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# Understanding Community Networks in Africa

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# DIGITAL AROUND THE WORLD IN 2018

KEY STATISTICAL INDICATORS FOR THE WORLD'S INTERNET, MOBILE, AND SOCIAL MEDIA USERS

TOTAL  
POPULATION



**7.593**  
BILLION

URBANISATION:

**55%**

INTERNET  
USERS



**4.021**  
BILLION

PENETRATION:

**53%**

ACTIVE SOCIAL  
MEDIA USERS



**3.196**  
BILLION

PENETRATION:

**42%**

UNIQUE  
MOBILE USERS



**5.135**  
BILLION

PENETRATION:

**68%**

ACTIVE MOBILE  
SOCIAL USERS



**2.958**  
BILLION

PENETRATION:

**39%**

we  
are  
social



we  
are  
social



# 47% of the world is still not connected

The lack of affordable access to the Internet and the disparity in levels of access across the world remains a key challenge.

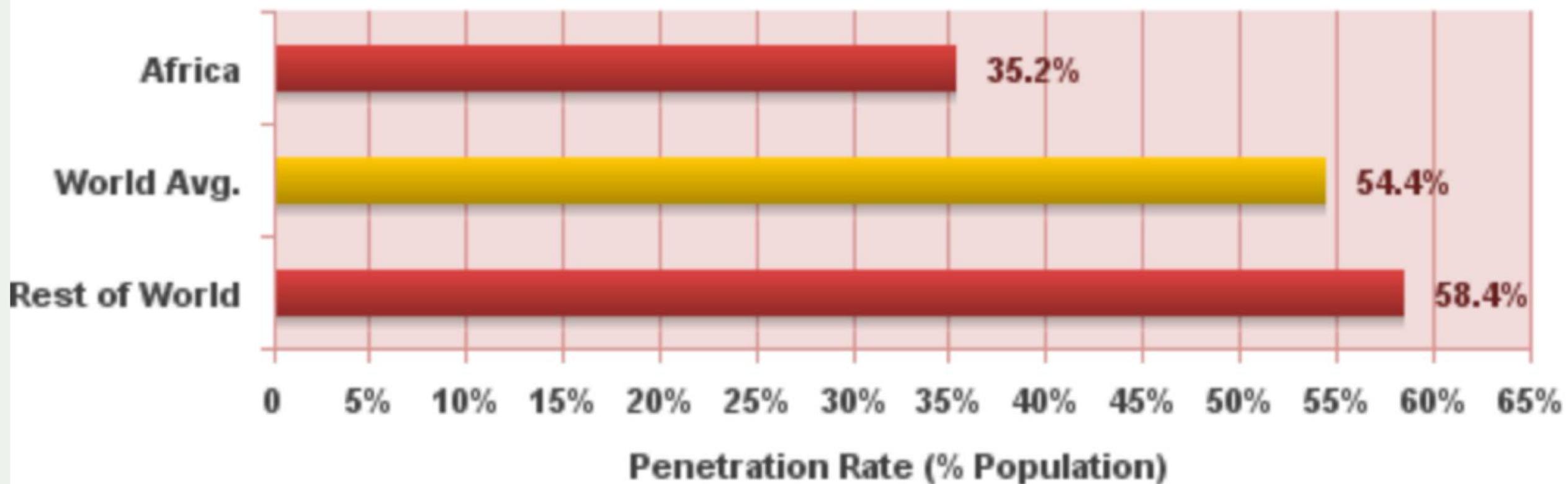
This creates competitive and economic disadvantage.



A vehicle crossing the landscape near Koklata in Tusheti, a beautiful but very remote region of the Greater Caucasus Mountains in the Republic of Georgia. ©Nyani Quarmyne

# Internet Penetration in Africa

## December 31, 2017



Source: Internet World Stats - [www.internetworldstats.com/stats1.htm](http://www.internetworldstats.com/stats1.htm)  
453,329,534 estimated Internet users in Africa in December 31, 2017 and  
4,156,932,140 Internet users in all the World in December 31, 2017  
Copyright © 2018, Miniwatts Marketing Group

# The Case for Community Networks

- The host of opportunities and potential benefits that are presented by expanding access to the Internet, connecting the next billion users is one of the central issues
- In Africa, more than 800 million people are unconnected – ITU 2017 Broadband report
- More than 62% of total population in Sub-Saharan Africa resides in rural areas while 37% in urban areas – World Bank 2014 population density report
- There is a common understanding that market forces are unable to provide affordable access to communications to the economically disadvantaged segments of the population
- The business case for deploying a base station requires more than 3,000 active users.
- Using the mobile network operator model, the next billion users will only be connected by 2025.
- These, and other factors, have led stakeholders to consider alternative and complementary solutions.



# Supporting the Creation and Scalability of Affordable Access Solutions: Understanding Community Networks in Africa

- Study commissioned by the Internet Society in 2017
- Built on previous study of existing CN's in Africa
- Objective was to gain insights on existing CN's as an alternative and complementary solution for connecting the unconnected in underserved areas of Africa
- Study was conducted by Carlos Rey-Moreno



# Definition of Community Networks



Community Networks can be broadly defined as telecommunications infrastructure deployed and operated by citizens to meet their own communication needs.

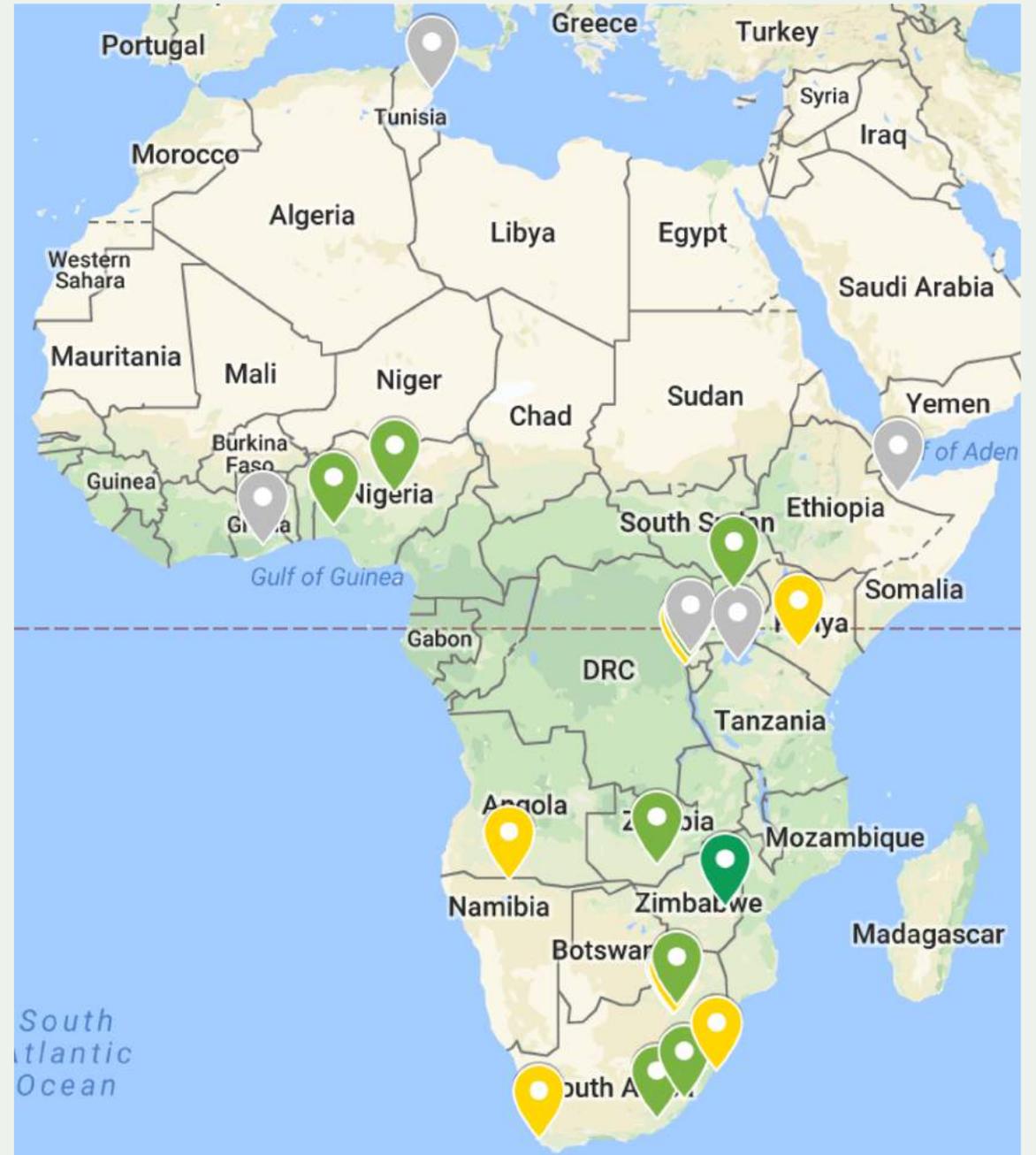


“In Africa, a community network is not simply telecommunications infrastructure deployed and operated by citizens to meet their own communication needs; it is a tool to improve what a community is already doing in terms of their growth and development, by contributing to a local ecosystem that enhances the daily lives of those staying in the community”



# Status of CN's in Africa

- A recent survey identified 37 community network initiatives in 12 African countries, 14 the report presents an in-depth study of the community networks on the continent

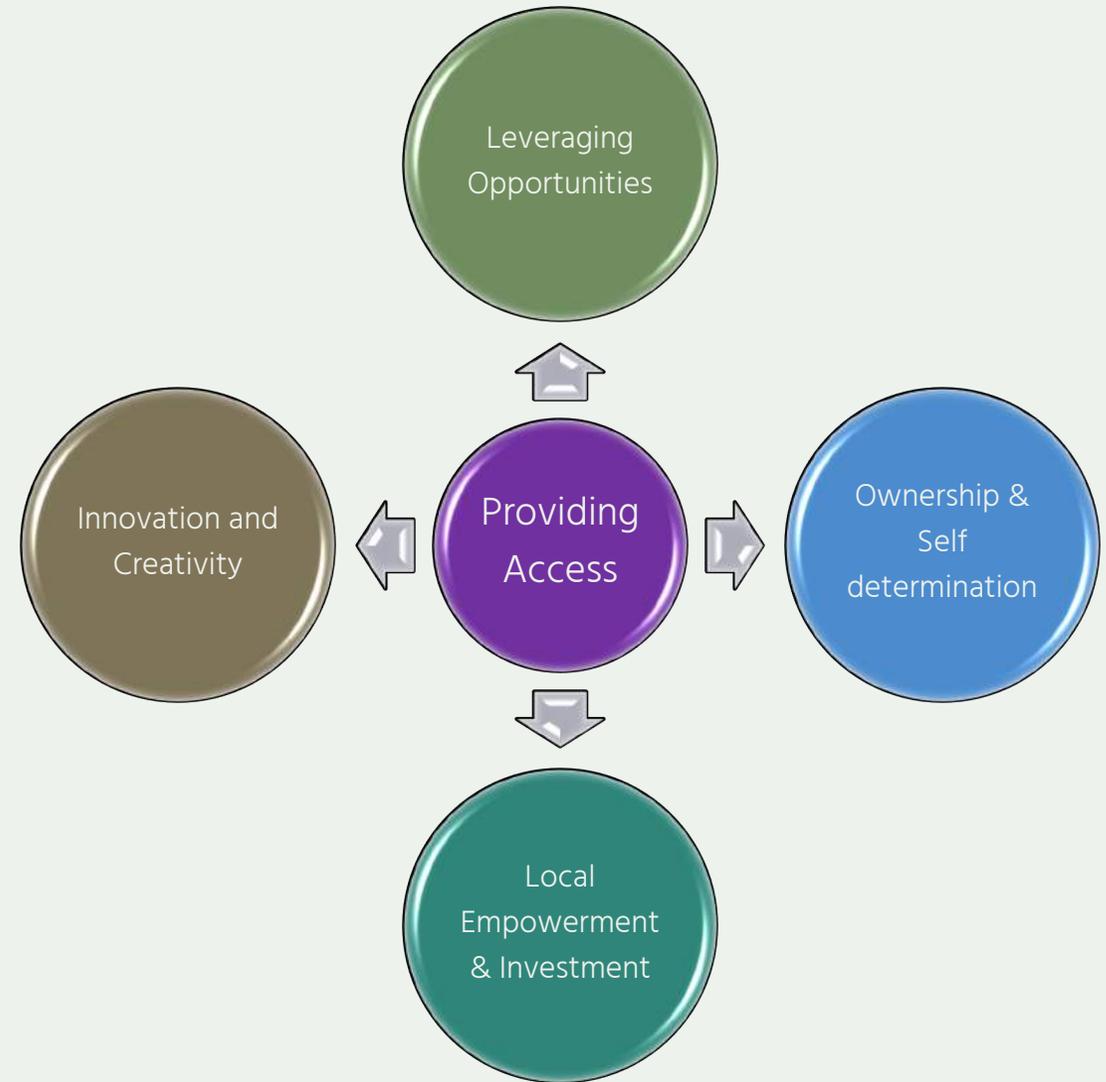


# Overview of Community Networks in Africa



# Factors behind the establishment of CN's in Africa

- **Provide connectivity in areas where there is none**
  - Provide cheaper alternative connectivity compared to what is provided by Mobile operators
- **Affordability reduces barriers to access and sharing of information and knowledge**
  - Access can be used to leverage education and employment opportunities
- **Owning the network provides self-determination over the prices and the services offered**
  - Keeps profits local instead of extracting them to external and even global player.
  - Therefore, the emphasis is community empowerment and investment, rather than in monetary profit
- **Technical capacity development**
  - Inspires innovation and creativity



# Startup Funding

“If you have a vision, the funds to start the initiative will come one way or another. It is also the other way around; when people receive funds but do not have a vision for the initiative, for their communities, that is when it does not go forward.”

Fred Mweetwa – Macha Works

Due to the lack of economic resources most CN's have applied for startup financial assistance from;

- Seed funding and grants from International organizations like the IDRC, OTI
- ISOC Beyond the NET grant Program
- Crowdfunding campaigns, either online or via personal or collective fundraising campaigns (mainly in collaboration with partners in Europe and North America).
- The donation of equipment, services, or funds via corporate social responsibility or research programs.
- Matching fund mechanisms, where donors match the amount contributed by the communities.
- The national Universal Service and Access Funds (USAF).

Underserved towns far from main cities



Where do you find CN's in Africa?

Rural and remote villages with low population density



Urban poor settlements with high population densities

# Understanding the “Community”

- The diversity of the region means that the definition of community varies from one place to another
- The common point is the understanding that; it concerns those living around the area where the network is deployed
- **Social cohesion** is key to the survival of tight-knit communities
- Social cohesion is underpinned by the community’s leadership which consists of **traditional authority, religious leaders and the local government**



# Ownership and Governance



- The CN's existing in Africa were all started under different circumstances
- The “**vision**” of making the community a better place is at the core of all the African CN's interviewed.
- CN's are often initiated by the more **informed community members and individuals** (local or external to the community) in collaboration with the local institutions and structures (tribal authorities, schools, hospitals, etc.)
- The **collaboration builds trust** and ensures that initiative is aligned with local community needs and sensitivities
- The ownership of the CN's is based on **sharing** and the **commons** approach in management of local resources.
- Governance is built upon existing **social cohesion** and existing governance structures i.e the local government, traditional/tribal leadership and the church

# Technical Aspects and Services Provided



## Technical Aspects - Access

- The Community Networks use;
  - Public facilities to provide access such as **community centers** or **cybercafés**



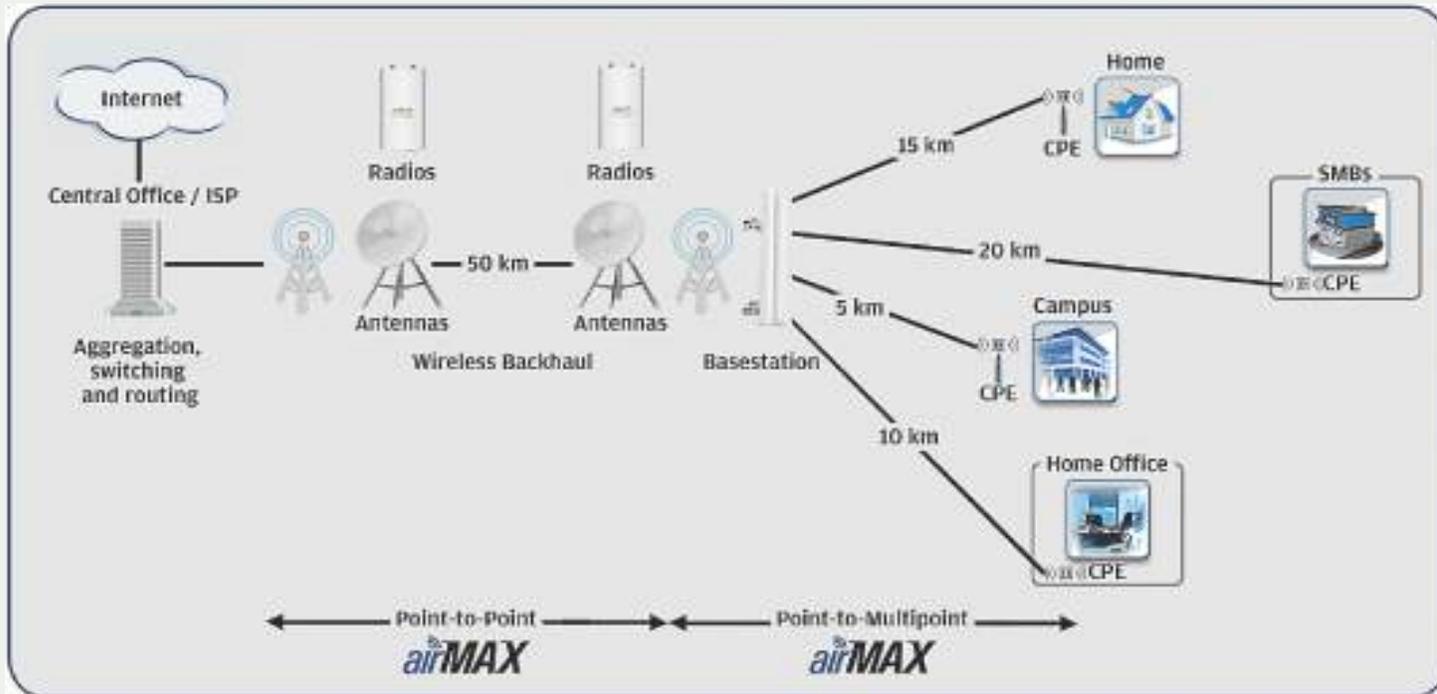
- The Community Networks use;
  - The use **wi-fi technology** to interconnect sites or multiple locations
  - Most use 2.4Ghz and 5Ghz ISM band

# Technical Aspects – Internet access

Not all CN's are connected to the Internet

Those that are connected either use;

- Satellite connectivity
- Long range wireless backhaul to nearest large city



Macha Works - Zambia

# The Technical Aspects - Power



- Most rely on Solar systems to power the equipment



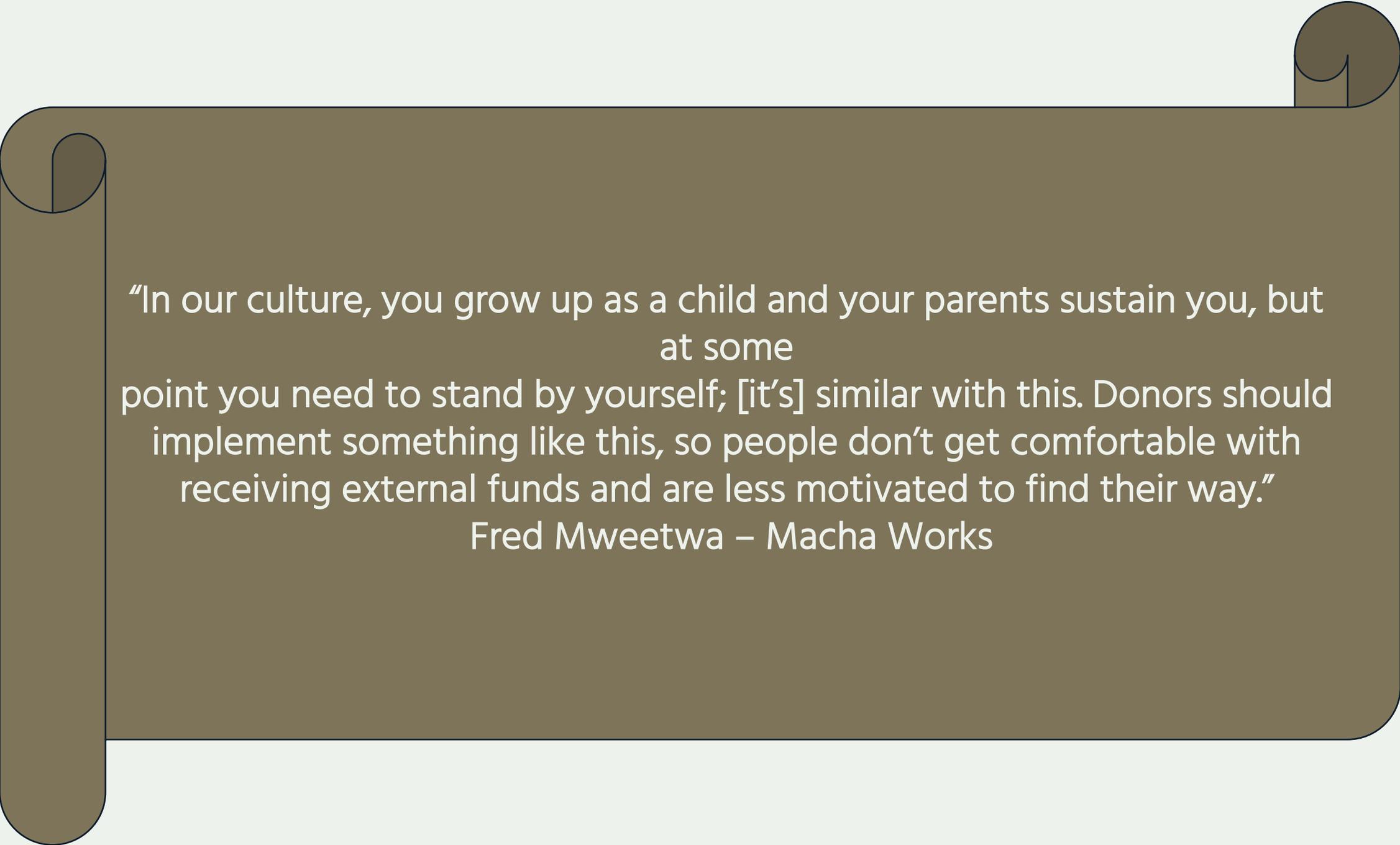
# Sustainability and Scalability



# Sustainability and Scalability

- Many CN initiatives have been established or supported through **seed funding, donations, crowd-funding campaigns, matching funds programs, in-kind contributions, etc.**
- CN's need to be sustainable in order to;
  - Cover their operational and maintenance costs
  - To address other social, technical, and legal barriers





“In our culture, you grow up as a child and your parents sustain you, but at some point you need to stand by yourself; [it’s] similar with this. Donors should implement something like this, so people don’t get comfortable with receiving external funds and are less motivated to find their way.”

Fred Mweetwa – Macha Works

# Services Provided



- Locally hosted content
- Local VOIP services
- Digital local noticeboards
- Local news websites
- Educational material (an offline version of Wikipedia, more than 36,000 electronic books, and PDF courses)
- a secure chat service that allows journalists to communicate openly, or to send audio they record to the local radio station.

# Other Services

## Capacity Building

- Computer literacy courses, International Computer Driving License (ICDL36) courses, and Internet training to school teachers.
- Digital storytelling, and practical experiences on networks, web development, and server management

## Non-technology Services

- Microfinance
- Community Radio
- Restaurant
- Bio-farm
- Foster home

# Way forward



# Barriers to the creation and scale of CN's in Africa

- **Social** : Awareness and relevance - “Why build networks if you already have mobile connectivity?”
- **Economic** : Affordability – “sometimes it boils down to the question of choosing between Internet/communication and other vital necessities such as food and health”
- **Technical** : Technical challenges and expertise - “In many of these communities in Africa where communication is a huge problem, the residents do not have the necessary knowledge [to] solve these problems and thus have to rely on outsiders for help in setting [up] their own networks.”
- **Legal** : Supporting frameworks and Policies – “it seems that governments are blind to the growing evidence that community networks could indeed be the solution to provide affordable access, not only to the Internet per se, but to e-government services that the very same people that they are trying to target cannot access”

# Opportunities and Considerations

- **Defining and recognizing community networks in Africa** - the more people are aware that these solutions exist, the more they start providing themselves with connectivity.
- **Stakeholder engagement and strategic partnerships** - targeted awareness-raising campaigns among key stakeholders groups i.e local government, traditional/tribal leadership and the church, could go a long way in scaling the model to other areas.
- **Developing local capacity for CNs** – identifying and supporting local community network champions to advance the community networks model across the entire region
- **Funding and sustainability** – Facilitate and establish more funding opportunities for CNs
- **Policy and regulatory engagements** - community networks still face barriers since they generally do not neatly fit into the current regulatory frameworks.

# Recommendations for Governments

- Promote and disseminate the community network model through their existing dissemination channels.
- Include curricula for the roll-out and maintenance of community networks into their existing skills development programs.
- Make USAF or other new funding mechanisms available for the deployment, operation, and maintenance of community networks.
- Create a more conducive regulatory environment by making more unlicensed spectrum available (particularly in those bands that are allocated nationally, but not used in rural areas, such as TV, GSM, etc.), implementing measures to reduce the backhaul costs such as more open access fibre national networks, and reducing the fees and taxes to import and use telecommunications equipment.
- Allow experimental licenses on a fast-track basis to ensure efficient start up for community networks.



# Thank you!

# Thank you.

There are many ways to support the Internet. Find out today how you can make #shapetomorrow

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