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Present Status of Massive Open Online Course (MOOC) initiatives for Open Education Systems in India – An Analytical Study

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Abstract*: This paper highlights the MOOC initiatives in open access education environment across a globe with special reference to India. Open education resourses, open access, online open courseware are the main components to promote open university with the help of MOOC platform by the various service providers. MOOC List is open access (OA) aggregator (directory) of Massive Open Online Courses (MOOCs) from different providers. MOOC List is a website where you can find free online courses (MOOCs) offered by the best universities around the world. For this purpose, MOOC List directory was studied to find their growth rate, country, subject-wise distribution as well as total courses available in Indian education systems in MOOC within verious MOOC platforms.*

Keywords:- MOOC, Open access, Open Educational Resources (OER), Open Platform, Online Courseware, Blended learning, Open University, MOOC List

Introduction

In India, over to different universities, offer conventional education. Teachers in colleges do the teaching, but universities rigidly control the program of study, syllabus, and examinations. The quality of education is a matter of concern. MOOCs (Massive Open Online Courses) permit learners to access and benefit from the teaching by renowned professors. MOOCs offer an unprecedented opportunity to revitalize education.

Definition of MOOC

The term "MOOC" (Massive Open Online Course) was coined by David Cormier in 2008 (Cormier & Siemens, 2010) to describe a twelve-week online course, Connectivism and Connected Knowledge, designed by George Siemens and Stephen Downes and offered at the University of Manitoba, Canada, in Fall semester 2008. "MOOC" is a play on the acronym MMORPGs: massively multiplayer online role playing games. The section Origins of the cMOOC describes the pedagogical philosophy and strategies behind the development of the first "connectivist" MOOC from the perspectives of George Siemens and Stephen Downes (Allen, & Seaman, 2014). The key goal was "for people to experience what it means to be part of a social, technical system of learning where the teacher's voice is not an essential hub but, instead, a node in an overall network" (Siemens, formerly at Athabasca University).

The structure and pedagogical philosophy of the open online courses offered at Stanford University in 2011 were quite different from the connectivist MOOCs. The article Origins of the Modern MOOC (xMOOC), contributed by Andrew Ng and Jennifer Widom, describes the sequence of events leading to the advent of the Stanford courses (BIS, 2013).

Open Platform

The vast majority of existing MOOCs are xMOOCs. They are structured as weekly sequences of activities, over as little as two weeks and as much as sixteen weeks but, most frequently between six and ten weeks. Instruction is provided predominantly via several short lecture videos per week, typically each 10 minutes or less in length, sometimes supported by supplementary readings, and problem sets or other assignments. Videos are often punctuated every two-three minutes with automatically graded "inline" questions, usually multiple choices or short answers, to help participants formatively assess their own understanding. Assessments that count towards the participant's final score are provided, usually weekly, in the form of auto-graded multiple choice or short answer quizzes, peer-graded assignments, and some auto-grading for computer code. Online discussion forums allow participants to engage with each other and course facilitators for technical and instructional support, or merely to create a sense of community. xMOOCs are generally delivered via third party platform providers such as Coursera, edX, and Udacity. Most are "cohort-based" in that they are offered over a fixed period of time, with participants being expected to complete activities within set windows of time. These courses and their associated materials often become unavailable for non-registered participants not long after their conclusion. Some xMOOCs are self-paced, remaining open indefinitely to participants.

Difference between xMOOC vs. cMOOC

xMOOC	cMOOC
• Pre-determined, instructor-led, structured and sequenced weekly activities • Short, content-based videos, readings, problem sets • Quizzes (auto-graded), peer-graded assessments • Discussion forum participation optional • Delivered via third party platform provider (e.g., Coursera, edX)	• social, technical system of learning where the teacher's voice is not an essential hub but a node in an overall network • Creation/exploration of topic area in "atelier" environment • Unique products created by students (blog posts, images, diagrams, videos) • Discussion forums, Diigo groups, Twitter and other social networking are key • Facilitator aggregates, reviews, summarizes and reflects on activity in daily/weekly newsletter • "Boot-strapped" platform and collaboration tools

Why MOOC

Some of the reasons for MOOC in various educational institutions are as follows:

- Worldwide access
- Free or at small cost
- Disseminate equal education opportunities for all individuals, regardless of race, creed, class, income, location.
- No caps on enrolments
- Anytime, anywhere at your own pace and time
- People are willing to invest a significant amount of time in learning and teaching skills online within informal networks and communities. In education, learning is not a linear process; it is a continued iteration which links to prior knowledge.
- Online learning certification through badges. The badges "certify skills and abilities" and "denote areas employers might look for".

Disadvantages of MOOC

Though most of advantages of MOOC, there are some disadvantages of MOOC identified which are as follows:

- ICT and internet dependent
- Education is still confined by geopolitical and socioeconomic boundaries. The mechanics of MOOC delivery disrupt traditional forms of delivery used currently.
- Instructors can get carried away with the new abilities enabled by MOOCs, letting the technology and computer proficiency demands overwhelm the courses. (rss feeds, twitters, hashtags etc.)
- Although students may like the departure from the traditional education structure, they still rely, at least in part, on long tested and mostly proven methods of delivery.
- The responsibility is wholly on the students, and without some sort of investment, students are unwilling to make the MOOC a priority, causing the rapid deterioration in active enrolment and low completion numbers
- It seems that informal learning experience for learners, in the absence of a stronger motivations from teacher student interaction
- Peer grading is inadequate. It requires a balance critique of content and critique of style.
- The one to many situation will make it impossible to give attention to students performance etc.
- Lack of personal attention
- Learning in MOOCs is subjective.
- No reliable system of accreditation and reward, MOOCs continue to suffer from a lack of clear, marketable point which to some is the purpose of education.
- It's quite possible that in an open course, a learner would start or even complete a course before engaging in a formal accreditation process. If the assessment model is a combination of peer review, participation, and formative/portfolio assessment, the accreditation could be entirely separate from the running of the course. This means the assessment frameworks and engines need to be looked at separately in a MOOC environment
- A further limitation of MOOCs is the awarding of credit. Currently, less than a handful of universities are willing to offer college credit for MOOC completion

Open access

Open access means its immediate, free availability on the public internet, permitting any users to read, download, copy, distribute, print, search, or link to the full texts of these articles, crawl them for indexing, pass them as data to software, or use them for any other lawful purpose, without financial, legal, or technical barriers other than those inseparable from gaining access to the internet itself (Budapest Open Access Initiative, 2002). Open Access benefits researchers, institutions, nations and society as a whole. For researchers, it brings increased visibility, usage and impact for their work. Institutions enjoy the same benefits in aggregated form. OA can be archived in two ways:

1. "Green OA" is provided by authors publishing in any journal and then self-archiving their postprints in their institutional repository or on some other OA website. Green OA journal publishers endorse immediate OA self-archiving by their authors.
2. "Gold OA" is provided by authors publishing in an open access journal that provides immediate OA to all of its articles on the publisher's website. (Hybrid open access journals provide Gold OA only for those individual articles for which their authors (or their author's institution or funder) pay an OA publishing fee (Das & Khan, 2014).

Open Educational Resources (OER)

OER will allow students to study courses from various institutions around the world for free online and is built as a more attractive option than massive open online courses. Students who complete an Open Educational Resources University course will be able to pay a fee to have their work assessed for academic credit, which would then be recognised by all the universities participating in the OER. Open Educational Resources Foundation, the New Zealand-based organization is coordinating the development of OER university.

Online Courseware

The OpenCourseWare movement started in 1999 when the University of Tübingen in Germany published videos of lectures online for its *timms* initiative (Tübinger Internet Multimedia Server). The OCW movement only took off, however, with the launch of MIT OpenCourseWare at the Massachusetts Institute of Technology (MIT) and the Open Learning Initiative at Carnegie Mellon University in October 2002. The movement was soon reinforced by the launch of similar projects at Yale, the University of Michigan, and the University of California Berkeley (Wikipedia, 2014). MOOCs "revolutionary" was their availability and, especially, their scalability. One of Stanford's first attempts to offer scalable forms of education was started by Andrew Ng in 2007 together with the Stanford Center for Professional Development. About ten Stanford courses were videotaped, and posted online together with lecture notes and self-graded homework. Called the SEE (Stanford Engineering Everywhere) project, it offered a similar experience to MIT's OpenCourseWare, except a driving tenet in SEE was that every course should offer a "complete course" experience: It should have a complete set of materials - including lectures, homework problems, and solutions - that the learners could work through by themselves (Das, 2014).

Blended learning

Blended learning is a formal education program in which a student learns at least in part through delivery of content and instruction via digital and online media with some element of student control over time, place, path, or pace (Wikipedia, 2014). Most modern MOOC platforms such as Coursera, Udacity, and edX support two related but distinct visions: scalable forms of education, and blended learning for on-campus teaching.

Open University

The Open University provides high-quality university education to all those who wish to realize their ambitions and fulfil their potential. Nearly all the undergraduate courses of the Open University offer non-formal entry requirements. This allows people who have missed out on education to fulfil their potential and achieve a university-level qualification. The Open University was founded to open up higher education to all, regardless of their circumstances or where they live. They have students of all ages and backgrounds: school students wanting experience of university-level study, school leavers who choose to begin their careers while they study for a degree, people wanting to develop or update their skills, or change career entirely, and retired people wanting to explore new interests and keep mentally active. MOOC can play catalytic role in Open University education systems. Open courseware and online assessment, online lecture tutorials, etc. are integrated to fulfil the goals and objectives of MOOC of any Open University systems.

Credentials and fees

For participants successfully completing a MOOC, various institutions and platform providers have experimented with awarding credentials such as certificates of completion, "Signature Track" certificates, "Verified Certificates of Achievement," Mozilla Open Badges, and American Council on Education (ACE) credit recommendations. Since their inception, both edX and Coursera have provided certificates of completion, often signed by the instructor, to MOOC participants who meet certain criteria such

as a minimum level of performance on course assessments. This basic credentialing is generally free of charge while other options carry a fee.

Legal Issues related with MOOC

Some of the key legal issues that MOOCs raise for libraries revolve around copyright and the use of copyrighted content (Butler, 2012) in this new context, while others relate to open access and accessibility. Specifically, MOOCs raise legal questions in some major areas:

- use of copyrighted works in instructional materials such as online lectures or modules (the equivalent of traditional classroom teaching);
- assignment of copyrighted works for outside reading (the equivalent of assigned texts and course reserves);
- copyright status of materials generated by faculty for use in MOOC courses (including video lectures, course modules, and other supporting materials);
- applicability of the notice-and-takedown provisions of the Digital Millennium Copyright Act; and
- accessibility of MOOC courses for learners with disabilities.

Objectives of the study

In this study, the prime objectives are as follows:

- to know the status of various MOOC service providers and their features
- to know the status of country-wide MOOC services
- to know the status of subject-wise MOOC services
- to find out the latest status of MOOC initiatives in India

Methodology

For this study, MOOC LIST has been consulted for this purpose. Data has been taken from the above this sources upto the 13th January, 2015. MOOC List is an aggregator (directory) of Massive Open Online Courses (MOOCs) from different providers. MOOC List is a website where you can find free online courses (MOOCs) offered by the best universities around the world (MOOC LIST, 2014). In MOOC List, anyone can browse by Multiple Criteria, Providers and Categories, University/Entity, Instructor, Country, Language, Type of Certificate, Tag. In home page of MOOC list, anyone can found the Upcoming courses (for the next 30 days), the last submitted or updated courses, browse by Course Categories, Course Length and Cloud of Tags. Registering in MOOC List allows anyone to evaluate courses and leave reviews, and also gives you access to "My MOOC List". "My MOOC List" is the way to bookmark your favorites MOOCs. "MOOC List" only list courses with open access (free). The course could have the option to pay for the certificate or exam, but the access to the course should be free. MOOC List doesn't create courses. There are several free platforms that can be used to build online courses, like OpenEdX, Moodle among others. MOOC.List provides a directory of MOOCs offered by around 46 different providers, with Coursera, Saylor, Canvas, and edX courses being the most ubiquitous. MOOC is developed and experimented in various languages like Arabic, Chinese, Dutch, English, French, German, Greek, Hebrew, Hindi, Italian, Japanese, Korean, Malaysian, Persian, Portuguese, Russian, Spanish, Turkish, Ukrainian.

MOOC Provider Accross a Globe

Various MOOC service providers have played catalytic role in the development of MOOC. All the universities across a globe have been taken initiatives to promote open education systems with help of either different service providers or own platform. US-based educational technology company Coursera, which offers massive open online courses (MOOCs) from various universities, has partnered with an Indian B-school, making it its first partner institution in India and 115th worldwide. Under the partnership agreement, Hyderabad-based Indian School of Business (ISB) is going to offer online content globally on the Coursera platform. Some of the MOOC service providers across a globe are shown in the Table 1:-

Name of the Provider	Websites	Subject coverage	Year of inception
Carnegie Mellon University - Open Learning Initiative	http://oli.cmu.edu/learn-with-oli/see-our-free-open-courses	Argument Diagramming, BioChemistry, Chemistry, French, Engineering Statics, Logic, Media Programming, Biology, Probability, Statistics, Speech, Statistical Reasoning, and others.	2002, Carnegie Mellon University
Class2Go	http://class2go.stanford.edu/	Computer Networking, Solar Cells, Fuel Cells, & Batteries	2013, announced partnership/union with EdX

Name of the Provider	Websites	Subject coverage	Year of inception
COURSERA	https://www.coursera.org/	All subjects	Andrew Ng, Daphne Koller and Rick Levin April 2012
EDRAAK	http://www.edraak.org/	original Arabic courses - developed by QRF All courses	Arab MOOC Platform: Edraak / initiative of the Queen Rania Foundation (QRF), developed by the Harvard-MIT consortium, edX
EdX	http://www.edxonline.org/	All courses	May 2012, Massachusetts Institute of Technology (MIT) and Harvard University English, Mandarin, French, Hindi, Spanish (Latin America)
Enaco	http://www.enaco.fr/mooc.php	NA	First MOOC on: "Les clés du management interculturel en Europe
EWANT	http://www.ewant.org/MOOC/Home/Default.aspx	statistics, computer programming and Chinese Medicine	Consortium started by National Chiao Tung University and four Chinese partner institutions
Fort Hays State University	http://www.fhsu.edu/	more than 40 online degrees	Fort Hays State University
FUN: France Universite Numeriqu	http://www.france-universite-numerique.fr/	French	France's National MOOC platform
FUTURELEARN, INC	http://www.futurelearn.com/	Forensic Science, Muslims in Britain, Critical Listening for Music Studio Production, Inside Cancer, Discover Dentistry, Dental Photography in Practice, The MIND is Flat, The Secret Power of Brands, Web Science: How the Web is changing the world, and others	owned by the UK's Open University offered in 2013
Holland College	http://www.hollandcollege.com/	Math MOOC	Provincial Community College for the Canadian province of Prince Edward Island (PEI) named after British Army engineer
IFP School	http://mooc.sustainable-mobility.ifp-school.com/	Sustainable Mobility	
iMooX	http://www.imoox.at/wbtmaster/startseite/	Wir, die Universität Graz und die Technische Universität Graz, bieten Bildung für alle	Austrian MOOC Platform
Institute des Mines-Telecom	http://www.mines-telecom.fr/p_en_imt_actu_compresse_ReseauxMob_716.html	mobile networks	Télécom Bretagne, an Institut Mines-Télécom school
INSTRUCTURE / Canvas Network	www.instructure.com / www.canvas.net	History to Game Design Concepts to Basic Math to Improving your Spanish Pronunciation, etc.	Utah-based venture-backed learning platform company founded in 2008

Name of the Provider	Websites	Subject coverage	Year of inception
Iversity	http://www.iversity.org/ http://un.iversity.org/	Planning Change Projects - Sustainable Development through Social Entrepreneurship" (University of Kiel) "Design 101" (Abadir Fine Arts Academy, Catania) "DNA - From Structure to Therapy" (Jacobs University Bremen) "Europe in the World: Law and Policy Aspects of the EU in Global Governance" (University of Passau, KU Leuven, European University Institute) "International Agricultural Management" (University of Weihenstephan-Triesdorf) "Mathematical Thinking and Working Methods in Geometry and Arithmetics" (University of Education Heidelberg) "Monte Carlo Methods in Finance" (Universidad Autónoma de Madrid) "Sectio Chirurgica - Anatomy Interactive" (University of Tübingen) "The Fascination of Crystals and Symmetry" (University of Hamburg) "The Future of Storytelling" (FH Potsdam)	Germany (awarded Global MOOC Contest Will Award €250,000) starting autumn 2013
LUXVERA	http://luxvera.regent.edu/disciplines	All courses	Regent University MOOC Platform. Christian Ministry MOOC & other disciplines
MIRIADAx	https://www.miriadax.net/		SPAIN Founded by Universia (http://www.universia.es/index.htm) and Telefonica Learning Services (http://www.telefonicalearningservices.com/) with involvement by Santander & other groups
MITx	http://mitx.mit.edu/	MIT courses	MIT
MOOC.org	http://mooc.org/		Google is teaming up with EdX, an open-source online education nonprofit started by Harvard and MIT, to create a new site that EdX's president compared to a "YouTube for MOOCs". Google will also become a partner in developing the Open EdX platform

Name of the Provider	Websites	Subject coverage	Year of inception
MOOC FACTORY Ecole Polytechnique Federale de Lausanne (EPFL)-Center for Digital Education	http://moocs.epfl.ch/mooc-factory	French, English Engineering	Africa
MOOCs University	http://www.moocsuniversity.org/		Initial courses, programs and services in 2014
MOOEC	http://www.mooec.com/about	English language at all levels mobile technology and immersive experiences to all	Starting in Brisbane, Australia and with the support of the Queensland State Government and the local English Language teaching community
MR UNIVERSITY Marginal Revolution University	http://mruniversity.com/	Economics The Eurozone Crisis<http://mruniversity.com/courses/eurozone-crisis> Economics of the Media<http://mruniversity.com/taxonomy/term/89/> The American Housing Finance System<http://mruniversity.com/taxonomy/term/90/> Mexico's Economy: Current Prospects and History<http://mruniversity.com/courses/mexicos-economy-current-prospects-and-history> Development Economics - Why are some countries Rick and others Poor? - http://mruniversity.com/courses/development-economics-0	Created by two economics professors at George Mason University
Najah National University	http://elc.najah.edu/node/304	History, Archeology, Culture and Heritage	first English language MOOC is on"Discover Palestine"
NationsUniversity	http://www.nationsu.org/#%21standing/c1u7y	Christian education, A Search for the Spiritual, The Church By Decade, A Synopsis of Islam, and others	NationsUniversity
North Carolina State University	http://go.distance.ncsu.edu/digital-asic/	Digital ASICs (Application Specific Integrated Circuits), ALL modern Information Technology how to design a digital ASIC (standard cell or FPGA) using the Verilog Hardware Description Language	North Carolina State University
NOVOED - New Name for Venture Labs	http://novoed.com/	Crash Course in Creativity, Mobile Health without Borders, Technology Entrepreneurship, Sustainable Design & Product Management and others	Stanford

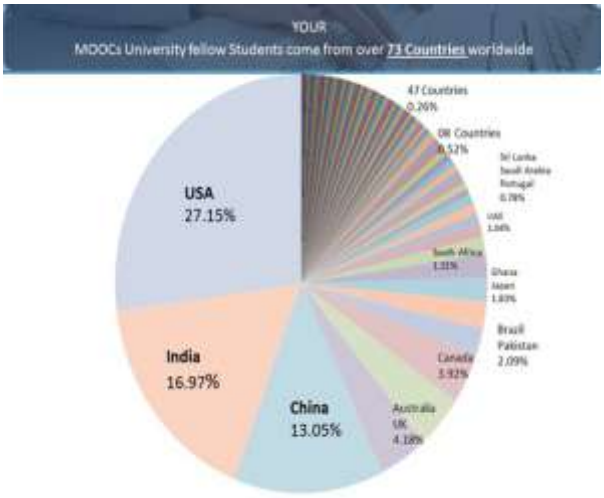
Name of the Provider	Websites	Subject coverage	Year of inception
OERu Open Educational Resources University	http://oeruniversitas.org/	All courses	Open Educational Resources Foundation, the New Zealand-based organization 31 institutions around the world
OpenCourseWorld	http://opencourseworld.de/	Business Process Management; How to create a Windows 8 App; Learn How To Lead; IT, etc.	working with German Universities & Corporations
OpenHPI	https://openhpi.de/about/openhpi	instructional videos, interactive self-tests and practical exercises, multi-faceted topics in IT technology, foundations of information technology, e.g., the design and structure of the Internet and the World Wide Web, the structure and operation of database systems or security in information technology, geared towards ICT professionals who wish to keep up with the very latest innovations in computer science research, e.g., In-Memory Data Management, the Semantic Web, or Multicore and Cloud Computing	Hasso Plattner Institute (HPI) MOOCs
OpenLearn	http://www.open.edu/openlearn/about-openlearn/frequently-asked-questions-on-openlearn	access to topical and interactive content, from expert blogs, to videos and games	The Open University In 2010 OpenLearn merged with open2.net
OPENLEARNING	https://www.openlearning.com/	Sports, Computing, Education, Business, and other areas	Sydney Australia by University of New South Wales senior lecturer
OPEN2STUDY	https://www.open2study.com/	All courses	Australian MOOC provider
OpenUpEd	http://www.openuped.eu/	Mathematics, economics, e-skills, e-commerce, climate change , cultural heritage, corporate social responsibility to the modern Middle East, and language learning, writing fiction	The European Association of Distance Teaching Universities (EADTU), that mostly involves open universities from France, Italy, Lithuania, the Netherlands, Portugal, Slovakia, Spain, UK, Russia, Turkey and Israel, launched pan-European university MOOCs
Phoenix College Flagship Community College of the Maricopa Community Colleges District	http://www.phoenixcollege.edu/about/discover-pc	two developmental math courses are being offered: Arithmetic /Pre-Algebra and Introductory Algebra	
Rwaq	http://rwaq.org/	Arabic	Riyadh-based Arabic massive open online course (MOOC) platform

Name of the Provider	Websites	Subject coverage	Year of inception
Stanford University	http://see.stanford.edu/default.aspx	lecture videos, access reading lists and other course handouts, take quizzes and tests, and communicate with other SEE students	Stanford Engineering Everywhere
Salford Business School University of Salford Manchester	http://www.salford.ac.uk/business-school/business-management-courses/mooc-search-social-media-marketing-international-business	twelve videos which will contain theoretical background from academic staff, as well as industry insights from key professional speakers	
Sunstone Business School	http://opencourses.sunstone.in/#sthash.oPoiS1ne.dpbs	Sunstone Business School Open Courses is India's first Open Courses in management	India
Swinburne University of Technology	http://www.future.swinburne.edu.au/courses/online-courses/moocs/	Basic physics, Chemistry - Building blocks of the World, Concepts in Game Development, Innovation for Powerful Outcomes, Mobile Robotics, and Carpe Diem MOOC: 13 years of research into collaborative design for technology enhanced learning	Australia
Tsinghua University	https://www.xuetangx.com/	Tsinghua, Peking and MIT	Chinese MOOCs Platform
UDACITY	http://www.udacity.com/	statistics, physics, computer science, artificial intelligence, software testing, programming languages, cryptology, and others	English, February 2012 founded by Sebastian Thrun, David Stavens, and Mike Sokolsky
UNEOPEN	https://www.uneopen.com/	Bachelor of Criminology, Bachelor of Laws, Bachelor of Arts (Sociology), or the Master of Business	Australia's first provider of open online subjects University of New England
UNESP aberta	http://www.unesp.br/unespaberta		UNESP partnership with NEAD (Distance Learning Center) in Brazil
UniMOOC	http://unimooc.com/landing/index.html	Spanish language	International Institute of Economics at the University of Alicantes and others
UNINETTUNO	http://www.uninettunouniversity.net/en/MOOC.aspx	Engineering, Psychology, Law, Economics, Communication, Literature Italian, Arabic, English, French	Italy first Italian **MOOCs** portal
Universidade Aberta - iMOOC	http://imooc.uab.pt/	Portuguese	Portuguese Open University
UNEDCOMA	http://www.unedcoma.es/	Spanish, Arabic	Spain: La Universidad Nacional de Education a Distancia MOOCs
Spain: La Universidad Nacional de Education a Distancia MOOCs	http://www.crypt4you.com/		Spain
Universitat Polytecnica de Valencia (UPVX)	http://www.upvx.es/ http://dynamicsandcontrolcourse.upvx.es/ficha	English Language MOOC: Dynamics and Control Systems, Control and their impact in all the Human activities	Spanish Language MOOCs by Universitat Polytecnica de Valencia

Name of the Provider	Websites	Subject coverage	Year of inception
University of Amsterdam	http://mooc.uva.nl/portal	Communication Science and others	University of Amsterdam
University of California - Irvine: OpenCourseware	http://ocw.uci.edu/info/	arts, business management, education, engineering, health sciences, humanities, information & computer sciences, law, physical sciences, social ecology, social sciences and others	Spanish and Portuguese Multilingual
University of the People	http://www.uopeople.org/	Associates and Bachelors degree programs in Business Administration and Computer Science	World's frist tuition-free university
University of Western Australia	https://www.class2go.uwa.edu.au/	Databases, and Material Behaviour from Atoms to Bridges	Australia
UNx	http://www.redunx.org/web/general-navigation/aprende	Advance physics	Spanish, portuguese
Veduca	http://www.veduca.com.br/home/index	Portuguese and Spanish first Latin American-based MOOC from the University of Sao Paolo	Brazilian MOOCs
World Science University (World Science U)	http://www.worldscienceu.com/courses/university	Science MOOC, Science Unplugged, Short Science Courses, and University Courses	NA
Yale Open Courses	http://oyc.yale.edu/	African American Studies, American Studies, Astronomy, Biomedical Engineering, Chemistry, Classics, Ecology & Evolutionary Biology, Economics, English, Environmental Studies, Geology & Geophysics, History, History of Art, Italian Language & Literature, Molecular, Cellular & Developmental Biology, Music, Philosophy, Physics, Political Science, Psychology, Religious Studies, Sociology, Spanish & Portuguese	2001

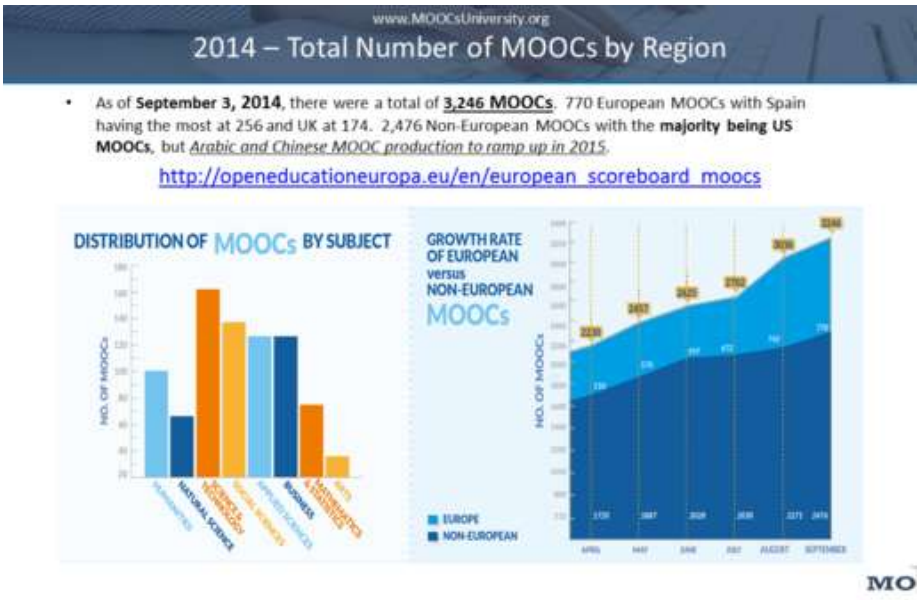
Table 1 – MOOC service provider accross a globe

Source: http://www.moocs.co/



Worldwide MOOC
Source: https://www.mooc-list.com

According to MOOC -list USA be the (27.15%) highest MOOC course facilitator accorss a globe and the second highest nation is India (16.97%) and the third highest is China (13.05%) over 73 countries worldwide till 2014.



Subject -wise distribution MOOC
Source: https://www.mooc-list.com

As per MOOC -list, Science and technology be the highest (160) MOOC service provider, the second highest is social science (140), the third position holds two subjects applied science and Business (120), and the respective subjects are humanities(100), mathematics and statistics (75), material sciences (60), and the arts (30). This is the panoramic view of subject distribution on various MOOC providers as on 3rd September, 2014.

MOOC courses in India

The High Speed Vedic Math Massive Open Online Course (MOOC) for all is the first MOOC launched in India for All. This course will benefit everyone - young children, school students, college students, teachers, parents and professionals. Based on a Mathematical system consisting of 16 Sutras or aphorisms, Vedic Mathematics was presented by a Hindu scholar and Mathematician Bharati Krishna Tirthaji Maharaja in the early twentieth century. Calculation strategies presented by this system are highly successful and fast. The course comprises five live classes, three documents, seven Videos and five online tests in English language. The courses on offer will include two from IIT Bombay and one from Princeton University. The courses from IIT-Bombay will be on 'introduction to computer programming' by Prof Deepak B Phatak from the Department of Computer Science and Engineering, and another on 'thermodynamics' by Prof Uday N Gaitonde. Prof Umesh V. Vazirani from Princeton University is leant to have agreed to share his course on Quantum Mechanics and Quantum Computation with India's MOOC platform- his course is currently up on edX- one of the largest global MOOC platform co-founded by MIT and Harvard.

A complete list of MOOC courses and their features in India are given below which are enlisted in MOOC list in Table -2.

Sl. No.	Name of the course	Course provider	Name of the institution	Instructors	Course length	Exam	Certificate	Language	Support materials
1	Introduction to Business Analysis	ApnaCourse	Spearhead Nonlinear Pvt Ltd	Adaptive Processes Business & Management	Self Paced	No Exam or Final Project	No Certificate	English	Vedio, Forum

Sl. No.	Name of the course	Course provider	Name of the institution	Instructors	Course length	Exam	Certificate	Language	Support materials
2	Project Management Formulae	Apna Course	Spearhead EduOnline Pvt Ltd	Chandramouli S Business Management	Self Paced	No Exam or Final Project	No Certificate	English	Video, Forum
3	EE210.1x: Signals and Systems, Part 1	Jan 15th 2015 edX	IITBombayX	Vikram Gadre	8 Weeks 4-6 hours / week	No Exam and/or Final Project information	Yes, Statement of Accomplishment or Verified Certificate	English	Video, Forum, Prerequsities, Tag
4	CS101.2x: Introduction to Computer Programming, Part 2	Jan 15th 2015 edX	IITBombayX	Deepak B. Phatak	8 Weeks 4-6 hours / week	No Exam and/or Final Project information	Yes, Statement of Accomplishment or Verified Certificate	English	Video, Forum, Prerequisites, Tag
5	Central Sales Tax (India Context)	ApnaCourse	Spearhead EduOnline Pvt Ltd	Gopal Shankar	Self paced	No Exam and/or Final Project information	Yes, Statement of Accomplishment or Verified Certificate	English	Video, Forum, Tag
6	SOC Verification using System Verilog	Udemy	Instructor Made Course	Ramdas Mozhikunnath	4 Weeks	No Exam and/or Final Project information	Yes, Statement of Accomplishment (free)	English	Video, Forum, Textbook, Team project, Tag
7	Online Mini MBA	Other Providers	myBskool	Various Instructors	15 week 2 hours/week	Yes, Paid Exam and/or Final Project	Yes, Verified Certificate (Paid)	English	Video, Textbook, Tag
8	Gain from the Power of Lean Six Sigma	Jan 27th 2015 WizIQ	Canopus Business Management Group Six Sigma Certification Course	Nilakanta Srinivasan Janakiraman	6 week 2 hours/week	Yes, Free Exam and/or Final Project	Yes, Statement of Accomplishment (Free)	English	Video, Forum, Textbook, Tag
9	EE210.1x: Signals and Systems, Part 1	Jan 15th 2015 edX	IITBombayX	Vikram G0adre	8 week 4-6 hours/week	No Exam and/or Final Project information	Yes, Statement of Accomplishment or Verified Certificate	English	Video, Forum, Prerequisites, Tag

Sl. No.	Name of the course	Course provider	Name of the institution	Instructors	Course length	Exam	Certificate	Language	Support materials
10	Agile in 100 minutes	Dec 10th 2014 ApnaCourse	Spearhead EduOnline Pvt Ltd	Venkatraman L	1 week	No Exam or Final Project	No Certificate	English	Video, Forum, Tag
11	Basics of Corporate Finance	Nov 20th 2014 ApnaCourse	Spearhead EduOnline Pvt Ltd	Namit Chugh	1 week	No Exam or Final Project	No Certificate	English	Video, Forum, Tag
12	CS101.2x: Introduction to Computer Programming	Sep 23rd 2014 edX	IITBombayX	Deepak B. Phatak	6 week 8 hours/week	No Exam and/or Final Project information	Yes, Statement of Accomplishment or Verified Certificate	English	Video, Forum, Prerequisites, Tag
13	ME209x: Thermodynamics	Jul 29th 201 edX	IITBombayX	Milind D Atrey Uday N. Gaitonde Upendra Bhandarkar	12 week 8-10 hours/week	No Exam and/or Final Project information	Yes, Statement of Accomplishment or Verified Certificate	English	Video, forum, Prerequisites, Tag
14	CS101.1x: Introduction to Computer Programming, Part 1	Jul 29th 2014 edX	IITBombayX	Deepak B. Phatak	6 week 8 hours/week	No Exam and/or Final Project information	Yes, Statement of Accomplishment or Verified Certificate	English	Video, Forum, Tag
15	Web Intelligence and Big Data	Mar 25th 2013 Coursera	Indian Institute of Technology Delhi	Gautam Shroff	10 week 2-4 hours/week	Yes Exam and/or Final Project information	Yes, Statement of Accomplishment (free)	English	Video, Forum, Prerequisites, Tag

Table 2 -MOOC iniatives in India

Conclusion

In a developing country like India where the major part of population resides in rural areas and people can't afford to get quality education, MOOC can definitely considered as a trend changer of education. This cost effective way of learning through online medium definitely possess a bright future in India. Learners do not have to travel up to long distances, no faculty will be needed then what will be required? Students have their computing devices and ICT and with the help of internet services and can acheive their education. The India MOOC platform will be completely free of cost and also promises to offer top quality courses in a number of Indian languages. Meanwhile, IIT Kharagpur is helping prepare a blueprint for the National E Library project- that will collect, preserve and disseminate all the intellectual output of our country and cater to the needs of the students spanning from school level to PG level and provide free access to quality e-contents and education material to students at primary, secondary and higher education level. The HRD ministry plans to involve all IITs and Institutions of higher learning in this project. An India specific MOOCs (Massive Open Online Courses) platform- likely to be christened 'Swayam' indicating self learning, has been launched on 25th September, 2014. The India MOOC platform will be completely free of cost and also promises to offer top quality courses in a number of Indian languages. The process has already begun to ensure effective translation of the IIT Bombay and Princeton course in Hindi and other languages. Meanwhile, IIT Kharagpur is helping prepare a blueprint for the National E Library project- that will collect, preserve and

disseminate all the intellectual output of our country and cater to the needs of the students spanning from school level to PG level and provide free access to quality e-contents and education material to students at primary, secondary and higher education level.

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