Wireless Network for rural population

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Profile of project area

This project is designed for rural population, where the People living in these zones, are characterized by a low level of scholarship and a high rate of emigration (mainly in the southern region of the country) to the mining industry, in South Africa.

The majority of the Telecentres provide people with services such as e-mail, Internet , telephone, fax, photocopy, document typing and printing . In some of them, there are available other services such as computer training, graphical services, TV & Video, and community radio.

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Site selection

- **The Population's ICT Awareness**

  In general, the population of these regions have high ration of illiteracy, therefore they have few information or low technical capacity of ICT usage.

- **What other ICT infrastructure exists: eg GSM**

The district headquarters, they have GSM technology, however, the population has no capacity of purchase power

Site selection

- At the moment two locations have already been identified as the potential targets, namely:
- **Chókwè;**
- **Massinga.**

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Site selection

- **Chókwè Telecentre**
- Chokwè Telecentre is located in a typical rural area in the Chókwè district, which belongs to Gaza province. There are some governmental and non-governmental organizations in this zone that make use of services provided by the Telecentre. One of these NGOs has a kind of exchange program with the population, which consists of talking with farmers in order to identify their problems regarding agriculture techniques. Then the NGOs try to find solutions by using the Internet and give some feedback to the farmers.

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Site selection

- These Institutions don`t have a local network of data and they are not linked to the Internet.

- Among the government institutions the local Secondary School is highlighted and is located about 300 meters of distance away of the telecentre.

Site selection

- Massinga telecentre

Massinga telecentre is located in rural area of the Inhambane province in south region of Mozambique.

Massinga district has the population number of 184.531 according to the 2007 census.

Site selection

- **Needs assessment**

Low cost connectivity based in can antenna for rural zones. This project was implemented at Manhiça telecentre.

Manhiça telecentre is located about 78 km away from the capital city of Maputo, where the majority of its 187,422 inhabitants belong to the rural community. Similar project VOIP, was designed but not yet implemented.

Site selection

- The community use the services provided by the telecentres.
- The govermment encourage and take part in the project finance for ICT infrastructure expansion.

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Description of project network

The Technology Level – backhaul, power, wireless network

In Mozambique power electricity coverage is less than 15% and the majority are urban areas.

More than half Mozambican population do not beneficiate from the conventional electricity. Similar to this, the majority population of rural zones have no idea about wireless network due to low capacity of ICT infrastructure.

Description of project network

- **Wireless network diagram**
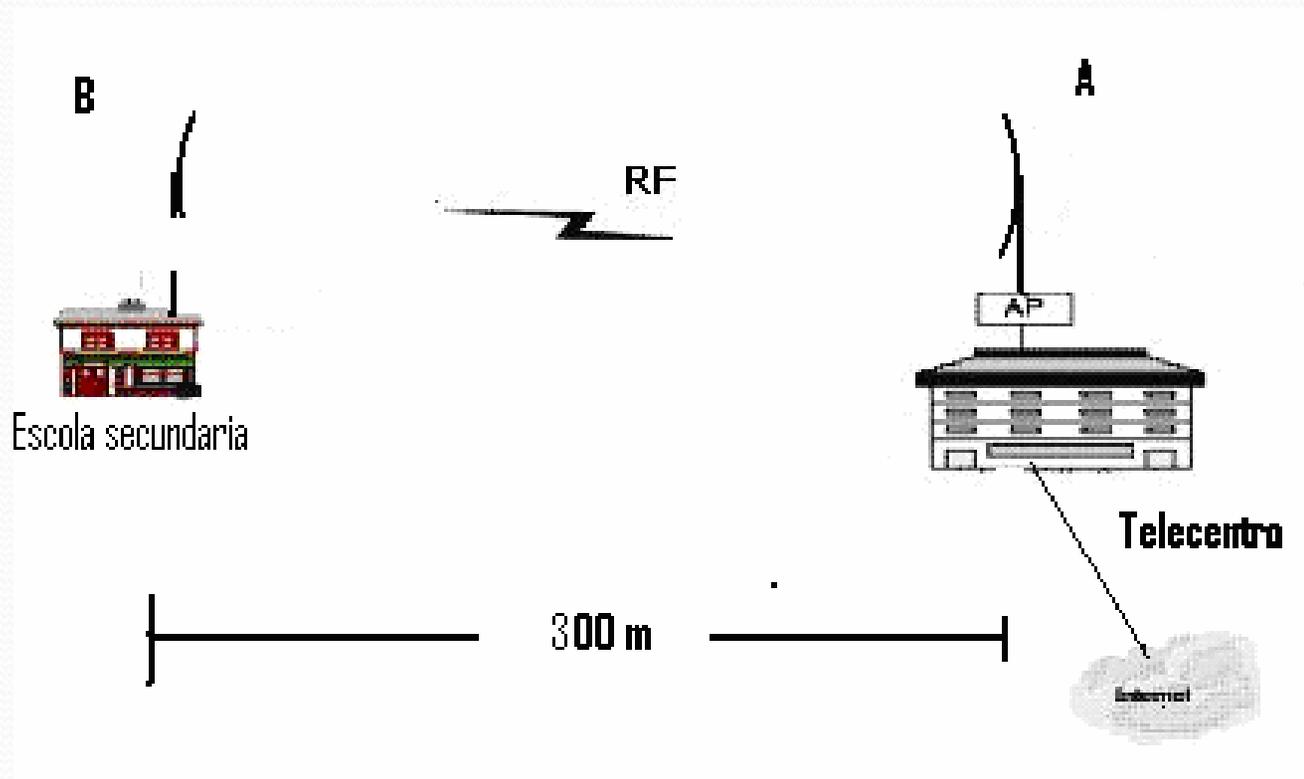
Description of project network

Human Resource and Capacity – available skills

The staff required for the project implementation had to be initially trained to acquire the needed knowledge to implement and monitor the project.

This process resulted in a somehow endless cycle due to the fact that the trained people often get better job opportunities with the acquired skills and end up leaving the project.

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Description of project network

Financial – how is the project funded

- CMCs received initial funds from IDRC and UNESCO to build the infrastructure and acquire PCs. This centres has a internet cafe, a training room and a FM radio which transmit about 30 km of ray.

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Description of project network

Regulatory environment – is wireless and VoIP legal

- The wireless technology have free bandwidth which can be used by someone without any permission that are the frequencies 2.4 GHz and 5 GHz, to use other frequencies it is necessary to ask for permission at INCM (Mozambique National Communication Institute).

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Description of project network

Regulatory environment – is wireless and VoIP legal

- The VoIP telephony is not allowed in the country, the fixed telephony still monopoly of TDM and can only be used in the areas were TDM is not operating. The small scale ISP being implemented in the telecentres faces to constrains being the one related to the use of radio frequency that needs to be authorised by the communications regulatory authority and the second related being a service provider that needs also a licence from the communications regulatory authority. This is an impediment and increases the costs of operations and affects the sustainability of the project.

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Business models

- **Number of clients, running costs, income**

In average each of this CMCs have a daily 50 users.

- **Do you recover costs?**

Yes, the Manhiça telecentre has a sharing plan, where the beneficiaries have to pay a reasonable amount to the telecentre wich will help the telecentre to pay to the service provider (TDM).

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Challenges & Lessons learned

- One of the biggest challenges regarding Telecentres operation is the problem of auto-sustainability.

- **Procurement of equipment:** Equipment procurement in Mozambique observes delays, due to the fact that some key components needed to build the antennas (e.g. N-type connectors, pigtail, some coaxial cable) are not available in the local stores.

- **Connectivity at the Telecentres:** the existing bandwidth in the telecentres is not sufficient to provide communication using VoIP based solutions, there were many cuts during the communication.

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Way forward

- **Plans for replicability and scalability**

- One of the auto-sustainability solutions is getting more people from the communities using the available services at the Telecentre, which can contribute to reduce the price of the services to the end user.

- One way to achieve a higher use of the Telecentre resources is to introduce new services that meet the communities needs (such as contents in local languages), and as well, to improve the existing ones. Also it is crucial the design of strategies to make these communities become aware of the benefits of the use of ICT resources.

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Thank you for your attention!