NEW PARTNERSHIPS AND NEW TECHNOLOGIES IN DEPLOYING LAST MILE CONNECTIVITY IN GHANA

LESSONS AND OPPORTUNITIES
OUTLINE

• Overview of GIFEC & Partnership Objectives

• Our Projects _ Last Mile Solutions

• Some Lessons and Opportunities Innovation in Rural Coverage

• Way Forward
INTRODUCTION

• A universal Access Fund _ Ministry of Communications

• Against the backdrop of the Sustainable Development Goal (SDG) 17 and its impact on socio-economic development, GIFEC acknowledges the need to build strategic partnerships especially for Rural ICT development to achieve the Fund’s objectives.

• Public-Private Partnerships (PPP) critical for accelerated connectivity in unserved and underserved communities.
OUR VISION

• To innovatively manage a Universal Access Fund collaboratively with stakeholders to achieve Universal access through the use of ICTs in Ghana
OUR MISSION

• To facilitate the provision of Universal Access to all persons through the use of affordable Information and Communications Technology for Socio-economic development.
PARTNERSHIPS

- GIFEC has established significant partnerships with both public and private Stakeholders in its quest to fulfill its mandate.
- These partnerships are key enablers for GIFEC to meet global challenges and generate sustainable change and long-lasting impact in the underserved communities.
- These partnerships are also firmly embedded in GIFEC’s way of working at global, regional and national levels.
- As partners, we leveraged on our resources, expertise and competencies to promote the Fund’s principles and values to achieve common development goals, and to strengthen visibility and impact of its action.
PARTNERSHIPS

GIFEC-TELCO-INVESTOR

TRIPARTITE PARTNERSHIP MODEL

- Site Acquisition and permitting
- Joint Site survey based on nominal selection
- Custom’s waiver for equipment clearance
- ECG facilitation for selected sites
- Acquisition of frequency (UMTS 900)

GIFEC

- Innovative solution offering
- Site build implementation and telecom works
- Site operations and maintenance

Investor

- Site selection and Planning
- Site integration and marketing activities
- Sales and Distribution
- Only 3G or better

Telco
• The Rural Star solution provides an energy efficient and economical solution to connectivity problems.

• It allows rural networks to provide cost-effective mobile broadband services as well as traditional voice services in remote areas.

• This solution combines Relay Remote Node (RRN) wireless backhaul, a simple pole tower, and a green solar energy.

• It also supports multiple RATs, multiple frequency bands, and multi-level cascading
## COMPARISON OF RURAL STAR AND OTHER TECHNOLOGIES

<table>
<thead>
<tr>
<th></th>
<th>Rural Star</th>
<th>Macro Site</th>
<th>Satellite Site</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cost of Tower</strong></td>
<td>Very Low</td>
<td>Very High</td>
<td>High</td>
</tr>
<tr>
<td><strong>Cost of Backhauling</strong></td>
<td>Very Low</td>
<td>High</td>
<td>Very High</td>
</tr>
<tr>
<td><strong>CAPEX</strong></td>
<td>Very Low</td>
<td>Very High</td>
<td>High</td>
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<tr>
<td><strong>OPEX</strong></td>
<td>Very Low</td>
<td>High</td>
<td>Very High</td>
</tr>
<tr>
<td><strong>Capacity</strong></td>
<td>High</td>
<td>Very High</td>
<td>Very Low</td>
</tr>
<tr>
<td><strong>QoS</strong></td>
<td>Good</td>
<td>Very Good</td>
<td>Average</td>
</tr>
<tr>
<td><strong>Time to Deploy</strong></td>
<td>Very Short</td>
<td>Long</td>
<td>Short</td>
</tr>
<tr>
<td><strong>Power Source</strong></td>
<td>Solar</td>
<td>Grid</td>
<td>Solar</td>
</tr>
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SMART COMMUNITY PROJECT (Partnership with “BLUETOWN”)

- The “Smart Community Project” is a project designed to provide affordable/free WIFI internet service to connect the unserved or underserved communities across the country.

- The Smart Community is a base/access point for providing all other broadband services to these communities including but not limited to Digital for Inclusion (D4I), Content, entertainment, e-Services (eUtilities, eTransform, eHealth, eLearning, ePolice, eAdministration etc.)
OBJECTIVES OF THE SMART COMMUNITY PROJECT

- Provision of affordable Broadband connectivity
- Creation of inclusive societies
- Improvement in Financial Inclusion
- Creation of Employment opportunities
This is a project designed to leverage on the value of existing planned investments in infrastructure of utility service providers, ISPs and MNOs to extend broadband internet via fiber optic cables to unserved/underserved communities across the country.

The project also seeks to provide all other broadband services, improve universal access to telecommunications in the selected communities and allow utility companies and MNOs, ISPs etc. to leverage on the system for their services.
AERIAL FIBER (Cont.)

• The project is set to last for a maximum duration of **five (5) years** for a total fiber optic length of **5000km** to be deployed to provide aerial fiber broadband solutions. An estimated length of **1000km** of aerial fiber will be deployed each year. Priority will be given sites or beneficiary communities not more than 20km from an existing fiber point.

• **The adoption of Aerial Fiber solution to provide broadband service is highly due to its low cost of deployment and fast implementation period.** Thus, this will be achieved by leveraging on the value of existing planned investments in infrastructure of utility service providers.
Implementing model for Aerial fiber project.

GIFEC

MNOs

UTILITY COMPANIES IN GHANA

AFFORDABLE BROADBAND: AERIAL FIBER CONNECTIVITY ON EXISTING UTILITY COMPANY INFRASTRUCTURE

END USERS: MEMBERS OF BENEFICIARY COMMUNITY
The table below shows a comparison between Aerial Fiber and Underground Fiber deployments.

<table>
<thead>
<tr>
<th>Description</th>
<th>Aerial Fiber Deployment</th>
<th>Underground Fiber Deployment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction Costs</td>
<td>Very Low</td>
<td>Very High</td>
</tr>
<tr>
<td>Cost Of Fiber</td>
<td>Low</td>
<td>High</td>
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<tr>
<td>Time to deployment</td>
<td>Fast Deployment</td>
<td>Very Slow</td>
</tr>
<tr>
<td>Existing Infrastructure</td>
<td>Yes</td>
<td>No. Ducts</td>
</tr>
<tr>
<td>State Laws</td>
<td>Permits required from Utility Companies</td>
<td>Permits required from many entities</td>
</tr>
<tr>
<td>Local Influences</td>
<td>No</td>
<td>High</td>
</tr>
<tr>
<td>Destruction Of Services</td>
<td>Low</td>
<td>Very High</td>
</tr>
</tbody>
</table>
IMPACT OF PPP ON THE DIGITIZATION EFFORTS

GIFEC from 2007-2016 built 107 RTP sites that is average of 10 per year.

- **2017 – 185** RTP sites were built, commissioned and activated
- **2018 – 200** sites were built, commissioned and activated
- **2019 – 200** sites are being constructed
- **2020 – 2,016** to be constructed

3 million communities have been covered through the PPP arrangements
LESSONS LEARNT

• Policy framework.
  • The policy goal in areas that remain unserved is to create a business case that will encourage ISPs to build or extend service to areas where the costs of deployment are high.

• Funding and operations
  • Less cost on investment due to cost sharing

• Planning and capacity building
  • Communities have the knowledge and tools to use it to support their economic development or other goals

• Program evaluation and evolution
  • Evidence that communities are leveraging network investments to make their economies stronger

• Stakeholder outreach and engagement
  • To avoid duplication of efforts and co-location
MNOs

THE DIGITIZATION EFFORTS – Way Forward

1. Provide affordable and reliable services

2. To collaborate with GIFEC to improve broadband infrastructure and services to the Rural Ghana

NCA

1. To make regulations that favour Rural broadband deployment.

2. Support the new technology for the Rural communities

Partners

To provide funding, new technologies and sustainable management of the deployed services to the Rural Ghana