WORKSHOP SERIES: Community Networks
in partnership with APC, Zenzeleni, Mesh Bukavu & TunapandaNET

Introduction

ICTs have been universally acknowledged as enablers for socio economic development. However, women in Africa especially those living in rural and informal settlements face barriers such as lack of access and capacity to utilise these technologies. Social factors such as lower literacy rates, limited mobility and poverty contribute to women lagging behind.

The Community Networks (CN) workshop aims to introduce women and girls to the foundation concepts of community networks and provide basics of how to apply these concepts for starting and managing women-led community networks. The workshop will also help raise awareness of the potential of community networks to close the digital (gender) divide. It will provide a space for women government leaders and policy makers to think of ways they can help in advocating for gender responsive policies that support women who are championing community networks in Africa.

Background

Community networks (CNs) are broadly defined as "telecommunication infrastructure deployed and operated by citizens to meet their own communication needs"[1]. CNs are viewed as a solution to spread connectivity to deprived areas with no connectivity, or where connectivity is not affordable and therefore inaccessible.

Opportunities

- CNs can potentially increase access to digital tools for women and men, and reduce barriers to access. The users of these networks will benefit from educational, health, business and or employment related information.
- CNs could contribute to the economic growth of local economies – through offering communities the chance to join the digital era, its services and its resources.
- CNs could result in better understanding digital technologies and tools - with communities potentially championing the creation of locally relevant content and services targeting their own needs.
- CNs could promote the use of technologies such as TV white spaces (TVWS) that use lower frequencies than Wi-Fi and allow outdoor none line of sight (N-LOS) connectivity. CNs also promote the use of the Global System for Mobile (GSM) frequencies, which are infrequently used in rural areas.

Some benefits associated with CNs:

1. Creation of new rural businesses and new rural income streams.
2. Provision of, and access to, cheaper telecommunications.
3. Facilitating community development through the vehicle of collective (community) ownership.
4. Maximizing the retention and circulation of capital within rural micro-economies.

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[1] https://www.comconnectivity.org/article/dc3-working-definitions-and-principles/

5. Creating local, critical and scarce higher value-added services.
6. Retaining the most skilled youth and decreasing the number of forced migration split households.
7. Enhanced savings for impoverished households.
8. Enabling the development of other existing and new rural businesses.
9. Increased access of rural households, hospitals and schools to the benefits of connectivity and the digital knowledge economy.

Challenges
1. Sustainability - financially and human resources wise
2. Limited awareness on the benefits of CNs
3. Technology illiteracy
4. The unsupportive legal environment when it comes to the use of TVWS and unused GSM frequencies

Expected Outcomes of the Workshop

- To raise awareness on community networks and roles that women can play in championing community networks in Africa.
- To inform and engage women in thinking critically about the role that communities and women can play in taking ownership of telecommunication and engaging in the digitalisation movement.
- To start the journey of building the women's capacity in community networks
- To come up with a platform that enables women to continue engaging on issues on community networks
- To engage with women to hear community voices

Gender Inclusion - painting the picture

- Imagine a woman with young children in a village – with access to internet on her mobile phone, receiving important health related messages about a disease outbreak and a call to go to the clinic to get her children vaccinated or receiving instructions on how to keep her family safe
- Imagine the same woman without access and completely cut out because of lack of access to a mobile phone and internet. Or completely cut out because of

illiteracy, lack of resources or because the digital tools are used by the male head of the family who works and lives far away from the family

- Responsible use of technology: Imagine a young girl who grows up in a family where the mother cannot guide / mentor her to use digital tools. These young girls might be exposed to risky ways of using digital tools through friends because her parent has not mentored or supervised her on how to use digital tools responsibly
- Imagine a woman who has no access to digital tools – and as a result misses out on job opportunities that are shared and advertised via digital tools

Session 1: Introduction to Community Networks (October 9th, 10th)

- Introduction to CNs from around the world
- Introduction to CNs in Africa
- Individual case studies will be presented

CNs around the world

The concept of community networks almost dates back to the start of wide spread use of the internet in the US and Europe, when groups of people set-up ways to share resources or internet connections across local networks. That is, at heart CNs rely on the active participation of local communities, are owned by the community, and operated in a democratic fashion.

CNs don't have to be operationalised through individuals only. Indeed, a whole variety of local stakeholders, NGOs, private sector entities, and/or public administrations are involved in the designing, developing, implementing, maintaining and governing CNs.

Some of those early networks have expanded considerably, for instance AWMN in Athens Greece is a CN which started back in 2002 and has over 800 backbone nodes plus a few thousand Client nodes. Guifi.net, in Catalonia, is the largest community network in the world, with over 30,000 nodes. However, many CNs remain small.

In the past few years, a movement that brings together CNs around the world has started to identify their shared characteristics. Thus, our first exercise together is to work out what these characteristics might be.

Interactive Exercise

This exercise will require participants to think about what the 'traditional model' of internet access is and how CNs might differ.

The table is populated only with the first (left) column, and we build up the answers to the next two as a group, and then Nic gives an example from a CN around the world that shows the characteristic clearly.

Characteristic	**'Traditional Model'**	**CN**
Who owns the network infrastructure?	*Companies, organisations, telcos*	*Collective: a common resource by the community where it is deployed*
Who manages the network infrastructure?	*Specialists, paid workers, CEOs*	*Technically operated by the community*
Who has access to network implementation and management details?	*Specialists in telcos and network admins*	*Open, public and accessible to everyone*
Who can extend the network?	*Telcos*	*Open: anyone is allowed to extend the network, as long as they abide by the principles and design of the network*
Who controls peering and transit?		*Whenever possible, be open to settlement-free peering agreements*

Who governs security and privacy arrangements?		*Consideration of concerns while designing and operating the network*
What kind of content?		*Develop and circulate of local content in local languages*

Introduction to Existing CNs in Africa

CNs in Africa are extremely diverse. Some serve rural areas across great distances (e.g. Bosco, Uganda), while others are geographically smaller but serve large urban populations (E.g. TunapandaNET, Nairobi). Some have been in existence for over a decade, and many are relatively new. Several have been triggered by research interventions, some apply a community governance-based approach (e.g. the Tribal authority in Zenzeleni), while others are more bottom-up (e.g. Groot Aub, Namibia). Some connect to the internet, others are part of a LAN.

Mini-Individual case studies that focus on beginnings and subsequent steps of 3 CNs:

- How Groot Aub began (Nic)
- How Tunapanda grew (Josephine)
- How Zenzeleni scales up (Sol)

Session 2 - How to Setup a Community Network (Oct 11th)

"In setting up community networks, shape the technology to fit human networks/relationships rather than shape human networks/relationships to fit the technology."

The goal of the session is to share a holistic view of what it takes to start and manage a community network. Emphasis will be placed on understanding the needs of the community and how community networks can deliver value/fill these gaps. Every community is unique thus it's important to emphasise that what works in one setting

may not necessarily work in another. In starting a community network, it's important to think critically and understand all aspects of the community.

Introduction

Session will begin with facilitators setting the scene and bringing parallels between women and collective solutions, such as CN.
- Ask the participants to 1) say their name, organisation and what they do (or would like to do) to address the issues of women, connectivity and Africa (individually or in groups).
- Make a brief, provocative statement about women, connectivity within the African context (socio-economic development and digitalisation, access to info/ knowledge/ resources, barriers).

- Presentation: Thinking about the role of telecommunications in Africa for women — what are the benefits, what are the barriers (financial, technical, social, legal)?
  - Paint the picture of a women in the rural area or urban informal settlement ("unconnected" women).
  - Paint the picture of what women do collectively/ entrepreneurially and solve their challenges (beading, wholesale to retail, collective farming, child rearing, stockveld/ chama).
- Introduction to the collective, people/ problem led nature of CNs (with real examples around Africa and beyond).

Designing Community Networks for Africans by Africans

Group Activity
Every community network tells a story of the community in which it exists. The story shows the challenges and opportunities in each community and how technology can be built on existing social structures. A majority of Africa's population either lives in rural areas or informal settlements, thus the women will be tasked to create CNs based on these two settings. The activity will take a four-step process:
1. Diagnose — What are the needs?
2. Prescribe — What are the solutions?

3. Implement — Community mobilisation and organization, socio technical solutions, policy and system advocacy
4. Evaluate — What outcomes do we measure, how to, bottom up effects of the CN

Before starting to design a CN, each group should be able to agree on who their target user is by creating a persona. The below questions will act as guide.

Imagine a woman living in rural areas or an informal settlement:
- What economic activities is she involved in?
- What social activities is she involved in?
- What challenges does she face?
- What existing social structures or grassroots organizations support her?
- How social groups does she belong to? — Cooperatives, small business groups?
- What would she need connectivity for?
- What type of information, digital services, apps etc would be useful to her? What value do these add?
- What kind of telecommunications or related services (printing, phone charging, voucher selling coop, device support, IT support, access devices etc) would help a woman's situation?
- How does a CN offer a tool that women can use to solve their problems?

At the end of the activity each group will present their ideas.

Call to action

Participants get to reflect on what they have learnt during the CN workshop?
- Do I see myself starting or joining an existing community network?
- How can I use my current skills or role to contribute to starting or supporting an existing CN?
- What support do I need to get involved in community networks?