



moocs4all

Image CC BY James Cridland

# *Low-cost Production of MOOCs*

## *Why and How?*

Brian Mulligan

Institute of Technology Sligo, Ireland.

[moocs4all.eu](http://moocs4all.eu)



Western Balkans Moodle Moot  
WESTERN BALKANS MOODLE MOOT

**IT Sligo**  
An Institiúid Teicneolaíochta, Sligeach

## WHAT IS IT?

# MOOC

### MASSIVE

Classes may consist of up to 100,000+ students.

### OPEN

Registration is open to anyone around the world.

### ONLINE

The course is taken completely online.

### COURSE

They're similar to college courses, but don't offer credit.

## POPULAR PLACES TO TAKE MOOCs

**coursera**



**TYPE OF INSTITUTION**



For-profit



**NUMBER OF COURSES**

**210+**



**ORIGINS**

Founded by two Stanford professors

**edX**



Nonprofit

**25**

Run by MIT, Harvard and Berkeley

**U**  
**UDACITY**



For-profit

**22**

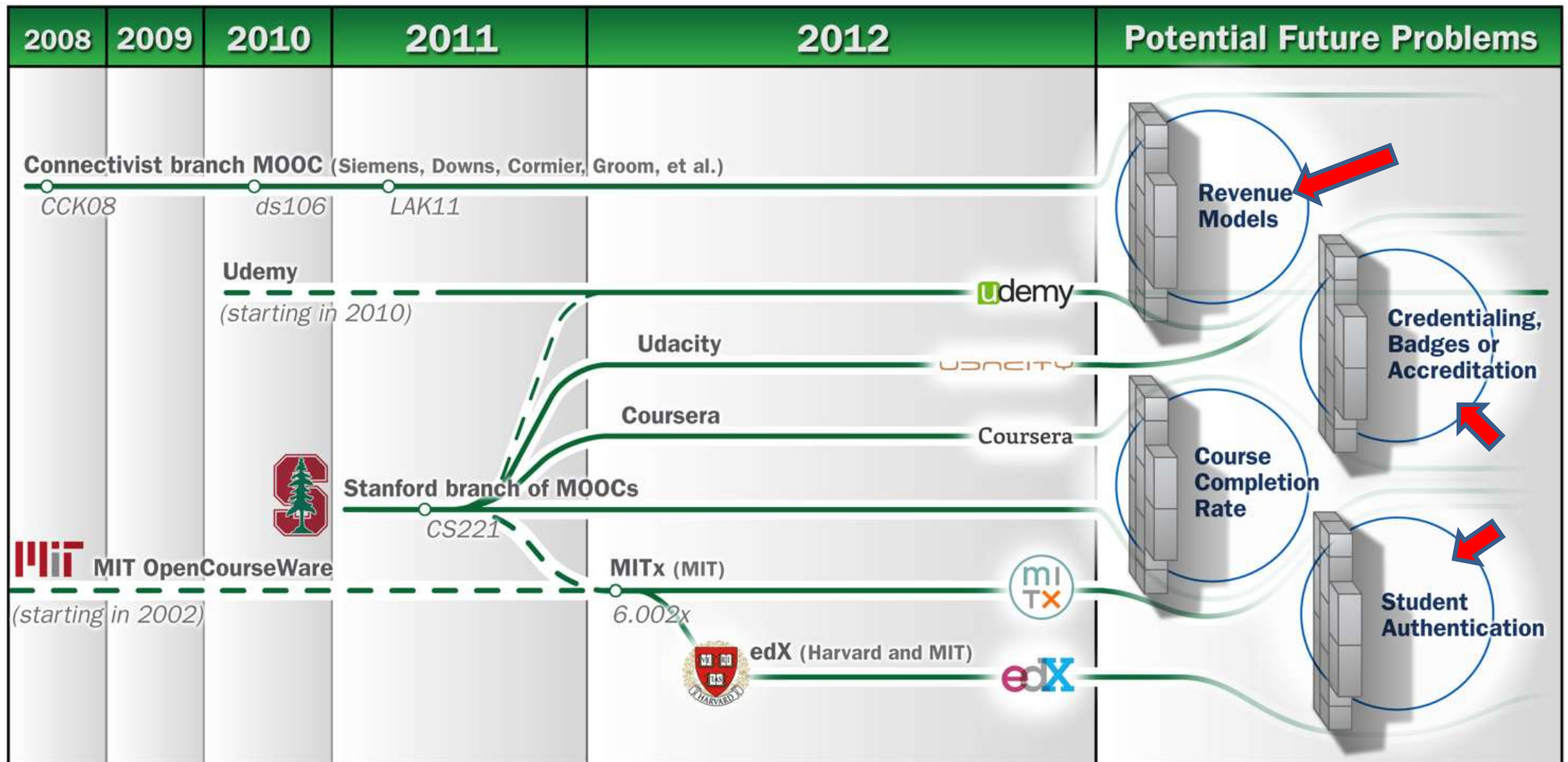
Founded by a Stanford professor



Bruce Shippee



# MOOC – Barriers to Overcome



Phil Hill, 2012

# The cost of MOOCs

- Survey of 27 UK universities
  - €40,485 average
- What about small target audiences?
  - Specialised topics
  - Minority languages
  - Changing technologies

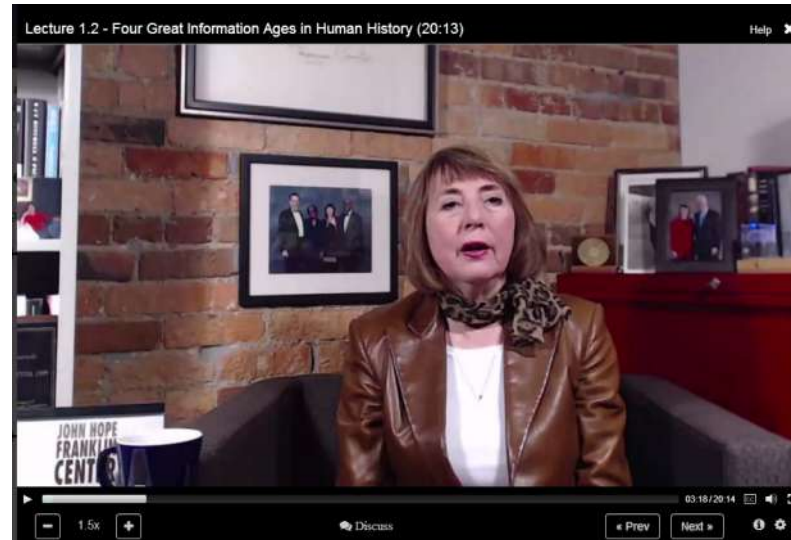


# Why do universities spend so much on MOOCs?



- Reputation?
- Quality of Learning?

# Is the Coursera xMOOC pedagogy sophisticated?



Do people learn?

**“I got exactly what I wanted from it and more...  
.. a most enjoyable and educational course”**

If an online course is good enough for  
30 students,



is it good enough for 3000 students?

# Are high production values required?

The image shows a handwritten derivation of Euler's Formula on a blackboard. At the top, the Taylor series for  $e^x$  is written:  $e^x = 1 + x + \frac{x^2}{2!} + \frac{x^3}{3!} + \frac{x^4}{4!} + \frac{x^5}{5!} + \dots$ . Below this, the series for  $e^{-x}$  is written:  $e^{-x} = 1 - x + \frac{x^2}{2!} - \frac{x^3}{3!} + \frac{x^4}{4!} - \frac{x^5}{5!} + \frac{x^6}{6!} - \frac{x^7}{7!} + \dots$ . The two series are then added together to form  $e^{ix}$ . The real parts are grouped under a bracket labeled  $\cos x$ , and the imaginary parts are grouped under a bracket labeled  $\sin x$ . The final result is  $e^{ix} = \cos x + i \sin x$ , which is labeled "Euler's Formula". A specific case is shown at the bottom:  $e^{i\pi} = -1$ . The video player interface at the bottom shows a timestamp of 09:19 / 11:27 and a resolution of 360p.

$$e^x = 1 + x + \frac{x^2}{2!} + \frac{x^3}{3!} + \frac{x^4}{4!} + \frac{x^5}{5!} + \dots$$
$$e^{-x} = 1 - x + \frac{x^2}{2!} - \frac{x^3}{3!} + \frac{x^4}{4!} - \frac{x^5}{5!} + \frac{x^6}{6!} - \frac{x^7}{7!} + \dots$$
$$e^{ix} = \left( 1 - \frac{x^2}{2!} + \frac{x^4}{4!} - \frac{x^6}{6!} + \dots \right) + i \left( x - \frac{x^3}{3!} + \frac{x^5}{5!} - \frac{x^7}{7!} + \dots \right)$$

$\cos x$   $\sin x$

Euler's Formula

$$e^{ix} = \cos x + i \sin x$$
$$e^{i\pi} = -1$$



# A simple online course

*30 x 15-minute recordings*

- ~~12 x Weekly 1 hour lectures~~
- Additional readings and recordings
- Weekly quizzes
- ~~Tuition and~~ Peer support via fora.
- 2 or 3 <sup>*Peer-assessed*</sup> assignments
- <sup>*optional*</sup> Final examination
- €6,000 to develop ~~and deliver~~



# LoCoMoTion Project



- Collection and dissemination of low-cost methods
  - Started 1 Feb 2015
- Website and Community Forum
- MOOC: “**Making MOOCs on a Budget**”

## The Team

Institute of Technology, **Sligo**, Ireland

Technical University of **Delft**, Holland

Fachhochschule **Bielefeld**, Germany

University of **Girona**, Spain

**Bath** Spa University, UK

[moocs4all.eu](http://moocs4all.eu)



# How?



- Learning Design
- Project Management
- Content
- Communication
- Assessment
- Recruitment
- Accreditation
- Platform

# Learning Design

xMOOC



Transmission



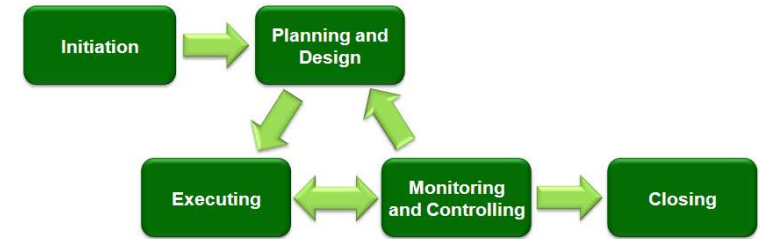
?

cMOOC



Discussion

# Project Management



- Tasks: Who, What, When, Why
  - Shared spreadsheet
- Team communication
  - Group email
  - Social network group
  - Instant messaging
  - Hangouts



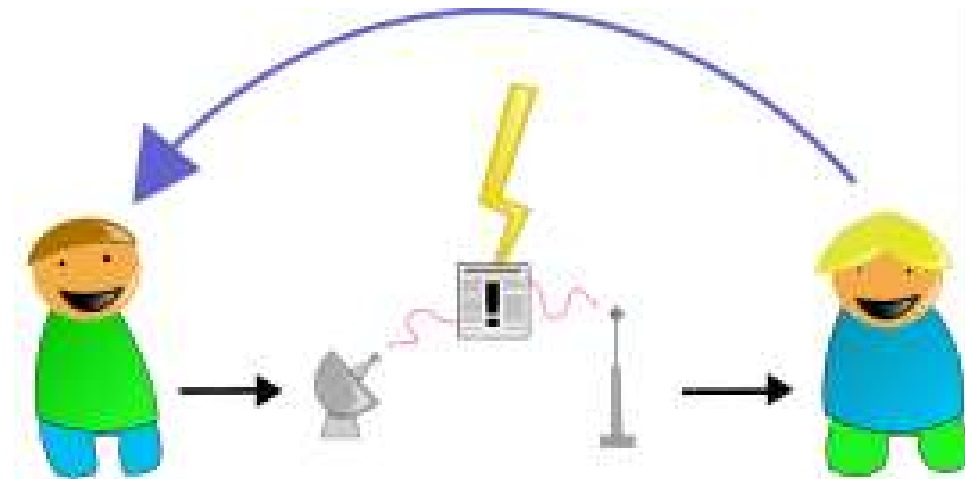
# Content



- Principles
  - Real learning Not “glitz”
  - Some options are not possible
  - Reuse OER
- Video content
  - Simple graphics (avoid animations)
  - Good microphone
  - Minimise editing
    - Tolerate mistakes
    - Repeat sections
    - Leave audio clues for editing

# Communication

- Are the discussion tools in your platform scalable?
- External tools:
  - LinkedIn, Facebook, Twitter
  - Piazza, Prulu, Discourse (via LTI?)



# Assessment

- Must be scalable
- Objective Tests
  - MCQs
- Peer Assessment
  - E.g. Moodle Workshop activity
- Could you award formal credits for this?



# Recruitment



- An enticing (or popular) topic
- Define your audience
- Interesting promotional video (Youtube)
- Social media (find your audience)
- Minimise dropouts
  - Surveys, varied assessment, gamification, provocative discussions

# Accreditation Issues

- Assessment
  - Formative vs. Summative
- Unbundling / Disaggregation
  - Separate learning from assessment
- Recognition of Prior Learning
  - “Competency”
  - Challenge examinations
  - ID Verification
  - Payment
- Models
  - Nano-degrees (udacity)
  - OERu.org
  - Georgia Tech, Arizona State, MIT (Supply Chain Management)
  - Open Classrooms (France)





# Platform

- Features
  - Content hosting / linking
  - Formative assessment
    - Quizzes
    - Peer Assessments
  - Discussions
  - Self registration and enrolment
- Visibility
- “Membership”
  - edX, Coursera, Futurelearn etc.
- “Open” with Quality Assurance: Canvas
- “Open” - Wikieducator
- Host your own
  - Moodle
  - Mash-up



# Moodle as a MOOC Platform



Certificate of Accomplishment



Restricted (completely hidden, no message): Not available until you achieve a required score in **Course total**.



## Lean Sigma Quality - Course Introduction



The concept of Six Sigma quality was first introduced by Motorola in the mid 1980's whereas Lean is widely considered to originate from the world class manufacturing techniques of the Japanese auto industry and in particular Toyota. It has since been embraced by leading global companies in the manufacturing and service sectors and is now the foremost **process improvement** approach for organisations that wish to attain world class performance in quality and customer satisfaction. The tools and techniques are being used in healthcare, banking and government sectors where benefits have been achieved in productivity, efficiency and elimination of 'waste'. In Lean Sigma terms 'waste' refers to anything that does not add value to the product or service in the eyes of the customer.

Forums: 3 Book: 1 URL: 1 File: 1 Glossary: 1

## Week 1 - Introduction to Lean Six Sigma



This week, we will review the differences between Lean and Six Sigma and discuss where the tools can best be applied. A key goal of Six Sigma is reducing process and product variation. We will review some examples and identify the key factors that contribute to variation in a process. These factors or inputs have been described by a leading Japanese quality guru, Dr. Kaoru Ishikawa as the 5M's – Man (or woman), Machine, Material, Method and Measurement. Six Sigma teams use the 5M's as memory joggers to assist in identifying each of the process inputs that contribute to variation in the process.

We will then focus on Lean and the seven wastes (muda) that are normally found in a process. These wastes contribute to increased costs in your organisation.

File: 1 Forum: 1 Quiz: 1 URLs: 4

# MOOC Week 1



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## Lectures

-  Lecture 1 – Part A - Video
-  Lecture 1 – Part B - Video
-  Lecture 1 – Part C - Video
-  Lecture 1 – Part D - Video
-  Lecture 1 - Slides / Notes

## Activities

-  Lecture 1 - Discussion Forum
-  Week 1 - Sample Quiz

## Additional Resources

-  Week 1 - Online Lean Six Sigma Dictionary
-  Week 1 - Lean Six Sigma Infographic
-  Week 1 - Six Sigma Infographic
-  Week 1 - Process Optimisation Video

# Moodle as a MOOC Platform

- Familiarity
  - Ease of upload or reuse
- Low-cost
- Scalable?
- Simplify
  - Navigation
  - Registration / Enrolment
- Existing features
  - Documents and URLs
  - Quizzes
  - Peer assessment (Workshop etc.)
  - Certificates and Open Badges
  - Integration with other systems (GDrive, Dropbox, LTI...)



# Possible Developments

- One-step Registration and Enrolment
  - + “wait list”
- Discussion
  - Scalability
  - Facilitator priorities
  - Forums vs. external tools (LTI?)
- Embedding Youtube videos
  - speed control
- Progress
  - Where am I in the course?
- Overlapping Cohorts
  - Staggered start dates
  - Object release/availability dates
  - Simultaneous “on demand” and “cohorts”
- Reuse
  - Access to courses from other systems (LTI?)
- Analytics
- Payments?
  - Assessment / support / other





# The Potential

- Cost is an access issue!
- Can learning be free?
  - We can create large numbers of free courses.
  - Even if we must pay for assessment and accreditation.
- OERu.org



Open Educational Resource  
**university**

# Thank you!.

Brian Mulligan

[brian.mulligan.googlepages.com](http://brian.mulligan.googlepages.com)

IT Sligo Online

[www.itsligo.ie/online](http://www.itsligo.ie/online)

