

# Cerebriam Knode

the definitive brief on technology in learning and communications

## A Year of MOOCs

With three high profile launches by US universities in 2012, backed by a total of \$112m investment, nothing can be considered more fast-paced in technology in higher education than the advent of Massive Open Online Courses (MOOCs.) By the end of 2012 three of the largest MOOC platforms, edX, Coursera, and Udacity, were collectively offering 226 online courses to over 3 million registered students worldwide.

"Higher education is being disrupted; our MP3 is the massive open online course (or Mooc), and our Napster is Udacity, the education startup..."

- Clay Shirky, New York University

A MOOC is, as the name suggests, a platform through which educational providers are able to offer, for free, online courses to students not enrolled on campus courses, thereby reaching a considerably larger number of students.

This brief is designed to place the events of last year in context, gain a better insight into what MOOCs actually offer, outline some related trends, provide some data on the resources required to create a MOOC, and consider the value of MOOCs to both the higher education sector, and students.

### MOOC Overview

- MOOC content is delivered largely via video, with quizzes and course discussion forums added to create interactive elements. There is no one-to-one support from faculty and instead the discussion forums are designed to encourage 'peer' support and collaboration. Though much of the discussion in these forums is not something from which one could learn.
- MOOCs are different from previous offerings of open and free learning resources because they are separate entities from the faculty's where their founders or course creators work, and are managed as businesses. These platforms are purpose built for remote learning by masses of learners, and are managed by a dedicated team of engineers. Some level of technical support is available to course creators, and the content is stored on remote servers and maintained by managed by MOOC staff. IP remains with the creator of the content. Much can be done to improve the user experience provided by MOOCs, and the level of intuitiveness in course presentation differ from platform to platform, and even from course to course within the same platform.
- None of the course providers are presently providing resources for an entire degree (bachelor or masters) programme. Most courses are actually modules which are either taken directly from courses delivered on campus, or are modified versions of courses delivered on campus.
- Typical class profiles tend to be very international with the largest number of participants logging on from the US, followed by India and then the UK.
- Some courses award a certificate of completion but no course offers a formal assessment, and the only check against plagiarism is self regulated by the student and articulated through an honour code by which they must abide.
- Many courses attracted highly educated students. Coursera's 'Software as a Service' and edX's 'Circuits and Electronics' course administrators each report that over 70 percent of their participants have degrees (and more than a third have graduate degrees.)

#### Quick Facts:

Coursera, for-profit, founded by current Stanford University professors.

Udacity, for-profit, founded by former Stanford University professor.

edX, not-for-profit, founded by MIT and Harvard University.

- Some MOOCs have been compared directly with on-campus courses. 63 percent of those who completed the EdX 'Circuits and Electronics' online course as well as a similar one on the MIT campus found the MOOC better; 36 percent found it comparable; and 1 percent, worse.

- Many of the earlier course offerings centred on sub-disciplines within engineering. While such course offerings continue to be popular due to the relative ease with which quiz answers can automatically be checked, academics from the social sciences and humanities have also begun to experiment with online courses.

#### The Value of MOOCs to Students

- Distant learning can never recreate a campus based education. The former does, however, provide self-motivated learners with the opportunity to learn for self development and/or career advancement. Where the latter is concerned, MOOC certificate recipients will struggle to show the value of a completion certificate granted with out a rigorous assessment and checks to prevent plagiarism.
- Udacity has signed an agreement with Pearson to invigilate tests associated with its online courses should this be required. Pearson runs over 4,000 centres in more than 170 countries, which have stringent security and monitoring checks to identify the test taker, and to ensure that they do not cheat.
- MOOCs suffer from low retention rates. edX's 'Circuits and Electronics' course, had a class size of 155,000. Of these 23,000 students tried the first problem set, 9,000 passed the mid-term and 7,157 passed the course as a whole. Coursera's 'Machine Learning' class attracted 72,000 students, only 46,000 attempted the first assignment, and 13,000 completed the class and earned a certificate of completion.

#### The Value of MOOCs to Higher Education

- Though most MOOCs continue to be free of cost at present, this is unlikely to be true for much longer. The following information about potential ways in which to monetise the platforms was obtained under a freedom of information act addressed to Coursera:
  - Certification (students pay for a badge or certificate); 2. Secure assessments (students pay to have their examinations invigilated); 3. Employee recruitment (companies pay for access to student performance records); 4. Applicant screening (employers/universities pay for access to records to screen applicants); 5. Human tutoring or assignment marking (for which students pay) 6. Selling the MOOC platform to enterprises to use in their own training course; 7. Sponsorships (3<sup>rd</sup> party sponsors of courses); and 8. Tuition fees.
- MOOCs are already experimenting with certification and employee recruitment. Businesses interested in offering continued professional development to their staff may find certain courses useful, at present a MOOC-business collaboration appears to be most promising route to monetisation.
- Many faculty members involved in MOOCs are interested in learning how they could improve the course offerings for their current on-campus students. With tens of thousands of online students, says one MOOC course creator, "you can assign 50,000 students to track A and 50,000 to track B, and then you have enough numbers to tell if a design change [in the course] is making a difference or not - which is very difficult when you have a class of 50 or 60 students that you can't really split into two."

- Some commentators have indicated that the notional returns offered by the MOOC platform creators to the course creators are not proportional to the skill and effort put into designing the courses. Significant time commitment is required from MOOC course creators, along with the preparedness to experiment with pedagogy and technology. The total amount of video used in each MOOC course varies but is unusually between 33 - 50 hours. The degree to which videos are edited also varies from course to course, and some are direct recordings of campus based classes, others are dedicated recordings, while others still use the chroma key effect to change backgrounds. Some course creators choose to upload lectures lasting 70 minutes, while others edit lectures to bite size chunks ranging from 2 - 15 minutes.

### **Distance Learning Trends in the UK**

- The increase in tuition fees at UK universities from £3,000 to £9,000 has led to an increase in the number of students considering applying to degree programmes offered by established online education providers, such as the Open University, which charges between £1,800 - £5,000 per year. In June 2011 The Open University reported that the number of younger students taking its degrees had increased by a third in comparison to 2010.
- Futurelearn is led by the Open University and is the first UK based MOOC. It was announced in December 2012 and is due to begin offering courses in July 2013. The universities of Birmingham, Bristol, Cardiff, East Anglia, Exeter, King's College London, Lancaster, Leeds, Southampton, St Andrews and Warwick have all signed up to Futurelearn. The business is managed by former BBC Radio Player front man Simon Nelson.
- The University of Edinburgh is the first British university to offer a MOOC which is titled 'E-learning and Digital Cultures' and is due to be launched on 28<sup>th</sup> January 2013. The course has 260,000 sign-ups to date.

### **MOOCs and the Future**

- National or regional higher education providers in Europe and beyond are likely to create their own well targeted MOOCs. It would most likely take a team of eight-ten experienced engineers to build such a platform in six months.
- In November 2012 Coursera and the American Council on Education (ACE) announced a collaboration designed to scrutinize the viability of MOOCs as part of a traditional university curriculum. Also, The Bill & Melinda Gates Foundation is giving Ithaka S+R, the non-profit research group, \$1.4 million to conduct a multi-campus study of MOOCs as an integrated instructional resource at several public universities in Maryland.
- The extent of longer-term finance impacts on individual universities will vary widely, according to a Moody's report titled: 'Shifting Ground: Technology Begins to Alter Centuries-Old Business Model for Universities'. "MOOCs create new revenue opportunities, increase brand recognition, and provide improved operating efficiencies,..." said VP-Senior Analyst Karen Kedem, author of the report.
  - "Most universities will likely gravitate to a 'mixed' model that combines residential learning with the new technology, some will increasingly feature online course delivery, and some colleges may choose to create a niche by remaining focused solely on the traditional residential-classroom experience." Less-selective, smaller colleges that are unable to join emerging networks or carve out an independent niche will likely experience credit stress driven by declining student demand, she adds.
- A May 2012 article in the Washington Post highlighted the \$750 billion - \$1 trillion debt in US student loans, which some refer to as the student loan bubble. With the high cost of, and low retention rate in, US higher education, building provisions for an affordable online education may be a good long term strategy.

Sources: nytimes.com, bbc.co.uk, Times Higher Education, Moody's, futurelearn.com, engineering.stanford.edu, edx.org, coursera.org, washingtonpost.com, insidehighered.com and MOOC's: An Analysis for BCIT.