BAREFOOT WIRELESS ENGINEERS (BWE) COURSE PROGRAMME IN AFRICA

TRAINING REPORT

This training report of Barefoot Wireless Engineer Course programme conducted in African countries – Nigeria and Uganda

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DEF
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SUMMARY

Training Name	Barefoot Wireless Engineer (BWE) training program in African countries
Organisation(s)	Digital Empowerment Foundation (DEF) and Commonwealth of Learning (COL)
Training Locations	✓ Fantsuam Foundation, Kafanchan, Nigeria ✓ Mama FM, Kampala, Uganda
Supporting Partners	✓ Fantsuam Foundation, Nigeria ✓ CEMCOD, Kampala, Uganda
Training Dates	10th Feb to 12th Feb 2020 ✓ 14th Feb to 17th Feb 2020
Training Facilitator	Ritu Srivastava
Total number of trainees	47
Training Objective(s)	✓ Enable participants to understand the concept of internet and wireless networks ✓ Build confidence amongst participants in handling wireless network ✓ To understand the fundamentals of wireless networking ✓ To introduce the LMS and take them through the wireless course modules ✓ Able to understand the nuances of troubleshooting and maintenance of the network
Outcome	✓ More than 45 participants from two African countries – Nigeria & Uganda participated in the Barefoot Wireless Engineer (BWE) training ✓ Around 25 young girls and women are from two countries undergone to BWE training program ✓ Mama FM community radio station in Kampala selected as pilot project to setup community network and connect with CEMCOD ✓ Fantsuam Foundation will extend the community networks in six locations of Kafanchan region ✓ CEMCOD will establish the pilot network between CEMCOD and MamaFM.

INTRODUCTION

Ten years before in 2010, Digital Empowerment Foundation (DEF) with support from the Internet Society (ISOC) initiated a project, called Wireless for Communities (W4C) to provide affordable, ubiquitous and democratically controlled Internet access in rural regions of the country. One of the challenges that we faced in managing these wireless networks in rural regions is difficult as wireless network engineers from urban areas are not willing to travel in rural regions. Thus, engaging with local young women will help to strengthen the existing community networks and also create employability for them. To overcome the challenge of lack of skilled wireless engineers, Digital Empowerment Foundation (DEF) developed the '**Barefoot**

Wireless Engineers (BWE)' course with support from the Common Wealth of Learning (COL) specifically designed for rural communities or young women to manage and operate these wireless networks and also impart their skills to others, which will create a multiplier and form a pool of wireless trainers. To achieve this, DEF organised three training(s) in Wanaparthy (Telegana), Protovillage (Andhra Pradesh) and Pathardi (Maharashtra) regions of the country in the first phase of the program.

In the second phase of the training program, DEF and COL collaborated to take BWE course in African countries. To achieve this, DEF selected two countries from Africa commonwealth countries – Nigeria and Uganda for the training program. The objectives of the training were twofold – 1) enable participants to understand the concept of community networks, internet and wireless networks and 2) introduce the LMS and take them through the wireless course modules. Over 45 participants from these two countries participated in the training program.

TRAINING DETAILS

The training was designed specifically for participants who don't have knowledge about community networks and wireless networks. Therefore, we selected partner organisations who have strong network and community reach in their region. In Nigeria, we partnered with Fantsuam Foundation, which is working with six communities of Kafanchan region in Kaduna state. Whereas in Uganda, we partnered with CEMCOD (Centre for Media Literacy and Community Development), which is working with five community radio operators in Uganda. Fantsuam conducted the training in its centre, whereas CEMCOD further partnered with MamaFM for conducting the training.

As this training was specifically designed for young students who are volunteering to Fantsuam Foundation and community radio operators, we selected the participants based on the following criteria:

➢ Age group between (15 to 40 years)

➢ Should have minimum knowledge of computer

➢ Digitally literate or able to handle computer and mobile phones

➢ Interested to learn wireless and networking

➢ Ability to work on the field

➢ Able to communicate influentially

We had conducted the pre-assessment of participants to understand the participants' profile and to understand - the social profile of women; availability of ICT tools & devices amongst women; usage of connectivity & internet amongst them. More than 45 participants from two countries participated, out of which 25 of them were female participants.

The three-day training programme was designed in three parts – the first part was focused on creating the understanding about the community network and the second part covered the basic concepts of wireless and networking and lastly introducing the BWE course by showcasing the LMS platform and take them through the wireless course modules. Talking about the community networks across the world, the training explored various concepts around community networks such as –

✓ What is community network?

✓ Why do we need to set-up the community network?

✓ How does community networks help in internet bringing internet connectivity in rural regions?

✓ How we can community networks for betterment of our lives?

✓ Sustainability models of community networks

Continuing with the concepts, we introduced the concepts related to wireless. These concepts included 'Wave'; 'Frequency'; 'Wavelength'; ISM Band; and wireless standards. The second half of the Day continued with the 'location survey' and methods and ways to conduct the location survey the collection of GPS (Global Positioning System) coordinates. Two kinds of apps - Maverick App and My GPS Coordinates are showcased to collect the GPS coordinates. The example of Whatsapp Location sharing Method/Google Map was used to explain the concept of GPS coordinates (Longitude and Latitude). The demo of collecting GPS coordinates were shown through video and also by collecting the GPS coordinates of the present location. Participants also downloaded the 'My GPS Coordinate' app in their phones.

Introducing the LMS platform, we showcased the online platform http://lms.defindia.org/ and its registration process. We also showcased mobile platform – Moodle from where any learner can read and see the videos on the go.

As a way forward, we will be conducting online training for one month in 15ᵗʰ March to 15 April 2020. We divided the group in two batches based two levels – the first level (0-5) - who don't have knowledge and the second level (5-10) who have basic knowledge about computer and networking. The training will be conducted online. As an outcome, both training partners will further engage with participants in the following manner:

1. Fantsuam Foundation will extend the community networks in six locations of Kafanchan region

2. CEMCOD will establish the pilot network between CEMCOD and MamaFM.

CHALLENGES

1. The course is designed in the Indian context, thus, explaining the context in Africa was a challenge. For example – explaining the regulatory framework about community networks in Africa context was the challenge.

2. Due to electricity failure, we were not able to show the full LMS curriculum. To overcome with this challenge, we briefly introduced the LMS platform, shown them 'Moodle' App on the phone.

3. Since the topic itself sounds technical, so it was challenging to explain the concepts of wireless and networking without deep-diving into explaining the concept

4. Providing the training within 3 days was challenging as it was difficult for women to sit for day-long trainings

5. Since most of participants have no access to internet data, thus, they were limited in using LMS platform.

ORGANISERS

About COL: Commonwealth of Learning (COL) is an intergovernmental organisation created by Commonwealth Heads of Government to promote the development and sharing of open learning and distance education knowledge, resources and technologies.

About DEF: Digital Empowerment Foundation (DEF), established in 2002, aims to connect unreached and underserved communities of India in an effort to bring them out of digital darkness and equip them with access to information. With the belief 'Inform, Communicate and Empower,' DEF finds sustainable digital interventions to overcome information poverty in rural and remote locations of India, and empower communities with digital literacy, digital tools and last mile connectivity.