



Telecentres in Mozambique Staying On-Line

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Authors:
Michael Daamen
Sarah Groenendijk
Adinda M'GBRA
Shaped Icons

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Justification and objectives

The number of information and communication centres for community development has increased remarkably in recent years in Africa mainly with the support of various bilateral and multilateral organisations like FAO, IDRC, UNESCO, and USAID. However, these experiences seem to have only covered part of the needs identified. In addition, the existence of the centres without a continuous support from external funds seems to be compromised leading to the following:

- African Rural communities still have limited access to available information on
- socioeconomic, and political activities at different levels ;
- Local development experiences are not well known and promoted;
- Capacities to manage information and communication are still limited at local level
- A relatively important number of centres created are not functional after the departure of the supporting institutions.

In this context, CTA has decided to benefit from these experiences in order to look at options for integrating traditional communication approaches and tools (radio, information centres) and new ICTs (cybercafés, community platforms, websites) in order to better respond to the needs of the rural producers at grass root level.

The aim of this report is to give an overview of the current phase of development of the Telecentres in Mozambique, describe their main difficulties, challenges and opportunities, proposing recommendations and a framework for action. The overall objective of this report is to contribute to improved knowledge sharing in Mozambique and hence contribute to the socio-economic development of rural communities

Methodology

The methods applied are:

- *Desk review* ; data collection and review of secondary sources - websites/files, reports and other documentation, including policy papers of governmental, bi-, or multilateral agencies, donor organizations operating in the area of intervention;
- *Sequences of semi-structured interviews with key informants were taken to come to an institutional analysis (DIRO)* - (collaboration and competition, policies and regulations, clients' needs) *and the needs at the organizational level;*
- *An analysis was made from the collected information to come to a problem census;* determining the range of topics of concern and identification of main challenges and opportunities;
- *Participatory Strategic Planning (PSP)* -a four step process eliciting the stakeholder's vision, the articulation of the contradictions blocking that vision and the creation of strategies dealing with those blocks that may result in an accountable implementation plan. PSP is done on an individual base, by analysing results from the survey and interviews, categorizing the responses.

PART 1- Definitions and overview

General definitions of Telecentres

Telecentres – are public places where people can access computers, the Internet, and other digital technologies that enable people to gather information, create, learn, and communicate



with others while they develop essential 21st-century digital skills (Wikipedia, <http://en.wikipedia.org/wiki/Telecentre> Accessed on 19-06-08).

Community radios – are a type of radio service that meets the interests of a certain area, broadcasting material that is popular to a local audience (Wikipedia, http://en.wikipedia.org/wiki/Community_radio. Accessed on 19-06-08)

CMCs – Community Multimedia Centres – are institutes that combine community radio broadcasting with other ICT technologies. They promote community empowerment and address the digital divide. It opens a gateway to active membership of the global knowledge society by making information and communication the basic tools of the poor in improving their own lives (UNESCO, www.unesco.org/webworld/cmc Accessed on 19-06-08).

For the distinction of the various financial structures in this report we apply the categorization of Benjamin; to be referred to hereafter as Type A and Type B. Hybrid models are consequently described separately. The two major types of Telecentres initiatives in Mozambique are: A) the micro-enterprise Telecentres; and B) the larger, donor-funded Telecentres -Benjamin, P. 2000 (see Sources and Appendix for a more detailed description)

Organisational models

The different organisational models of Telecentres in Mozambique vary from the simple offices/locations offering technical services such as public telephone, photocopy machines, etc. to the more sophisticated ‘cybercafés’ offering other ICT services including; computer use, internet and training (vocational, literacy, e-literacy and others), and the more in the community embodied centres (community houses/centres). Within Mozambique these were defined as follows: telecentres, community radio, CMCs, CPRDs and UMTICs;

Telecentres: currently, four Telecentres are operational in Mozambique. These were once set up with the help of external funding and can, therefore, be considered as the above mentioned Type B.

Community radios are wide spread in Mozambique and play an important role in the dissemination of information to communities and in the exchange of information at community level, covering agricultural, educational, cultural and health topics and civic campaigns in remote areas. They are accessible to the population since broadcasting is often in local languages and the costs are low. Most community radios in Mozambique are set up through initiatives from UNESCO and Mass Media Institute (ICS) and can therefore, be considered as the above mentioned Type B.

CMCs provide vocational training, adult literacy training, and basic ICT training. Users are stimulated to develop a critical view on the content. Raising the clients’ awareness is empowering the process of capacity building and general emancipation. CMCs are, in most cases, financed by international organisations, and can therefore be considered as the above mentioned Type B. CMCs aim to become financially independent within few years.

CPRDs – Centro Provincial de Recursos Digitais (Provincial Centre for Digital Resources) – are Media Centres located at provincial level, financed by the government (and therefore Type B). Their aim is the provision of a common central entry point for all ICT activities in the area to support their infrastructure, investments and knowledge. Furthermore they organise and conduct training for CMCs personnel.

UMTICs – Unidade Móvel de Tecnologias de Informação e Comunicação (Mobile ICT units) – are an initiative of the CPRDs. UMTIC are mobile vehicles provided with computers and other ICT facilities, such as satellite internet, video demonstration service, etc. supplying remote rural areas with no other access to ICT facilities. UMTICs give the possibility to gather information, communicate with others and learn basic digital skills. UMTICs are



financed by the government through CPRDs and can therefore be considered as the above mentioned Type B.

This report will, from now on, use the term ‘Telecentres’ as a general term to refer to Telecentres, Community Radios, CMC, CPRDs and UMTICs. If a particular model/approach isn’t covered by the general term, the specific term will be used.

Overview of the telecentre movement in Mozambique

Mozambican CMCs started with the implementation of two telecentres in the districts of Manhiça and Namaacha (both in Maputo province), in 1999. These pilot projects were an initiative of the community, gained support from the CIUEM (Eduardo Mondlane University Informatics Centre), and were sponsored by IDRC (International Development Research Centre).

Mozambique was, thereafter, selected as one of three partner countries in an initiative launched by UNESCO and the SDC (Swiss Agency for Development Cooperation) during the World Summit on the Society (WSIS) in Geneva, in December 2003

This initiative aimed to scale-up CMC initiatives and to move beyond isolated pilot projects. This new programme started up in November 2004, and was financed by SDC. By the end of 2005 eight CMCs were established in Mozambique. Since then the numbers of CMCs increased rapidly. Many existing telecentres and community radios have been encouraged to complement their facilities and become full CMCs. Existing telecentres started to offer community radio services and existing community radios started to offer computer facilities such as basic ICT training and use of internet.

Local institutions such as libraries, community centres and community based organisations were stimulated to establish their own CMCs. CMCs were established according the for-profit concept of user-paid service, aiming to become self-sustaining after the first years. This, unfortunately, proved to be difficult to achieve.

Manhiça’s and Namaacha telecentres were complemented with a community radio in 2004 and are nowadays known as CMCs. Most of the Telecentres and Community Radios ever established in Mozambique are now slowly being converted to CMCs. There are 4 Telecentres, 40 Community Radios and 20 CMCs already established in Mozambique (see Figure 1). Over 50 districts already enjoy benefits from a CMC, Telecentres or community radio. The government recognises the development potential of ICTs and aims to have at least one CMC in each of the 128 Mozambicans districts , providing equal access to information to the whole population (Telecentros, 1998).

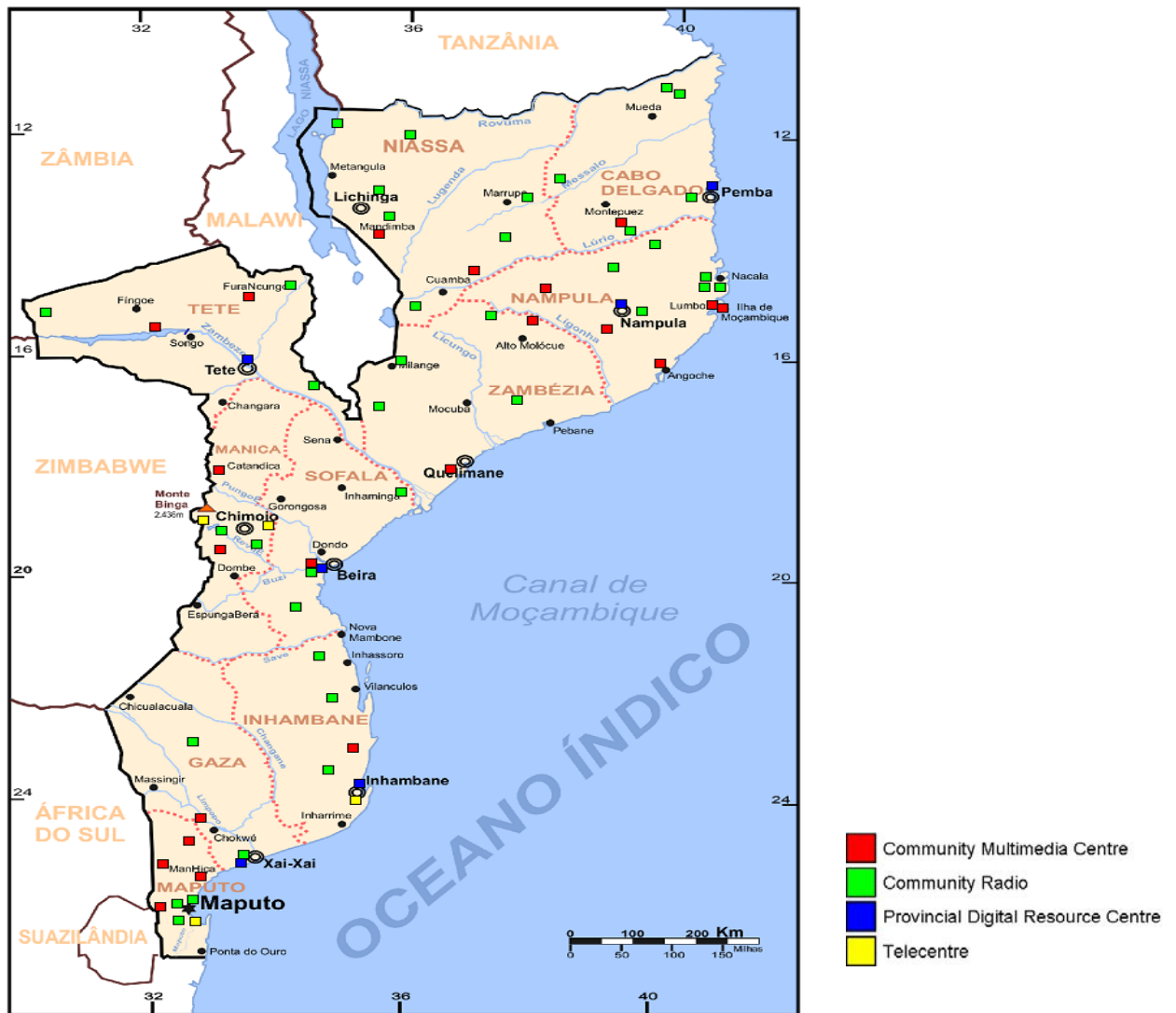


Figure 1 - Map of Mozambique with the overview of Telecentres, Community Radios, CMCs, and CPRDs

Note: Modified from CAICC, 2008

PART 2 -Telecentres in their environment

Country profile

Mozambique is situated in south-eastern Africa and has borders with Tanzania, Malawi, Zambia, Zimbabwe, Swaziland and South Africa (see Figure 1).

Mozambique gained independency from Portugal after the Portuguese Colonial War, in 1975 when FRELIMO (Front for the Liberation of Mozambique), an anti-colonial communist political group, took control over the country. The country adopted a socialist system and all private goods were taken by the government. At the same time the anti-communist opposition group RENAMO (Mozambican National Resistance) was formed. RENAMO was sponsored by the Rhodesian Intelligent Service, by the apartheid government of South Africa and the United States and launched a series of attacks on transport routes, schools and health clinics.



The country descended into a civil war which endured until 1992, when President Chissano and RENAMO leader Afonso Dhlakama signed a peace agreement.

The civil war had a severe impact on the country's economy. In 1989, UNICEF estimated that the country's GDP was only half of what it would have been without the war. The economy of Mozambique continues to be dominated by agriculture nowadays, even if only 22% of its arable land is cultivated.

Major exports include prawns, cotton, cashew nuts, sugar, citrus, copra and coconuts, and timber. At an extensive economic reform many state-owned enterprises were privatized. GDP growth rates increased rapidly; today's growth rate is more than 10% per year.

The socialist government claimed all the land as state property after independence, disowning its original landlords and redistributing the land among the population. The government established cooperatives for the provision of supplies, and to purchase the peasants production. The peasants were organized in rural villages (aldeias comunais) operating under the economic control of the local cooperatives. This drastic change in land distribution had a big influence on the economic situation. The new system could not produce the same production yields and possible benefits resulting from land reformation were lost because of the civil war. In 1986, the Government of Mozambique was granted international aid from IMF/World Bank. The country embraced a more liberal and market-oriented development model. In this new context, mechanisms were created to acquire new land rights for private investment, at almost no cost for the applicant. It was only after the multiparty elections of 1994, that the government initiated the ambitious land legislation programme according which land rights were protected and investments into the rural areas stimulated.

Within this historical context, Mozambique became a unique country regarding the rural circumstances; the amount of big farms is nearly inexistent, 70% of the total population still lives in rural areas and peasants are mainly producing for subsistence.

The civil strife also limited the penetration of information and communication technologies (ICT) in the country. The provision of e-mail and internet services was first initiated by the Eduardo Mondlane University Informatics Centre (CIEUM), in 1993. For rural areas, ICT infrastructure started only recently with the improvements of the telecommunication network and the privatization of the telecommunication governmental company (TDM) for mobile telephony (see national network).

Social and economic context

Mozambique has a population of approximately 20, 4 million (INE, 2008), 70% of this population live in rural areas within a 40Km wide costal strip. The official language is Portuguese but is considered a mother tongue by only for 6.5% of Mozambican population. (Terra Firma, 2006). Live expectancy at birth is for the total population 41.04 years. HIV/AIDS prevalence is high; it is estimated that 12, 2% of the adult population is infected with the virus (CIA, 2008).

The economy in Mozambique has achieved an impressive growth since the signing of the peace agreement in 1992, after 16 years of conflict. During the long lasting conflict and just after signing the peace agreement Mozambique was among the poorest countries in the world. At the time of the first national household survey in 1996-97, the mean consumption rate per capita was below the absolute poverty line. Since then Mozambique has known a successful rapid economic growth. Between 1996-97 and 2002-03 there was substantial fall in the proportion of the population living under poverty line, from 69.4 percent of the population to 54.1 percent respectively (James et al, 2005).

In 2006 the per capita GDP was estimated at U.S. \$320, a significant increase over the mid-1980s level of U.S. \$120 (USDS, 2008). All consumption rates per capita have increased with 3% annually during this period all sections of society have enjoyed a greater consumption

rate, but a slightly higher increase in consumption per capita in the higher social levels, increasing social inequalities. Although this economic growth is impressive, over half of the population continues to live in absolute poverty.

About 80% of the economically active population work in the agricultural sector. Fourteen million Mozambicans live in rural areas. Many rural communities are sited in areas far away from the national road network. Trading at national level and access to information from national sources are very difficult for them. Communities there are often poor; illiteracy and unemployment rates are high. The widespread of other than non-basic ICT services is therefore challenging. Various programs in Mozambique involve the expansion of informatics and of connectivity to the internet, mainly in the capital city but expanding to the interior.

Mozambique has very high illiteracy rates, mainly in rural areas. About 64% of the adult male population finished the 5th grade in urban areas, contrasting with 24% in rural areas. These rates are lower for the adult female population: about 43% of the urban women finished 5th grade, while only 9.5% of the adult rural women did achieve the same level of education (Gwatkin et al. 2007).

Electricity supply

The mains source of electricity is hydropower. Households are the main consumers of electricity. The exact number of households connected to the electric grid is unknown, but estimated between 5-20%. Electricity supply, mainly in the countryside, is problematic.

Mozambique produces more electricity than it consumes. About 13.17 billion kWh is produced within the country, while 9.12 billion kWh is consumed. (See Table 2). In comparison, the Netherlands with approximately the same amount of inhabitants as Mozambique, consumes 108.2 billion kWh.

The Mozambican government launched a project in 2000 to increase the percentage of the population with access to electricity from 5% up to 15-20% (Adel-Sofala, 2008). All schools, health clinics and administrative centres are supposed to have access to electricity before 2012. The current state of this programme is unknown. Despite many investments for bio-fuel production and use of alternative energy sources such as solar panels, the largest part of the population still have no access to electricity.

Electricity production:	-	13.17 billion kWh (2005)
Electricity consumption:	-	9.127 billion kWh (2005)
Electricity exports:	-	12 billion kWh (2005)
Electricity imports:	-	9.588 billion kWh (2005)

Table 1: Electricity production, consumption, export and import

(Source: CIA World Fact Book, 2008).

Many CMCs are not connected to the national electricity network and depend therefore on generators. CMCs are, consequently, confined to specific, limited operating periods. Electricity provided through generators is furthermore not stable, which increases the costs



for extra equipment such as stabilisers and the risk for damages on the equipment. Those who are connected often have oscillating electricity input. Stable alternative forms of electricity provision should be found for remote areas, such as solar panels or micro-hydropower stations, this isn't yet the case.

ICT infrastructure in the country

Access to ICT in Mozambique is still extremely limited. With the significant variations in population density in Mozambique, parts of the country are better served with ICT facilities than others.

The telecommunication infrastructure, for example, consists of a national backbone, covering all provinces up to the district level. There is one fixed line operator (Telecomunicações de Mocambique, TDM) and two mobile phone operators. During the last decade the number of fixed telephone lines has doubled. Still the fixed line network today covers only 12% of the country's area, while the mobile phone network covered, in 2005, about 35% -40%, a coverage which is expanding rapidly. The amount of mobile telephones is about 35 times higher than the number of fixed line telephones.

mCel a mobile phone operator owned by TDM, and Vodacom a South African operator are the two mobile phone operators running in Mozambique. mCel is the largest and ever expanding operator. Vodacom is quickly entering the market. Launched only recently at the end of 2003 it has today a market share of about 40%.

Internet access is still limited in Mozambique (see table 2). The government has initiated a project whereby optic fibres will be placed throughout the country. This will permit the use of fixed telephone lines, television and broadband internet. Although a few provinces have been covered already, the vast majority of the population still have no access to these facilities. In urban areas Telecentres become more and more widespread.

Access to other forms of ICT such as newspapers, radios, and televisions is generally poor. Figures indicate that only 3 in every 1,000 people had access to daily newspapers in 1996; 40 in 1,000 had radios and 5 in 1,000 had access to televisions in 1997. (For comparison table 2. shows more recent figures). Radio communications are, even though, extensively used, mainly by commercial businesses, the United Nations, and NGOs operating outside of the main towns. The radio is quite potential since its network covers approximately 60%-70% throughout the country.

Indicator	Rural	Urban
Newspaper readership		
Women	0.4	9.9
Men	2.2	24.8
Radio listenership		
Women	36.9	62.8
Men	68.1	84.9
Television viewership		
Women	1.9	37.0
Men	3.1	50.1

Table 1 - Average Access to Media in Rural and Urban Populations in Mozambique¹
Source: Gwatkin et al. 2007, data from 2003

¹ Note: as a percentage of the adult population using the media at least once a week



National ICT policy

The government recognises the importance and the development potential of ICT, and formulated the ICT policy strategies following the launch of the African Information Society Initiative (AISI). Mozambique is one of the few countries to allocate 5% of its GDP for the development of the telecommunications sector.

The government of Mozambique approved a National Informatics Policy at the end of 2000 and an Implementation Strategy in 2002. The policy specifically states that *'The State recognises and protects the right of citizens to have access to information and to knowledge spread by ICT'* and adopts the principle of universal access. In current practice, there is no legislation restricting freedom of expression on the Internet, and no restrictions (blocking or filtering) on access to sites or the publication of information on the Internet.

The government obligated all legal entities which provide public telecommunication services in Mozambique to invest 1% of their gross income of the previous year to FSAU. FSAU – Fundo do Servico de Acesso Universal /Universal Access Fund – is a public service created in 2006 with the aim to invest in projects for universal access to telecommunications.

The World Bank, the Portuguese National Institute of Administration, the British Council and the London School of Economics have also provided support for training. The Eduardo Mondlane University Informatics Centre (CIUEM), affiliated centre at the University in Mozambique/Universidade Eduardo Mondlane has developed partnerships with the Manchester Metropolitan University on distance education for staff members, with the University of Dar es Salaam which is establishing a similar centre, with the University of Durban for staff exchanges and visits, with the University of Pretoria on computer-based learning, and with the South African Council for Scientific and Industrial Research (CSIR) on distance education, training and supporting technologies.

With the support of the World Bank, CIUEM installed a VSAT with a 384 Kbps link to Washington to activate its distance training facility. The CIUEM and Televisao de Moçambique (TVM) will share the infrastructure for distance education.

CIUEM has entered agreements with a number of computer companies such as HP, Sun, Digital and Tulip for the provision of maintenance guarantees.

Within the University, CIUEM was responsible for developing an information policy for establishing the University's LAN which provides e-mail services in Maputo and Internet Access on campus.

Internet connectivity in rural areas is often non-existent or, if existent, it oscillates and is expensive. Satellite internet offers the best connectivity at the moment but is very expensive. The government programmed the installation of optic fibres throughout the country, which will offer an affordable and good alternative for satellite internet; broadband internet for all.

PART 3 - Institutional analysis

The national network

The Ministry of Science and Technology is the national institute in charge of ICT policies in Mozambique. The Ministry installed UTICT (ICT Policy Implementation Technical Unit) as GO in charge of coordinating the implementation of CMC's and community Telecentres throughout the country.



In 2002 the government of Mozambique, by means of the UTICT, and the PNUD (United Nations Program for Development) signed an agreement to promote and implement CPRD's (Provincial Centres of Digital Resources) with the aim to implement the national ICT policy at the provincial and regional level.

CPRD objectives fulfil the need to bridge the gap between the remote and isolated CMCs, and those CMSs where information is relatively easy accessible. - Such as the centres at the provincial capitals or those at Maputo-.

CPRD's main objectives are;

- to promote partnership between Mozambican youths and international volunteers
- to deliver connectivity by low-cost VSAT (a two-ways satellite ground station which transmit broadband data to remote locations)
- to provide low-cost e-mail services
- To promote mobile ITC unit, called UMTIC (a vehicle equipped with computers and connected to a network for training for remote communities (see definitions).

CIUEM is the leading key ICT institute in Mozambique. They're responsible for the training, coordination, technical assistance and management support of the CMC's.

CIEUM co-created the CAICC – Centro de Apoio à Informação e Comunicação Comunitária (Community Information and Communication Support Centre) – is a joint initiative of national and international organisations working in the field of community ICTs. The members of CAICC are: Eduardo Mondlane University Informatics Centre (CIUEM), National Community Radio Forum (FORCOM), ICT Policy Implementation Unit (UTICT), Mass Media Institute (ICS), United Nations Educational, Scientific and Cultural Organization (UNESCO), United Nations Development Program (UNDP). The objectives of CAICC are: (CAICC, 2008)

- To provide online, offline and face-to-face support for all community radios, CMCs, telecentres and other community initiatives working with ICTs in Mozambique.
- To strengthen national network bringing stakeholders together for joint activities and promoting mutual support and sharing of experiences at the base.
- To develop communication services, training and management skills that will contribute to the consolidation of each centre.
- To document and share results.

The regional and provincial government are also involved in the management of the Telecentres, guaranteeing the necessary infra-structure.

The CMC's operate with an information exchange structure and staff exchange programme among them. These are considered as great mutual learning practices and as such promoted by the CPRDs; they provide accommodation for meetings for example staff member trainings.

More over, CAICC promote the exchange between all the community ICT access points (CMC's, CPRD's, Community Radios and Telecentres).

Participation of the local community is guaranteed by the local committee (CAL). The communities can express their needs and wishes to this committee who are responsible to

fulfil these needs or transmit them to other levels of the communication network. This participation of the community in the CMC decision-making process is essential for the sustainability of the CMC's. (Macame and Cumbana, 2002).

Other external organizations providing funding and support to CMCs are UNESCO, SDC, TDM, INCM and the mobile phone companies' mCel and Vodacom.

UNESCO – United Nations Educational, Scientific and Cultural Organization - and SDC – Swiss Agency for Development Cooperation – have supported and financed many of the CMC implementation projects.

TDM – Telecomunicações de Moçambique – is an independent, publicly-owned business firm responsible for the provision of public telecommunication services. TDM has been restructured into a commercial entity with financial autonomy, and is today responsible for planning, installing and operating the national and international network. TDM retains monopolistic control of basic services, switching and transmission, as well as cellular services. (Etta & Parvyn-Wamahiu, 2003)

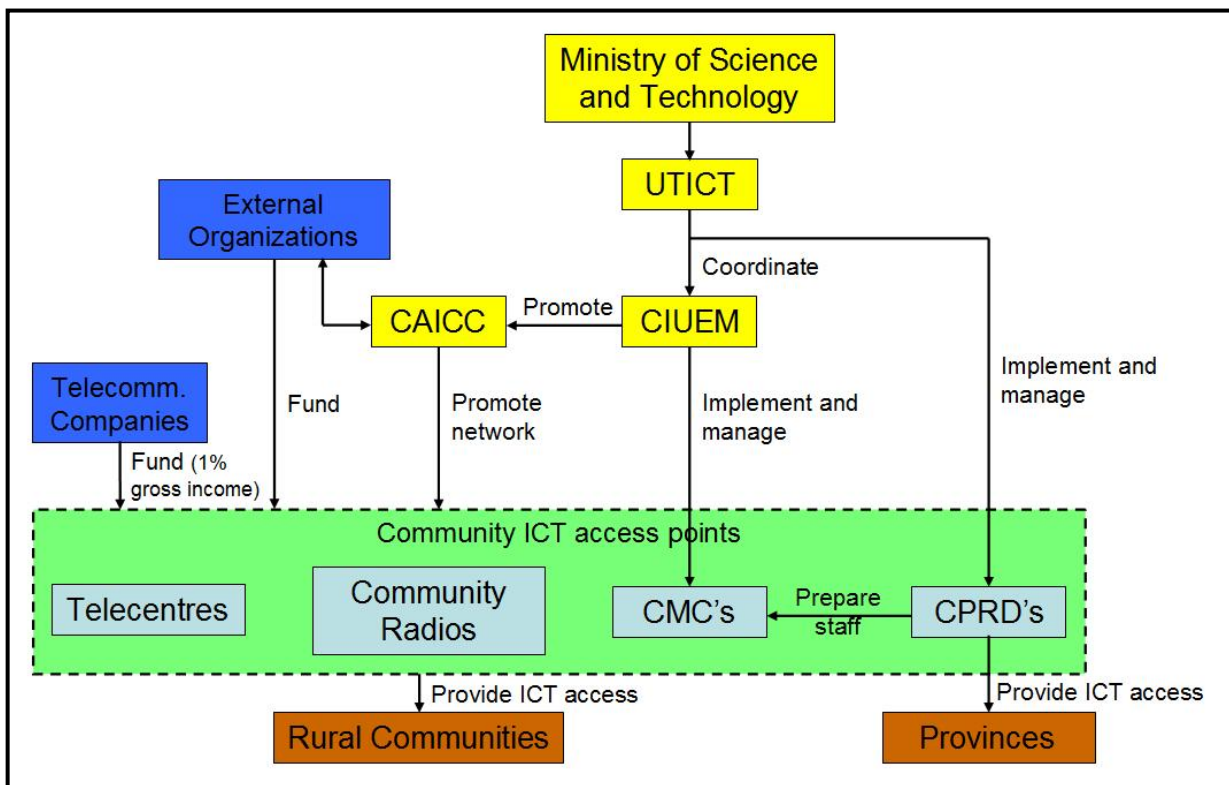


Figure 2 - Information flow between the stakeholders involved in the Telecentres network in Mozambique.

INCM – Instituto Nacional das Comunicações de Moçambique, which falls under the Ministry of Transport and Communications (MTC), was established in 1992 as an independent regulatory body of the telecommunications sector. INCM undertakes several responsibilities, including licensing, the formulation and interpretation of sector policy, international relations, and defining and monitoring the targets set for TDM.

(For mCel and Vodacom see ICT infrastructure)

PART 4 - Organisational aspects

Technologies and Services

The tangible services offered at most Telecentres are basically fax, computers with internet, binding, printer, fax, photocopy and telephone. These are standard at most Telecentres. Photocopying is the most requested service by Telecentres users, followed respectively by, telephone and computer use. The use of internet and e-mail is among the least requested services, but is increasing rapidly.

After the first years of the CMCs implementation there has been an increasing use of computer services in general, mainly for e-mail checking and basic use of Microsoft Office packages. Each of the four Telecentres has four computers, an Internet hub and modem, two printers, backup equipment, a public phone, a fax/phone, an external card-phone, a photocopier, an overhead projector, a whiteboard, a TV with video, a radio and a binder. Current operating costs are just being met by income generated through service provision.

A problem is the costs and the rapid development of new software. Due to the fast development of ICT technologies, equipments and software used by CMCs are often outdated. The government and the CIUEM seek for alternatives such as the use of open source software, and the provision of information through alternative sources.

Telecentres organise different training such as vocational, adult literacy and basic ICT training. This implies also further development of the staff in technological and content management skills, like documenting official/and other relevant papers, structuring information, establishing knowledge exchange systems, curriculum development and other essential skills.

At the same time, nourishing intellectual and mental capacities; like data gathering and analysis, developing critical points of view, decisiveness and awareness.

Furthermore, Telecentres in Mozambique work together with schools, providing teachers new methods, educational tools and content; stimulating children to learn and apply ICT skills.

Gender distribution	No. of people	Percentage
Male	591	62
Female	291	38
Total	882	100

Table 2 - Gender distributions of ICT Users in visited schools
Source: SCAN – ICT Mozambique, 2002

The Telecommunication Development Bureau (TDB) of the International Telecommunication Union has launched its first Telemedicine project in Mozambique. Telemedicine refers to the provision of medical services and health care via existing telecommunications-based systems (terrestrial and satellites links). The range of services includes medical consultation, pathology diagnosis, education and emergency services. Two central hospitals, one in Maputo (the capital city of Mozambique with a population over 1.1 million), and one in Beira (with a population of 0.32 million), have been connected by a telemedicine link using the existing telecommunication infrastructure. Both hospitals will now be able to make use of standard low-cost teleradiology equipment that makes possible the exchange of images including radiographs, as well as the transmission of laboratory results. The project has been carried out



by a multidisciplinary group of partners including Telecomunicações de Mocambique (TDM) and the telemedicine equipment vendor WDS Technologies of Switzerland.

There are still many unexplored applications: like mainstreaming content of internet for community radio broadcasting (info for cooperatives, trade unions, market prices, etc.) and transmitting relevant information provided by Geo-Information Systems, and other interesting sources and applications, to community level. Innovative information technology should be scant on relevance and adapted for development and environmental purposes. This requests a cross-sector and trans-national approach, while staying connected with the latest IT innovations worldwide.

Value Label	Percentage
E-mail	40.20
Internet	38.20
Research	12.70
GPS (Global Position System)	6.90
Databases	45.10
Application software	30.40
Other	26.50

Table 3 - Used ICT purposes at institutions²

When disaggregated by gender, the Table 4 below shows that for women the order was telephone, photocopying and computer word processing in a descending order of use. For men, the reverse order was observed with computers as the most popular and telephones the least used of the services.

Month	Male			Female			Monthly Total
	Children	Youth	Adults	Children	Youth	Adults	
Jan	390	1374	962	34	1103	464	4,327
Feb	214	763	362	20	250	124	1,733
Mar	412	1243	652	56	348	148	2,859
Apr	643	1600	771	114	458	221	3,807
May	260	1421	1285	124	324	298	3,712
Jun	235	663	465	102	323	276	2,064
Jul	839	1546	1017	475	577	441	4,895
Aug	936	2011	1862	563	1140	960	7,472
Sep	742	2010	1862	562	1136	970	7,282
Oct	1285	2206	1918	662	1321	1183	8,575
Nov	859	1373	1412	657	1114	804	6,219
Dec	264	1157	906	290	554	499	3,670
Total	7,079	17,367	13,474	3,659	8,648	6,388	56,615

² Not only Telecentres in Mozambique

Table 4 - User Distribution at Telecentre of Manhica

There is a large demand for computer use, mainly among the youth and students. Most CMCs have about 2-4 computers. This is way too little to fulfil the demand for both individual users and those who wish to follow training on ICT.

Management

Most CMCs require a minimum of three staff members. The manager and the assistants are responsible for the activities at the CMCs. The assistants have the task to operate the photocopy machine, printer, computer and other daily activities. All staff members must be a member of the community and speak both the local and Portuguese language. They do work on voluntary basis but receive some financial support out of the CMC's revenue.

Staff members of the Telecentres classified as Type B, receives special vocational training carried out by the CIUEM. In common practice, they are the ones dealing with the day-to-day problems faced by the users and as such must be able to assist them finding the requested and required information.

The local committee (CAL) composed of community representatives are in charge of the supervision and monitoring of the CMCs. The members are local authorities, NGO staff members and local parallel organizations. At some of the CMCs CAL members participate actively in the management of the centres. At other centres, a CMC member reports the CMC activities to CAL, thus in this structure CAL supervises the CMC activities indirectly.

Most CMC work as horizontal organizations, in which all involved participate in decisions at their respective levels. Whereby the general supervision is the concern of the CAL members. The aim of this structure is to ensure the involvement of the community members and hence to promote community ownership. However, the involvement is often restricted to certain parts of the community and the decision-making process is still partially done by external organizations.

The frequent replacement of assistants is one of the identified problems in the management. It's a negative side-effect -of the training provided to CMC staff members and the low salary incentives offered by Telecentres-, that skilled employees leave in search for better paid jobs. New, inexperienced assistants need to be hired frequently. Suitable candidates for the function aren't easy to find since they must belong to the community and possess specific skills, such as the Portuguese language, and a good understanding of the communities' perceptions, demands and needs. Investments in training, and human capital are lost for the CMCs if trained people leave to serve other parts of society and results also in a diminished collaboration between the community and the CMCs.

In general the working conditions for Telecentres staff members are not optimal. Many of them work on a voluntary basis and receive only symbolic financial return for their efforts. This is influencing the continuity of long-term programs.

Technical support, backup, and continuous staff training are essential for sustainability of Telecentres and for encouraging the developmental and information services. Telecentres in general call for more and better trainings on management, administration, marketing, and IT (hard, - and software) skills, for staff members.

Good communication channels with local authorities and community leaders as well as maximum transparency and information regarding the project are also important to ensure the role of the Telecentres within the community.



Farmers might not participate in the group discussions simply because they live too far. Need assessments conducted by staff members on the concerns of those, and other peasants is a mean to collect data for content development and to strengthen and expand the network.

Despite the applied horizontal structures, in reality those working in the sector prefer mostly to refer to some spokes-persons instead of expressing their own points of view. This gives an impression of a centralized management style and/or working culture, which isn't coherent with the nature of the sector.

Finance and marketing

Within the context of Mozambique there are three major sources for funding for Telecentres; by the government (CPRD's and UMTICs), by international organizations (CMCs) and by private entrepreneurs (funds are made available through FSAU, (see the National ICT Policy section). UTICT evaluated the most appropriate and sustainable organizational model. This research was focused mainly on CMCs. Some findings;

Every service of the CMC is offered in an accessible price for the community. In the current situation, most CMC's are able to cover their basic cost, such as electricity and water bills, expenditures of staff members, etc. by the services revenue. However, this income does not allow the CMC's to maintain their machines and invest in new equipments and infrastructural improvements. CMC's therefore still depend on external funding and support, such as the CIUEM.

The remaining Telecentres in Mozambique, -those that aren't part of the CMC/CIUEM project-, have similar financial structures. Their income is also generated by charging the users with a minimum cost for the use of services.

Funds for the acquisition of new equipment and its maintenance are still received from external organizations. Telecentres still remain dependent on donor support although their aim is to achieve financial sustainability in the nearby future.

The community radios were mostly initiated by external organizations such as UNESCO and the Mozambican Mass Media Institute (ICS). Since community radios technologies have significantly lower costs than Telecentres, and they work exclusively with volunteers they are able to operate with a very low budget and, consequently, provide free information to the users. For acquisition of new equipment and maintenance funds are raised at UNESCO and ICS. To overcome this dependency UNESCO and other supporting organizations are promoting a multi-facet system of sources of income, while limiting costs to a minimum and increasing the capacity of the community to maintain this system. (UNESCO/UNDP, 2006).

Some private entrepreneurs have noticed the successes of Telecentres and the increasing demand for computer services in rural areas. They started internet cafes, which now compete with the Telecentres. In this competition the Telecentres have the advantage that the community got a certain social commitment towards them. This competition might increase if the demand for computer services exceeds the potential of the Telecentres. If the strengths and opportunities of both models (type A and B) would be combined this can result in an organisational model whereby the private entrepreneurs invest in the technical infrastructure (increasing the number and quality of PCs, provision of software, maintenance, etc.) While Telecentres can offer housing and attracting costumers- since they're more embodied in the community.



Budget/Institution/ Year	Number	Percentage
Institution with budget for ICT's	17	16.67
Institution without budget for ICT's	85	83.33
Total of institutions	102	100
Total of budget	\$96446.63	

Source: SCAN ICT Mozambique 2002

Table 5 - Number of institutes in Mozambique with Budget for ICT

The high costs of equipment, maintenance, connectivity, software, thus the costs for technology and innovation is the primary reason Telecentres, don't reach a break-even point, and achieve financial self-sustainability within a few years after implementation. Common expressed concerns among the CMC's, regarding investments, are the need for better control mechanisms on the services, the development of local partnerships, training for staff members (management, administration, marketing and general IT), the limited means to increase the number of computers and to improve the radio transmission quality. There is a general increase, mainly among the younger generations, in the use of computers at the CMC, both for use of internet and training courses. CMCs do not have the financial capacity to cover all above mentioned costs.

The marketing approach can be improved since among community members there isn't enough awareness on the available services at the Telecentres and their benefits. There is, furthermore, a lack of services tailor-made to client-specific needs (for instance geographically or production related), and/or specific target group customized services.

Financial independence is far from being reached yet. The income generated through the services provided is not enough to meet all the costs and to guarantee replacement and maintenance of the equipment. Connectivity costs will, with the introduction of optic fibres throughout the country, soon reduce, but this is not the case with the price of equipment. Costs for the services provided cannot be increased until Telecentres have contributed to a clear economic return to all levels of the community. This is a long term process. CMC's main group of clients (youngsters) aren't yet taking part in the labour market, and are still in the learning process. Increasing service prices at this phase of development it likely to hamper sustainability.

Content development

A key to success for the CMCs is to go beyond the provision of technical services. The opportunities for innovative applications of information supply reaches much further than currently explored.

UTICT has built an online platform for content development, making online portals available for all institutions that wish to publish information online. The provision of information using the platforms built by UTICT is not compulsory. Some research institutes produce their own content, making use of other channels for publication. There are three levels of online content development for CMCs in Mozambique; national, provincial and local.

- National level: UTICT's online platform, on which the various governmental sectors publish their information. These sectors i.e. Health, Agriculture, Education are each responsible for the provision of content in their areas of concern.

- Provincial level: CPRD's are responsible to produce relevant information at provincial level, making use of the publishing facilities created by UTICT.
- Local level: CMCs produce information, publishing this on the same online platforms. Some CMCs publish information on their own websites.

Online information produced outside the country, mainly in Portuguese speaking countries like Portugal and Brazil, is frequently consultant by Mozambicans, thus considered to be relevant and useful.

Content development for the community radio is likewise produced on national, provincial and local level. The information supplied at the national and provincial levels is mainly governmental; broadcasting current affairs and daily national news. This information is often translated to the local language by the community radio staff members. But most of the content for community radios is developed at local level.

Most community radios make transmission time available for members of the community. They can participate in radio programs and express their opinion through the phone, during - phone-in programs, and programs with (live) group discussions. It is mentioned that there are many community members that do not feel comfortable to expose their opinions to the whole community. The possibility for anonymous divulgation might help some farmers to overcome this. It's crucial that mediators of the community (like the assistant) become skilled in vulgarisation, or extension workers are connected with the Telecentres transmitting (translating and adapting) information from and towards peasants.

There is an expressed need for translation and simplification of the information produced elsewhere. Especially on topics related to agricultural production like up-dated market prices and weather forecast.

Illiteracy is a major problem restringing the optimal use of IT. Basic use of IT requires a minimal degree of alphabetization. Most of the information provided through the internet is in Portuguese. Those who enjoyed the privilege of education are able to benefit from the Telecentres services. However the vast majority of the population still depends on the staff members of Telecentres or on literate friends/family members to help them in the use of IT.

Besides illiteracy, the population encounters also the effects (advantages and disadvantages) caused by new forms of transmitting information. Information, in Mozambique like in most African cultures, has been transmitted mainly orally. In the modern information society conventional media sources are mainly based on written text.

Reading is mostly an individual activity³, while oral information exchange can be a group activity whereby participation and two-way/multiple exchange are part of the communication. Group discussions imply also shared decision-making. It is likely that new media will nourish individuality and influence social stratification. Especially since media content isn't always corresponding with the cultural perception.

Concerning this, a differentiated approach for content management at the different services - Community radio and internet- is appropriate. Community radio can be applied to facilitate democratic processes involving the elder generation into multi-stakeholder communication exchange. ⁴

The use of internet for livelihoods improvements are long-term objectives with a focus on the younger generation. Collaboration both community radio and Internet for content exchange and co-productions will bring an added-value and overcome the weaknesses and risks of the respective media.

³ Except off course if one reads to another(or group). A simple but neglected tool in ICT strategies.

⁴ Besides participatory video-making and dissemination which can also be a very effective tool.

PART 5 - Conclusions and Recommendations

Conclusions

1. Telecentres have a comprehensive and positive impact on communities in Mozambique. Often offering the sole connection for knowledge and information exchange of local communities and connecting them with the global information society.
2. Appropriate information and training can raise awareness, increase income generation and provide structures of exchange on environmental, agricultural, health and other development-related topics.
3. Telecentres are importance tools for participation, empowerment and capacity building. Embodied in local communities their power and impact can be very high. Telecentres help the community to take part in the open market and move away from their isolated position.
4. Cautiousness is required regarding possible effects changing the traditional exchange and decision making processes in a disadvantaged manner with the use of non-adapted services and content.
5. Income generated through the services provided is not enough to meet all the costs and to guarantee replacement and maintenance of the equipment.
6. The high costs of equipment, maintenance, connectivity, software, thus the costs for technology and innovation is the primary reason Telecentres, don't reach a break-even point, and achieve financial self-sustainability.
7. Most Telecentres will, in the next years, continue to be dependent on (inter)national donors who provide, at least, sufficient funds for the maintenance and replacement of equipment.
8. Most users of the facilities offered by the Telecentres, such as computer and internet, belong to the younger generations, economic return from the Telecentres to the community is likely to be a long term process.
9. If the conditions for well functioning centres are fulfilled; basic education for all, proper content development, stable and cheap internet connectivity and power supply, an economic return in the community will be the result, followed by a more balanced cost-price implementation at the Telecentres. This demands a period of another generation to mature.
10. Over emphasising the financial self-sustainability can overshadow the quality and adequacy of the Telecentres. Considering the role and impact of the Telecentres in the overall development, the idea of financial self-sustainability can be reconsidered in the long-term.
11. The use of internet for livelihoods improvements are long-term objectives with a focus on the younger generation. Collaboration for content exchange and co-productions can bring added-value and overcome the weaknesses and risk of the respective media.
12. There is relatively little knowledge among community members on the available services and their benefits. There is, furthermore, a lack of services tailored to specific local needs and a lack of content relevant to local interests. Specific regional

content is not always available and if available often not provided in a simplified, easy to understand language.

13. Power supply is another problem faced by many Telecentres in Mozambique. Many of them are not connected to the national power network and depended therefore on generators or other sources of electricity. This electricity supply is expensive and inconstant, what makes CMCs require specific extra equipment, such as stabilizers

Recommendations

1. Improve quantity and quality of ICT equipment. There is a large demand for computer use, mainly among the youth and students. Most CMCs have about 2-4 computers, this is way too little.
2. Internet connectivity in rural areas is often non-existent or, if existent, it oscillates and is expensive. Satellite internet offers the best connectivity at the moment but is very expensive. Optic fibres are installed throughout the country, which will offer an affordable alternative for satellite internet ;namely broadband internet for all. Since there is an urgent need for it; this process has high priority.
3. The information sector is a highly specialised one which changes rapidly, and demands highly specialised professionals to keep updated with international developments and innovations. To meet this demand a group or centre of consultants (ITC technicians/designers, Knowledge and Information Exchange specialists, etc) can function as a service/consultative centre on regional/national level. By vocational training (ToT), helpdesk services and other consults such a centre can provide tailor-made and up-dated services and solutions in an effective manner. (For instance through subscription to this helpdesk).
4. Farmers might not participate in the group discussions simply because they live too far. To overcome this Telecentres can send extension workers or staff members to these remote areas more often.
5. There is a need for easy access and relevant content to be made available for the community. Editorial skills scouted and promoted within the served communities can add an interesting dimension (improving accessibility, ownership, relevance of information, interactivity and representation).
6. There is a need for translation (adapted and scanned on relevance) of the available information. Less academic and more hands-on working language.
7. There should be a clear job description of the function of mediator/facilitator between the Telecentres and the served communities. His/her role is of crucial importance and should be rewarded to assure continuity.
8. Community radio should moreover be applied to facilitate democratic processes involving the elder generation into a multi-stakeholder communication exchange programme, participatory video-making and dissemination can have a likewise effect.
9. Improve accessibility by internet with the production and use of visual info and educative materials, by web-designers, making use of illustrative examples, humour and universal or culture specific designs.

10. With the development of specialized marketing strategies; new sponsors and advertisers can be attracted at national and international levels. These marketing strategies should be related to the various groups of users, providing potential advertisers insight to the market.
11. Web home-pages and community radios are yet under-exploited means for advertisements.
12. Focus should shift from financial self-sustainability towards the broader perspective on the role and impact of Telecentres within the overall development context. In this perspective Telecentres are more a tool for development than an end product. Telecentres do have a valuable impact worthy of long-term (financial) support.
13. Telecentres link with education can help school teachers to keep updated with new teaching techniques, subject contents and give access to digital libraries. Students can gather information about different topics and develop basic ICT skills that are nowadays indispensable.
14. Telecentres should promote interactive programs making use of phone-in programs or free (subsidized) help lines, as for example the child helpline telephones.
15. Each Telecentre can build on an effective e-mail strategy. Websites built around an e-mail strategy approach has proven to be more frequently visited, more accessible and it improves the interactivity of the users. Therefore create on-line communities and enhance the possibility of the community to become active information providers instead of consumers⁵.
16. The marketing approach can be improved since among community members there isn't enough awareness on the available services at the Telecentres and their benefits. There is, furthermore, a lack of services tailor-made to client-specific needs (for instance geographic or production related), and/or specific target group customized services.
17. New media sources such as internet allow innovation by using more suitable ways to transmit information for oral based cultures, e.g. the production of videos by internet or DVDs.
18. Community radios often have transmission time made available for farmers to divulgate and discuss their problems, individually or through group discussions. This possibility is not yet optimally used. Many members, furthermore, do not feel comfortable to openly discuss their problems through the radio. The possibility for anonymous divulgation might help some farmers to overcome the above mentioned apprehension.
19. Farmers might not participate in the group discussions simply because they live too far. To overcome this problem Telecentres should send extension workers or staff members of the community radio to these remote areas to interview the farmers enabling them to share insights.

PART 6 - Framework for action

Strengthen and expand the network	Creation of an international/ regional structure for staff exchange programs	Create directories of newsletters, blogs or other online newsgroup on specific development-related /agricultural issues.	More Telecentres can subscribe to the international/African knowledge networks.	Negotiate subsidized help lines with multilateral/international organizations and TDM (free telephone number for special groups; children in need, abused groups, family planning	Create mixed (traditional and modern) media tools for cultural determined design. e.g. filming and distribution of popular theatre
Set up marketing strategy	Identify new partners for e-commerce (buy and sell)	a market analysis (general -orientation) will interest potential investors/sponsors in the emerging markets.	Commercialisation of internet involving with target group –marketing esp. youth ;demand driven services for downloading music, movies/ vacancies/distance learning.	Introduce different prices (students/scholars)	Attract local entrepreneurs by developing specialised business services.
Improve management and capacity building	Train staff in more specialized IT applications (M&E tools, financial management tools (budgeting, planning), etc.	Create realistic and common goals for all stakeholders (identity/mandate and task division), with monitoring and evaluation system.	Scout media/IT talent and connect with contests/ fairs/ scholarships/ funds/ conferences for IT-innovation	a clear job (rewarded) description of the assistant/mediator/facilitator between the Telecentres and the served communities to ensure continuity.	Create a inter/region helpdesk of highly specialised IT consultants (subscription)

<p>Improve logistics</p>	<p>Identify and make available software for telecommunication centres. (M&E tools, financial management tools (budgeting, planning), etc.</p>	<p>Identify other investors in media-industry (AV/music/photography, games and other digitalised media businesses)</p>	<p>Combine and expand services of small and larger centres (charge, sell cart telephones, film broadcasting photography, DVDs etc.)</p>	<p>The purchase of the necessary hard,- and software is essential for up-scaling up-scale.</p>	<p>build on an effective e-mail strategy/ web design for e-commerce</p>
<p>Enhance the level of participation and interactivity</p>	<p>Create a cross-sector approach with a mutual strengthening strategy on governmental level between the sectors of education, health, agriculture, women and children, and communication</p>	<p>Set up participatory planning structure with all stakeholders including the grassroots, encouraging balanced gender participation. While adapting appropriate technology, for example –on-line projector with screens for grassroots level group gatherings, and technical facilitator.</p>	<p>Expand the ambulant media services of CPRD’s for regular field visits the remote peasants.</p>	<p>Create information means and means to participate in decision making for non e-literates (newsletters/translations) and illiterates, (AV-material/popular theatre. Produce interactive phone-in program formats for radio and TV.</p>	<p>Encourage informal networking.</p>

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APPENDICES

List of contacts

Ministry of Science and Technology

Dr. Carla Moiana – National Director of department of Intra-structure
Ing. Jussi Hinkkanen – assistant
Address: Av. Patrice Lumumba 770, Maputo
Telephone number: +258 21352800

UTICT – Unidade Técnica de Implementação da Política de Informática

Salomão Manhiça – Coordinator
Lourino Chemane – Technical advisor
Address: Av. Guerra Popular, Nr.20 2, Maputo
Telephone number: +258 21302241 / 2298

IIAM – Instituto de Investigação Agrária Moçambicana

Address: Av. Das FPLM 2698, Edifício de Pedologia, 1. o. Andar, Maputo
Dr. Paula Pimentel – General advisor
Telephone number: +258 21460219

CIUEM – Centro de Informática da Universidade Eduardo Mondlane

Address: Av. Julius Nyerere, 257, Maputo
Dr. Luis Neves – Staff member
Telephone number: +258 823220170

UNAC – União Nacional de Camponeses

Sr. Diamantino Nhampossa – Executive Coordinator
Address: Rua. Valentim Siti Nº 39, Maputo
Telephone number: +258 21 311828 / 824904050

Centro de Multi-mídia Comunitária – Manhiça

Dr. Dinis Muianga – Committee member
Sr. Luis João – User
Address: Estrada Nacional Nº 1, Manhiça
Telephone number: +25821810052

Questionnaire Telecentres in Mozambique

1. Introduction to the survey
 - Who we are
 - Details of the project
 - Purpose of the interview
2. Details of organization and interviewee
 - 2.1. Name of the organization and type (Telecentres, company, government institution, etc.)
 - 2.2. Details of the organization (where, address, contact, what is its connection with Telecentres)
 - 2.3. Name and function within the organization of the interviewee (local community member; Telecentres practitioner; government staff; member of international or national organization; etc.)
3. Is this Telecentres, in your opinion, a good example of the average Telecentres in Mozambique, regarding the technologies used, its policies and management?
4. What are the main ways to exchange information for most peasants and rural communities in Mozambique?
5. What are the main positive socio-economic contributions of rural Telecentres in Mozambique?
6. Challenges and recommendation
 - 6.1. What are the main challenges of this Telecentres?
 - 6.2. Do you think most Telecentres encounter the same challenges?
 - 6.3. If not, what are the differences?
 - 6.4. How do you think Telecentres could overcome these challenges?
 - 6.5. How would you like to see development of the Telecentres in the next 5 years on the following areas:
 - Technical
 - Financial
 - Policy at national level
 - Policy at local level
 - Social
 - Contents of the service - information provided, training, etc
7. What are the primary objectives of this Telecentres (or the Telecentres in Mozambique in general)?
8. Business model / finance
 - 8.1. What is the business model of this Telecentres (i.e. how does it operate)?
 - 8.2. What is the most common business model in Mozambique?

- 8.3. What is, according to you, the most sustainable business model for a Telecentres? Why?
 - 8.4. Is the monthly revenue for this Telecentres higher, equal or lower than the monthly operational cost?
 - 8.5. What are the sources of revenue for this Telecentres (or in Telecentres in general)?
 - 8.6. Which are the different phases of development this Telecentres (and Telecentres in general) went through regarding the business model?
 - 8.7. What is, according to you, the most sensible phase, i.e. what's the bottleneck?
 - 8.8. Does this Telecentres have a sustainability plan?
9. Participation of the government
- 9.1. What is, in your opinion, the influence of the government on the Telecentres projects in Mozambique?
 - 9.2. What are the main connections of this Telecentres (or in Telecentres in general) with the government?
 - 9.3. Should the government change something in their policy towards Telecentres?
10. Participation of the community
- 10.1. Does the community participate in this Telecentres initiative? If yes, how?
 - 10.2. How is that for most of the Telecentres in Mozambique?
 - 10.3. Do women participate in this Telecentres initiative? If yes, how? Is this a trend within the Telecentres in Mozambique?
 - 10.4. Are there special programs to include women / youth / elderly / disabled in the initiative of this Telecentres?
 - 10.5. What are the constraints for people who do not (properly) speak Portuguese? Are the services provided adapted to those people? If yes, how?
 - 10.6. Does the language of content usually coincide with the local language?
11. Staff
- 11.1. How many staff members does this Telecentres have?
 - 11.2. How many of them are women / elderly / youth / disabled?
 - 11.3. How many of them are paid or volunteers?
 - 11.4. How is the policy in Mozambique regarding staff members?
12. Technologies used
- 12.1. What are the most common technologies used in this Telecentres?
 - 12.2. What are the most common technologies used in rural Telecentres in Mozambique?
 - 12.3. Which ones need to be improved?
 - 12.4. Which ones are affordable?
 - 12.5. Which ones do you recommend for future Telecentres initiatives? Why? Are any alterations / adjustments needed?

- 12.6. What electricity generating technologies are used in this Telecentres?
- 12.7. What electricity generating technologies are used in most Telecentres in Mozambique?
- 12.8. Are there problems related to the electricity provision?
- 12.9. How could they be overcome?

13. Connectivity

- 13.1. What type of connectivity does this Telecentres have?
- 13.2. What is the most common connectivity in Telecentres in Mozambique?
(Broadband, Dial up, Leased line, Mobile phone, Radio, Satellite, Wireless, XDSL, ISDN, Other)
- 13.3. Is it effective? If not, why not?
- 13.4. What would be the ideal form of connectivity? Is that possible? If not, why not? If yes, how?

14. Services / trainings provided

- 14.1. What are the services provided by the Telecentres?
 - access to government services
 - agriculture information
 - business services
 - classified advertising
 - Computer Aided Learning programs
 - computer repair
 - daily news
 - desk publishing
 - digital photography
 - e-auction
 - education news/information
 - employment information
 - e-Post & e-mail
 - fax
 - forward complaints to gov. agencies
 - games
 - health system information
 - ICT supply
 - ICT training
 - information on government programs
 - internet access
 - library
 - main line phone
 - matrimonial match
 - online application of citizen certificates
 - photocopy
 - printing
 - procurement of goods
 - radio browsing
 - scanning
 - selling insurance policies
 - specific web content
 - video conference
 - video-making
 - VoIP
 - weather information
 - other. Specify



15. What are the trainings provided by this Telecentres?

16. Information flow

16.1. How are new information topics included in the Telecentres services?

16.2. How are decisions regarding this topics made?

16.3. Does it follow the national development in the rural sector? (or is it the rural sector that follows the new information topics of the Telecentres?)

16.4. Is there inclusion of the community in content development? If yes, ho

16.5. Is there exchange of information within Telecentres? If yes, how?

16.6. Is there staff exchange within Telecentres?

16.7. If yes, how? If not, do you think it would be helpful / interesting and why?

16.8. *How often* is information regarding the following development areas provided through most Telecentres *to the target communities?*

- Agriculture
- Education
- Employment
- Gender
- Governance
- Health
- Small business

16.9. *How important* is the information regarding the same development areas *to your Telecentres users?*

- Agriculture
- Education
- Employment
- Gender



- Governance
- Health
- Small business

16.10. *What are the sources of information for the same development areas?*

Development areas: Some source of information

- | | |
|------------------|--------------------------|
| - Agriculture | ○ Local communities |
| - Education | ○ Government |
| - Employment | ○ International agencies |
| - Gender | ○ NGO's |
| - Governance | ○ Research institutes |
| - Health | ○ Universities |
| - Small business | |

17. Knowledge sharing

17.1. Does this Telecentres share the information it has / obtains with other Telecentres? If yes, how? If no, why not?

17.2. Is this Telecentres participating in any (inter)national knowledge network? If yes, which ones?

(National Telecentres network, Regional Telecentres network (W-Africa, E-Africa, S-Africa), www.telecentre.org, www.openknowledge.net, www.dgcommunities.org, www.developmentgateway.org, Others)

17.3. On what, in your opinion, does information / knowledge sharing on development issues help Telecentres?

17.4. If there was a web-based knowledge network of Telecentres how useful would it be to access the following online services?

- Directory of expertise
- Advisory services
- Case studies / good practices
- Online learning modules / tools

GDP per sector

Mozambique Gross Domestic Product (GDP) Percentage structure, 1999

GDP	Niassa	Cabo Delgado	Nampula	Zambézia	Tete	Manica	Sofala	Inhambane	Gaza	Maputo Prov.	Maputo City	Total
Agriculture	48.1	52.4	52.8	55.4	25.7	34.1	15.5	34.2	26.5	13.9	1.0	24.6
Livestock	0.8	5.6	2.2	1.5	3.2	1.6	2.1	3.0	6.1	1.9	0.2	1.8
Forestry	4.6	5.2	3.1	6.5	4.1	5.3	3.1	3.2	3.3	2.6	0.5	2.8
Fisheries	0.4	1.9	2.7	3.1	1.3	0	2.1	2.8	2.9	2.4	3.4	2.6
Mining	0.3	1.9	0.1	0.2	0.1	0.2	0.1	0.1	0.1	1.7	0	0.3
Manufacturing industry	6.2	2.6	6.4	7.9	6.4	12.8	9.4	3.7	3.3	12.6	18.4	11.3
Electricity and water	0.7	0.7	1.3	0.8	1.3	3.2	2.1	0.6	1.7	0.5	4.6	2.5
Construction	4.4	1.2	0.7	0.8	4.1	2.8	3.6	2.8	5.9	23.1	20.1	9.6
Transport and communications	4.6	6.5	5.7	2.6	7.4	8.1	13.5	7.8	9.8	14.5	11.5	9.2
Commerce	14.1	12.2	13.5	9.9	24.1	17.9	29.8	24.6	21.7	15.3	30.2	22.5
Restaurants and hotels	0.6	0.2	0.1	0.4	0.8	0.3	0.3	0.2	0.2	0.1	1.9	0.9
Public administration and defence services	5.3	3.9	2.1	3.1	3.9	3.0	2.5	3.3	3.8	3.6	0.9	2.3
Financial and insurance services	1.3	1.0	1.4	1.3	2.3	1.2	3.7	1.6	1.9	1.1	3.5	2.4
Real estate, renting and business activities	3.0	2.9	3.3	2.4	2.9	3.7	4.3	4.5	4.7	1.9	1.9	2.9
Education services	2.4	1.8	1.5	2.7	2.3	1.5	0.9	2.4	2.7	2.4	0.5	1.4
Health services	0.6	0.4	0.4	0.5	0.7	0.6	0.5	0.8	0.9	0.6	0.3	0.5
Other services	1.7	-1.1	1.8	0	8.5	2.6	5.5	3.5	3.6	0.9	0.3	1.8
Adjustment by customs duties and SIFIM	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9

Source: National Human Resources Development 2001

- Comparative summaries of current technologies
- Electronic conferences, discussion groups, newsletters.

Inventory of ICT infrastructure projects in Mozambique 1997-2007

SECTOR	PROJECT DESCRIPTION		
NGO			
	<p>1. Digitalisation of National Telephone Network</p> <p>Objective: Improve quality of national backbone by replacing the old analogue telephone switches by digital systems</p> <p>Partners: Govt., TDM</p> <p>Length: completed in 2000</p> <p>Cost: Information not available</p> <p>Target Group: Public in general, business and Govt services</p> <p>Evaluation Information: Available at TDM</p> <p>2. Mobile Network Infrastructure</p> <p>Objective: Provide mobile telephony services by establishing the necessary network infrastructure, to be extended</p>	<p>1. National Transmission Network</p> <p>Objective: Increase bandwidth capacity of the national backbone by laying down a high capacity marine and land fibre optic cable, to interconnect all provincial capitals and some cities</p> <p>Partners: Govt., TDM</p> <p>Length: 2001-2007</p> <p>Cost: USD1,000,000</p> <p>Target Group: Public in general, business and Govt services</p> <p>Evaluation Information: Not available yet</p> <p>2. Modernisation and Expansion of Traffic Centres</p> <p>Objective: To expand and modernise existing capacities in regard to the traffic</p>	<p>1. VSAT Communications Network</p> <p>Objective: Extend national backbone to remote rural areas, where other technologies are not appropriate</p> <p>Partners: Govt., TDM</p> <p>Length: 2002-2003</p> <p>Cost: USD3,500,000</p> <p>Target Group: Public in general, business sector and Govt services</p> <p>Evaluation Information: Not available yet</p> <p>2. Low Cost VSAT Stations</p> <p>Objective: Provide connectivity to remote areas, where other technologies are not appropriate, serving initiatives such as community access points (Telecentres), Schoolnet and the Provincial Centres of</p>

Public	<p>gradually to the all country</p> <p>Partners: Govt ,TDM and private sector</p> <p>Length: since 1999 up to now</p> <p>Cost: Information not available</p> <p>Target Group: Public in general, business sector and Govt services</p> <p>Evaluation Information: available at TDM and MCEl</p>	<p>centres (north, central and south regions) in order for the network to support integrated digital systems up to district level</p> <p>Partners: Govt., TDM</p> <p>Length: 2001-2003</p> <p>Cost: USD6,000,000</p> <p>Target Group: Public in general, business sector and Govt services</p> <p>Evaluation Information: Not available yet</p>	<p>Digital Resources (CPRD's), etc.</p> <p>Partners: Govt., TDM</p> <p>Length: 2002-2003</p> <p>Cost: USD168,000</p> <p>Target Group: Public in general, business sector and Govt services</p> <p>Evaluation Information: Not available yet</p>
	<p>3. Telecentres Project</p> <p>Objective: To bring connectivity and access to information to rural communities</p> <p>Partners: Govt., CIUEM, IDRC and UNESCO</p> <p>Length: 1999-2002 (Pilot phase)</p> <p>Cost: about USD350,000</p> <p>Target Group: Women, small business initiatives, students, local govt services (e.g. education, health), tourists, etc</p> <p>Evaluation Information: Available at CIUEM</p>	<p>3. Modernisation of the Transmission Network for Maputo and Surrounding Areas</p> <p>Objective: To expand the backbone of the transmission network and introduce new services</p> <p>Partners: Govt., TDM</p> <p>Length: 2001-2004</p> <p>Cost: USD26.500,000</p> <p>Target Group: Public in general, business sector and Govt services</p> <p>Evaluation Information: Not available</p>	<p>3. Universal and Affordable E-mail Access</p> <p>Objective: Increase e-mail access and connectivity by providing relatively cheap solutions, such as store and forward e-mail systems and packet radio networks for remote locations</p> <p>Partners: Govt and stakeholders</p> <p>Length: 2002-2003</p> <p>Cost: USD500,000</p> <p>Target Group: Public in general, business sector and Govt services</p> <p>Evaluation Information: Not available yet</p>
	<p>4. Schoolnet Project</p>		

	<p>Objective: To provide basic computer skills, connectivity and access to information to pre-university schools</p> <p>Partners: Govt., CIUEM, World Bank, IDRC and Govt of the Netherlands</p> <p>Length: 1998-2000 (phase I)</p> <p>Cost: About USD500,000</p> <p>Target Group: students and teachers</p> <p>Evaluation Information: Available at CIUEM and Ministry of Education</p> <p>5. Sustainable Development Network Program (SNDP)</p> <p>Objective: To provide connectivity and information to promote sustainable development to a wide range of organisations, especially government institutions</p> <p>Partners: Ministry for Environmental Affairs (MICOA) and UNDP and CIUEM</p> <p>Length: 1997-1999</p> <p>Cost: \$US250,000</p> <p>Target Group: Govt institutions</p> <p>Evaluation Information: available at MICOA</p>	<p>yet</p> <p>4. Digital Agencies</p> <p>Objective: Integrate Internet access facilities and services in the existing shops of TDM</p> <p>Partners: TDM</p> <p>Length: 2001-2003</p> <p>Cost: USD1,000,000</p> <p>Target Group: Business sector and public in general</p> <p>Evaluation Information: Not available yet</p> <p>5. Telecentres Project (phase II)</p> <p>Objective: To bring connectivity and access to information to rural communities, and development of local content</p> <p>Partners: Govt., CIUEM, Kellogg Foundation, IDRC, UNESCO and NGOs</p> <p>Length: 2002-2004</p> <p>Cost: USD2,500,000</p> <p>Target Group: Women, small business initiatives, students, local govt services</p>	<p>4. TeleMoz</p> <p>Objective: Establish provincial gateways and networks at provincial level mainly for Internet access within the Ministry of Transport and Communications</p> <p>Partners: Govt and USAID</p> <p>Length: 2002-2004</p> <p>Cost: USD4,100,000</p> <p>Target Group: Govt services</p> <p>Evaluation Information: Not available yet</p>
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		(e.g. education, health), tourists, etc Evaluation Information: Not available yet	
Private	<p>6. Leland Initiative</p> <p>Objective: To eliminate the monopoly in the provision of Internet services, by providing technical and financial resources for the establishment of new ISPs.</p> <p>Partners: USAID and TDM</p> <p>Length: 1997</p> <p>Cost: Information not available</p> <p>Target Group: IT related entrepreneurs</p> <p>Evaluation Information: Available at USAID</p>	<p>6. Mobile Network Infrastructure (for second Operator)</p> <p>Objective: Provide mobile telephony services by establishing the necessary network infrastructure for the second mobile operator</p> <p>Partners: private sector</p> <p>Length: 2002-2003</p> <p>Cost: Not available</p> <p>Target Group: Public in general, business and Govt services</p> <p>Evaluation Information: Not available yet</p>	

