The Online Evolution: from Early Repositories to State-of-the-Art MOOCs

2016 CEE-SEC(R)
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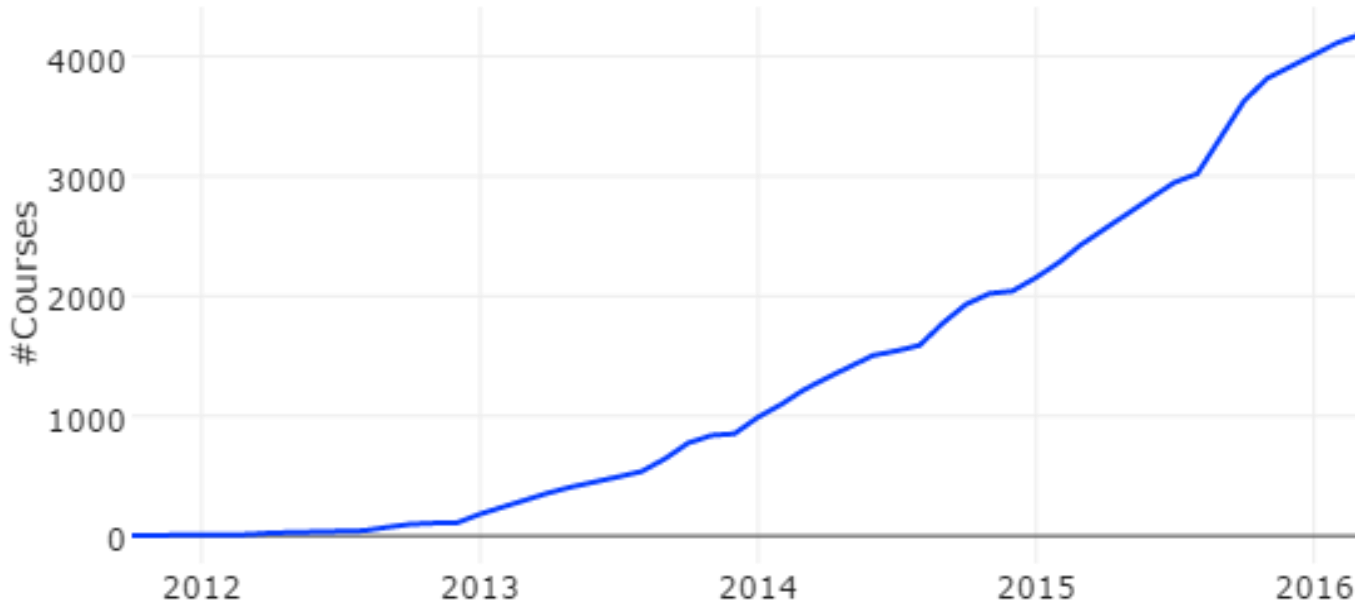
MOOCs Platform Attributes:

- *Massive* = 1M learners (enrolled students)

- *Open* = 100% free (excluding verified certification and extended support)

- *Online* = 100% remote delivery (lecture videos + slides, exercises, cases/solutions, discussion groups, course projects etc.)

MOOCs Growth Rate
(ClassCentral, 2015)

Growth of MOOCs

MOOCs Development:
Stage1 – Content Repositories

- Lightweight

- Downloadable materials (slides, project data etc.)

- Online testing

MOOCs Development:
Stage2 – Video Age

- Rich media
- Specializations
- Master qualification
- Worldwide educator recruiting
- Personal tutors
- Blended learning with multiple knowledge sources;
- Integration with social networks, instant messaging etc.
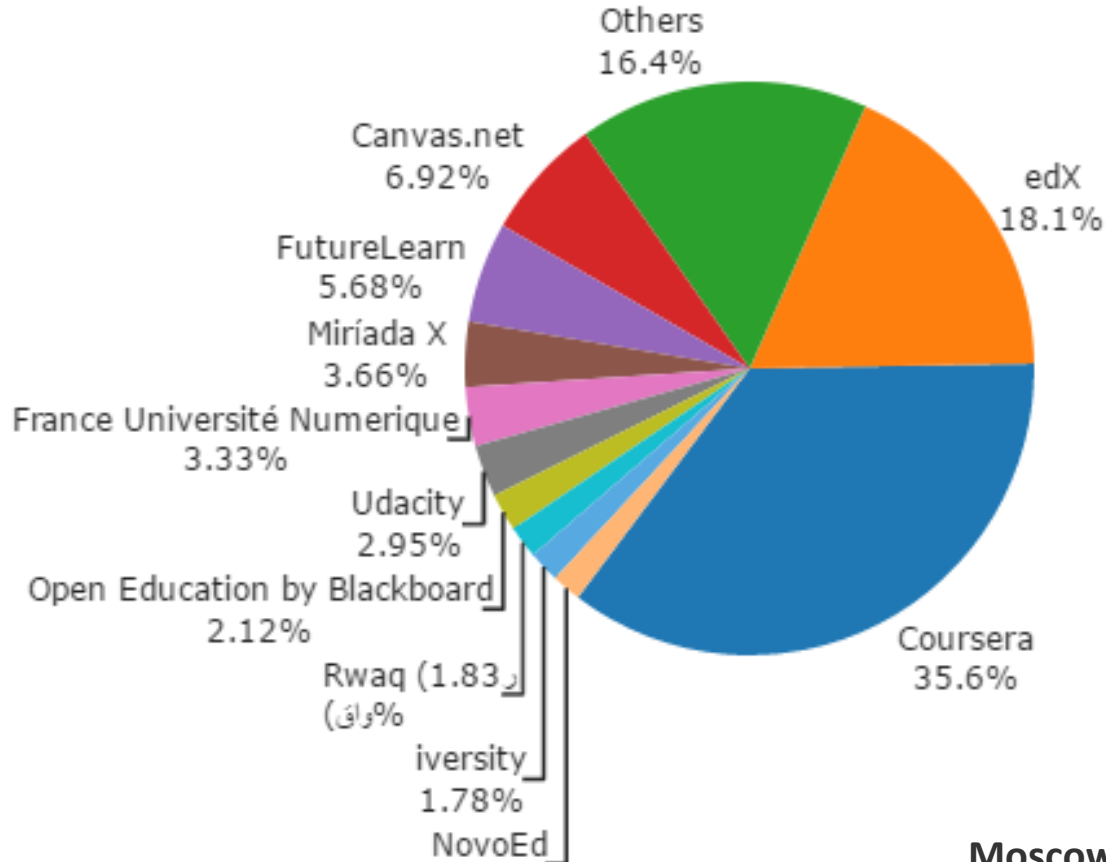
MOOCs Development:
Stage3 – Massive Online Courses

- Since 2012
- Initially based on university programs
- Free admission
- No tuition fee
- Restrictions (licensing, distribution,
   limited courseware use)
- Personal mentoring (optional)
- Huge audience (typically 10K-1M learners)
- Overall world audience: nearly 40M learners

MOOCs Distribution by Providers
(ClassCentral, 2015**)**

Others
16.4%

Canvas.net
6.92%

FutureLearn
5.68%

Miríada X
3.66%

France Université Numerique
3.33%

Udacity
2.95%

Open Education by Blackboard
2.12%

Rwaq (رواق)
1.83%

iversity
1.78%

NovoEd

edX
18.1%

Coursera
35.6%

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MOOCs in the World: Coursera

- Started 2012 (Stanford)
- #1 in the MOOCs world
- 20M+ learners
- 4,500 courses
- Annual growth rate 30%+
- Raised $85M funding
- 2015 – verified certification for $1M

MOOCs in the World: edX

- Started 2012 (MIT + Harvard)
- #2 in the MOOCs world
- 10M+ learners
- 750 courses
- "Best-of-breed" partners
- Raised $6M funding
- Income source: verified certification

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MOOCs in the World:
Learning & Cost Models

- *General principle*:
  free basic services + paid options:
- "course experience"
  - one-on-one coaching
  - personal project evaluation
  - verified certification
- monthly course access fee
- individual mentoring
  - exercises
  - projects

Contributing to the Evolution:
Online Course Development

- Stage 1.0

2 courses (2002-2004), INTUIT, functional and OOP (F# + C#), slides + tests

- Stage 2.0

3 courses (2010-2011), INTUIT, enterprise systems, slides + tests + videos

- Stage 2.5

2 courses (2012-2013), HSE, enterprise systems + research seminar, slides + tests + videos + LMS

- Total audience (since 2002): 9,000 learners

Contributing to the Evolution:
MOOCs Development

Stage 3.0
- Dates: 30.10.2015-30.10.2016
- 6 MOOCs = 5 Coursera + 1 edX
- Topic: Enterprise Systems
- Focus: Models / Methodologies / Crisis
- Launched: 2016 (Apr.-Sept.)
- Labor: 100h (studio recording time)
- Total audience (av.=3mo): 12,000 learners

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MOOCs Development:
The Early Outcomes (1 of 2)

- MOOCs enrollment rate 10+ times faster!!!
- Demographics:
  - new markets (Russia,Brazil,Columbia) bring Coursera 75% of learners
- Intensive use of big data on learners:
  - language
  - geographical location
  - demographics (gender, age, education level etc.)
- Coursera:
  - Russia = 90%
  - FSU = Ukraine, Belarus, Kazakhstan
  - Non-FSU = Israel, USA and Germany
- edX (total = 2,500+ learners):
  - USA (19%), India (11%) and UK (4%)

MOOCs Development:
The Early Outcomes (2 of 2)

- Coursera has stronger analytics for gender and age
  - Females (33%) – below average (39%)
  - Age 25-44 (46%) – 1.5 times above average (30%)
  - Top 3 age range = 18-44 (54%) – 1.5 times above average (34%)
  - Top 3 qualification levels:
    - Master (30%)
    - Bachelor (13%)
    - School/college student (30%)
  - Full-time employees: 74% – 1.5 times above average (48%)
  - Part-time employees: 13% – 1.5 times above average (8%)

MOOCs: The Current Trends

- Using *analytics* based on big data on learners (language, geographical location and demographics, including gender, age, education level)
- *Blending* knowledge sources (video, lecture slides, interactive projects, e-books)
- Using multi-source *feedback* (ratings, comments and reviews from course development team, learners, mentors)

MOOCs in Russia:

- Impressive examples
  - HSE recommends/requires to include MOOC links into course syllabi
  - MIPT, MEPhI etc.
- MOOCs are often basic level, they complement face-to-face teaching
- *MOOC means "open", it is beyond ANY language/country!*
- 100% Russian MOOCs seem too constrained to succeed
- Russian MOOC platforms
  - For students: Open Education Russia, Lektorium, Stepik
  - For employees: RZD, Gazpromneft, Alfabank
  - Too specific and too early to evaluate
  - Require a dedicated research

MOOCs: Verifying the Approach - Learners' Feedback

- General: warm, enthusiastic, encouraging
- Course ratings: 4.2-5.0
- Low motivation = complaints, negative comments
- High motivation = targeted, goal-directed comments
- "Bugs" must be fixed ASAP (these are **M**OOCs!)
- MOOCs attracted managers, not only "technicians" – due to broad focus
- courses helped to:
  - master new concepts
  - get the "big picture"

Conclusion and Future Work

- Online courses went a long way: 1.0 to 3.0+
- Current MOOCs:
  - rich content
  - impressive marketing
  - precise analytics supported by big data
- Course design basis - accurate positioning/structuring
- Students' self-motivation is critical
- Hands-on tasks to support self-motivation
- Project-based chains of courses:
  - Coursera specialization
  - edX Xseries

Future work: Coursera specialization on ESSD

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Thank you!

See you online!

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