Project Partners

Angola
AngoNet under the Development Workshop

Mozambique
Centre for Informatics, Eduardo Mondlane University (CIUEM) & Mozambique Information and Communication Technology Institute (MICTI)

Catholic University of Mozambique (UCM)

SchoolNet Mozambique & Ministry of Education

Higher Polytechnic and University Institute (ISPU)

South Africa
CSIR, Meraka Institute (also coordinators of the network)

University of the Western Cape (UWC) & University of Cape Town (UCT)

Translate.org

Tshwane Metropolitan Council

Zimbabwe
ConnectAfrica

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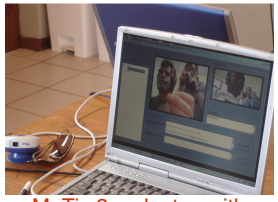
Nurse downloading a digital photo for teledermatology

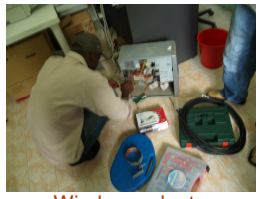


MuTi v2 on laptop with video and voice

Telecentres and NGOs

Existing telecentres can provide a range of connectivity and ICT services and progress to the level of becoming the local ISP as shown in Huambo and Inhambane. MICTI, through their telecentres find themselves in a similar situation.

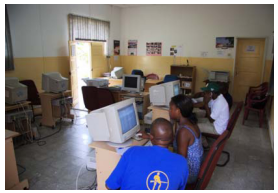
Training at Manhiça telecentre



Wireless adaptor installation at Chóckwe

" Community-driven ICT projects can establish the foundation for sustainability through cost sharing to prove that commercialisation is possible "

AngoNet Telecentre (Huambo)



Computer Lab at EPCI Telecentre

www.fmfi.org.za

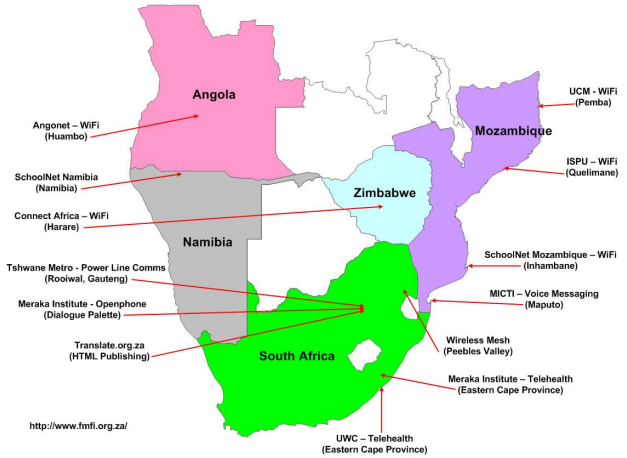
In Angola, Mozambique, Namibia and South Africa, technical innovation coupled with social research is creating affordable and sustainable connectivity in rural communities.

The Project

First Mile, First Inch (FMFI) is a multi-disciplinary series of projects exploring the technological and social consequences of least-cost telecommunications implemented in remote schools, clinics, and telecentres.

The research explored how people interacted with new technologies and how their daily lives were changed. The projects have demonstrated how the first mile in poorly served rural and marginalized communities can be bridged with WiFi as well as other off-the-shelf DIY technologies.

First Mile First Inch (FMFI) Network of Researchers



The Development Goals

Although fixed-line networks in rural communities of developing countries often preclude innovative access, opportunities such as the unbundling of a network's local loop or "last mile" and the provision of modest Internet access suggest that innovation requires a different mindset - an approach that empowers communities with a sense of ownership and control of communications infrastructure. To that end, FMFI aims to understand and challenge institutional frameworks, regulatory considerations and national policies.

The key long-term goal is sustainability: to help local communities build their own neighbourhood networks and cultivate the skills required to manage and even replicate the networks in the future.

The Context

The end point of large communications distribution networks-often referred to as the "last mile"-is usually the most challenging, most expensive and most difficult part to manage in

rural environments. FMFI represents a paradigm shift towards “first mile” (the starting point of a network) and “first inch” (the immediate experience of the end user). The project aims to overcome failures in addressing the needs of rural communities through innovative, inexpensive access in various contexts, and to explore and document the sustainability of such access.

The Impact

At the local level, FMFI targeted a variety of identified needs, for example: improving communication between doctors, health workers and clinic sisters in the Eastern Cape and Mpumalanga provinces of South Africa; giving students in remote Mozambique villages access to curriculum for distance education and regular contact with their university tutors; providing ICTs and internet access to rural schools in Namibia; and provide Internet access through a wireless terrestrial connection to the war-affected town of Huambo in Angola.

Equally important outcomes are the creation and growth of new partnerships with government, private sector, international aid agencies and organizations involved in technology research and development, and the publishing of reference book for “first mile” and “first inch” implementation in a rural Africa context.

Research Objectives

- To develop innovative information and communication technologies (ICTs) and to implement “first mile” solutions
- Change the behaviour in the use of ICTs – how the use of ICTs has changed community life
- Cost and benefits of solutions – to quantify what is meant by low cost connectivity
- Scalability and replicability of technologies – the viability of rolling out the solution
- Influence on policy and regulation – demonstration of project benefits to the regulator
- To publish a reference book for “first mile” and “first inch” implementation in rural Africa.

FMFI Philosophy

In order to overcome the barriers to access the Information Society we need:

- a change in mindset putting the end user first,
- bottom up momentum whereby communities are empowered and have a sense of ownership of their own communications infrastructure, and
- community access to innovative ICTs and a “*just do it*” approach whereby communities can create networks that in turn create new demand for ICTs on shoestring budgets.

FMFI Outcomes – The Lessons Learned

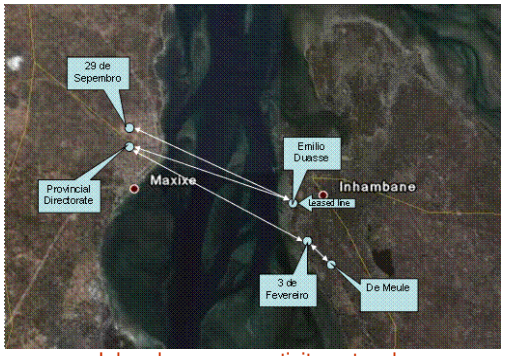
As this research is a comparative study of FMFI technologies in different low-density contexts, it is useful to compare and contrast the lessons learned from the projects with respect to:

- Influence on policy and regulations - WiFi regulations
- ICT Initiatives in Education
- ICT Initiatives in Health
- Telecentre & NGO Initiatives
- Cost and benefits of solutions - Connectivity cost sharing
- Business models
- Changed behaviour in use of ICTs
- Scalability and replicability of ICT technologies

Influence on Policy and Regulatory

In light of the limited ICT coverage in rural Africa, rollout of WiFi networks provides great potential to stimulate extended ICT access. This is due to the relatively low costs of WiFi once the backbone connectivity is in place, which enables community-based, or bottom up, deployment. All the FMFI partners involved in direct implementation are using some form of WiFi. The current regulatory framework in Southern Africa poses significant challenges to deployment of WiFi community networks.

Community member installing a WiFi node with cantenna



Inhambane connectivity network

“ When backbone connectivity is in place, community-based initiatives can provide affordable access to ICT resources through wireless connections ”

“ Education departments can subsidise connectivity costs to create effective ICT networks in which resources are shared in a cluster of schools ”

ICT Initiatives in Education

The FMFI project in Inhambane and Maxixe showed how a Department of Education can intervene in a connectivity provision situation which placed unnecessary financial burdens on individual schools. They stepped in to revitalise access to ICT resources by taking care of the backbone costs for a cluster of schools. The direct intervention is the first lesson learned in terms of changing policy from within.

Computer Lab at Escola Secundaria de Muele

Escola Secudaria 29 de Setembro

ICT Initiatives in Health

The projects in the health arena showed that it was possible to influence health officials to create telehealth policy, budget for its introduction and create guidelines for institutionalisation.

Provincial Directorate (Inhambane)

“ Telehealth applications can be commissioned in deep rural settings to link clinic sisters to health specialists for diagnosis, referral and teleconferencing ”

Nursing staff receiving training