



**WORLD
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**Cloud Radio® & Video cloud for education and skill development
(Schools/Colleges/Universities)
Towards a local/global/education**

An innovative Approach



Note: Cloud Radio® is a registered trade Mark of World Development Foundation, New Delhi.

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1. Project Description

Cloud Radio® and video cloud based education in schools/colleges/Universities for local/global education and skill development to attain SDG2030

2. Background

The 2030 agenda for 17 Sustainable Development Goals (SDGs) aims to end poverty and deprivation, preserving the planet's ocean and land and tackling climate change. The agenda was adopted in 2015 and today after four years, three billion people in developing countries, who produce the great majority of the food that the world consumes, are most vulnerable to climate changes, drought, floods, lack of resources such as fertilizers, seeds etc, and market shocks. On the planet earth, 821 million people go hungry each year. The hungry people in the world rose by 40 million to 821 ml from 2015 to 2017. The situation is becoming alarming in South America and most regions of Africa. More than 90% people living in urban area are living in polluted climate and have no access to hygiene and sanitation. Globally, around 690 million population is severely food insecure, with 48 percent in Africa; 45 percent in Asia; 5 percent in Latin America and 2 percent across Europe and North America. The key to achieving SDGs is to increase the food production around the world not only to feed the existing population but the population that will grow to 9 billion in 2030. This is possible by adopting Knowledge Agriculture™ for which **a massive program of educating and upgrading the skills of farmers and entire populace are required to be undertaken.** We define Knowledge Agriculture™ as a process which uses technology and tools such as Greenhouse, IOT (Internet of Things), Robotics, AI (Artificial Intelligence), UAV (unmanned aerial vehicles) and specialized software for weather modelling, smart zone seeding, fertilizer modelling, UECS (Ubiquitous Environment Control System), SaaS (Cloud based monitoring and control system develop by Japan). Execution of technology assisted skill development projects in part of India and Ethiopia and their sustained monitoring for many years by us showed inspiring changes in rural behavior and willingness of farmers and the related professionals to adopt the new technology. The key to achieving the SDG2030 is a new type of education for the entire globe with a new knowledge, skill and attitude.

SDG 4 is to ensure “inclusive and equitable quality education and promote lifelong learning opportunities for all” For this type of education, the University and Instituddes need new curriculum, educational content, extensive use of ICT and related technologies to extend the knowledge to each person living at any corner of the world.

3. WHAT IS LACKING

Apart from the normal curriculum, following must be an integral part of education.

- Character Building: : Morals, values and Ethics – Integrity – Work ethic – Service learning – Civic virtue – Respect for others – Living peacefully – Caring – Sharing – Honesty – Courage – Valuing time – Cooperation – Commitment – Empathy – Self-confidence – Character – Spirituality – Introduction to Yoga and meditation
- Discipline, attitude
- ART, CULTURE AND PHILOSOPHICAL TRADITIONS
- Skills for knowledge agriculture, fisheries, coir, tourism, Govt. schemes: Mudra yojana, Kisan Samman Yojana,
- STEM

4. WDF Strategy



Figure 1: Strategy for SDG4

The few of the Tools & Technology required for this type of education are:

- Audio/video based content with knowledge-bases in Universities /Institutions

- Acoustically treated studios / Electronic Media production Centers (EMPC) and transmission cum server room to **provide facilities for audio /video recording/production/storage/streaming**. It shall **comprise of audio/video studios, transmission cum recording/editing room, PCR, Edit rooms, digital archives, and auxiliary facilities**.
- Hardware and software for **establishing Cloud Radio (cloud local or OTT) /streaming/internet/ community**).
- Enabling all the students/faculty **to receive streaming audio and video educational content on their digital devices** (mobiles, tablets, laptops, etc.) locally or remote sites such as e-pathshala/associated colleges/Universities.
- **Interactive content streaming e-portal** to stream lecture recordings, conference proceedings, schedules, etc. to students/faculty.
- **Workshop/ Training and operationalization** for exchange of ideas and experiences

5. Main features

Audio/video/multimedia-based content repositories and its delivery using local cloud /internet cloud/OTT/streaming /community radio for regular course /skill development

- Digital knowledge repositories allow for scaling of resources
- Classroom lessons on wi-fi speakers/mobile phones
- Reinforce learning & understanding of the concepts
- The learner-centered approach, which can address the absence of /differences among teachers
- Central Policy Control, Resource Monitoring,
- Low set-up cost/ Resource Development Costs (voluntary contributions by teachers, creative commons licensing) / maintenance cost

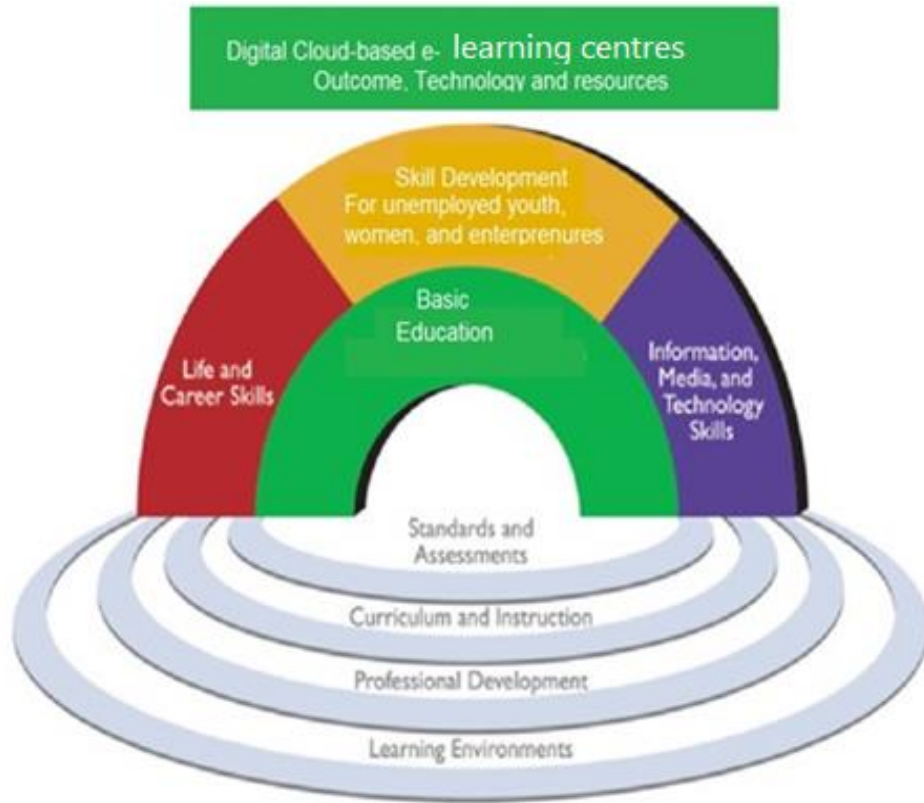


Figure 2: Digital Cloud e-learning centers

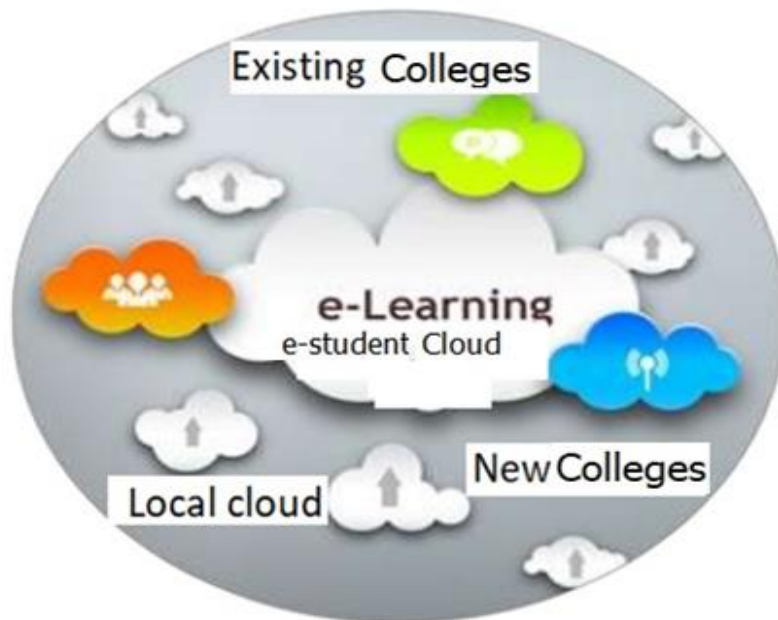


Figure 3: Information distribution through Cloud

1) EMPC/Studios /server room/ streaming

- Acoustically treated studio/EMPC/server room
- Provision for recording /streaming/ storage/uploading
- Software- archive (database), retrieval, playback, scheduler, android app for mobile
- Interactive web portal



Figure 4: EMPC/ Transmission Studio/Production Studio

6. System architecture

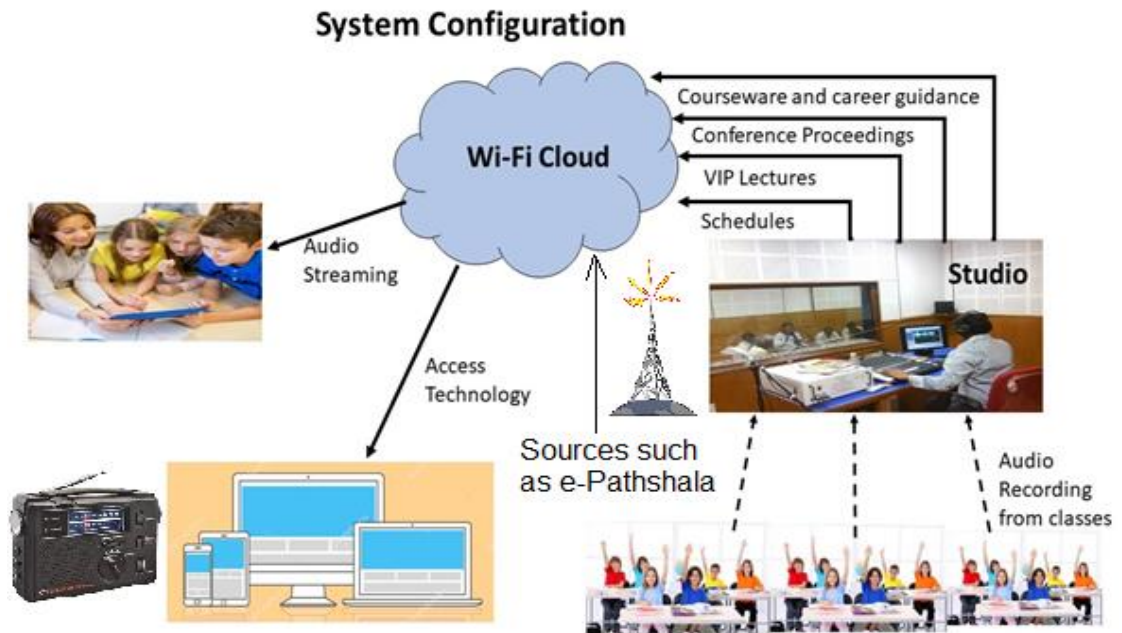
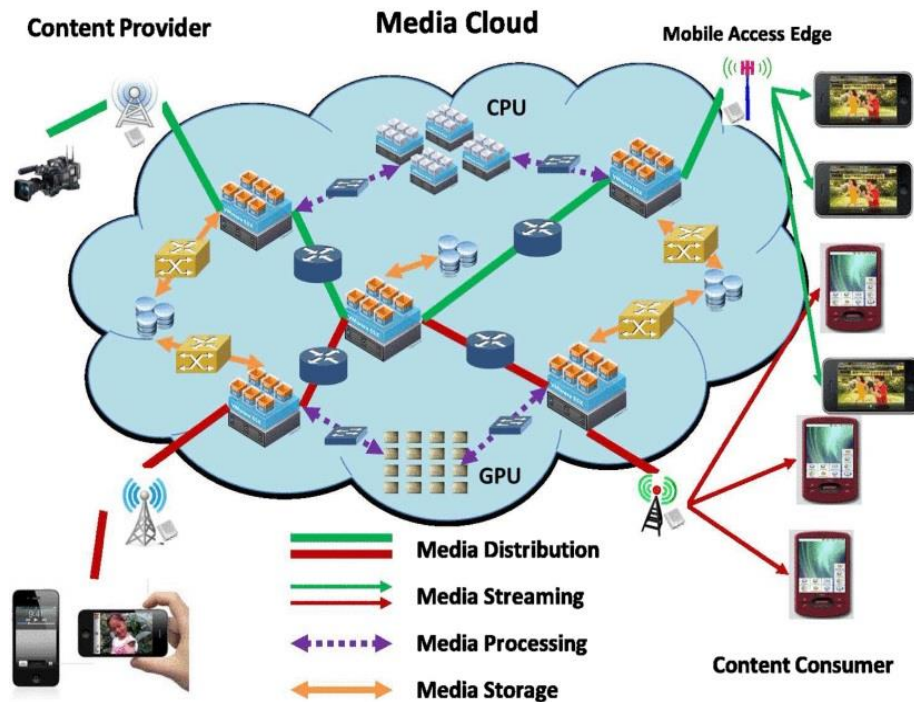


Figure 5: System Architecture Design

7. Delivery System

- Video Cloud-based Content Delivery In The Form Of Video /Audio To Be Received On A Digital Device (Smart Phones)
- Radio Cloud®
- Community Radio



- OTT video streaming: direct-to-consumer content creation and distribution
- Mobile is fast emerging as the dominant growth channel for audio and video content distribution
- “75% of worldwide video consumption occurs on mobile devices.” eMarketer
- 5G---AV/VR
- Immediate FULL NATIONWIDE coverage for the distribution of the content
- Content accessible via Internet connection on:
 - all Devices : Smartphones, Tablets, Feature phones, SmartTV, Android SetUp Boxes, Roku, AppleTV...
 - all Operating Systems : Android, iOS, Windows ...
 - all Telco Networks
- Minimum investment without any expensive CAPEX on heavy in-house equipment
- Simple implementation with a go to market in less than 6 months.
- Content available with automatic metadata and multiple language subtitles
- Support Subscription and Advertising models with automatic ads insertion server side.

8. Access technology

- Computer in computers lab
- All Devices: Smartphones, Tablets, Feature phones, Android Set-up Boxes, Roku...
- Operating System: Android
- All Telco Networks
- FM Raio Receiver



Figure 5: Different Access Systems

9. Benefits

- Accessing classroom lectures several times to reinforce learning
- Online audio offers the best of traditional radio with extra benefits such as mass distribution and larger area coverage using Internet
- Support Advertising models
- Over the time extension of the project to all the colleges (Affiliated /associated) will be possible with additional infrastructure with free ON DEMAND unlimited access to all content placed on the cloud.
- Content with single URL, using HTML5 advanced player
- The adaptive bitrate can be used if the growth of listeners is rapid.
- Improved learning
- Improved teaching (Monitoring of quality of teaching)
- A new beginning of the use of cloud-based technology for smart learning (First time in India)
- Recorded lectures can be shared by other college students
- Bridge the gap of teacher shortage in colleges
- Skill development by mass-com students by working in studio and honing the skills of the announcement, preparing programs, post-production, station management, internet radio
- Shall facilitate short term courses.
- Partnership with other country colleges/ students

10.Partnership & Implementation

World Development Founddation & Panchanan Barma University, Cooch Behar, West Bengal are partenering to establish first such system in West Bengal with University as main hub.