To
MOOC or not to MOOC: that is the question

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September 17, 2014
Plan

Context

Response

Implications

MOOCs
Demand — Costs — Technology
Exploding demand for HE

- 2007: 150.6 million tertiary students globally
- 2012: 165 million
- 2025: 263 million
The Demand

4 new universities to cater to 30,000 needed each week to accommodate children who will reach enrolment age by 2025

go.nature.com/mjuzhu

Everitt, qtd Liyanagunawardena et al, 2013
Tertiary Enrolment in Asia 2004 - 2012

Tertiary Enrolment in Malaysia 2004 - 2011

## Gross Enrolment Ratio in Secondary & Tertiary, 2012

<table>
<thead>
<tr>
<th>Country/Regions</th>
<th>Secondary %</th>
<th>Tertiary %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Malaysia</td>
<td>67</td>
<td>36</td>
</tr>
<tr>
<td>East Asia &amp; Pacific</td>
<td>83</td>
<td>28</td>
</tr>
<tr>
<td>South Asia</td>
<td>63</td>
<td>21</td>
</tr>
</tbody>
</table>

Access to Higher Education

OECD Average 40-50%

Caribbean 25%

South Asia 15%

Sub-Saharan Africa 10%
Rising Costs of Higher Education

Source: The Economist Dec 1st – 7th, 2012, Higher education, Not what it used to be.
And yet...

- 36% of college graduates did not show any significant cognitive gains over 4 years
  

- Half the employers say they have trouble finding qualified graduates to hire
  
  *Chronicle of HE* and *Marketplace*

Cover Credit: PHOTOGRAPHS BY PETER HAPAK FOR TIME
Global Youth Unemployment Rate
2004 - 2013

Source: ILO - Global Employment Trends for Youth 2013
## Unemployment 2009-2012

<table>
<thead>
<tr>
<th>Country/Region</th>
<th>Unemployment %</th>
<th>Youth Unemployment %</th>
<th>Unemployment with Tertiary Education (% of Total Employment)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
<td>Male</td>
</tr>
<tr>
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<td>3</td>
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<tr>
<td>East Asia &amp; Pacific</td>
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<td>12</td>
</tr>
<tr>
<td>South Asia</td>
<td>3</td>
<td>5</td>
<td>9</td>
</tr>
</tbody>
</table>

Challenges of filling vacancies, Malaysia

- Poor command of English (55.8%)
- Poor character/attitude/personality (37.4%)
- Asking for unrealistic salary (33%)
- Mismatch of skills (30.2%)

Jobstreet Survey, qtd by Dato Seri Idris bin Jusoh, Malaysian Edn Summit, 2014
Challenges

- Companies felt that 77.6 % of graduates ‘did not have the necessary skills’

  Bank Negara Malaysia survey, ibid.
The Digital Divide (Commonwealth countries)

Source: International Telecommunications Union
ICT in East Asia & Pacific 2004 - 2013

ICT in Malaysia 2004 - 2013

From digital divide to digital dividend

- The emergence of mobiles
- Use of appropriate technologies that are affordable, accessible and available
THE RESPONSE:
The Rise of Open Universities

UNISA

Athabasca University

The Open University

IgnoU
Asia has the largest number of adult ODL learners in the world, over 70 open universities!

India alone has a growing network of 14 open universities, 14 open schools and nearly 150 dual-mode institutions which collectively cater to over 7 million learners.
Online enrollment as a % of total enrollment, 2002 to 2012: US

Source: Grade Change - Tracking Online Education in the United States  I.E. Allen and Jeff Seaman
Online enrolments: Global

- Aggregate growth rate is 7.6%. The highest growth rate is in Asia at 17.3%, followed by Eastern Europe, Africa, and Latin America.

- The top ten countries with the highest eLearning growth rates are Vietnam, Malaysia, Romania, Azerbaijan, Thailand, Slovakia, the Philippines, Senegal, China, and Zambia

*Ambient Insight Worldwide Report*, January, 2013
Massive Open Online Courses: MOOCs

Coursera

Future Learn

Udacity

edX
Courses Offered

- Mathematics, 6%
- Science, 30%
- Arts and humanities, 28%
- Information technology, 23%
- Business, 13%

NPTEL India MOOC

- Focused on IT Skills
- Jointly offered with NASSCOM (industry)
- 52000 joiners; about 15000 participants
- 7500 participation certificates
- 1200 advanced, industry-recognised certificates
- Testing costs INR 2000 (RM 120)
Virtual U of Pakistan Open Courseware
U Philippines UPOU MOOCs
Xuetang MOOC (China)

https://xuetangx.com/, http://xuetangx.com/knowledge/2/
MOOCs offered in China

- by professors: giving back to society
- at universities: joining elite groups
- through consortiums: course & credit exchange
- at the ministry of Education: innovative courses

Wang, Qiong, Peking University in IAU Horizons, June 2014
MOOCs in the developing world

- ‘democratising access to higher education...by leveraging on new technologies such as Massive Open Online courses (MOOCs)’.
  
  Y.B Dato’ Seri Idris bin Jusoh

- ‘set up Massive Open Online Courses (MOOCs) ...to make it convenient for working class people and housewives to further their knowledge and qualifications’.

  BJP Manifesto, 2014
MOOCs in Malaysia

Global Entrepreneurship offered by Taylors University, Malaysia

https://www.openlearning.com/courses/Entrepreneurship
MOOCs in Malaysia

Malay Arts
offered by
Universiti Putra,
Malaysia

The ‘Massive’ in the MOOC

270 000
Students enrolled in Udacity’s Computer Science MOOC

200 000
US University first-year students intending to study Computer Science in 2968 4-year degree granting institutions

Profiles of MOOC learners

- a small fraction of registered persons complete/even start a course

- 841,687 people registered for MOOCs
  - 35% of them never engaged with the content,
  - Around 5% of completed their courses
  - Typical registrant: “male with a bachelor’s degree who is 26 or older”.

Andrew Ho et al, MIT-Harvard research study 2014
MOOC: Global Reach

841,687 in MIT-Harvard MOOCs
- 72% of the registrants from outside the U.S.
- 2.7% were from Least Developed Countries

35,000 in University of Pennsylvania MOOCs
- 15% were from BRICS
- 20% were from other developing countries

Ho et al 2014; Holland and Tirthaly 2014
Reaching the Unreached?

- The idea of MOOCs is that we are going to educate the children in China and Africa. A surprising number of people in the Financial Engineering and Risk Management MOOC were people who work on Wall Street. A number of Ph.D.s were taking it too. (Sreenivasan, formerly at Columbia University)

- We know that there is still something about MOOCs that isn't particularly helpful, or isn't particularly appealing, to people who have not gotten a degree. (Vignare, University of Maryland University College)
Why Do Universities MOOC?
(Columbia U Research Study by Hollands and Tirthali 2014)

- Extending the reach
- Building the brand
- Improving economics
- Improving educational outcomes
- Innovation in teaching and learning
- Conducting research on teaching and learning
MOOC for Development (M4D)

- Designed and offered by COL and IIT-Kanpur
- Delivery compatible with mobiles
- Experts from different countries for online mentoring
- 2286 sign ups from 116 countries
- 23% of learners certified;
M4D MOOC: independent evaluation 2014

- Good pedagogic practices adopted
  - Short videos (mostly)
  - Regular assignments and quizzes
- Mentor-Learner interaction regular; peer-to-peer learning
- Content and mentoring from highly competent individuals
- 87% rated the course quality very high
Learning from COL’s M4D MOOC

- Branded MOOC platforms are not necessary
- High quality of materials and teaching critical
- High levels of learner engagement is a must
- High reliability of IT platforms essential
- Possible to deliver quality at low cost
  - USD 19 300 compared with a min of USD 50 000 for branded MOOC (can be as high as USD 500 000)
  - Cost per certificate for a seven week course is about US$ 58 (compared to US$ 240 or higher in branded ones)
IMPLICATIONS
Pedagogy

- Flipped classroom
- Short chunks of learning resources
- Interactivity
- Peer-to-peer learning
Dynamic pedagogy: Learning Analytics

- Predictive Systems can be developed
  - An Early Warning System: an upcoming drop out can be noticed

- Recommender Systems can be built
  - Tutor/Coach can observe frequent attempts and failures in a particular activity and recommend remedial activities
Advantages of Learning Analytics

- Creates wholly new personalization pathways for learning from masses of data
- Continuous feedback for ongoing improvement
- Improved outcomes
- Quality of learner experience enhanced
Core implications: Pedagogy

- Teams in production
  - 5-25 members needed in a multi-disciplinary team
- Instructors’ investment in time
  - About 10-20 hours per hour of course material
- Highly reliable IT support and platforms

Hollands & Tirthali, 2014
Services Management

- Unique ID per learner across courses
  - Especially for those seeking certificates
    - Use of typing speeds
    - Iris scans
    - Other ID management

- Advanced records management
  - Critical for maintaining learner access and performance data
Services Management

- Online library and documentation support

- Discussion Forums
  - and similar activity spaces
  - Important for peer-peer and peer-mentor interaction
Services Management

- Proctored Examination:
  - At a cost to the learner
  - Practiced in a number of offerings
  - Involves expertise in exam center management
Credentialling

- Certificates of completion
- Badges
- Invigilated exams at testing centres
- Credits
Do you believe students who succeed in your MOOC deserve formal credit from your institution?

- **YES**: 28%
- **NO**: 72%
Issues for Quality

- Can one size fit all?
- Student verification and academic integrity
- Is a peer reviewed assessment acceptable?
- Is there a delinking of the institutions which teach and the institutions which credential?
FutureLearn

- A social enterprise initiative of OU UK
- Emphasis on enhancing the quality of learner/user experience
  - To cover 13 M users in five years
- Led by highly experienced instructors and designers
- Partners:
  - 35 Universities in UK and Europe plus Australia, South Africa and Japan
  - The British Council and the British Museum
Implications for Higher Education

- ‘Unbundle’: Delinking where we learn from where we receive qualifications;
- Diversify provision from full services to services that the learner can choose, increasing flexibility;
- Collaboration rather than competition.
Implications for Open Universities

- Strong in contemporary pedagogy
  - Already advanced in blending media and I-Design
  - Established Culture of production teams
  - Experience in content development

- Strengths in services management
  - Consistency and timeliness of delivery
  - Established practices in Contact center development
  - Similarly in exam center management
Implications: National Policy

- View MOOC as a new, interactive broadcast medium
  - Access devices are computers, tablets and smartphones rather than TV or radio sets
- Develop credible QA and Credentialing framework
- Focus on Higher Education as well as advanced skills development/in-service training
- Develop and nurture a capable and robust infrastructure
- Manage costs: adopt OER policies
New players emerge

- Business sector
  - FICCI in India, for example (Aug 2014)
  - MOOC for job-readiness
  - MOOC for skills development
  - MOOC for non-formal training of potential workers

- Agricultural Sector
  - Strong thrust to supplement extension
  - MOOC for in-service training
Implications: Institutions

- Orient faculty to offer and manage MOOC
- Sensitise administrators about quality and credentials in MOOC
- Develop robust marketing practices for mass outreach and enrollment
- Build teams that support authoring and ICT management
Finally, for developing countries

- New model of MOOCs required, one that builds on the experience of ODL
- MOOCs will *supplement* rather than replace traditional institutions
- Excellent platform for skilling at scale and with speed
THANK YOU