NYD Wi-Fi Project Concept Document

Nyara Youth Development (NYD) is a Non-Profit Company that aims to be an effective change agent in the impoverished rural Nyara Villages area, in the Haga Haga area, Eastern Cape, focusing on youth development and digital inclusion; transformation and equalizing access to opportunity; stretching mind-sets to be aligned to 21st-century thinking and helping marginalized youth to enter the South African economic stream.

The founder Robyn Mafanya returned to her childhood farm home and was inspired to become a beacon of hope and make a difference in a community that has continued to remain at the bottom of the income chain since she left 20 years ago.

Nyara Youth Development was launched in April 2021, using multiple platforms to drive holistic social change in the community with partner SSCN such as food relief due to COVID-19, a gender empowerment workshop to combat gender based violence, trafficking and rape and promoting healthy life styles through sport.

For more information about our organisation please see:

https://web.facebook.com/Nyara-Youth-Development-100115845589327

Or visit our website:

https://nyarayd.wixsite.com/website

We are building a Youth Resource Centre that will encompass a computer lab, library, training auditorium and a counselling/wellness room. In order for this Centre to be impactful and 21st Century driven, for the over 1200 youth from 3 schools in the area, it is imperative that a customised rural Wi-Fi community network be installed for meaningful access.

Wish, a Non-Profit Organisation, with expertise in Wi-Fi infrastructure, has endeavoured to assist us in this process with their knowledgeable guidance and implementation proficiency.

After much research, we have opted to install a Wi-Fi community network at NYD due to its affordability, ease-of-use, and ease of deployment. We have completed a line-of-sight analysis and determined the following:

- Identified our initial network coverage areas and last terminating point
- Identified the ISPs within our region for possible last mile connectivity (ISP with fibre point of presence closest to our location who can provide the connectivity either through fibre or radio, taking into account cost for setup and network reliability)
- Completed the last mile feasibility study to determine the best options to use in terms of equipment, number of towers, height and cost

We have drafted a feasible option of how to go about implementing Wi-Fi in the Nyara area where we are situated. We cannot get direct access to the urban town from our centre as there is too much terrain that blocks the line of sight and therefore need to install a secondary point

of presence. However, the advantage of accessing the urban town is that there are multiple wireless optic points of presence and we could create a backup network if necessary. We plan to build a tower of roughly 10m high at the Nyara Youth Development Centre that will be our initial point of presence that will connect to the secondary antenna and then to the urban wireless network. We will then input 10 small antennas situated in the Mooiplaas area, where more connectivity is required, to avoid contention on the line.

Potential and expected outcomes:
- Free access to a wealth of educational materials and crucial continued awareness around that;
- Really affordable access to world class internet; capable of streaming high quality video calls and lessons;
- Entrepreneurship training, skills development, digital literacy and all the benefits of online learning and internet entrepreneurship, 4IR, new economy, IoT, etc. and
- Improvement on a replicable template for network incubation, training and building as part of an overall community of community networks.

This is the 6th network that Wish has implemented and the immediate goal is to incubate 20 networks by 2023. The partners involved alongside Wish on previous projects like this include: Internet South Africa, Internet Society, iKamvanet, Ki-Fi, iDathanet and Little Warrior.

The Project Outline will be undertaken as follows:
- Three online events at the start of the project to introduce the community to the project and conduct basic training for community involvement in implementation;
- One in person event - to introduce and invite participation from the Community
- 7 days of network training and building in the first week of implementation - during which the participants will build the anchor site and backbone of the connection;
- Ongoing exchanges with the 6 other community networks about smaller antenna implementation; and
- Building of smaller community antenna sites over the next 6 months.

We are requesting your support and assistance with this project and would like to make YOU our impact partner in moulding the young rural minds of Nyara Villages into 21st century thinkers, ready to keep abreast with the current economy and ultimately bridge the existing digital divide.

Timeline

The project will be divided into community outreaches, a week-long practical installation courses and training during which the anchor site and backbone will be built, and then follow up events spaced every two weeks where additional training will be done for additional sites to be connected.

Network Layout

Several network layouts were planned and considered, and the below layout was chosen. As the pilot of a community network within the Mooiplaas area, there is a lot of room for growth into the neighbouring communities. We foresee these neighbouring communities being encompassed into our access range as part of our expansion program and therefore bridging their digital divide too.