Open and Online Education

Anka Mulder, Executive Board, Delft University of Technology

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Online and On Campus Higher Education
Clayton Christensen

What happened to:
• Telephone companies?
• The music industry?
• Record shops?
• Or travel shops?

Internet is the Disruptive Technology for Higher Education
1. What are we afraid of?
Recent developments
MOOC platforms (USA)

**UDACITY**
- **Founded:** January 2012
- **Founder:** Sebastian Thrun (ex Stanford professor)
- **Company:** For profit
- **Funding:** $22 million (Venture Capital)
- **# Universities:** none
- **# Courses:** 30
- **# Topics:** ICT
- **# Students:** 1 million
- **Certification:** Yes
- **Proctored examination:** Yes (4000 CBT locations in 170 countries via partnership with Pearson VUE)
- **Open Source:** No (licenced)

**Coursera**
- **Founded:** April 2012
- **Founder:** Koller & Ng (Stanford professors)
- **Company:** For profit
- **Funding:** $22 million (Venture Capitalist)
- **# Universities:** 81
- **# Courses:** 442
- **# Topics:** All academic fields
- **# Students:** 4.5 million
- **Certification:** Yes (most)
- **Proctored examination:** Yes, (5 accredited courses + partnership with ProctorU)
- **Open Source:** No (licenced)

**edX**
- **Founded:** May 2012
- **Founders:** MIT & Harvard
- **Company:** Not-for-profit
- **Funding:** $60 million (Harvard / MIT: 30 each)
- **# Universities:** 29
- **# Courses:** 67
- **# topics:** All academic fields
- **#students:** 1.2 million
- **Certification:** Yes
- **Proctoree examination:** Yes (450 CBT locations in 110 countries via partnership with Pearson VUE)
- **Open Source:** Yes (platform and some courses)
2. Do we need change?
Our mission in education?

• Educate students
• Prepare students for tomorrow’s world
• Spread knowledge
1. Teaching methods have to change: students expect to choose what they learn, how they learn and when they learn
2. HE student numbers will increase
“Students expect to choose what they learn, how they learn and when they learn”
Yet, this is how we teach
2.

“The number of higher education students in the world is expected to quadruple, from around 100 million in 2000 to 400 million in 2030”
To accommodate them we need to build 15,000 universities of 20,000 students in 30 years
= 500 per year
= 10 per week
## Credit Outlook Higher Education Institutions USA

<table>
<thead>
<tr>
<th>Market Segment</th>
<th>Broad Credit Effect</th>
<th>Opportunities/Risks</th>
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<tbody>
<tr>
<td>Global</td>
<td>Positive</td>
<td>Superior brand reputation strengthens further</td>
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<td>Free content offers opportunity for experimentation and supports tax-exempt mission; hedges regulatory risk</td>
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<td>Greatest ability to monetize at later stage, but may require sharing of benefits with new technology partners</td>
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<tr>
<td>National</td>
<td>Highly Positive</td>
<td>Align with global segment to build international presence/join emerging networks</td>
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<td>Leverage scale to keep up with industry trend and reduce operating costs</td>
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<tr>
<td>Regional/Specialized</td>
<td>Mixed</td>
<td>Broaden brand recognition through the use of new technology</td>
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<td>Operational efficiencies through lower cost of delivery and ability to specialize</td>
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<td></td>
<td>Increased competition could weaken market share</td>
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<td>Potential need to create partnerships with other less well-known universities/for-profit provider could be a costly new investment</td>
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<tr>
<td>Local/Commuter</td>
<td>Negative</td>
<td>Technology dilutes some of the value of physical proximity to student &amp; increases reputation premium</td>
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<td>Small size, weak market reputation renders many unattractive partners for emerging networks, may be left out as industry consolidation increases</td>
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<tr>
<td>For-Profit</td>
<td>Highly Negative</td>
<td>Short-term benefit of legitimizing preferred form of delivery</td>
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<td>Long-term threat as more reputable universities enter the online market</td>
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3. Delft University of Technology
• Good university, but no fat cat: so prioritise

• Engineers:
  • easy adapters of technology
  • open to innovation

• Demand for Higher Education growing
Online and Campus Education
Delft open & online education: examples

- **Video Lectures** – 10 years - thousands
- **Grass Root Projects** – 8 years
- **OpenCourseWare** – 7 years (120)
- **EdX member** - 2013
- **MOOCs** – 2013 – 2 published
- **Online accredited programmes** - 2013
  - MSc Water Management
  - MSc modules 30 EC: TPM & Aerospace
- **Blended Learning** - 2013
  - BSc TPM
• Spring 2014:
  • Introduction to Aerospace Engineering
  • Next Generation Infrastructures

NEW ET3034TUx: Solar Energy
Discover the power of solar energy and design a complete photovoltaic system. MORE
STARTS: 16 Sep 2013 • INSTRUCTORS: Arno Smets • DelftX

NEW CTB3365x: Introduction to Water Treatment
Learn about urban water services, focusing on basic drinking water and wastewater treatment technologies MORE
STARTS: 16 Sep 2013 • INSTRUCTORS: Jules van Lier • DelftX

50,000

25,000
Age Distribution of DelftX Registrants
(self-reported, >80% reporting rate)

**Water**
- United States: 21%
- Mexico: 18%
- Canada: 15%
- Colombia: 13%
- United Kingdom: 10%
- Nigeria: 9%
- Spain: 8%
- Brazil: 7%
- India: 6%

**Solar**
- United States: 26%
- India: 23%
- Mexico: 16%
- Netherlands: 12%
- Colombia: 10%
- Spain: 9%
- United Kingdom: 8%
- Brazil: 7%
- Pakistan: 6%

**General**
- PhD: 3%
- Master's: 26%
- Bachelor's: 39%
- HS: 26%
- Other: 7%

Female (F): 16%
Male (M): 84%
Open & Online Education Phase III

Ambition:
1. Maintain position in top 3 Europe
2. Expand & diversify online portfolio Masters, MOOCs, OCW, Modules
3. Maximize collaboration with partners in edX (MIT, Harvard, Stanford, ...) to boost international & academic reputation
4. Increase production & innovation capacity of teaching & support staff

For whom?
- Campus students
- New Master students
- Life Long Learners
4. **The Future: business models**
Recent developments platforms

**MILLION DOLLAR BABY:** Coursera announced that its Signature Track program, which allows students to earn official certificates for courses, has surpassed 25,000 signups and $1 million in revenue. The Palo Alto-based MOOC started the program in January, and by April reported $220K in earnings. At the time of writing, Coursera has 94 courses that offer Signature Track certificates, which each cost $39 to $49.

**EDX UNIVERSITYX LOGO**

This is to certify that

**Jean Z. Rodriguez**

successfully completed

**S101x: Sample Course**

a course of study offered by edX, an online learning initiative of UniversityX through edX

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**EARN AN XSERIES CERTIFICATE FROM ONE OF THE TOP INSTITUTIONS IN THE WORLD**

Some schools offer an XSeries Certificate when you complete and pass a series of courses in a specific subject. Earning an XSeries Certificate is a true achievement. It demonstrates a level of achievement that you can use to advance your career or simply impress yourself. The requirements vary for each institution, but generally you must take and receive a Verified Certificate of Achievement in each course as outlined by the school. Review the current list of active XSeries options below or read the XSeries FAQs.
Business Models?

- Certification
- Online customised courses for companies
- Educational services: tutoring, study advice
- Diagnostics for education
- Sponsoring
- Recruiting services
Why Open & Online?

- Reputation
- Innovation
- Increase university output
- No way back
- Quality
5. Back to Boston
Thomas Friedman: “The World is Flat”

“When the outstanding becomes so easily accessible, average is over.”