Academic and Community Networks in Nigeria

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Overview

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  - Scope & Impact
- Project Concept & Deployment.
  - Deployment Model
  - Services Deployed
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Importance of the Project
Introduction

- Nigeria has the highest out of school population in the World – 60% based in rural Northern Nigerian out which 60% are girls.

- Investment in good and equal opportunity education is vital for national development and well-being.

- Innovative online learning solutions would enhance youth education in the rural communities and also among the girl child.
The focus of the research is to:

- Engage and provide access to quality online education to high school graduates and out of school youth.

- Improve host communities' educational and economic status by facilitating their access to suitable quality educational resources through technology.

- Provide customized online basic math training for the girl-child especially in the rural areas and children. In the long run it also improves on STEM participation which is low.
The Project Deployment
Project Model

Secure Cloud for Academic and Community Networks

LEGEND

Academic institution
TV White Space
Transmitter & Antenna
Local Cloud resources
(LMS, e-Library, Apps, etc)

At a Community
TV White Space
Receiver with uplink access point
Solar powered sCACN hotspot(s)
(Wi-Fi repeaters, IoT gateways, etc)

Each institution supports multiple academic networks and community networks
Services Deployed

- Remedial Studies
- Library Services
- Lectures
- Interactive Mathematics and English App(s) for Children and Cooking recipes for girls
Proof of Concept
Proof of Concept

- The proposed deployment on the cloud infrastructure of the ICTP provided access to online courses and materials via a computer or electronic device with Internet access to some undergraduate students across two institutions (PLASU / UJ) across two different courses (CS & Mass Comm).

- Using Moodle, learning materials and educational resources for teaching and learning were deployed for access.

- Customised applications that would teach girls mathematics through cooking recipes has been developed though still work continues to include more recipes and the children appropriate recipes.
Findings from PoC

- The female students seem to participate better than the male students.

- On-line interactions, class forums, discussions seem to be improved and quite engaging thanks to motivating presence of tutor(s).

- Learners used the virtual lecture-room was also used for pre and post class activities (tutorials & social interactions).
DEFENCES FOR SEDITION

As contained in Section 50 (2) (i-iv) of the Criminal Code, a speech or publication will not be regarded or amount to Sedition if it intends to:

- Show that the President or Governor was misled or mistaken in any measure in the Federation or States as the case may be.
- To point out errors or defects in the government or Constitution of Nigeria or of any region as by law established or in legislation or in the administration of justice with a view to remedying such errors.
- To persuade the citizens to procure by lawful means the alteration of any matter in Nigeria as by law established (mobilisation of citizens to come to vote a government out).
- To point out with a view to removing any matter which is producing or having the tendency to procure feeling of ill-will and enmity between and among different classes of people or the population of Nigeria (state of origin, tribe, etc).
Soak the beans in the water for one hour. If there are 60 minutes, the beans are already soaking for $\frac{1}{2}$ hour, how many minutes of soaking are left?
Pick

1 1/2 Cups peeled dry beans
Black-eyed Peas
2 Bullion Cubes and 2 Tablespoons Crayfish
Challenges

- Even though this deployment stands to benefit the community, government and the individuals economically and socially, like any other ICT deployment in Nigeria, there are challenges that may hinder its sustainability –
  - Funds
  - Unreliable Power Supply
  - Human Resources / Local Technical Incompetencies
## Sustainable Solutions for Identified Challenges

<table>
<thead>
<tr>
<th>Identified Challenges</th>
<th>Sustainable Techniques</th>
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<tbody>
<tr>
<td>Lack of reliable Internet connectivity in DCCSS</td>
<td>Deployment of TVWS technology</td>
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<td>CSR agreements with mobile providers</td>
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<td>Lack of electricity in the community like Dungung Community Comprehensive Secondary School (DCCSS)</td>
<td>Installation of solar panels with batteries and inverters to serve ICT equipment in the community school and the University</td>
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<tr>
<td>Lack of reliable power supply in the Nigerian Universities / Institutions</td>
<td>Installation of diesel generator to power the community school computer labs</td>
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<td>Deployment of solar units to power teaching aids: Laptop, USB webcam/cameras, room/class speakers, individual bluetooth mics, interactive white boards, etc</td>
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<td>Lack of requisite skills to manage computer labs and network in DCCSS</td>
<td>Organise basic maintenance training for persons responsible for managing the computer labs and network</td>
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<td>Create training videos on maintenance and troubleshooting to serve as reference and learning materials</td>
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<td>Deployed Secure cloud managed and hosted at the University</td>
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Conclusion

- The project uses ICT facilities to improve education and hence socio-economic development in the host communities.

- The females and young children develop basic skills in core educational material through age appropriate lessons delivered using an app that also teaches skills in cooking of local meals.

- The nation thereby meets its SDG goals which includes training of out-of-school adolescents and youths as well as training of young children and the girl child.
Thank-You