

# MOOC : AN EUROPEAN VIEW

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Back from the United States, after a visit to the University of Pennsylvania and Drexel University in Philadelphia, and having attended the 2012 Educause conference in Denver, this memo summarizes my understanding of MOOC, an initiative launched by several well known American universities. My main purpose was to understand what is behind this enthusiasm and how it can be translated to European universities.

## MOOC: A SHORT HISTORY

American universities have focused on new technologies and their use for education since their appearance in the late 90s. Since 2002, with the explosion of the Web technologies, the dream of a full distance education has started to be a reality. The intention of the universities was twofold: to attract new customers far from their traditional recruitment pools and to compete, not only with others universities, but also with private companies, such as Phoenix U., which organized a classical distance learning with great success. The creation of WGU, a pure online university [1] is the best example of this intention. Later, the MIT created the OCW initiative (Open Courseware) [1] which exposes an increasing number of teaching documents to the world. In 2006, the Khan academy [2], not especially intended towards Higher Education, invited everyone to add his own short video (less than 10 minutes in most cases) to explain any point of interest. The contributors are all volunteers. Neither their qualifications nor their legitimacy are controlled.

More recently, a new concept, MOOC (Massive Open Online Courses) [3] presented a more ambitious goal. Its aim was to provide a comprehensive education to any public, at world scale, and to deliver an attestation (certification) of completion of study to those who had followed successfully the full course.

However one must define what is underlined under the word “successfully”. The concept of distance learning is quite old. It has been evolving with the technology and the economic conditions. Are the MOOC a breakthrough in education or a new avatar of an old concept? An excellent review about this issue, has been written by P. Hill [4] in Educause Review.

Before discussing further the MOOC, it is necessary to recall the socio-economic context of the American universities, to understand to which problem this new concept is supposed to answer.

## THE SOCIO-ECONOMIC CONTEXT OF THE AMERICAN UNIVERSITIES

The economic model of the American universities is that of a private non-profit enterprise [5]. State universities are no exception. Their mode of income is based largely on student enrollment: students pay for the education they receive, thus the fees depend on the tuition. This is not the case in many European countries where fees are based on a semestrial or yearly period. The cost varies depending on enrollment, hence the concept of full-time student (FTE), that keeps coming up, when discussing the cost of technological solutions with U.S. suppliers. Thus the price of any teaching unit includes the price of all relevant services, including technology. A university may not hesitate to increase it in order to provide new or improved services. They eventually feeds other activities through this money. A community college or a state university will not ask the same fees than a prestigious private university, not only because its regulations do not allow it, but also because its field of activities is narrower, thus its financial needs.

Another reason for the push of technology is that, competition being a key word in the search of clients, i.e. students, technology can be a good argument as well for communication as for education. This is the case at Drexel U., for example, which claims to be always on the front of new technologies.

The American university is in crisis. Registration fees have skyrocketed in recent years and reached intolerable levels [6]. The average level of student debt, when leaving the university is at a worrying level [7]. Universities are aware of this and are looking for parades. Community colleges, state universities have seen their number of students increase after the 2008 crisis. Some economists predict the bursting of a financial bubble in this area.

Technologies are already being used by publishers to respond to this crisis. Contrary to most European universities, American courses are based on books that students are supposed to acquire. Publishers have massively moved to electronic publishing, with the idea of lowering the prices, which rises at an intolerable level (\$ 1,000 per year per student on average).

MOOC is another way to meet the crisis as OCW was, partially, to meet the cost of publication.

Finally one must mention, in the American culture, the sincere desire to help those in need (donations, volunteering, alumni donations, corporate support, ...) which is the origin of many generous initiatives to spread the knowledge.

## THE INITIATIVES

MOOC is a new concept, where learners study alone, helping each other. They assembled by affinity, language, community ... to exchange, share and solve all the difficulties they encounter in their learning. In this concept the number of participants can be very large. It even reaches 140,000 or more for some courses! At this scale it is no longer possible to envisage a direct interaction with teachers because it would require an incredible large staff and would increase tremendously the cost. Automatic tests allow participants to check their understanding and assess what they have learned. Teachers are very little involved, giving only general directions through the social tools that are implemented to allow exchanges between learners. People who achieve the course are awarded a certificate. The failure rate is very high, above 80%; the promoters of MOOC reply that, due to the high number of participants, the number of certified students remain honorable.

The cost of preparing a MOOC is important. A MOOC is not just online documents, already available via the Web:

1. Documents, once used for OCW, must be fully redesigned for this new model. All authors insist on this point. This is not, by far, a simple reuse of existing documents.
2. The need for automatic or semi-automatic assessments require appropriate tools and human resources to design the assessments (teachers associated with specialists of the underlying technologies).
3. Social networking tools must be designed to facilitate the interaction between learners
4. A new approach to pedagogy, adapted to distance education without interaction with teachers, given the mass of students, is required. It is called "Flipped Learning", which reflects the fact that the student behavior must become more proactive to help each other, support each other, join together (remotely) in a way that best suits them (community, language, affinity, ...). Hence the importance of social networking tools. These concepts are grouped under the name of "crowd-sourcing".

The discourse about education and pedagogy, sometimes, seems amazing. It addresses ideas that already exist for many years, in US as well as in Europe, about the use of technology in education: see, for instance, what has been done at UPMC [8]. This seems, to an outside observer, a little strange because, up to now, the importance of technology has been justified, in particular in the United States, as a push to change the pedagogy. The new concept, here, is the need to process large masses of students, requiring automatic control and monitoring with minimal human intervention. In other words "flipped learning"

appears as a revolution in pedagogy, not because it is more efficient, but because it is needed to handle large numbers of students.

All this means that the decision, to go to MOOC, requires to mobilize significant financial and human resources. Classical teaching platforms are not suitable: they are not intended for such masses and are designed to enhance interaction with real teachers. One needs to invent new tools, better adapted to mass education, more akin to CMS (Contents Management Systems) as LMS (Learning Management Systems).

American universities, with their considerable resources, have understood that creating a MOOC, requires much more than they can afford. They have assembled in consortia where each university brings some courses. The consortiums are comprehensive enterprises with their employees, officers and funding. edX [9] which includes Harvard, Berkeley and u. of Texas began with 60 M\$. Its proponents recognize that the business model is not yet defined, each consortium being today supported by the industry. About the purpose of MOOC themselves, nothing is clear. Questioned on this point, the answers from the promoters vary: for some, it is a generous action towards the most disadvantaged, to raise their level of knowledge to be promoted in their company through the acquisition of a knowledge not necessarily directly related to their work. Others, such as Drexel U., U. of Central Florida or U. of Colorado, believe that a purely online teaching is a means to filter the entries to the university directly in second year, at a reasonable price for the students. This would lower the price of the studies compared to an entry in a conventional first year. In this model the MOOC is no longer free and becomes part of the financial strategy of the universities. Harvard sees it as a means of communication to attract good students and even offer scholarships to those who are most successful.

At Educause 2012 a number of them were present:

- EdX [9]
- Coursera [10] which includes 33 universities around Stanford and claims to be followed by nearly two millions students! U. of London, EPFL, U. of Edinburgh, in Europe, joined the consortium.
- Canvas [11] to which belong Brown U., U of Central Florida ...
- Udacity [12] which is a company founded by former Stanford University staff members.

Other MOOC, such as Udemy [13], were not present (or at least I did not notice their presence). The MOOC blooms with different models. The discourse remains quite similar: new pedagogy, new tools, questions about the financial viability of consortia ("all will not survive") and about the use that each partner will decide about the courses made available in the MOOC.

One may consult the documentation provided by Educause [14-15].

## CONCLUSION

The outline of these consortia, their long-term goal is still very unclear. Some proponents have the vision of charitable assistance to students in these difficult times. Others may have more commercial thoughts, costless today, as an advertisement, but not tomorrow. The landscape is changing and will change depending on the socio-economic tensions.

Some attempts already are starting in Europe, at a modest scale [16] and in great confusion with various actors. Some have joined American consortia such as Coursera, as mentioned above. They are not the last. This is not the first attempt in mass teaching at the level of a nation: the Open University, in Great Britain, is the best example and success. MOOC, anyway, are very challenged from the pedagogical point of view. The opinion of P. McGhee, Vice-Chancellor at the University of East London, as expressed in the Guardian [17], is a good example of the ongoing discussions.

European universities must enter the movement. Otherwise all the space will be filled by initiatives coming from other places. The motivation to establish a MOOC, in Europe, can not be the same as in the United States, because the socio-economic context, the cost of education, the role of the state to define the university strategy, are completely different.

One thing is definitely sure: building a MOOC cannot be done at university level. The project is too ambitious:

- human resources needed for preparing lessons: content and formatting, scripting ...
- resources requested to implement the solution: platform, server, website ...
- necessity to rapidly offer a large range of courses. Each contributor can only bring a few items, considering the work and the requirement to mobilize a staff.

We may suggest two alternatives:

- national consortiums: for instance, in France, the UNT [18] could be a right scale. However, since they are defined by themes, their specialties are too narrow and they would not offer the wide palette of their American competitors.
- Consortiums at a European scale, where each university will provide expertise in its own language. Such consortiums would be a good representation of the European cultural diversity. A European organization such as TERENA [19] could be the technical operator for the servers and the platform. EUNIS [20] could act as an intermediary body, a link between the technicians on the one hand, the course designers (academic staff) on the other.

The main challenge remains to solicitate the academic partners. This is a strategical point and universities must take initiatives very quickly through their own channels (direct links, European Universities organization such as EUA, LERU,...). The European Community is also a natural partner and leader.

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