Massively Empowered Classrooms

Sriram Rajamani
Assistant Managing Director
Microsoft Research India
MOOCs and Indian Elite Institutions

IITs, IIITs, NITs, BITS, etc.

- Top teachers, top students, good technical infrastructure
- Students know about MOOCs & take MOOC courses
- Often give course credit for MOOCs
- Teachers sometimes offer courses in internationally popular MOOCs (such as EdX) as well as homegrown MOOCs
Most engineering students in large state technical universities

Undergraduate engineering Colleges: ~4700
Faculty: ~50,000
Students: ~4,000,000

Large universities with many affiliated colleges
- Centralized curriculum
- Single shared exam
- A few high quality colleges, long tail

MOOCs mostly unknown & unused by students or teachers
From our recent survey in Karnataka:
- ~80% of students never heard of edX, Coursera, ..
- < 3% had ever watched even one online educational video
Question

What is the reason for poor update of MOOCs among the masses?

• Content mismatch with syllabus
• Lack of value proposition
• Poor infrastructure

Idea:
Rethink the MOOC model
Massively Empowered Classrooms

- Local control
  - Content synched with syllabus
  - College-level identity and analytics
  - Local supplementation

- MOOC-like content
  - Short, high-quality videos
  - Periodic quizzes
  - Forum & community

- Address infrastructure limitations
  - Offline video viewing
  - Phone application

- Social Engineering
  - Facebook campaigns
  - Competitions
  - Certificates
Experience so far...

• **1\textsuperscript{st} Pilot (2013):**
  3 universities, 120 colleges

• **2\textsuperscript{nd} Pilot (2014 first semester):**
  5 state universities + MHRD QIP program

• **3\textsuperscript{rd} Pilot (2014 second semester):**
  3 new courses (4 courses in total) + 10 state universities + Microsoft DPE Academic Program+ MHRD QEEE program.

**Our Peaks:**
In progress: 2000 enrollments in one day.

• 4 courses so far
  – Started with Algorithms
  – Recently added: Computer Networks, Data Structures & Theory Of Computation.

• **1500** colleges and **~30,000** enrolments so far.

• Almost 30% students engaged throughout the semester.

• Offline solution seeing good traction.

• Phone App gaining lot of popularity.

• Significant interest from the government (MHRD)
Learnings

- Context matters: relevant syllabus, local engagement
- Bandwidth and access matters: offline windows app, mobile android app
- Awareness matters: systematic evangelism using social media matters
- Credentials matter: Certificate and other incentives matter

Research

- Control vs experimental group
- Intermediated video lessons
- Plagiarism
- Fairness of automatically generated problem variants
MEC Call for action!

MEC is a Research and experimentation platform

Please join us and work with us

- Learn from our courses
- Teach courses on MEC
- Do research experiments with online learning
Contributors

• Ajay Manchepalli
• Andrew Cross
• Bill Thies
• B. Ashok
• Deepika Sharma
• Deepti Desai
• Ed Cutrell
• Jacki O’Neill
• Kameswari Chebrolu
• Kavi Mahesh
• Madhavan Mukund
• Madhusudan Parthasarathy

• Nakull Gupta
• Naren Datha
• P. Anandan
• Rahul Kumar
• Ram Rustagi
• Rosa Arriaga
• Satish Sangameswaran
• Siddharth Prakash
• Sridhar Vedantham
• Srinath Bala
• Vidya Natampally
• Viraj Kumar
Visit us @ http://mecr.org

Massively Empowered Classroom
A community initiative by Microsoft Research.

What is MEC?

The best engineering jobs in India (and around the world) demand graduates with more than just a degree in CS or EE. The best jobs are going to candidates who can demonstrate that they really understand their discipline. Microsoft Research India is excited to introduce MEC (short for “Massively Empowered Classrooms”), a research project designed to bring the highest quality classroom material to every undergraduate engineering student in India. MEC is geared to be a fun,