the certificate is awarded by Coursera). One institution also has plans to award credits (Gaebel et.al. 2014, p.68).

According to the survey of Bologna Follow-up Group cited in the annual report 2015 of Eurydice titled “The European Higher Education Area in 2015: Bologna Process Implementation Report” (European Commission/EACEA/Eurydice, 2015, page 125) in the majority of cases (20), recognition of non-formal and informal learning can only lead to a limited number of credits. In 19 systems, mainly in the South-East, prior non-formal and informal learning cannot be taken into account/ accredited towards fulfilment of a HE study program. In 2 of the 19 countries (Austria and Iceland), some higher

education institutions or programs are open to admission on the basis of recognition of prior learning. In the remaining 17 systems, recognition of prior non-formal (MOOC learning including) and informal learning is not used at all, neither for admission to nor for progression in higher education. This result outlines the validation of MOOC learning as a very important issue.

#### **Networked Readiness Index – the capacity of EU countries to leverage ICT for increased competitiveness**

According to the Annual report for 2015 issued by Visiongain (MOOC Market 2015-2020) the MOOC's market is exhibiting great potential to grow exponentially over the next few years. MOOCs appears as a very advantageous and commercially interesting solution for many companies looking to implement effective training programs for employees, MOOCs have the potential to revolutionize the corporate learning industry. The growing number of connected devices, high enrolment rates in MOOCs, the increasing acceptance of MOOCs based training in enterprises around the globe and the increasing demand for low cost, high quality and globalised education could be considered as main reasons for the substantial uptake of the technology. In this context, the assurance of an appropriate MOOCs infrastructure, efficient business model and validation process are among the aspects which mirror the capacity of the enterprises to leverage ICT for increase of their competitiveness.



The World Economic Forum measures the capacity of countries to leverage ICTs for increased competitiveness and well-being through the complex indicator Networked Readiness Index (NRI). The annual report (NRI 2015) presents the results of ranking which covers 143 countries. In the NRI annual report is put special accent on the use of ICTs for inclusive growth especially via e-entrepreneurship on the open Internet. Authors outline the main reasons that determine the education as a critical component of innovative startups. From one side, it provides a general background in fields of interest, and from the other side it facilitates the detection of the current market gaps and identification the specific knowledge required to help fill the gaps. In this context MOOCs are considered as a way to lower the cost and increase the reach of educational resources, thereby removing significant roadblocks to education. The three crucial challenges that must be addressed if we are to maximize the potential of ICTs in education are considered:

- Reforming telecommunications, which must include a drive to ensure that teachers / lecturers and students, accessing ICT support, have stable and high-speed network connectivity, however remote their locations may be;
- Delivering quality digital educational content, which must provide in-depth focus on the quality and availability in multiple languages, especially targeted at educators;
- Embracing collaboration, which must take advantage of networked collaboration tools and social networking in order to develop mechanisms that bring educators of teachers together to pool expertise and share content.

The success of the MOOCs is based on the fundamental assumption that the lifeline of technology is readily available. Currently many developing countries face severe infrastructure issues connected with the supply of electricity and / or the requisite bandwidth. In Europe the situation is better but in the Eastern European countries (especially their rural regions) some of these infrastructure problems still exist though not with the same sharpness as in the developing countries.

In the NRI annual report Michael Kende from the Internet Society emphasizes that the activity of innovation becomes more inclusive because more people—across countries and income levels, education and gender—are able to create new

enterprises. By this reason the results of innovation becoming more inclusive, because many new entrepreneurs focus their efforts on filling market gaps close to home. Kende argues that policymakers can focus on ensuring of the appropriate infrastructure in order to foster this new source of startups.

The group performance of Western European countries is also strong. The Netherlands (4th), Switzerland (6th), the United Kingdom (8th), and Luxembourg (9th) all appear in the top 10. Ireland (25th) has been stable since 2012, and France (26th) - which has lost three places since 2012 - closes the group in the sub-region. The next figure represents the ranking results about the top 10 European countries harnessing information technology.

In Southern Europe, Portugal (28th, up five), Italy (55th, up three), and Greece (66th, up eight) improve significantly from last year on the back of major improvements in government usage, whereas Malta (29th), Spain (34th), and Cyprus (36th, up one) remain quite stable. These largely positive trends contribute to narrowing Southern Europe's gap with the rest of the region, which had been widening since 2012. The Eastern European countries that have joined the European Union (EU) since 2004: Slovenia (37th, down one), the Czech Republic (43rd, down one), Hungary (53rd, down six), Croatia (54th, down eight), and the Slovak Republic (59th, no change) are either stable or losing ground. Meanwhile Poland has entered the top 50 (with 4 places up), and Romania (with 12 positions up) has reached 63rd place, ahead of Bulgaria (73rd). The next figure represents the top 10 countries harnessing information technology ranking only for Europe.

Europe: Top 10 countries harnessing information technology	
Networked Readiness Index 2015	Global rank*
Finland	2
Sweden	3
Netherlands	4
Norway	5
Switzerland	6
United Kingdom	8
Luxembourg	9
Germany	13
Denmark	15
Iceland	19

Source: World Economic Forum, 2015.  
\*2015 rank out of 143 economies.  
\*\*The index measures how economies use the opportunities offered by information and communications technologies for increased competitiveness, and well-being.

Figure 4 Top 10 countries harnessing information technology (European dimension)



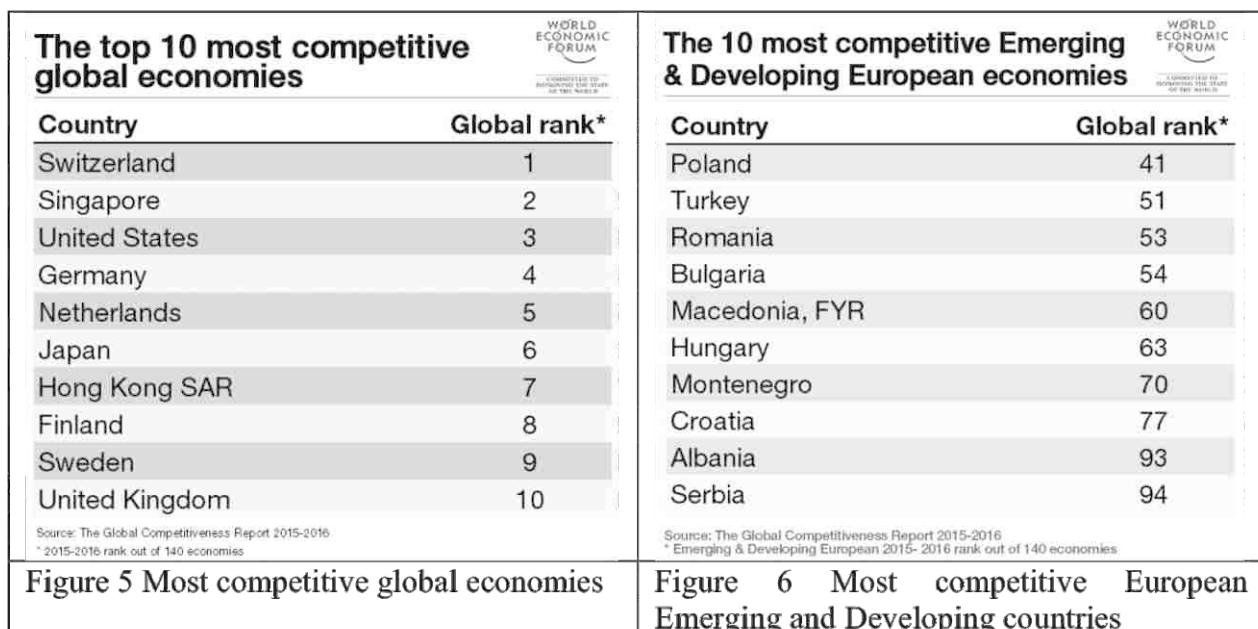
As a conclusion, the performance of countries largely mirrors their position on the development ladder: a higher level of income is typically associated with a higher NRI score.

The World Economic Forum defines competitiveness “as the set of institutions, policies, and factors that determine the level of productivity of a country”. The Global Competitiveness Report /GCR/ (GCR 2015) published by the World Economic Forum. In this Report more than 140 countries are ranked on the base of the Global Competitiveness Index /GCI/. Many determinants drive productivity and competitiveness. Among the classical and neoclassical ones, more recently the focus is extended also to other mechanisms such as education and training, technological progress, macroeconomic stability, good governance, firm sophistication, and market efficiency, among others. Through a systematic assessment of the drivers of productivity, the Report identifies priority areas for structural reforms and plays a role of a guide and monitoring tool all stakeholders to steer their actions towards enhanced competitiveness. It is not possible to maintain high level of competitiveness without well-functioning public and private institutions, appropriate infrastructure, stable

macroeconomic framework and good health and education and the last ranking results show this in an ultimate way. The figure 5 shows the top ten most competitive economies in the world. More than 50% of them are European countries – Nordic countries and countries from Western Europe. The figure 6 shows the ten most competitive Emerging and Developing European countries.

The overview of the GCI shows that the most advanced European economies have recovered to their pre-crisis level of competitiveness. As in previous years, they fill all the top positions in the rankings. Yet some disparity remains, with some Eastern and Southern European countries occupying the lowest rankings in this group: most notable is Greece, which at 81st place is the least competitive economy of this group.

The long period of economic instability (almost a decade) and a double-dip recession have eroded trust in public institutions in most advanced economies, especially in Southern Europe. At the same time, the quality of infrastructure there is improved thanks to heavy investments and increased market competition. The firms from this part of the Eurozone show signs of convergence with their northern counterparts.





The results from GCR demonstrate a divide in Europe between reformist countries and the other countries. In France, Ireland, Italy, Portugal, and Spain, is observed significant improvement in the areas of market competition and labor market efficiency thanks to the reforms these countries have been implementing. By contrast, Cyprus and Greece have failed to improve in these pillars. (GCI 2015)

It is undisputable that the technology is increasingly essential for firms' competitiveness and prosperity. The technological adoption category assesses the agility with which an economy adopts existing technologies. Technology is understood as a concept covering not only products but also processes and organization methods, all linked by the common factor of enhancing efficiency in production. In addition, technology adoption contributes to an innovation ecosystem.

There are two sources of technology adoption: local firms can invest to bring in technology from abroad or from other sectors or companies, and a country can exploit spillovers from the foreign direct investment of international companies.

Consequently, the wider is the gap between foreign technology and the technology available in the country - and the longer is the gap between invention and its adoption - the more difficult is the new technologies to be imported. In this context the educational technologies are not an exception.

The EU spends about 6% of its GDP (2011) on education, almost all financed by the public sector. Current expenditure accounts for 90% of this, mostly for teaching and the operation of facilities. At about 9% is invested in facilities such as equipment and schools buildings. By comparison, US education spending is 7.3% of GDP with a 30% private sector contribution, in particular for higher education, which is used especially for provision of incentives for greater business orientation of higher education and research. Expenditure per pupil in the US is 30% and 40% higher for pre-primary and school education and double for tertiary education. (EIB 2015, p. 30)

Indicators assessed by the World Economic Forum suggest that the EU performs worse than the US, Japan or South Korea across a range of innovation environment dimensions. The largest gaps with respect to the US are in company spending on research and development and

university-industry collaboration. (European Investment Bank 2016).

### Performance of EU Innovation Systems

The European Innovation Scoreboards (EIS 2015) provide a comparative assessment of research and innovation performance in Europe. Assessment of the research and innovation performance of the EU Member States and the relative strengths and weaknesses of their research and innovation systems helps Member States assess areas in which they need to concentrate their efforts in order to boost their innovation performance. The measurement framework distinguishes between 3 main types of indicators (Enables, Firm activities, Outcomes) and 8 innovation dimensions, capturing in total 25 different indicators.

- Enables – put the focus on innovation dimensions: Human resources; Open, excellent and attractive research systems; Finance and support.

- Firm activities - capture the innovation efforts at the level of the firm, grouped in 3 innovation dimensions: Firm investments, Linkages & entrepreneurship; Intellectual assets.

- Outputs - cover the effects of firms' innovation activities in 2 innovation dimensions: Innovators; Economic effects.

Member states are classified into four performance groups based on their average innovation performance. Average performance is measured using a composite indicator building on data for 25 indicators going from a lowest possible performance of 0 to a maximum possible performance of 1. The EU countries which have innovation performance well above that of the EU average are called Innovation leaders. The countries with innovation performance above or close to that of the EU average are called Innovation. Moderate innovators are the countries with innovation performance below EU average. Modest innovators are the countries with innovation performance well below that of the EU average.

In line with the 2015 annual report Sweden keeps again the innovation leadership. It is followed by Denmark, Finland, and Germany as European Innovation Leaders. Compared to 2014, innovation performance has increased in 15 EU countries, while it declined in 13 others. In the updated version of the European Investment Bank report for 2016 are identified three main reasons for Europe's



weaker innovation performance:

- Relatively weak industry-science links,
- Poor commercialisation of research results;
- Inefficient exploitation of knowledge created elsewhere.

The slow recovery from the crisis, the increasing competition from innovation in emerging economies, and the strength of US policies aimed at regaining a leading position are suggested as additional factors that undermine the European innovation performance.

Currently the group of modest innovators includes Latvia, Bulgaria and Romania. The short profiles of these EU members are described taking into account the data provided by the Innobarometer 2015 (Innobarometer 2015).

Bulgaria's relative strengths are in the following dimensions: "Human resources" and "Intellectual assets". The country has high shares of highly educated people and performs well in applying for the following indicators: Community trademarks (29%); R&D expenditures in the business sector (19%), Public-private co-publications (14%), and New doctorate graduates (10%). Strong declines in performance are observed in Sales share of new innovations (-12%) and Venture capital investment (-28%).

Over time, the relative performance of Romania has worsened from 46% in 2007 to 37% in 2014. The country performs similar to the EU average for a number of indicators, in particular "New doctorate graduates", "Exports in knowledge-intensive services" and "Youth with upper secondary level education". High growth is observed for the indicators Community designs (29%) and Community trademarks (22%). The strongest declines in performance are observed in Venture capital investments (-20%). and Sales share of new innovations (-21%).

## Conclusions

In conclusion have to be underlined that the question about ensuring the national authorities support for digital innovation remains an open question despite the recent European Communication on Opening up Education.

Until now, some countries in Europe have no national regulations adequately responding to MOOCs. As in all areas where strategic institutional

and national developments are required, policy makers and university associations and networks should facilitate dialogue and exchange among them.

European universities have to strengthen their efforts in the MOOCs development and provision as soon as possible otherwise all the space will be filled by initiatives coming from other places. The motivation to establish MOOCs, in Europe, cannot be the same as in the United States or in the other regions of the world, there should be a European dimension to this because the socio-economic context, the cost of education, the role of the state to define the university strategy, are completely different.

The fact that MOOCs require big investment but in the same time do not guarantee immediate returns is certainly another reason for caution, particularly in times of economic and financial crisis. It is not possible to expect a big progress in MOOCs if an additional funding are not available and appropriate adjustments of the regulatory frameworks that support the activities of universities (staff and students) and their institutional partners are not ensured.

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