

MOOCs

Massive Open Online Courses

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An update of EUA's first paper (January 2013)

Table of Contents

1. Introduction.....	3
2. International MOOCs facilitators	4
Coursera	5
edX.....	6
NovoEd	6
Udacity.....	7
Udemy	8
... and other platforms.....	8
3. European responses	10
3.1. Mapping European MOOCs.....	10
3.2. European initiatives in detail	11
3.3. Motives for MOOCs in Europe.....	14
4. MOOCs in other parts of the world.....	16
5. Observations on MOOC developments.....	18
5.1. Financial aspects.....	18
5.1.1. Production and maintenance of MOOCs	18
5.1.2. Income from MOOCs.....	19
5.2. Implications for learning and teaching.....	21
5.2.1. What is best in learning: MOOCs, classroom or open university?	22
5.2.2. MOOC = innovative quality learning for all?	23
5.3. Blended learning and flipping the classroom.....	24
5.4. Learners.....	25
5.5. Teachers	26
5.6. Should MOOCs award credits?.....	27
5.7. Openness – who owns MOOCs?	29
6. Points for further consideration for European higher education	30
7. Annex.....	34
7.1. European participation in Coursera	34
7.2. MOOC directories.....	35

1. Introduction

With the rapid development of MOOCs, EUA published an occasional paper in January 2013 on MOOCs for discussion at the EUA Council, and for information for EUA membership. The present paper aims to provide an update on these developments, particularly as they concern European higher education.

The main issues described in this update are:

- **International MOOCs facilitators:** The largest concentration of MOOCs is still in the US. The three big providers, Coursera, edX and Udacity have been growing in size and have also developed distinct profiles.
- **European reactions to MOOCs:** Despite Europe's mitigated reaction and less hype than in the US, there has been a sharp increase in MOOCs, to the extent that around one third of MOOCs around the world involve European higher education institutions.¹ This has happened through participation in the US platforms, as well as European initiatives launched by the universities themselves, but also by private start-ups, often with support from national governments, telecommunication companies and foundations.
- **A European dimension:** One issue is also whether and how MOOCs can develop a genuine European dimension. The current trend is that there are some platforms at national level in larger European countries, which may be profiled via language rather than belonging to the national higher education system: there will be separate English, French, German and Spanish platforms with a degree of openness to other languages. The European open universities have launched their own MOOCs portal. The European Commission has expressed its interest and support in exploring the potential of MOOCs in various ways, among others through studies, and provision of funding, and a new website launched along with its "Opening Up Education" Communication. A first European MOOCs stakeholder summit took place in June 2013 in Lausanne, with a follow-up summit scheduled for 10-12/02/2014. The question remains whether and how MOOCs could complement the structures and instruments developed in the European Higher Education Area.
- **Around the globe:** MOOCs have also been developed in other parts of the world, and not surprisingly, basically everywhere where education structures are already well-developed. Many of the platforms in emerging countries provide access to courses from the US and from Europe.
- **Business models:** MOOCs companies are under pressure either to transfer costs to course participants or to generate income from other sources. Their ability to gather venture capital suggests that there is economic potential – but only time will show whether these MOOCs initiatives are successful or doomed to fail. Predictably their success will depend firstly on business strategies and markets, and only secondly on educational needs and quality.
- **Learning and teaching:** the impact on learning and teaching is still unclear, but it is quite obvious that MOOCs do not replace institutional higher education provision, but supplement it, e.g. if used in blended learning within universities, as individual lifelong learning opportunity (predominantly during or after higher education studies) or as a means to reach out to new target groups (e.g. through continued professional education). For some of these options, the question is whether and how "massive" they have to be, and what exactly distinguishes them from other forms of blended and online learning. First answers to these questions are courses provided for a fee, MOOCs with the additional options of student

¹ www.openeducationeuropa.eu/en/european_scoreboard_moocs

support and certificates or even credits. An interesting question is whether these services are provided solely by the higher education institution, or in collaboration with the MOOC platforms or other external service providers, a phenomenon which is increasingly referred to as “unbundling”. This may impact the general understanding, definition and award processes for academic degrees, and respectively strengthen alternative validation routes.

- MOOCs impact **higher education institutions** in different ways, depending on the type of institution, and its socio-economic and legal framework. As in other areas, such as internationalisation or regional cooperation, universities on both sides of the Atlantic find themselves in very different situations and respond differently to MOOCs. US institutions are under a much stronger economic pressure to respond, and reaction in the US ranges from determination to develop new education and business models to concern about the future of those institutions that cannot develop MOOCs, and about higher education in general. Many of the European universities seem to be more concerned about lagging behind international competition, and look at MOOCs as a global promotion opportunity. There is excitement among those staff members who have been working in e-learning and open education for many years. But there is also frustration that insight from and achievements of longstanding e- and distance learning practice are either ignored or presented as recent innovation. There is also some concern that MOOCs might not promote real learning innovation, and would be used simply to save costs rather than improve quality. But overall, the impression is that European universities look at technology-enhanced learning, including MOOCs, in a positive and forward-looking way.

I should like to thank all colleagues at EUA who provided comments and support to the paper, and also the members of the EUA Task Force for Innovative Learning and Teaching for their advice. Special thanks to Zhong Zhou, researcher at Tsinghua University, and Thérèse Zhang, now former colleague at EUA, for their support in gathering information about MOOCs in China.

This is an update to the previous paper, published a year ago. Given the rapid developments, it is almost impossible to keep the paper up-to-date even in the process of writing, and any developments after 01/12/2013 were not taken into consideration.

I have done my best to check and verify all facts, but MOOCs are fast-moving, and sources of information comprise news articles, blogs, but also observations and perceptions of a wider range of individuals active in the fields. I apologise in case that any important developments or initiatives have been omitted or not described accurately. We would welcome your support in notifying us of these and also your contribution to any future updates. Please send any information to: elarning@eua.be

2. International MOOCs facilitators

Despite the fact that MOOCs have gained popularity in other parts of the world, the focus is still in the US, with providers such as Coursera, edX and Udacity not only growing in size, but also developing much more distinguishable profiles. For universities, participation in these platforms is not only solid from the technical points of view and the services provided, but also makes investment and risk in MOOCs rather containable. In addition, a main attraction for European and other international higher education institutions to join is that it guarantees international visibility.

The rise of Coursera

January 2013	June 2013	August 2013	Nov. 2013
33 partners	81 partners	75 global partners/ 10 US State Institutions	97 global partners/ 10 US State Institutions
2 European universities	24 non-US institutions (incl. 12 European institutions)	32 non-US institutions (incl. 15 European institutions)	50 non-US (incl. 28 European institutions)
214 courses – 20 fields	386 courses - 26 fields	435 courses (of which 2 by US State Institutions)	543
		85 signature track courses	145 signature track courses
2 million students	3.7 Mill students (1.5 Mill. on campus)	4.5 Mill students	5.58 Mill students
English	English + 5 languages	English + 6 languages	English +11 languages

Figure 1: The rise of Coursera, Source: Coursera website, www.coursera.org

Coursera

Coursera currently offers more than 500 courses, for more than 4.4 million learners, involving 97 “global partners” and 10 US state institutions (global partners being US and international universities). Around half of the non-US higher education institutions involved are from Europe. Interestingly, practically all the universities that joined most recently are from outside the US, mainly from Europe and Asia (see Figure 1: The rise of Coursera and for a list of European institutions, section 7.1 below).

Coursera is making an effort to create critical mass and become the biggest player. It signed contracts with 10 big public US institutions supporting them in using MOOCs in undergraduate teaching. This would include production of MOOCs, but also adaptation and use of existing MOOCs in blended and face-to-face teaching. Two institutions have already started to offer MOOCs. Reportedly, what attracts these public US institutions is not only the MOOCs concept as such, but the fact that Coursera has developed a platform which allows for automatic (machine) assessment in a more sophisticated way than other existing platforms.²

Coursera has rapidly diversified its mission to include school and pre-school education, in that it aims at providing teacher training courses. In addition to university departments for education, its partners also include training centres for primary and secondary school teachers, museums, etc., among them the Commonwealth Education Trust.³

² www.insidehighered.com/news/2013/05/30/state-systems-and-universities-nine-states-start-experimenting-coursera

³ <http://techcrunch.com/2013/05/01/coursera-brings-online-instruction-to-teachers-taking-its-first-steps-into-the-k-12-market/>

Coursera has also improved its website, which now contains pages on the mission, Pedagogy (www.coursera.org/about/pedagogy) and Leadership (www.coursera.org/about/founders). Besides eight US provosts, the advisory board comprises the president of the École Polytechnique Fédérale de Lausanne as the only non-US member.

More than a quarter of the courses are now offered with an option for a “signature track”, which is fee-based, and awards a certificate. Identification is done via an ID card, and also by recording the student’s typing style.

Its growing market share helps to attract investors of course: Coursera announced to have raised another US\$43 million in venture capital, on top of the US\$22 million it banked last year (Economist, 20/07/2013).

edX

The edX consortium currently comprises 28 universities including the founders and owners of edX, Harvard University and Massachusetts Institute of Technology (MIT). The edX consortium also includes 17 partner institutions from outside of the US: five European universities: École Polytechnique Fédérale de Lausanne (EPFL) (Switzerland), TU Delft (the Netherlands), Karolinska Institutet (Sweden), Université catholique de Louvain (Belgium), Technische Universität München (Germany), and 11 universities from India, China, Hong Kong, South Korea, Japan and Canada.

There are currently 62 courses on offer in different areas, many of them interdisciplinary. edX offers certificates for successful completion of a course at no cost, but does not offer course credits.

Another interesting initiative which demonstrates the application of MOOCs is the collaboration between edX and the International Monetary Fund (IMF). From 2014 on, edX will provide policy-oriented economics courses for government officials of IMF member countries.⁴

edX has collaborated with Stanford University on platform development, and as of 01/06/2013, it has released OpenEdX (<http://online.stanford.edu/openedx>) as an open source platform. It remains to be seen whether this will contribute to setting the scene for open source, adaptation and sharing rather than for monopoly tech-platforms. While joining with edX’s development effort, Stanford has not joined edX, but will continue to publish courses on various platforms, including Coursera and its own.⁵

Since it is not-for-profit, edX has to cover costs. Currently it charges institutions using its platform, and for services provided. But edX leadership recently admitted that it has not decided yet what the main source of revenue will be.⁶ In this regard its most recent move to join forces with Google might not be too much of a surprise. It is still unclear what exactly this partnership will entail.

NovoEd

Established in April 2013, it targets students and teaching staff. It currently offers about 20 courses, most of them for a fee. It aims at supplementing existing higher education provision. Some courses are for free, others charge US\$149 or US\$249.

NovoEd was founded by a professor and a PhD student from the University of Stanford, and its staff and most courses are from the university. Apparently, some of the courses are also exclusively for

⁴ www.edx.org/alert/imf-and-edx-join-forces-pilot/998

⁵ www.insidehighered.com/news/2013/04/03/stanford-teams-edx#ixzz2camqyEf1; www.edx.org/alert/stanford-university-collaborate/693; for Stanford’s own courses <http://online.stanford.edu/openedx>

⁶ <http://chronicle.com/article/How-EdX-Plans-to-Earn-and/137433/>

Stanford students. An important feature is its platform developed in 2012, which claims to enhance peer interaction and collaboration. Learners are assigned to a group of less than 10 peers.⁷

Udacity

Udacity has further sharpened its “applied” approach (“learn – think – do”), and also announced in autumn 2013 a shift towards fee-based courses for companies. Beyond the statements on its “Vision” page and the occasional interviews with its founder, which emphasise the beginning of a learning revolution and the democratisation of learning, there was very little reflection on what Udacity concretely aims to do for learners. On 10/09/2013, it launched the “Open Education Alliance” – a consortium of organisations dedicated to closing the skills gap,⁸ among them Google and AT&T. The website leaves open what this alliance is actually going to do. In its blog, Udacity provided very generic information about the skills gaps, and stated that it will continue to work with its partners, who have joined the alliance in order to close these.⁹

There are currently 28 courses on offer. Udacity has no university partners, but individual lecturers, presented either with their academic or professional credentials – and their personality (“When he’s not working to improve education, Sean likes running, hiking, and preparing for the inevitable zombie apocalypse”; “Katie loves singing, snowboarding, reading, yoga, and traveling”). Interestingly, several courses have several instructors from different backgrounds – it seems as if Udacity established a kind of core group of instructors, and also does some matchmaking among them. Some instructors are European (either working or teaching in the US or in Europe). Unlike Coursera or edX, its advisory board brings together expertise from business, politics and education.

Udacity offers five courses, which are credit-earning. All five courses are accepted at San Jose State University System (SJSU), and at least one of the instructors in each of the courses is a San Jose staff member. There is a fee of US\$150 to enrol for a credit-earning course. Announced in spring 2013 with a lot of media attention (one of the first initiatives that awarded credit for MOOCs), courses were put on hold in June 2013, when it transpired that the pass rates of students attending the spring courses had been significantly lower than those of on-campus students. In mid-2013, Udacity and SJSU leadership had clarified that the project would be continued, and that the low rates were due to the type of students who participated (remedial courses, high percentage of disadvantaged students, students not enrolled at SJSU).

Lillian Taiz, President of the California Faculty Association, pointed to the fact that despite the improved pass rate for the summer course, the retention rate has been deteriorating, i.e. students dropped out rather than failed. She also conveyed the faculty’s concerns that these courses have been used for disadvantaged students and questions the rationale of the initiative. She is quoted in Inside Higher Ed: “When I think back to when they launched this thing in the face of massive budget cuts to higher education, ... this was supposed to save money and provide more access [...] It hasn’t, at least from what I’ve seen, done either. I wish we could invest more time and money in students that are in face-to-face classes.”¹⁰ In the meanwhile, Sebastian Thrun, CEO of Udacity, has admitted in an interview not only that MOOCs fail in remedial courses, but that the concept in general might not work: “We have a lousy product”, he commented on the low completion rates, and admits also “that human element, surprise, surprise, makes a huge difference in the student experience and the learning outcomes”.¹¹

⁷ <http://techcrunch.com/2013/04/15/stanfords-novoed-brings-collaboration-and-group-learning-to-moocs-to-help-fight-attrition>

⁸ http://nist.gov/mep/upload/Bridging-the-Skills-Gap_2012.pdf

⁹ www.udacity.com/opened; <http://blog.udacity.com/2013/09/announcing-launch-of-open-education.html>

¹⁰ Inside Higher Ed, 28/08/2013 www.insidehighered.com/news/2013/08/28/san-jose-state-u-posts-improved-online-course-results-udacity-partnership-remains#ixzz2dLTrvbnw

¹¹ Fastcompany, 14/11/2013 www.fastcompany.com/3021473/udacity-sebastian-thrun-uphill-climb

He announced that Udacity would focus on industry collaboration through professional and vocational courses – which seem to have been the company’s approach right from the beginning. This would also entail close to 24/7 learner support, including “human feedback and human grading”. The courses at SJSU were still on offer towards the end of 2013.

Udemy

Established in 2010, it provides 8 000 courses for one million learners. Courses are based on practical skills, and the target are learners from all walks of life, those who want to improve, for example, their computer skills, yoga, astronomy or just learn how to negotiate a higher salary.

Udemy works with individual lecturers, not with institutions. It takes pride in recruiting expert lecturers from everywhere, including business and Ivy League universities. But it invites anybody to become a lecturer, and also offers courses to help people to set up their courses, and meet the quality requirements. It provides a detailed list of criteria that have to be fulfilled to get a course published (e.g. at least 30 minutes of content, of which 60% has to be video; clear structure; criteria to be met for audio and video quality; a free-to-try lecture etc.). Most courses charge a fee between US\$9 and US\$99.

... and other platforms

There are more platforms, some of them already existing before the MOOC hype started, such as the longstanding **Apple University**, one of the pioneers in offering lectures online; and **Sakai**,¹² which aims at building communities of educators to create open software to advance learning, teaching and research. Institutions can become members of the Sakai Foundation, or Canvas,¹³ which has 4.5 million users and facilitates professional and academic courses, usually offered by higher education institutions or other education providers.

Even though all these platforms are based in the US, however, they are by no means national platforms, but open for international participation. This is true regarding the institutions that offer courses, but also regarding the course participation, as for example the map of Coursera’s global footprint suggests.¹⁴

Inside Higher Ed, 19/12/2013 www.insidehighered.com/news/2013/12/18/san-jose-state-u-resurrects-scaled-back-online-course-experiment-mooc-provider#ixzz2npx4bhuG; New Hampshire News 31/12/2013 <http://nhpr.org/post/online-education-revolution-drifts-course>

¹² www.sakaiproject.org

¹³ www.canvas.net

¹⁴ December 2013 www.insidehighered.com/blogs/globalhighered/mapping-courseras-global-footprint

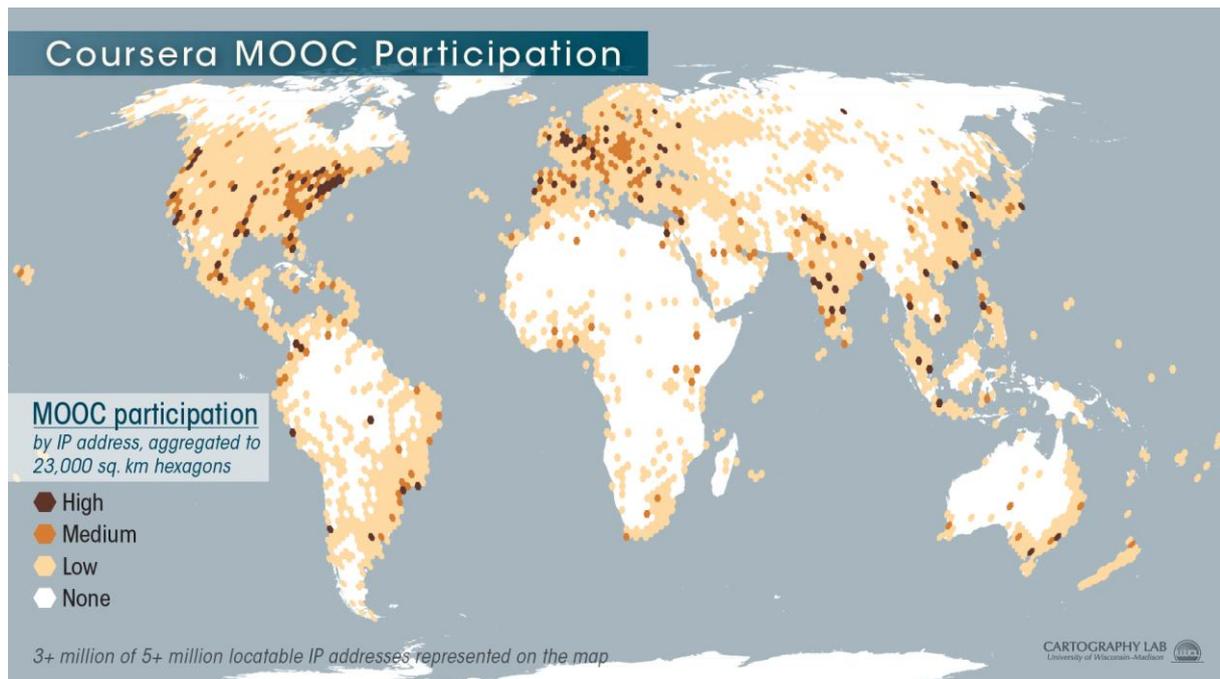


Figure 2: Global participation in Coursera MOOCs by Kris Olds, 2013¹⁵

Kris Olds, a professor for geography and observer of global educational development trends, states: “... MOOCs are arguably post-national higher education platforms. Their names are almost uniformly placeless. As I have noted [before](#), the founders of US-based MOOC platforms like edX, Coursera and Udacity are immigrants to the US from around the world, and many of the staff working in their offices are also recent immigrants.”¹⁶

Saying this, the MOOCs platforms – while internationally oriented – in many of their aspects are developed in the specific context of the US, as has been pointed out in the 2013 EUA MOOC paper. Therefore, while there is no particular section on MOOCs in North America, the *Section 5. Observations on MOOC developments* of this current paper draws upon the US situation in many of its examples. In addition, the December 2013 letter by the President’s Council of Advisors on Science and Technology to President Obama is recommended for reading, as it provides a comprehensive reflection on the ongoing debate on the potential of MOOCs in the US.¹⁷

¹⁵ www.insidehighered.com/blogs/globalhighered/mapping-courseras-global-footprint Participation has been normalised against population size. The author cautions that only three out of five million participants have been located, and that there is no guarantee that the sample is representative.

¹⁶ www.insidehighered.com/blogs/globalhighered/mapping-courseras-global-footprint; the hyperlink in the article links to the following article: www.insidehighered.com/blogs/globalhighered/are-moocs-becoming-mechanisms-international-competition-global-higher-ed

¹⁷ www.whitehouse.gov/sites/default/files/microsites/ostp/PCAST/pcast_edit_dec-2013.pdf

3. European responses

3.1. Mapping European MOOCs

At the time when EUA's first paper on MOOCs was published, little was known on MOOCs in Europe. But over the past months European initiatives have gained more visibility. Some of them have existed for quite a while, but do not seem to have gained international attention.

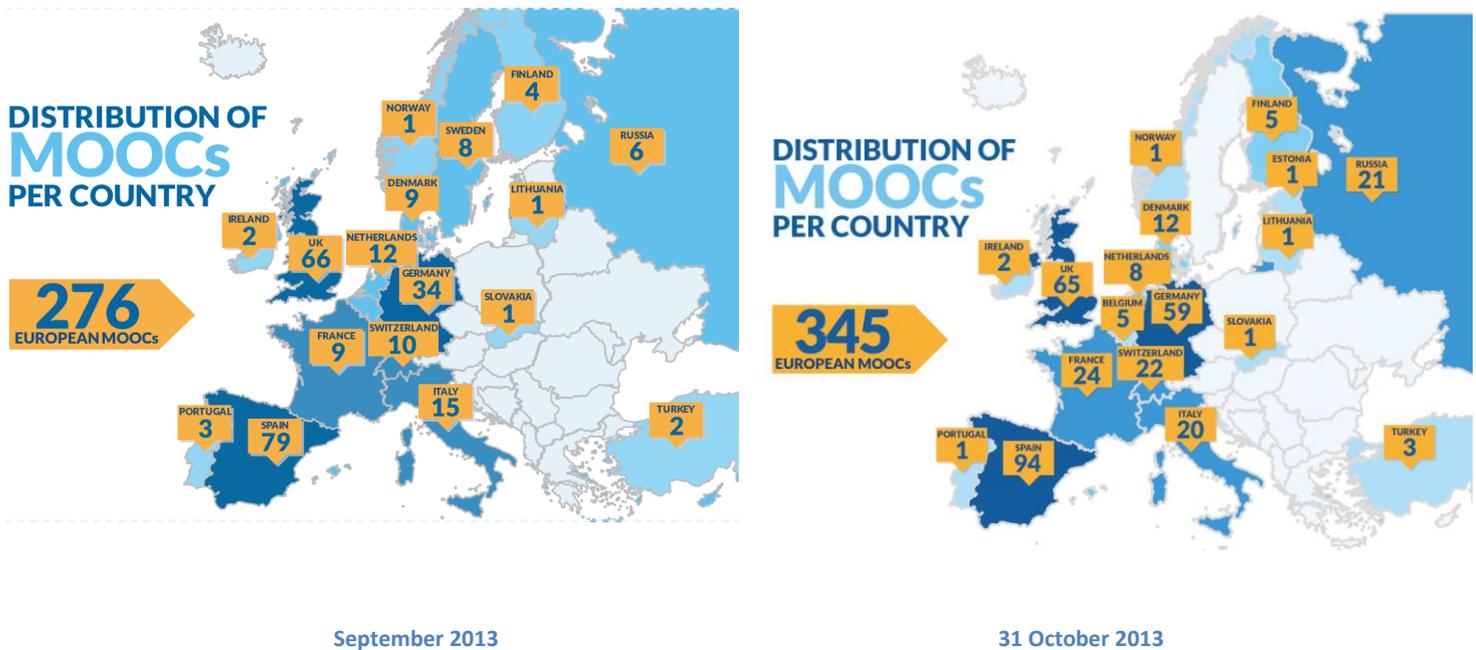


Figure 3: European MOOCs – Source: EU Open Education Europe Portal www.openeducationeuropa.eu/en/european_scoreboard_moocs

Concluding from reports on ongoing and planned initiatives from 13 countries at the **first European MOOCs Stakeholder Summit**, 06-07/06/2013, organised and hosted by the Ecole Polytechnique Fédérale Lausanne (EPFL), Switzerland,¹⁸ there must have been at least 100 institutions offering (or planning to offer by the end of the year 2013) 200-250 courses; to this number, one would have to add 61 courses provided by the European open universities at the OpenUpEd Portal. A forthcoming EUA survey on e-learning showed that of 249 responding European higher education institutions, 31 have MOOCs,¹⁹ but an additional 115 state that they consider introducing them. 75% of the institutions confirmed that they either had adopted a position towards MOOCs, or were planning to do so.²⁰

In September 2013, the recently launched Open Education Europa website of the European Commission comes to a similar number. But by end October, it already has 345 courses. The steep increase is probably due to a real increase in MOOCs (in particular through the launch of the French MOOCs platform France Université Numérique), but also to improved information gathering. Overall, the statistics suggest that while European universities took a longer time to get involved, they may now account for approximately one third of the MOOCs in the world (Figure 4).²¹

¹⁸ <http://moocs.epfl.ch/eu-mooc-summit>

¹⁹ In Denmark, France, Germany, Ireland, Italy, Netherlands, Norway, Portugal, Russia, Spain, Switzerland, United Kingdom

²⁰ The survey has been carried out in the 2nd half of 2013. Results will be published in the first quarter of 2014 on the EUA website, www.eua.be

²¹ www.openeducationeuropa.eu/en/european_scoreboard_moocs



Figure 4: European MOOCs – state September 2013, Source: EU Open Education Europe Portal www.openeducationeuropa.eu/en/european_scoreboard_moocs

3.2. European initiatives in detail

In **Spain** in January 2013 **Miriada X** (www.miriadax.net/) was launched — a cooperation between the Spanish company Telefonica and Universia.²² Miriada X is designed to facilitate exchanges and cooperation between Spanish and Latin American institutions. So far, 20 institutions have joined, 17 of them from Spain and three from Puerto Rico and the Dominican Republic. It offers courses for free.²³ Generally, there seems to be a strong interest in MOOCs in Spain. The Universidad Nacional de Educación a Distancia (UNED), in the meanwhile, has a significant share in the close to 100 Spanish MOOCs.²⁴

Portugal has only had two MOOCs so far, but with interesting conceptual approaches: one has been developed in cooperation with Brazilian partners. The Universidade Aberta (Portuguese Open University, www.uab.pt/web/guest/home) launched a project called iMOOC (<http://imooc.uab.pt/>; “i” for individual responsibility, interaction, interpersonal relationships, innovation and inclusion) to develop a pedagogy for MOOCs that is in line with its educational principals: “autonomous and self-directed learning with a strong social dimension and the flexibility that distance online learners need with the pacing necessary to help them get things done.” At the beginning it provides a “bootcamp” on e-learning for all learners. One of the first courses delivered via the OpenupEd platform is on “Climate change – The Context of Life Experiences”.²⁵

Announced at the end of 2012 as a **British platform**, and led by the Open University, **FutureLearn** (www.futurelearn.com/) was launched in the UK in September 2013. Meanwhile, Trinity College Dublin, Ireland, and Monash University, Australia, have joined the platform. The website description has been changed accordingly (“top UK and international universities”). The platform now comprises 26 partners in total, including the British Library, the British Museum and the British Council. The course offer has not yet been announced, but according to the website, learners from 150 countries have expressed their interest by signing up. FutureLearn promises that courses will be free of charge, and would be adapted to mobile devices such as smart phones. There has been a very contentious discussion on the envisaged licensing policy of FutureLearn.²⁶

²² A network of Spanish and Latin American universities, initiated and sponsored by the Santander Bank Foundation

²³ www.guninetwork.org/guni.hednews/hednews/universia-and-telefonica-launched-platform-for-massive-open-online-courses

²⁴ http://portal.uned.es/portal/page?_pageid=93,25731579&_dad=portal

²⁵ <http://mooconewsandreviews.com/mooc-around-the-world-our-global-list-of-distance-learning-resources-part-2/#ixzz2gMy8t900>

²⁶ See in particular the blog of Lorna Campbell. <http://blogs.cetis.ac.uk/lmc/2013/06/05/what-do-futurelearns-terms-and-conditions-say-about-open-content/> It has been remarked that FutureLearn’s policy resembles very much that of Udacity.

In **Ireland**, probably with the sole exception of Trinity College that recently joined FutureLearn, only non-university higher education institutions have taken up MOOCs. The **Institute of Technology Sligo**, a recognised public education institution, which has been offering distance learning since 1989 and online learning since 2002, conducted a MOOC, which will be repeated in 2014.

Alison is a social enterprise distance learning provider established in 2007. According to its website, it provides around 600 courses to 2.5 million learners worldwide. Course participation is free, but Alison charges for service and support, and for courses for companies. It is based in Ireland and it notes that its courses also adhere to British Council and Australian High School standards.²⁷

In June 2013, in **France**, the telecommunication company Orange announced that it would launch a platform for France in the fourth quarter of 2013, which has apparently not materialised.²⁸ But in the meanwhile, the French Government has launched **France Université Numérique (FUN)**, the first French MOOC portal, using edX's open source learning platform. FUN has been launched with 20 MOOCs to start in January 2014. The MOOC platform is one of the 18 action points of a five-year strategic plan for the digitalisation of learning and teaching.²⁹ While announced as the national platform with participation restricted to French institutions for the moment, it has been mentioned that it might open up in the future to courses from universities outside of France.

In **Finland**, former Nokia developers established "Eliademy" and announced they would develop a MOOC platform. But for the moment, it seems only to provide a mobile-phone-compatible virtual classroom concept. There is a free version for individuals, and companies have to buy licenses.³⁰

In **Austria** Udacity courses are used by at least one institution as an alternative to the regular study programme.³¹ Meanwhile, two Austrian institutions have joined forces for a MOOC platform.³²

Germany seems to have developed MOOCs early on, albeit without calling them by that name:

- **openHPI** (<https://openhpi.de>) was developed by the Hasso Plattner Institute and began on 03/09/2012 with the online course In-Memory Data Management³³ (English) taught by Prof. Hasso Plattner, founder of HPI, co-founder of the software giant SAP. According to the website, there were 13,126 participating learners, of whom 2 137 earned the graded certificate, i.e. they achieved more than 50% of the maximum number of points. Courses launched later had a lower participation rate (the latest course 7 350 learners). Courses are offered in English and German.
- **opencourseworld** (www.opencourseworld.de/pages/landingpage.jsf; OCW) was established by IMC AG, a spin-off company established by the University of Saarland that offers IT and service solutions. IMC collaborates currently with 20 partners (higher education institutions, research institutions and companies), among them three German universities (University of Saarland, University of Hamburg, and Technical University Munich), the DFG Institute for Artificial Intelligence and the Fraunhofer Institute for Experimental Software Engineering, as well as

²⁷ <http://alison.com/free-training/ALISON/Who-We-Are>

²⁸ <http://elearningeuropa.info/nl/node/124869>

²⁹ www.enseignementsup-recherche.gouv.fr/cid74171/lancement-de-france-universite-numerique.html; www.france-universite-numerique.fr/moocs.html

³⁰ <https://eliademy.com>

³¹ The University of Salzburg announced that it would provide teaching support and award credits for some MOOCs. <http://forums.udacity.com/questions/10011204/austrian-university-to-award-credits-for-udacity-courses>

³² University of Graz and the Technical University of Graz <http://on.uni-graz.at/de/lehren/article/bildung-fuer-alle-1/>

³³ <https://openhpi.de/course/inmemorydatabases>

Scheer Management/Consultance and Microsoft. Former BITKOM President August-Wilhelm Scheer is the founder of the Scheer Group, IMC AG and OCW.³⁴

- **iversity** (<https://iversity.org/>), launched in 2011/2012 as an international think-tank, has the goal to push education into the digital age. It is based in Germany and collaborates with the German Government and private national foundations, which contribute to its funding. In partnership with the German education think-tank Stifterverband (www.stifterverband.info), iversity has launched a call for MOOCs under the title of MOOC Production Fellowship,³⁵ which received more than 100 submissions, most of them from Germany. In autumn 2013, it awarded 10 institutions with €25,000 each, and started its MOOC platform. The courses offered are in German and English, and iversity³⁶ also announced that two higher education institutions from its platform will award ECTS credits for MOOCs.³⁷

In 2012, the **European open universities** were relatively silent about the developments, apart from the Open University UK, which announced its involvement in Futurelearn. This changed with the launch of the OpenupEd **portal** of the EADTU³⁸ in April 2013 that posts courses that were developed earlier but are now offered for free. European cooperation on the issue is envisaged in the future. According to the press release it is “the first MOOCs initiative which goes Europe-wide, with the support of the European Commission”. By now, 65 courses covering a wide variety of subjects are available in 12 different languages. The 11 launch partners are based in France, Italy, Lithuania, the Netherlands, Portugal, Slovakia, Spain, and the UK, and outside the EU in Russia, Turkey and Israel. Many, but not all European open universities have joined. A reason for not joining could be a certain reservation towards the MOOCs approach, as it would not include the necessary measures for student support. The German Fernuniversität Hagen, not a member of OpenupEd, has recently launched a MOOC with restricted participation (for students enrolled at the institution), followed by one open for everybody. Initially, participation in the OpenupEd portal seemed to be open only to EADTU members and the open universities. However, in October 2013, EADTU announced that, for a moderate fee, which still is to be decided, the portal would be open to courses provided by conventional universities, provided that they fulfil the quality standards that EADTU has laid down in its e-excellence label.

There are some examples of individual higher education institutions launching their MOOCs independently, without any connection to one of the big platforms. The **Leuphana University Lüneburg, Germany** offered a MOOC “ThinkTank – Ideal City of the 21st Century”. The course, with no prerequisites, was taught by the famous architect Daniel Libeskind and ended in April 2013. While the courses have not been relaunched, it has resulted in the establishment of the **Leuphana Digital School**.³⁹ **EPFL**, while offering courses on Coursera, also has some courses not related to any platform, to diversify, and also to address a different target group. There are probably many more examples of universities that offer their own MOOCs – including some that have done this for quite some time, without calling them MOOCs.⁴⁰

³⁴ www.checkpoint-elearning.de/?aID=11751 and www.faz.net/aktuell/beruf-chance/campus/offene-onlinekurse-frueherer-bitkom-chef-will-moocs-populaerer-machen-12046826.html

³⁵ www.moocfellowship.org/

³⁶ <https://iversity.org/en/pages/about>; <http://techcrunch.com/2013/03/11/iversity-moocs-pivot/>

³⁷ <https://iversity.org/pages/moocs-for-credit>

³⁸ European Association of Distance Teaching Universities representing distance learning institutions and organisations

³⁹ <http://digital.leuphana.com>

⁴⁰ A good source on MOOCs in different parts of the world including Europe is a series of articles written by Sylvia Moessinger from the perspective of a MOOC user. EUA survey (autumn 2013) on ICT-based learning among its members also includes questions on MOOCs.

On the other hand, some universities are careful to draw a line between the education they offer and MOOCs. The **University of Cambridge** has been quoted as saying that it had no plans to offer MOOCs.⁴¹

So far there is not much information about MOOCs developments in **eastern Europe**, with the exception of **Kaunas University** in **Lithuania**, and one initiative in **Slovenia**.

3.3. Motives for MOOCs in Europe

It is interesting to see the diverse responses to MOOCs that European national higher education systems and different types of institutions with different missions develop.

Many European institutions develop MOOCs as a complementary strategic approach for international competition. This seems to be the case for example in the Netherlands and in the UK, where institutional leadership devotes considerable attention to MOOCs.

The UK's FutureLearn initiative and France's Université Numérique (FUN) have been presented as initiatives to ensure global visibility and competitiveness against the transatlantic developments, and to explore possibilities for international visibility and attractiveness. In the case of the French and the Spanish platforms, language is of course an additional aspect. But interestingly, they also provide some courses in English.

There is also the expectation that MOOCs could contribute to improving the quality and cost-effectiveness of higher education, and as a means of broadening and innovating learning. This seems to be the case in Spain, which has currently the highest number of MOOCs, delivered both by the open universities and regular universities. At several occasions, Spanish university leadership and staff expressed their conviction that MOOCs could be a means to revolutionise the present learning and teaching practices, and hence bring the change that the Bologna Process and national reforms failed to achieve. In Italy, the Ministry for Education, Universities and Research established a Committee in June 2013 to develop proposals to improve the quality of e-learning in the country, and in view of the eleven Telematic Universities. In France, FUN is one element of an ambitious e-learning strategy, involving all education sectors. In the UK, a report by the Department for Business, Education and Skills in collaboration with the Centre for Distance Education (CDE) and the Observatory on Borderless Higher Education, concludes after an extensive literature review that MOOCs will in the long term contribute to significant changes in the higher education sector.⁴²

One of the promises is also that MOOCs would allow a better articulation between higher education and the labour market, and contribute to providing professional education opportunities for learners outside of universities. This seems to be a motive in many countries, certainly also those in crisis, like in Spain. Germany's first MOOCs had been developed for professional education, though not free of charge, and university involvement in them has been marginal.

But there seems to be some scepticism towards MOOCs and the idea that they would play a major role as a transformer, innovator and game changer – beyond the novel approaches that would emerge anyway from other types of digital and online education. This seems to be particularly the case in countries that have already established a broad offer of e- and online higher education. For example in Germany, some higher education institutions have a longstanding experience in blended

⁴¹ www.timeshighereducation.co.uk/422234.article

⁴² www.gov.uk/government/uploads/system/uploads/attachment_data/file/240193/13-1173-maturing-of-the-mooc.pdf

learning, and rather than focus on MOOCs, the current debate seems to centre on how e- and online learning can enhance higher education.⁴³

This may also be one of the reasons why so far there are only a few MOOCs in northern Europe. Many of the northern European universities have a longstanding practice in e- and online learning offers, and it may not be evident why they should now develop MOOCs. This is supported by the fact that there is a vivid discussion in the university communities of northern European countries: In Finland, for example, all universities have incorporated open universities, which may explain why the interest in MOOCs and international MOOCs providers seems to be limited, and discussions focus more on the development of new Finnish platforms for course delivery. MOOCs are certainly also considered by national authorities. For example, a Norwegian official expert committee issued a report on 18/12/2013, recommending increased public funding for MOOCs and other e-learning measures, including e-literacy of staff, and its use in formal and informal education.⁴⁴

The **European Commission** (EC) is obviously interested in MOOCs, for various reasons. As MOOCs attracted the attention of higher education leadership, this could help to underpin the EC's "Opening up Education Communication" (September 2013). Besides bringing European education into the digital age, it also sees great prospects for IT skills development (shortage of programmers etc.). It conceded that it would support the development of courses through the Erasmus+ Programme, given also that many institutions would not yet have the capabilities to provide MOOCs. It also emphasised an interest in keeping courses open, which may have to be seen in relation to its ongoing efforts to establish open access on research results, and would – if turned into European policy – contribute to shaping the European higher education landscape.⁴⁵ Given the interest in modernising European higher education, it also perceives MOOCs as an opportunity for transformation and increased collaboration with business. Commissioner Vassiliou spoke on the occasion of the launch of the abovementioned OpenupEd portal of the European open universities, and on a number of occasions; other EC officials have addressed and also facilitated discussion on the issue, e.g. at the 2013 University-Business Forum.⁴⁶ It will be interesting to follow developments in the next months, on whether and how a European dimension of MOOCs would be developed. In this regard, the EC has launched a tender to map MOOCs developments and to establish a European MOOCs platform, or to advise how to build on already existing network platforms. Another tender on innovation in teaching and learning mentions MOOCs quite prominently as one of the strategies to be studied.⁴⁷

The idea to establish a central European platform is still occasionally referred to, but it is unlikely to materialise. Europe is diverse, and its strength lies probably in decentralised approaches that compete and also cooperate. It would be more important that platforms that have been established in Europe so far, and others which may still emerge, would – in addition to their language preference – develop a clear profile that makes them attractive to both European and international institutions.

⁴³ See e.g. presentations and discussions at an event of the Centrum für Hochschulentwicklung (CHE)

⁴⁴ A translation of some of the recommendations can be found at Lorna Campbell's blog at

<http://lornacampbell.wordpress.com/2013/12/18/norwegian-government-mooc-report-and-digitization-programme/>

The report is available in Norwegian at http://khrono.no/sites/khrono.no/files/moocutvalget_delrapport_1_13122013.pdf

The recommendations also concern accreditation (which is to be taken care of within the existing accreditation system), recognition of credits, the use of MOOCs in LLL, and also address the possibility of fees to certain groups of learners – which is an interesting issue, given that so far HE has been free for all students, including international students. The government has recently proposed to introduce fees for international students: www.isu-norway.no/index.php

⁴⁵ www.wiredacademic.com/2012/05/exclusive-europes-erasmus-prepares-to-launch-college-rankings-mooc-classes/

⁴⁶ <http://ubforum2013.teamwork.fr/en/programme>

⁴⁷ <http://ec.europa.eu/digital-agenda/en/news/support-services-foster-web-talent-europe-encouraging-use-massive-open-online-courses-focused>; http://ec.europa.eu/education/calls/1013_en.htm

It is likely that European MOOCs will be of growing interest internationally. Some European MOOCs initiatives are (also) considering international audiences: e.g. FutureLearn has been presented by Prime Minister Cameron during his visit to India this year; some francophone MOOCs from different European countries target African learners; and Spanish initiatives reach out to Latin America. European universities are obviously of interest to the big international platforms, whose representatives travelled many miles over the past months to promote their initiatives and patiently answered questions from European stakeholders. A workshop entitled “Making Sense of Euro MOOCs” organised by Madison University in June 2013 did not only try to analyse the European situation, but also used the occasion to discuss the issues that US universities are confronting. Despite the different ecosystems, there are many parallels to be drawn. The global higher education community has found yet another topic for discussion, and hopefully for cooperation.⁴⁸

4. MOOCs in other parts of the world

Universities in some other parts of the world did not only join the international platforms, but can also rely on an increasing number of offers from national and regional initiatives.

In July 2013, the Chronicle reported on Schoo in **Japan**, the Japanese version of Coursera. Schoo is said to target Japanese young professionals with around 130 courses and a total attendance of 40,000 users. The company, which gathered US\$1.5 million venture-capital, hopes to have more than a million students by the end of 2013 (Chronicle of Higher Education 05/07/2013).

China has a longstanding tradition of distance learning. The Open University of China, formerly the Radio and Television University, has an extended network of regional and local branches all over the country, providing courses, with tutorials and exams. National exams could be taken with or without course attendance.⁴⁹

MOOCs have been received with some curiosity as a new educational resource for both Chinese higher education institutions and the wider society, and in many respects it resembles the discussions that take place elsewhere. Students seem to have been among the first to embrace the new trend: some of the fancy international courses that have achieved high popularity in China are quoted and referred to on many different websites, and are subject to vivid discussions among students (such as the Harvard courses on Justice). Overall, participation in international MOOCs seems to be highly reputational, and it is expected that students will soon start to include their participation in MOOCs of famous universities in their CVs.

University professors seem to react with a sort of “no choice, have to participate in MOOCs” attitude, and also in anticipation of pedagogical reforms towards student-centred learning, enabled through “blended learning”. Widening access to education obviously is an important issue for China. There is some reflection on how MOOCs could enhance learning and teaching at developing universities in Western China, but also on Chinese courses that could meet the interest of learners around the world.

Leading Chinese universities have obviously decided that they cannot afford to stay away. The Shanghai Jiaotong University – initiator of the Shanghai ranking – has established a forum on MOOCs in China;⁵⁰ Peking, Tsinghua, Fudan, and Shanghai Jiaotong joined edX in June and July 2013. So far, Peking has four courses on edX, and is currently launching another six courses on Coursera. According to local newspaper reports in September 2013, students enrolled at Peking University can

⁴⁸ <http://globalhighered.wordpress.com/2013/06/17/european-moocs-in-global-context-workshop-19-20-june-2013-uw-madison>

⁴⁹ <http://en.crtvu.edu.cn>

⁵⁰ www.edu.cn/html/info/2013/situ/

now earn credits from the university's own MOOCs.⁵¹ Tsinghua, after an intensive pilot phase, launched in October 2013 its own platform XuetangX,⁵² offering its own courses and courses from edX.⁵³

Chinese MOOCs and open courses can be found at several portals. glr.cn (www.topu.com) offers a wide range of open courses, some of them also not academic. Sohu,⁵⁴ another portal for open learning offers an array of open courses provided by Chinese universities, as well as several Chinese TV and online media agencies. It also refers to courses from prestigious international universities (such as Harvard, Yale, MIT, Stanford, Berkeley, Princeton).

Netease (<http://open.163.com>) is yet another portal with a wider range of courses from universities and education-related agencies. The international courses are clearly dominated by US institutions, but there is also the UK Open University, Nottingham, and HEC Paris with seven courses on business and management. Most courses have Chinese subtitles. The website enables access by personal computer and mobile phones. The offer also includes the Chinese website of the Khan Academy, in English with Chinese subtitles (<http://open.163.com/khan/>).

In February 2013, the Ministry of Education of **Taiwan** launched a “MOOCs” project aiming at including 15 universities with 100 courses.⁵⁵

In **India** the Academic Financial Trading Platform (www.academictrader.org), founded by Carnegie Mellon University professors, launched online business education courses in 2012 specifically for Indian MBA students and executives.⁵⁶ Under the slogan “Education is a right, not a privilege”, Educateme360.com, a New York-based Indian start-up, offers customised online learning to Indian students. Their courses, currently still in the pilot stage, aim at fighting illiteracy and developing blended learning. They will be made available in various Indian languages. EduKart, which promotes itself as “India’s leading online education company” offers degree courses recognised by the Indian University Grant Commission (UGC) and also professional certificates. Most courses are provided by Indian higher education institutions, some by international higher education institutions. EduKart emphasises that it tailors its offer to industry needs: it provides corporate courses; supports job matching; and rates its graduates on an “EduKart Rating of Employability”.⁵⁷

In **Africa**, Africamooc (<http://aelsnet.net/mooc-what-is-that/>) hosted by AeLSNet (Africa eLearning Service Network) is a repository of eLearning courses and materials. The motto of its founder is: “If your online course is available for free, we will host it for free on the AeLSNet ePortal Africa.” It provides a long list of MOOC providers, and gives an overview on current and soon to start MOOCs – most of them from the big international platforms. But so far, it lists no African MOOC providers or no African MOOCs.

African Management Initiative (AMI; www.africanmanagers.org/free-online-learning-ami-develop-africas-first-mooc) has been established by the Association of African Business Schools, together with the Global Business School Network and several foundations. Its website presents it as “The first

⁵¹ www.edx.org/school/pekingx/allcourses ; <http://mooc.pku.edu.cn>

⁵² <http://XuetangX.com>

⁵³ www.universityworldnews.com/article.php?story=20131101154620288

⁵⁴ <http://tv.sohu.com/open/>

⁵⁵ “Opportunities and Challenges of MOOCs: Perspectives from Asia”: <http://library.ifla.org/157/1/098-chen-en.pdf>

⁵⁶ http://articles.timesofindia.indiatimes.com/2012-12-06/delhi/35646814_1_udacity-online-business-economics

⁵⁷ www.edukart.com – see in particular the FAQ section. EduKart itself states that it is aiming at establishing links with universities.

Massively Open Online Course designed by Africans for Africans”: It provides a free online platform offering management courses and practical business education.⁵⁸

There has been talk about the World Bank funding a Coursera MOOC to provide market-relevant IT skills in Tanzania, but apart from a mention on the World Bank blog, there seems to be no further information on this initiative.⁵⁹

For the **Arab world**, the Edraak Platform, established by edX and the Jordanian Queen Rania Foundation, will offer edX courses translated into Arabic against a license fee, and also plans to “develop its own courses in Arabic taught by leading Arab faculty members and well-known professionals in a variety of fields.”⁶⁰

In **Brazil**, Veduca (www.veduca.com.br/home/index) was the first MOOC provider in Latin America, and it curates publicly available educational videos from universities like the University of California at Berkeley and Harvard and Columbia Universities, adding subtitles in Portuguese. The company also offered the first Latin America-based MOOC from the University of São Paulo (Chronicle of Higher Education, 05/07/2013).

In **Australia** Open2Study (www.open2study.com/) has partnerships with eight Australian universities and offers courses on topics such as nutrition, anthropology, and business (Chronicle of Higher Education, 05/07/2013). The University of Melbourne was the first Australian university to sign up to Coursera in 2012. Monash University has joined FutureLearn, but does not intend to offer credits at this stage. The University of New England launched its own free online initiative in which it offers students the option of earning credits by taking a fee-paying exam. Deakin University and La Trobe University launched free MOOCs, with the option to award credit at a fee of US\$495 or US\$816 respectively. Deakin sees this as an experiment in online learning and new ways of assessment, which also includes “badges” awarded by peers.⁶¹

5. Observations on MOOC developments

5.1. Financial aspects

A major issue is of course the financial implications of MOOCs. Right from the start, there have been discussions on whether they have a high or low cost, and how there might be a return of investment. While the business models seem to be still under development, there is a bit more evidence of what a MOOC may cost.

5.1.1. Production and maintenance of MOOCs

So far, the production and maintenance costs of the actual courses are mainly with the higher education institutions and their teachers. Therefore, for an institution, the first question should be whether it can afford one or several MOOCs. In this regard the institution has to consider the costs for development, but also for delivery, and maintenance.

The costs depend on whether universities would rely on the services of the MOOCs companies or other service providers, or produce their own MOOCs, which might lower the costs, in particular if the institution were to produce more than one. The full cost might be around €200,000-€250,000,

⁵⁸ www.africanmanagers.org/who-are-we

⁵⁹ <http://blogs.worldbank.org/category/tags/coursera>

⁶⁰ www.edx.org/blog/moocs-arab-world – 07/11/2013

⁶¹ www.insidehighered.com/news/2013/06/19/australian-universities-offer-fee-based-credit-moocs#ixzz2WeOZs3WA

whereas the production cost (excluding work time of academic staff and probably also university technical staff) might range from €30,000–€50,000.

The production costs can vary greatly, depending on how the MOOC is produced, for example whether one professor reads a lecture in front of a camera, or whether it involves large academic and production teams. Apparently for the Harvard course on “Classical Heroes”, film shooting in Greece was one of the cost factors. But there are other ways of doing MOOCs: Jörn Loviscach, a German professor for technical mathematics, produces low-cost videos in Khan-Academy style all by himself with a webcam and computer. He has a MOOC on Udacity, but his stronghold is the German-speaking YouTube community (9 million views).⁶²

But stating this as an example for low cost, would obviously disregard the amount of staff time still necessary to produce these videos. Duke University has provided an example of the development of a MOOC that required 600 staff hours, of which 420 were for academic staff.⁶³

Obviously it is an issue of how to remunerate staff who contribute to MOOCs on a regular basis in order to integrate their participation in MOOC production into their working load. A critical point is also whether and how much teaching assistance an institution provides for a MOOC.

If a MOOC is run several times, cost effectiveness should increase. However, there might be limits to this, given that it may require an update to capture new developments, correction of errors, etc. A frequent argument in favour of MOOCs is that the data that results from learners’ engagement can be used to improve the course, but this again would require staff time and generate costs.

Whether universities can allocate funding to initiatives like MOOCs may differ from country to country, depending on their level of financial autonomy and funding rules. For European universities, which to a large extent are publicly funded, the question arises whether they have sufficient funding autonomy to produce MOOCs. Funding rules may also influence the decision on whether production and maintenance of MOOCs can be outsourced. For the institutions and the public the question is also whether these expenses can be justified, in particular in times of financial crisis and austerity – given that they do not, or not in first line, benefit/aim at the institutions’ actual students.

Another issue is of course why universities should actually want to invest in MOOCs. In some countries, e.g. the Czech Republic, institutions cannot exceed the number of study places, regardless of whether students are studying physically in classrooms or via online programmes. A question might also be whether there will be – apart from visibility and reputation – any revenue from MOOCs.

5.1.2. Income from MOOCs

Obviously, the MOOC companies have to cover costs, and finally, if for-profit, generate revenue.

One possibility to generate income is “crowd-funding”, an approach used by Udemy which charges fees under US\$100 for its courses. In case the course would attract a large number of learners, this could be attractive to the lecturers, as they would receive 70% of the income.

Certification fees are frequently mentioned as the potential income source. Some institutions and providers started to certify the completion of courses for a moderate fee. But unless large numbers of learners decide to take a certificate, this would hardly become an income source. At the time, Coursera’s fee was around US\$50, but it also offered fee waivers, for those who could not afford it.

⁶² Hochschulanzeiger 13/08/2013 <http://hochschulanzeiger.faz.net/deutschlands-bester-online-prof-sendung-mit-der-mouse-12399070.html>

⁶³ http://dukespace.lib.duke.edu/dspace/bitstream/handle/10161/6216/Duke_Bioelectricity_MOOC_Fall2012.pdf

For a growing number of courses Coursera is now offering a fee-based “signature track”, which awards certificates. This requires learners to undergo biometric identification verification (via photo ID and unique typing pattern) right at the beginning of the course. Coursera emphasises that the certification is a pass validation offered by the institution and Coursera, and not a credit award.⁶⁴ Coursera continues to offer the course for free.

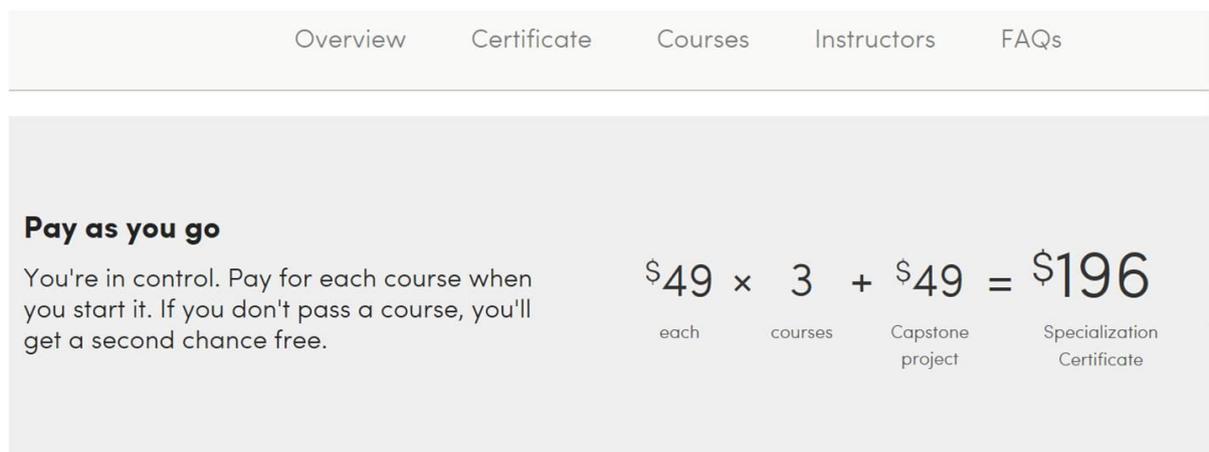


Figure 5: Coursera pricing for signature track courses, Source: www.coursera.org/specialization/reasoning/8

The Universidad Nacional de Educación a Distancia in Spain offers under “UNED Abierta” (Open UNED) a broad range of validation options for its MOOCs, starting with a participation certificate for €15, whereas certificates which award ECTS require an exam and come at a slightly higher cost.⁶⁵

Testing and certification of MOOC participants, who for individual courses remain low in number and disseminated widely around the globe, is also a growing domain for specialist companies, such as Proctor U and Pearson. The latter is cooperating with edX. An edX representative announced recently the “post-MOOC” area, as its members start experimenting with SPOCs – small private online courses with fixed enrolments.⁶⁶

A contested issue is still whether credits and degrees can or should be awarded via MOOCs, and what would be the implications. In this regards a MOOC Masters of Georgia Institute of Technology is awaited with a lot of suspense. The issue is not so much the feasibility – the open universities have offered credit and degree-earning online courses for many years – but whether this course will meet demand and render economic benefit. Universities – in particular in the US – are under growing pressure to secure and diversify income streams. And Georgia Tech is not the only institution that considers a digital learning offer that would either lower costs, or generate additional income. Transforming its OpenCourseWare website into a pay-per-view e-learning application was one of the approaches that apparently the Massachusetts Institute of Technology (MIT) has considered as an additional income source in times of global financial crisis.⁶⁷

But even if Georgia Tech and a few other well-known institutions are to succeed – there is still some recollection of the failed attempt some time ago to make online learning profitable⁶⁸ – this will not provide a general answer to the higher education sector of how MOOCs are to be financed and can even make revenue.

⁶⁴ www.coursera.org/signature/ ; <http://blog.coursera.org/post/40080531667/signaturetrack>

⁶⁵ http://portal.uned.es/portal/page?_pageid=93,25731579&_dad=portal

⁶⁶ <http://etcjournal.com/2013/09/26/spocs-are-mooc-game-changers>

⁶⁷ www.universityworldnews.com/article.php?story=20100918074309955

⁶⁸ EUA Paper on MOOCs – p. 9 www.eua.be/Libraries/Publication/EUA_Occasional_papers_MOOCs.sflb.ashx

It would also not create sufficient return of investment for the big platforms. While not excluding the possibility of income from certification of participation, completion, credits and degrees, it is hard to imagine that this would be the only, or even the main income source, given the considerable investments that have been made. edX was established with a US\$30 million investment from both Harvard and MIT. These costs are probably partly returned through cost contribution of the 30 participating universities (for example, it is known that Amherst College has been invited to join edX for US\$2 million for a period of five years – given that edX has now around 30 partners), partly written off as investment, including reputational costs. edX and Coursera have developed different models of charging institutions for the use of platforms and services, and how to share any additional income, but while one is for-profit and the other not-for-profit, they have probably not yet developed sustainable business models.⁶⁹ In September 2013 it was announced that edX and Google joined forces to launch MOOC.org in 2014 – a platform that would allow a wide range of course producers to be shared – including teachers and businesses to “make contributions to the online education space, the findings of which will be shared directly to the online education community and the Open edX platform.”⁷⁰ Google has launched several instruments in the area of teaching and learning, most recently a MOOC course builder. There have been comments that this is a somehow unexpected alliance, a highly exclusive not-for-profit university platform and a multinational internet operator, and it will be interesting to see what the business project is going to be.

In July 2013, Coursera announced that it had raised another US\$43 million in venture capital, on top of the US\$22 million it banked last year. Among the participants are LearnCapital, a Silicon Valley venture firm, the World Bank’s International Finance Corporation, and also Laureate, an international operator of for-profit universities. Doug Becker from Laureate stated in an interview that he would expect MOOCs to reduce the cost of higher education by at least one third, and if they only earned 1% of that benefit, it would “still be a very nice business”.⁷¹ In an interview with Forbes Magazine, the Coursera CEO Daphne Koller stated that a stock market launch might be inevitable, given the outside investments. The alternative would be selling, which she would like to avoid, as this might imply that Coursera’s goals would change.⁷²

This points once more to the question of the actual motivation for MOOCs: is it to make learning more economical, or to improve it – or both?

5.2. Implications for learning and teaching

Many of the arguments made in favour of or against MOOCs are actually more about economic aspects (cheaper or free of charge) and the motivations for institutions to have them (such as international outreach). The issues of funding and business models for MOOCs are already quite complicated; to assess at this stage what MOOCs actually mean for learning is even more challenging. This is partly because they are a relatively new development, their use is still in the experimental phase and not much research has been published, but also because in different institutional and system environments they may have a different impact.

Principal questions are:

- Are MOOCs a means for learning, or just an information source (fancy form of textbooks)?

⁶⁹ <http://chronicle.com/article/How-EdX-Plans-to-Earn-and/137433/>

⁷⁰ <http://techcrunch.com/2013/09/10/google-expands-role-in-digital-education-teams-up-with-edx-to-build-a-youtube-for-free-online-courses/>

⁷¹ Economist, 20/07/2013 – www.economist.com/news/business/21582001-army-new-online-courses-scaring-wits-out-traditional-universities-can-they

⁷² www.forbes.com/sites/georgeanders/2013/07/10/coursera-hits-4-million-students-and-triples-its-funding/

- Can MOOCs replace, complement or supplement higher education provision? Are they, for example, a possibility to widen participation? If so, what are the conditions to be met in terms of learning support and assessment?
- Should MOOCs award credits?
- How would MOOCs, credit-bearing or not, change the role of higher education institutions?

5.2.1. What is best in learning: MOOCs, classroom or open university?

What makes the debate complicated is that it combines two topics of discussion: MOOCs versus traditional face-to-face teaching, and MOOCs versus other forms of online learning. Hence, many of the arguments for and against MOOCs are actually not MOOCs-specific, but are related to the general debate regarding online learning.

Those who are sceptical about online education would identify MOOCs as the most recent and extreme representation of a type of learning provision that is not to be trusted. The classic conservative teacher's position is that MOOCs cannot replace a teacher, learning has to be interactive, and does not allow to do laboratory experiments, clinical practice or medical simulation.

However, criticism also comes from the open universities that find that MOOCs are just a resource – whereas the open universities provide real teaching with the necessary student support services, and award degrees (and hence are at least of equal quality to face-to-face teaching).

The question of whether online learning “is as good as” and whether it “replaces classroom teaching” has been the source of confrontation between proponents and opponents of online learning. Online opponents tend to describe the merits of face-to-face education in a nostalgic way that tends to ignore the realities of modern mass higher education. As MOOCs are announced as “the best education of the world accessible for anyone”, MOOC proponents may counter the arguments: How does studying a MOOC delivered by an inspired scholar from one of the world's top institutions compare to sitting in an overcrowded and anonymous lecture hall in some unknown institution?

Besides the fact that this is – at least for the moment – hardly an alternative, as MOOCs generally do not award credits, and no degree: the point is of course that no sensible person would claim that online learning should replace all physical classroom teaching. It is clear that MOOCs and online learning forgo certain features that physical classroom teaching can offer, e.g. spontaneous interactivity, informal exchanges, cultural and social experiences in and outside the lecture hall – in particular in the case of young school leavers, for whom higher education coincides with living apart from their families, and becoming responsible for managing not only learning but also their lives.

Decades of successful practice have proven that online higher education learning is possible and can be of high quality. It has also become clear that it has not replaced face-to-face instruction, but offers an alternative for learners who are not able and prefer not to attend a brick-and-mortar institution, and allows for an overall flexibility in teaching and learning.

So the discussion would be: what is the difference between a MOOC and other forms of online learning? Is it as an alternative to physical higher education teaching or a complement to it?

5.2.2. MOOC = innovative quality learning for all?

Many innovative achievements of MOOCs are actually not so novel and certainly not unique selling points:

- Large numbers of learners being able to watch a MOOC? This is basically the same technology as watching TV programmes — live or recorded — on the internet.
- Being able to respond to exercises and quizzes? Being able to join a discussion or working group? To get peer support? There are rather common technologies used in online questionnaires, games, in social media and many online portals, and they have been for a long time part of online learning. It clearly depends on the development of software and e-platforms, which is of course very important and useful for further progress in interactive mass communication and collaboration, including in learning.

A key argument in favour of MOOCs is that they promise to provide high-quality learning opportunities to a very large number, or even unlimited number of learners for free or at low costs. The economic side of this argument, i.e. business models that would allow MOOCs to remain free of charge or at low cost for participants, have already been discussed above. However, longstanding experience has shown that quality and student success in online learning come at a price that is maybe even higher than for face-to-face education. The question therefore is whether MOOCs are actually able to undercut the costs of other online learning models, while offering comparable or even superior learning quality.

Can MOOCs solve the problems and dysfunctions in mass education resulting from an unfavourable instructor-to-student ratio? Can MOOCs even reverse the pattern of one (instructor) to many students toward “many to one” or “many to many”? Some educationalists would see this change as necessary to revolutionise learning.

Educational scientists have pointed out that many MOOCs are just reproducing a model of traditional education provision that is already in crisis. They also challenge the claim that MOOCs provide flexible learning – apart from the fact that they can be followed on a more flexible time schedule – and point for example to the fact that Coursera MOOCs follow a very linear, fairly standardised narrative. Adaptive learning, i.e. learning material that adjusts automatically to the learning needs and abilities of learners, is making progress, driven by research, software developers and publishing companies,⁷³ but still far away from allowing flexible learning phases.

One may also argue of course that there are different types of MOOCs, such as a connectivist MOOC (c-MOOC). However, it seems that presently, it would not be possible to run a c-MOOC⁷⁴ on one of the big provider platforms, as software tools would not allow for the type of interaction and collaboration among participants that characterise c-MOOCs. A question is whether this could be changed, given the fact that a purpose of c-MOOCs is that learners and groups of learners develop their own initiatives, which are unpredictable. The x-MOOC pattern, however, is a fairly linear approach with clearly defined (learning) outcomes. A c-MOOC might impede the automatic assessment approach that the big MOOC platforms currently offer, which requires rather prescriptive learning, in that all issues need to be broken down into to a dual response choice (right or wrong). It would also imply a different role of the instructor (more of a facilitator than the actual provider of knowledge), than the one in traditional teaching.

⁷³ www.insidehighered.com/views/2013/04/04/adaptive-learning-could-reshape-higher-ed-instruction-essay#ixzz2Pfdetc9d

⁷⁴ For further information on the distinction between c- and x-MOOCs, see the previous EUA paper on MOOCs p.4 www.eua.be/Libraries/Publication/EUA_Occasional_papers_MOOCs.sflb.ashx

Another point made in favour of MOOCs is that they create large sets of data that may provide more robust analysis of learning styles, course programmes, etc. However, the point is also made that this is less about improving learning, and more about correcting the teaching materials, which could have been done also with proper preparation in the first instance, and some testing. This kind of assessment would also make more sense, if the students and their backgrounds are known – which is usually not the case in MOOCs.

5.3. Blended learning and flipping the classroom

MOOCs are also considered as a means for instruction in a “blended learning” mode.

There are good arguments for this approach. Research shows that students learn more through active learning (i.e. when they have assignments or discuss an issue) rather than through listening to lectures. Students listen to lectures more attentively if they have been given a problem or task to solve before the lecture. In this regard the structure that most MOOCs have – short lectures alternating with assignments and quizzes – seems to be ideal. Of course, one could also do this in a classroom, but it would be more difficult to ensure that all students participate: some might need longer to assimilate the content of the lecture, and prefer to listen to it again before doing the assignment.

Another advantage is that teacher-student contact time usually used for lectures could be used differently, e.g. for discussions, experiments, project- and group-work, working with peers etc. This concept is referred to as flipping the classroom. It has been strongly advocated and demonstrated by Salman Khan, founder of the Khan Academy, in the context of school teaching. Teachers get time to work with students on an individual basis.

This may be a good strategy provided that institutions have the physical infrastructure in place. Lecture halls are not particularly useful for anything but lectures, and student project groups might also need rooms to meet and work. Some teachers report that their students are actually quite happy listening to lectures, and this is also confirmed by research that proves that students – despite the fact that they learn more and better when they are active learning – prefer conventional lectures.⁷⁵

Another observation is that the discussion on innovating learning through MOOCs takes a rather exclusive focus on replacing lectures. This might give the impression that students are spending most of their study time in lectures; this is probably not the case in most European higher education institutions. The concept of “flipping the classroom” might not be so different from seminar style teaching, where students have to read books at home, and to prepare papers to be presented. If a MOOC is to replace or to supplement book reading, this might appear more animated and more appealing to some students. But it might not really solve the “one to many” problem because in blended learning at an institution only a relatively small number of learners could take part in the flipped classroom. But an advantage might be that a MOOC could serve a very diverse learning group, comprising students in the institution, in the classroom and at home, and learners outside of the institution, whether or not they will take a certificate or be awarded credits in the end.

The concept of a flipped classroom is of course not a particularity of MOOCs, but is used generally by institutions working with blended learning. The question is whether MOOCs are the most suitable instruments for blended learning, as they seem to be developed for self-study, and not as a part of a blended course. Therefore, teachers may use elements of a MOOC, both for classroom teaching or for home self-study assignment. However, this is only possible if MOOCs will prove to be sustainable and remain an open source.

⁷⁵ www.universityaffairs.ca/students-prefer-good-lectures-over-the-latest-technology-in-class.aspx

5.4. Learners

The discussion on MOOCs deals with learners in a very abstract manner.

Many of the reports and articles that talk about the disruption in higher education systems and institutions that will transform higher education learning, paint the picture of economic and reputational competition between higher education institutions, with masses of young people from around the globe seeking the best possible education they can get. Assumptions are that MOOCs would widen access, and allow those learners from around the globe who cannot afford conventional study, who do not have enough time or cannot attend a classroom, to have access to higher education.

As a matter of fact, little is known about the profiles of MOOC participants, about their motivation to sign up and the actual benefits that derive from MOOCs.

The participant maps show that participants come from all those places in the world which can be reached via internet, again with a high density in regions where higher education access is available for a large fraction of the population. Interestingly, cases such as the “Ulan Bator boy” – a 16-year-old who successfully completed the MIT course on electrical circuits – suggest that besides exceptional talent, institutional and family support are of great importance.⁷⁶

Analysis suggests that unless MOOCs have a specific social or professional target or are put into the context of institutions or organisations, the vast majority of participants are higher education students, former students or upper secondary school pupils, who are quite likely to enter higher education. The University of Madison Wisconsin and University of Edinburgh both report that around 70% of MOOC participants are university graduates.⁷⁷ A study conducted on 35,000 MOOC participants of Pennsylvania University produced similar results, and also confirmed that participants from emerging countries usually belong to the educated and wealthy part of society, who are likely to have access to higher education.⁷⁸ Random inquiries in the European environment over the past months suggest that MOOCs are more likely to be attended by younger people: young professionals, not too removed from the world of learning, who would also see this as a possibility either to gain additional knowledge and skills for their professional practice, or use this as a retreat from a relatively dull daily work routine that offers little intellectual stimulation. Currently enrolled students might sign up for MOOCs to gain additional knowledge, get a “second opinion” or for remedial purposes, but maybe also for intellectual enjoyment in areas far away from their actual study fields. But these are somehow anecdotal, not built on systematic research and appropriate data samples. Academic teachers should give it a try and ask their students: how many of you are doing a MOOC, and why? This could help to find out whether they sign up for MOOCs because they want the best education in the world – which is the assumption made in a number of reports: all students would prefer to study at some of the world’s top institutions. What seems to contradict this assumption is that MOOC participants often do not recall which institution actually provided the course they attended.⁷⁹

This and the low importance that institutional affiliation seems to play on some of the platforms (e.g. some of Udacity and many of the Udemy courses) seems to suggest that there is an audience that is focusing on themes and knowledge more than on institutional reputation. This may be true, in

⁷⁶ According to a newspaper article, the 16 year-old studies at a school in Mongolia which is run by an MIT graduate.

www.nytimes.com/2013/09/15/magazine/the-boy-genius-of-ulan-bator.html?ref=elearning&r=0

⁷⁷ www.era.lib.ed.ac.uk/bitstream/1842/6683/1/Edinburgh%20MOOCs%20Report%202013%20%231.pdf and Clare Huhn,

UW-Madison MOOC Data Coordinator p. 8 at <http://apir.wisc.edu/cssimages/UW->

[Madison_MOOC_Demographics_August_2013.pdf](http://apir.wisc.edu/cssimages/UW-Madison_MOOC_Demographics_August_2013.pdf)

⁷⁸ www.nature.com/nature/journal/v503/n7476/full/503342a.html

⁷⁹ This is a personal observation from conversation with several people who had taken MOOCs, but did not recall from which institution.

particular, for European participants who are educated or have been educated in national systems that have not been stratified by rankings etc. This does not mean that the quality of content and teaching is of no importance to them. Given that the MOOC offer in some subject areas is quite broad, one occasionally hears statements like the following: “I signed up for a course, did not like it, and found a better one on the same topic.” Given the opportunity, learners make choices, both in online and face-to-face education.

5.5. Teachers

There has been resistance among staff in some of the US universities. Staff at San Jose State University felt under pressure to use the edX JusticeX course of Harvard scholar Michael Sandel, which SJSU bought, and wrote an open letter to the author. Faculty protested against what they perceived as a push “to replace professors, dismantle departments, and provide a diminished education for students in public universities”.⁸⁰ The letter, while acknowledging Michael Sandel’s scholarship, makes some remarkable points: for example, it refers to the fact that students would read less books, and also questions why the diverse student body of SJSU with its own relation to justice should listen to the discussions of predominantly white upper-class Harvard students. It also criticises, apart from economic considerations, that there was no pedagogical or academic reason to prioritise the course over the teaching provided by SJSU. (Note that the Governor of California had publicly declared MOOCs a means to save education costs.)⁸¹

We do not know whether Michael Sandel responded to the letter, but he wrote to the author of the Chronicle of Higher Education article, clarifying that his course has been online for free for several years, and has only recently been redesigned for edX, and that he actually knew “very little about the arrangements that edX made with San Jose State University” (Chronicle of Higher Education, 02/05/2013). This sparked off a debate, and Sandel’s position has been echoed and supported by other professors, and apparently also by the American Council on Education (Chronicle of Higher Education, 25/05/2013). The point being made is that knowledge should be made available to a broad public, and MOOCs could be compared to other publications, such as books, in this regard.

This is obviously another aspect to be considered: scholars are aware that their books can be used for various purposes in various contexts, which is of course their key function and the reason for their success. But admittedly, the idea that the word would be separated from the scholar and would travel around the world raised considerable concern around 2 000 years ago.⁸² Is the critical question the “depersonalisation of teaching”? Does a MOOC teach – or just circulate knowledge? MOOC companies insist that it is teaching; people like **Anant Agarwal** of edX called upon teachers to rethink teaching and stated that it is time for them “to join the revolution” (Observer, 15/06/2013).

Interestingly, the changing role of teachers, which is central to other forms of e-learning, is addressed very differently in the MOOCs context: rather than redefining the teacher as facilitator and enabler of learning, MOOCs are suggesting a scenario in which a few are becoming star teachers and gain international fame and visibility – whereas others would end up in rather subaltern and uncreative positions in assisting the implementation of MOOCs. Many MOOCs are restating the traditional concept of a professor – albeit in a contemporary fashion: shorter lectures, more pictures, quizzes and riddles. The absence of women in teaching MOOCs has been noted.

⁸⁰ <http://chronicle.com/article/The-Documents-Open-Letter-From/138937/>

⁸¹ <http://chronicle.com/article/Why-Professors-at-San-Jose/138941/>

⁸² Dialogue Socrates and Phaidrus: *And when they [the speeches, MG] have been once written down they are tumbled about anywhere among those who may or may not understand them, and know not to whom they should reply, to whom not: and, if they are maltreated or abused, they have no parent to protect them; and they cannot protect or defend themselves.*

But in the US context at least, there is a more mundane and material issue about MOOCs and teachers: Mitchell Duneier, a colleague of Sandel at Harvard and a “Star MOOC Professor” (Chronicle of Higher Education) declared that, despite the fact that teaching MOOCs has been “one of the greatest experiences of my career”, he would – at least for the moment – abstain from any further MOOC teaching. He turned down a proposal from Coursera to license his course to be used at other colleges in a mix of online and face-to-face instruction. “I’ve said no, because I think that it’s an excuse for state legislatures to cut funding to state universities. ... And I guess that I’m really uncomfortable being part of a movement that’s going to get its revenue in that way. And I also have serious doubts about whether or not using a course like mine in that way would be pedagogically effective.” He expressed concern that licensed MOOCs would give a pretext to cut higher education budgets even more (Chronicle of Higher Education, 03/09/2013).⁸³

Obviously, it is not only university staff without tenure track positions and at less reputed colleges, who feel uncomfortable about MOOCs. At Amherst, one of the top US liberal arts colleges, faculty members decided against joining edX – the official reason was to safeguard the independence and uniqueness of the institution’s approach to learning and teaching.⁸⁴ While staff at some institutions may be suspected of being notoriously hostile to change, including the development of online learning, there are also institutions involved in online learning that are sceptical, but retain a wait-and-see position. University leadership at the American University launched a moratorium on MOOCs, given that the implications are not entirely clear (Chronicle of Higher Education 13/05/2013). But, as reported, and this might be a crucial difference to the European situation, many universities are under pressure from their governing boards to get involved in MOOCs. Media articles in the US suggest that the President of the University of Virginia was ousted in part over issues related to online learning and later re-instated following a faculty rebellion against the external governing board.⁸⁵

All this also suggests that institutions and their staff may decide against MOOCs for different and sometimes even opposite motives and reasons, and that the specific political and economic situation, institutional governance and contractual issues play a major role.⁸⁶

5.6. Should MOOCs award credits?

Credits are probably – next to the business model – the most contentious issue with regards to MOOCs. One cannot quite understand how MOOCs are supposed to change higher education, if they do not award credits, be it in blended or in distance-learning mode – unless they imply new ways of validation which either complement or compete with existing credit systems. A report of the rating agency MOODY’s on income prospects of US higher education institutions points to MOOCs as an additional income source – provided they would award credits.⁸⁷

On the other hand, if institutions that deliver MOOCs do not award credits, does that not indicate that they do not consider MOOC as teaching?

While most universities in the first instance excluded awarding credits, there seems to be a trend towards this. As reported, the American Council for Education (ACE), very much in line with its

⁸³ <https://chronicle.com/article/A-MOOC-Star-Defects-at-Least/141331/>

⁸⁴ www.insidehighered.com/news/2013/04/19/despite-courtship-amherst-decides-shy-away-star-mooc-provider

⁸⁵ In her statement, the Chair of the Board questioned the ability of the President of the University of Virginia to exercise proactive and innovative leadership: “We also believe that higher education is on the brink of a transformation now that online delivery has been legitimized by some of the elite institutions” <http://news.virginia.edu/node/18791?id=18791>; www.nytimes.com/2012/09/16/magazine/teresa-sullivan-uva-ouster.html

⁸⁶ www.acu.ac.uk/membership/acu-insights/acu-insights-5/moocs-disrupting-academic-profession

⁸⁷ www.insidehighered.com/news/2013/01/17/moodys-report-calls-question-all-traditional-university-revenue-sources

longstanding mission of awarding credits for programmes (ACE CREDIT) to service men and women and other lifelong learners, has accepted 11 courses, five from Coursera, five from Udacity and one from edX, for credit, and will continue to review and externally quality-assure them.⁸⁸

This is very much in line with the prediction that MOOCs will morph into MOCCS – Mid-Sized Online Closed Courses that would either provide learning support, assessments and credit for a fee, or be delivered through licensed provision in the context of a university, such as the example of Antioch University where students participate in selected Coursera courses supported by a staff member of the university.

Georgia Tech in collaboration with the telecom company AT&T is offering a MOOC Master’s degree programme in computer science as from January 2014, via Udacity. Geared “to professionals by focusing on applying advanced knowledge in the workplace”, it will cost US\$6 600, a fraction of the cost of the on-campus course which is research-based and requires one-on-one interaction.⁸⁹ The pilot phase is limited to 600 participants, which might also be part of the aim to assess the workload that MOOC degrees would imply for instructors, teaching assistants and administration.

But while a complete online degree appears to be a novelty for such an exclusive institution like Georgia Tech, others in the same league are not too far away: the University of Harvard, for example, has a longstanding distance learning strand, Harvard Extension, which offers associate degrees and Bachelor degrees with an eight and 16 credit on-campus study requirement, respectively.⁹⁰

There has been some speculation on whether higher education institutions will lose the monopoly on degree and credit validation, as other education providers have started issuing badges⁹¹ and certificates, which are accepted by employers. This process – often referred to as “unbundling” – has been well described by Salman Khan, the founder of Khan Academy:

“What if we were to separate the teaching and credentialing roles of universities? What would happen if regardless of where (or whether) you went to college, you could take rigorous, internationally recognized assessments that measured your understanding and proficiency in various fields – anything from art history to software engineering. With our hypothetical assessments – microcredentials, if you will – people could prove that they know just as much in a specific domain as those with an exclusive diploma. Even more, they wouldn’t have had to go into debt and attend university to prove it. ... In short, it would make the credential that most students and parents need cheaper (since it is an assessment that is not predicated on seat time in lecture halls) and more powerful – it would tell employers who is best ready to contribute at their organizations based on metrics that they find important.”⁹²

One “open” way of doing this could be via peer review and assessment, by which through feedback (voting) from an open peer community an individual would gradually build up a reputation and get his/her level of knowledge and expertise attested.⁹³

⁸⁸ www.insidehighered.com/views/2013/09/17/essay-efforts-address-issues-skepticism-about-moocs#ixzz2fgZs4I8c

⁸⁹ www.udacity.com/georgiatech

⁹⁰ www.extension.harvard.edu/degrees-certificates/undergraduate-degrees/online-courses-campus-requirement ; http://en.wikipedia.org/wiki/Harvard_Extension_School

⁹¹ Badges seem to be the same as certificates.

⁹² <http://schoolsoftthought.blogs.cnn.com/2012/10/04/my-view-the-future-of-credentials/>

⁹³ A good example is stackoverflow – which is problem-based: everybody can ask a question and everybody can answer, and the peer group/participants would vote which is the best answer to the problem <http://stackoverflow.com/> – and the remarks on this and other initiatives on Alfred Wenger’s website <http://continuations.com/post/33154949166/unbundling-higher-education-credentialing>

Another approach are initiatives that provide systems and portfolios for credit-similar validations awarded by institutions and organisations. This is obviously a very interesting domain for companies active in education and media.

“Open badges” is a development spearheaded by the software company Mozilla, which has been developing a software package that allows registered users to collect badges from all types of learning. Among the organisations and institutions that award badges are museums and scout organisations, but also some universities.⁹⁴

While the awarding of degrees and credits is still with the higher education sector, some companies take a parallel approach in ensuring the best recognition of their learning programmes. For example, Pearson, which according to its website is the only FTSE 100 company⁹⁵ offering degree courses, awards a Pearson Higher National Diploma at the Pearson College.⁹⁶ But these courses are also validated by Royal Holloway and Bedford New College, University of London.⁹⁷ For England, Wales and Northern Ireland, Pearson Edexcel is one of the official examination boards, which started off as a charity, and became then a for-profit venture. It examines secondary school degrees and is the only body to offer the BTEC vocational/work-related qualifications, some of them giving access to or being equivalent to higher education degrees.⁹⁸

Strikingly, on the European side, there has not yet been a real discussion on whether MOOCs should earn credits, and whether they could be related to the instruments of the European Higher Education Area (ECTS, recognition of prior learning). As reported earlier, there seems to have been at least one individual case in which a German university recognised MOOC learning. As mentioned above at least one of the European open universities offers ECTS award, and the Berlin-based MOOC platformiversity is exploring ECTS award with two of its participant institutions.⁹⁹ It will be interesting to see the future developments on this issue. So far, according to ACE, demand for credit award has been slow, but it is not excluded that this might change.¹⁰⁰

5.7. Openness – who owns MOOCs?

The modulations of the original MOOC concept described in this paper are also likely to impact the first O of the MOOC – for open: this concerns the point that students would pay no fees, which can no longer be taken for granted, but also the right to use and adapt MOOCs. The 2008 c-MOOC concept of the open-university world strongly emphasised the “free to use”, with reuse and adaptation of materials for other purposes and contexts, as its very principles. Therefore criticism is voiced from the open educational resources fraction towards the development of restrictive licensing.

There has been a debate recently about FutureLearn’s licensing policy. This blog, for example, notes:¹⁰¹ “Users may not copy, sell, display, reproduce, publish, modify, create derivative works from, transfer, distribute or otherwise commercially exploit in any manner the FutureLearn Site, Online Courses, or any Content.” FutureLearn also reserves an unrestricted right to use any content users submitted, and in some cases when learners did subtitles or translations these would become the

⁹⁴ <http://openbadges.org/participating-issuers/>

⁹⁵ A share index of the 100 companies listed on the London Stock Exchange with the highest market capitalisation (wikipedia)

⁹⁶ www.insidehighered.com/blogs/stratedgy/moocs-moccs#ixzz2FOw16rtN

⁹⁷ www.pearsoncollege.com/

⁹⁸ <http://en.wikipedia.org/wiki/Edexcel>

⁹⁹ See pp. 11 and 18 above; and EUA Occasional paper on MOOCs 2013 p. 9

¹⁰⁰ http://chronicle.com/blogs/wiredcampus/credit-for-moocs-effort-hits-a-slag/49573?cid=pm&utm_source=pm&utm_medium=en

¹⁰¹ <http://blogs.cetis.ac.uk/lmc/2013/06/05/what-do-futurelearns-terms-and-conditions-say-about-open-content/>

property of FutureLearn. It has been remarked that this very much resembles the conditions that Udacity sets.

edX has made its platform open source. Asked about its position towards course content and material, the edX representative at the Madison University workshop stressed that edX, in principal, was in favour of the widest possible open licensing, but that individual universities participating in edX (e.g. Harvard) would have their own position on these issues.

Universities signing up with Coursera grant the company a “non-exclusive worldwide licence to reproduce, distribute, publicly display, perform, enhance, modify, adapt and translate content provided by the University”. So far, Coursera has not used this clause as an income source – with the exception of its contracts with a number of state universities that use an entire MOOC for on-campus teaching (Chronicle of Higher Education, 03/09/2013); institutions have been allowed to use parts of a MOOC (e.g. the videos) free of charge.

This can obviously evoke all kinds of legal issues, on academic freedom and intellectual property rights, and how faculty and university relate to each other, and also, who is actually responsible for the content and, possibly in the future, will award credits. For example Stanford University stated that – while it will sign up with edX – its faculty may continue using Coursera. The University of California’s faculty union has challenged contracts that the university leadership signs with Coursera, on the grounds that the courses are the intellectual property of the individual teachers.¹⁰²

But these developments also bring up the question of whether there is a key opportunity for a European open learning initiative. In most European countries, higher education institutions are to a large extent funded by public money. Tuition fees are generally low to non-existent. Therefore, an attempt to build a business model relying in the first instance on fees for online courses – beyond the offer already provided by open universities, the universities’ lifelong learning departments and private for-profit providers – might not be very strategic and bear a high risk of failure. But could universities contribute to further underpinning and strengthening the European Higher Education Area and the Erasmus exchanges through collaboration in MOOCs and e-learning, for example, by granting each other use of MOOCs at no to low costs? This is of course not only an issue for European universities, as an initiative of the New American Colleges and Universities Group shows, which plans to establish a “code-sharing” initiative allowing their students to take courses for credit at their home institution.¹⁰³

The idea of openness of MOOCs is advocated by the European open-learning community. Fred Mulder, EADTU, UNESCO chair for open education, makes the point that the courses and the materials should remain open, but for teaching and services, there should be no charges.¹⁰⁴

6. Points for further consideration for European higher education

I. Evolution of MOOCs

- Europe has witnessed a rapid increase in MOOCs over the last year. First experiences – in Europe and elsewhere – suggest that MOOCs may take different shapes and serve different

¹⁰² www.insidehighered.com/news/2013/03/19/u-california-faculty-union-says-moocs-undermine-professors-intellectual-property

¹⁰³ <http://chronicle.com/blogs/next/2013/07/11/fly-the-friendly-skies-of-united-universities/>

¹⁰⁴ Mulder is one of the authors of a concept of five components of openness, that can and should not all be completely implemented. He points out that open education is not a doctrine, but an orientation. www.learning-innovations.eu/2013/Fred-Mulder-Open-ing-up-Education-in-5-components-the-pan-European-OpenupEd-MOOCs-initiative

purposes that vary considerably by country and institution, as has been demonstrated above in some examples.

- As there is no “one definition” of what MOOCs are, and deviation from the core concept will continue, it is important to **continue observing and analysing their development, their purposes and the opportunities they may offer for European higher education institutions.**
- The importance of this development goes far beyond the actual MOOCs, as it has to take into consideration a wider range of issues, with regard to online learning, learning and teaching in general, but also the emerging open science movement which helps to imagine and discuss processes of institutional change. Given the response to MOOCs in different parts of the world, this offers yet another opportunity for international exchanges on the future of higher education.

II. The evolution of higher education: Avalanche, disruption or transformation?

- The assumptions that have been made on the impact of MOOCs often concern expectations of economic returns and are based on the potential impact of technologies that are still not fully developed (e.g. adaptive learning):
 - **MOOCs are occasionally presented as a remedy for addressing all the challenges of mass higher education** (access for everybody at low cost). But presently there is no convincing evidence that moving *en masse* to online provision would be more effective than the more conventional classroom. In particular at Bachelor level (replace undergraduate teaching through MOOCs) the consensus appears to be that direct interaction between teachers and learners is of the essence. There may also be a danger, in more competitive environments, of a two-tier higher education system emerging, with MOOCs and other forms of e-learning being seen as education offered to economically disadvantaged learners. This would be a contradiction to the values underpinning the European Higher Education Area.
 - An assumption has been made that **MOOCs are the centrepiece for major transformations in higher education around the world**, due to the economic and technical innovations they bring. These “avalanche” scenarios assume that MOOCs are superior to learning and teaching in conventional universities in a number of aspects (lower price, flexible course delivery, better quality of teaching and course materials, international reputation of providers).
- However, so far, the indication is that MOOCs will complement existing provision rather than replace higher education institutions. Any other scenario would imply open markets for higher education and in Europe a decrease in public responsibility and a corresponding liberalisation of higher education sectors. Such developments could, indeed, challenge the very existence of public and private non-profit universities, and would most likely mean disadvantages for students and society at large with regard to quality, social equality, costs and sustainability. In this regard it will be important to monitor carefully the further development of national legal frameworks for higher education across Europe as well as the European internal market and international trade agreements presently being revised.
- But MOOCs are one among a wide range of options that **e-learning offers** to higher education institutions, and likely one of the elements that may contribute to an ongoing process of change and transformation in teaching and learning in European higher education.

III. One piece in the puzzle of technology-enhanced education

- It appears evident that **e-learning will be of growing importance for European universities**, given also the growing use of the internet and digitally-based scientific cooperation, as well

as the ubiquitous presence of portable digital devices.¹⁰⁵ While universities may, of course, develop and implement e-learning without becoming involved in MOOCs, it is evident that over the past months, MOOCs have been useful in **raising awareness and interest, and stimulating a debate on the broader use of e-learning.**

- An important issue to which MOOCs have drawn attention concerns the additional opportunities for universities to **reach out to learners and partners outside the institution.**
- There are certainly opportunities for enhancing the quality and accessibility of higher education. But neither MOOCs nor e-learning as such guarantee improved course delivery and pedagogical approaches.
- Considered reflection and the commitment of higher education staff and institutional leadership will be needed to ensure that **MOOCs reach their potential for promoting innovation in learning and teaching.** This will require analysis and assessment of practice at institutional level in working with MOOCs.

IV. Potential benefits

- Higher education institutions that engage in MOOCs will have to explore **their actual and potential benefits for students and other groups of learners, for institutions, systems and for society at large.** In the European context it should be further investigated whether and how MOOCs could:
 - **Enhance internationalisation,** by presenting Europe's higher education offer externally and by introducing European learners to universities in other parts of the world, and thus contribute to the reputation of European higher education and its connectivity with partners around the world.
 - Become **a strategic means for knowledge dissemination and enhanced collaboration promoting truly global exchanges,** including north-south partnerships, based on common principles such as research ethics and good governance.
 - Contribute to **research and research cooperation** among universities, as well as to promoting **partnerships with individuals and organisations outside of higher education.**
 - **Support the future development of the European Higher Education and Research Area** through facilitating teaching collaboration, enabling joint curricula and fostering virtual exchanges of staff and students and also providing opportunities for making further use of **open educational resources (OER)** which have been developed at many European institutions but have not yet gained the visibility and formal acknowledgement of the higher education community.
 - Offer greater opportunities for broader groups of **learners interested in lifelong learning and in accessing informal educational opportunities, for professional or personal reasons,** thus also reaching out to society, including potential students and employers looking for opportunities for training their employees.

V. The responsibility of the university

- The positive response of many European universities in such a short period of time to the emergence of MOOCs shows that they have the capability, responsiveness and flexibility, required to embrace new developments in a rapidly changing global environment.
- Rather than MOOCs making universities obsolete, **universities are making MOOCs possible:** most MOOCs are produced by higher education institutions and people working in them. This

¹⁰⁵ In October 2013, an EUA survey on ICT-based learning, including MOOCs has been launched to map structures for the provision of these within the institutions (including open universities, digital centres etc.). The upcoming EUA TRENDS 2015 report will also refer to MOOCs and ICT-based education.

also means that universities must assume responsibility for the quality of all their learning activities, including MOOCs.

- **Each institution will have to assess whether and how it wants to use MOOCs**, rather than, or in addition to, other forms of e-learning. This requires the development of strategic approaches, developed in line with institutional profile and mission, and in the wider context of the changing nature of learning and teaching and the growing role of e-learning.
- It will be important for universities to explore proactively the further use of e-learning, taking into account the resulting changes for staff, students and for their governance and management approaches. They will also have to consider learners and partners outside universities being addressed through MOOCs. As in other areas of activity, this will require **strategic approaches to implementation** if these new developments are to impact significantly on the “regular” teaching process and course provision.

VI Broader Strategic Considerations

- **Financing MOOCs:** there is much discussion of the business models for MOOCs. So far the production and maintenance costs are mainly with higher education institutions while the various platforms are looking to generate revenue. The situation is in flux, with different Anglo-Saxon and European models and motivations emerging. Reflecting the consensus on the public responsibility for higher education in Europe there is also discussion of possible investment of public funds in MOOCs. In particular in times of economic crisis this would require clear evidence of benefit to universities and learners.
- **Positioning Europe:** Beyond a common platform launched by the Open Universities and the European MOOCs summits, there has been little strategic debate on their added value in the European context. EUA invites its members to contribute, through the knowledge and experience they have gained with MOOCs, to a broader European discussion on the possibilities that MOOCs open up, and how best to achieve synergies with existing structures and instruments of European higher education.

7. Annex

7.1. European participation in Coursera

In November 2013, in total 28 institutions from the European Higher Education Area (24 from EU member states, plus three from Russia and one from Turkey) were offering courses on Coursera.

Copenhagen Business School	Denmark
Technical University of Denmark (DTU)	Denmark
University of Copenhagen	Denmark
École Centrale Paris	France
École normale supérieure	France
École Polytechnique	France
HEC Paris	France
Ludwig-Maximilians-Universität München (LMU)	Germany
Technische Universität München (TUM)	Germany
Sapienza University of Rome	Italy
Università Bocconi	Italy
Eindhoven University of Technology	Netherlands
Leiden University	Netherlands
University of Amsterdam	Netherlands
National Research University – Higher School of Economics	Russia
Moscow Institute of Physics and Technology	Russia
Saint Petersburg State University	Russia
IE Business School	Spain
IESE Business School	Spain
Universitat Autònoma de Barcelona	Spain
École Polytechnique Fédérale de Lausanne	Switzerland
University of Geneva	Switzerland
University of Lausanne	Switzerland
University of Zurich	Switzerland
Koç University	Turkey
The University of Edinburgh	UK
University of London International Programmes	UK
University of Manchester	UK

7.2. MOOC directories

Literature on MOOCs consists mainly of articles, info web pages, blogs etc. – and it is boundless. In addition to the literature quoted in the paper above, the following websites provide MOOC directories. They are designed to find MOOCs, but are useful to get an overview of MOOCs on offer and also contain other information.

- <http://openeducationeuropa.eu/en/find/moocs> – a European Union web portal with a “MOOC finder” function.
- www.distancelearningportal.com/articles/241/moocs-online-education-for-the-masses.html – the Study Portal website which is offering also a portal on distance learning programmes, including MOOCs.
- www.moocs.co/Higher_Education_MOOCs.html – a MOOC directory differentiating different levels of education – it has a kindergarden section.
- www.mooc-list.com/ – a directory that offers several search criteria, including languages.
- www.class-central.com/ – a directory which allows to browse MOOCs by providers, courses, or topics.