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**Meraka Institute, CSIR, South Africa**

# Profile of Project Area

- We serve a coastal community in Ghana called Winneba
- Population over 50,000 made up of Educational Instns. & Govt. Agencies
  - University of Education, Winneba
  - Community Health & Police Training Schools
  - Senior High Schools & Junior High Schools
  - Municipal Assembly, Police, Prisons, Health, Education Directorates
- Power source: Stable and from the national hydro source
- ICTs: GSM, Analogue Phone, Radio stations, TV, Fax, etc.
- Income Levels: Low income levels
- Partner: Arrow Network Systems - www.arrownetworks.net

# Site Selection

- **Population's ICT Awareness:** Largely literate with growing interest in knowledge in ICTs especially University Community

- **ICT infrastructures:** GSM, Analogue Phone, TV, WiFi, WiMax

- **Needs assessment:** Not thoroughly done and documented
  - Our free wireless broadcast has attracted a lot of people and statistics of visitors on our log shows increasing demand

- **The Roles of Various Local Actors:**
  - The Municipal Assembly, the Community Health Nurses, Hotels and Internet Cafe are connected to our network for Internet access at a fee. This shows conscious effort to increase access by stakeholders
  - WODiV is run as a with a social enterprise model
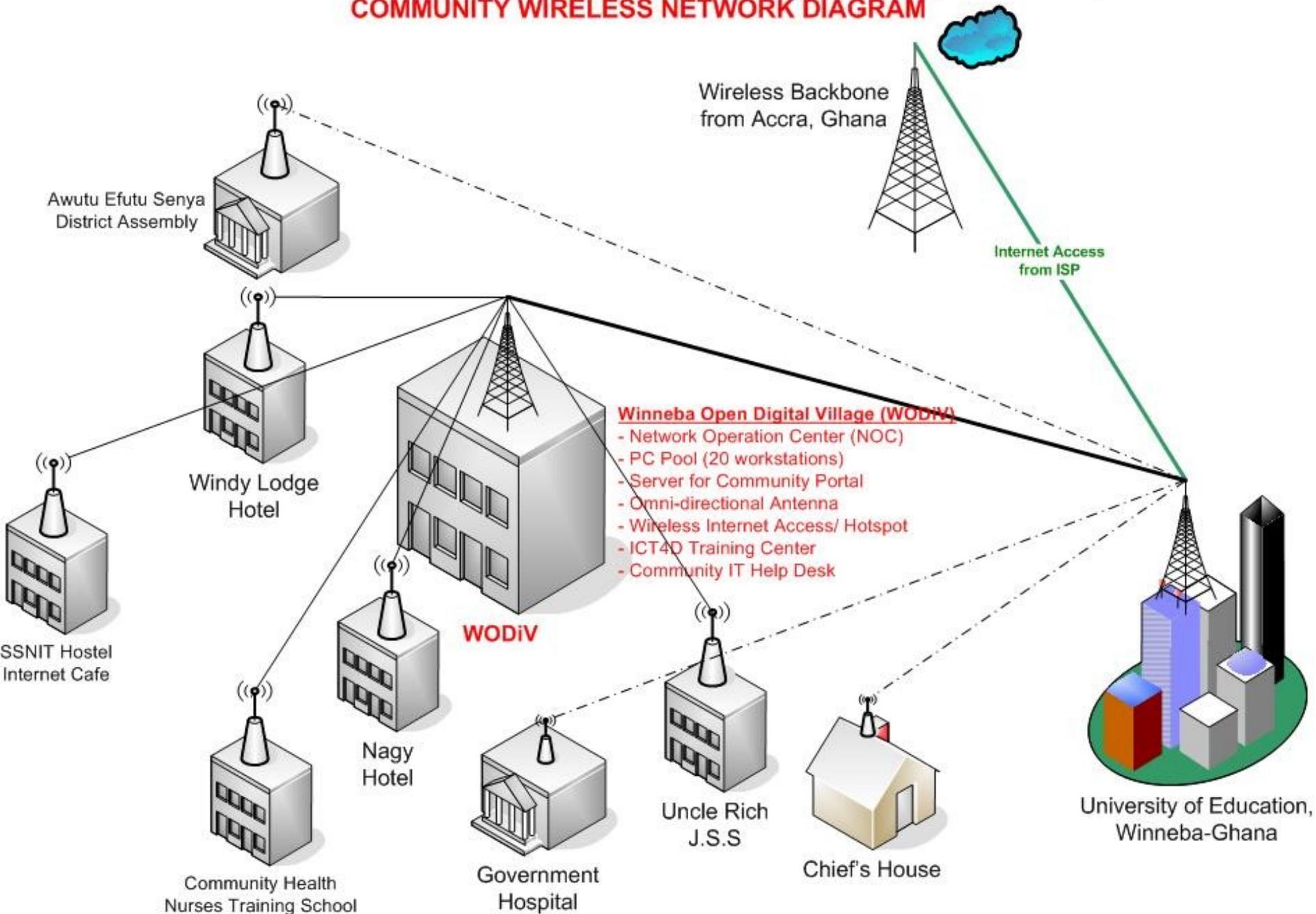
# Description of Project Network

- **The Technology Level**
  - **Wireless network: WiFi Point-to-point, Mesh**
  - **Power: 100 Ah Battery Back up**
- **Human Resource and Capacity**
  - **Highly skilled staff with IT Diplomas and First Degrees**
- **Financial**
  - **Grants and payments from subscribers: COL, DIIRWB**
- **Regulatory environment**
  - **WiFi is legal**
- **Wireless network diagram:** Next Page

# WINNEBA OPEN DIGITAL VILLAGE (WODiV)
## COMMUNITY WIRELESS NETWORK DIAGRAM

Wireless Backbone from Accra, Ghana

Internet Access from ISP

Awutu Efutu Senya District Assembly

Windy Lodge Hotel

SSNIT Hostel Internet Cafe

**Winneba Open Digital Village (WODiV)**
- Network Operation Center (NOC)
- PC Pool (20 workstations)
- Server for Community Portal
- Omni-directional Antenna
- Wireless Internet Access/ Hotspot
- ICT4D Training Center
- Community IT Help Desk

**WODiV**

Nagy Hotel

Community Health Nurses Training School

Government Hospital

Uncle Rich J.S.S

Chief's House

University of Education, Winneba-Ghana

# Business Models

- **Number of clients, running costs, income**
  - **Clients:** Four (4) clients on the network pay monthly flat fee
  - **Hot Spot:** Flat daily user fees for the Wireless Hotspot at the WODiV premises
  - **Internet Cafe:** Café at WODiV uses the Cafezee billing software for hourly charges

- **Do you recover costs?**
  - Yes

# Business Models – Price lists for additional I T Services



## THE WINNEBA OPEN DIGITAL VILLAGE (WODiV)

### REPAIRS AND MAINTENANCE SERVICES

When it comes to repairs and maintenance of your Laptop and Computers, lean on WODiV for Quality Service and affordable Rate.

**PRICE LIST**

Desktop Diagnostic Fee:GH¢3.00

Laptop Diagnostic Fee:GH¢5.00

### SOFTWARE INSTALLATION

Windows OS:GH¢5.00

Linux OS:GH¢5.00

Antivirus Installation: GH¢5.00 each

Office Package: GH¢5.00 each

Multimedia Software Installation: GH¢5.00 each

Media Players: GH¢2.00 each

**Other Available Softwares**

Internet Explorer 7

Mavis Beacon Teaches Typing

CorelDraw

### Other Services

* Periodic Servicing of computers for offices and organisations.
* Computer Network Installation & maintenance.
* Internet Installation & Subscription.
* Data Management.
* ICT Training for organisations & individuals.

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# Challenges and Lessons Learned

- **Bandwidth Control & Management**
  - Microtik Software for WiFi & Open Access for Mesh Hotspot

- **Wired Network Billing**
  - Cafezee Software

- **Network Expansion**
  - Limited Internet bandwidth & more hotspots with billing software.

- **Challenges**
  - Only 1Meg shared bandwidth from ISP with increasing demand
  - Open Source Billing software for wired and wireless/mesh
  - Establishing a more robust network security

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# Way Forward



- **Phase 1:** Completed – 4 institutions with 1 hotspot

- **Phase 2:** Expanding the current network to cover the whole Winneba

- **Phase 3:** Set up a national network of Ghanaian Universities Project for the development of Digital Educational Content: GhARNet

- **Phase 4:** West African Sub-regional Gigabit network of NRENs called the Africa High Speed E-Content and Digital Repositories (AHEAD) Project.
  - Consortium being created; new members welcome



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# African High Speed
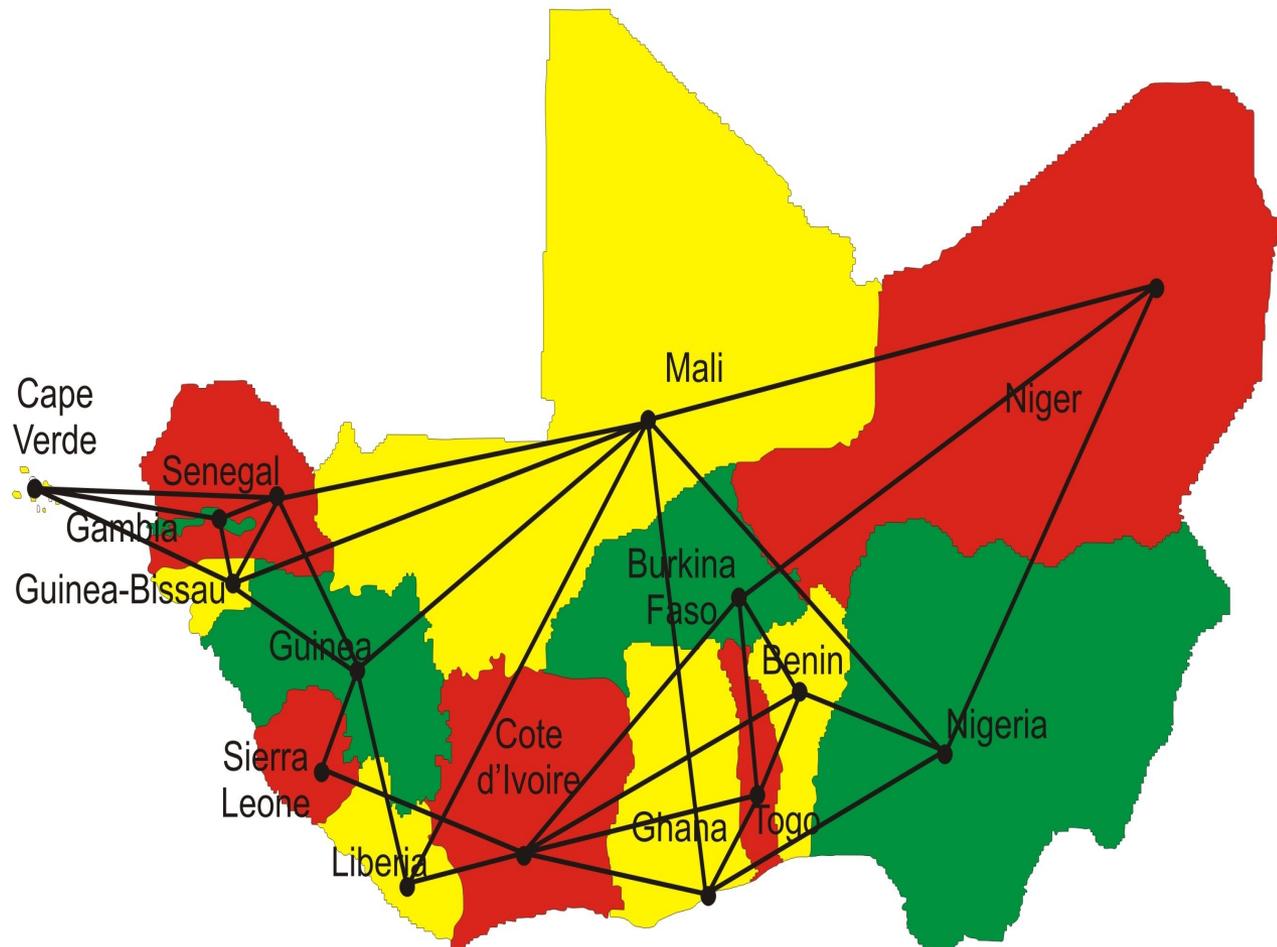# E-Content and Digital Repositories Network (AHEAD)

### Ghana National Research Network (GhaRNet)
### &
### Multiple National Research Networks

# Way Forward: Phase 4 – AHEAD, Multiple NRENs Gigabit Network

# Thank You