→ *A rural dwelling in the KwaZulu-Natal Midlands.*

# Using ICT4D to make a difference in Tugela Ferry

Dr Marita Turpin and Kirstin Krauss

**In Tugela Ferry, a remote town in the KwaZulu-Natal Midlands, researchers in the Department of Informatics at the University of Pretoria made a significant contribution to the wellbeing of a Zulu community by effectively and sustainably implementing information and communication technology (ICT) according to the community's needs. The project formed the basis of the doctoral research of two lecturers in this department and produced valuable new insights into research in the field of ICT for development.**

Information and communication technology for development (ICT4D) is a research area in information systems that is concerned with the application of ICT to improve socioeconomic conditions in developing countries. The first era of ICT4D is associated with the expansion of the internet in the 1990s, and is characterised by the establishment of telecentres. Many of these telecentres failed. This drew attention to concerns such as sustainability, scalability and impact evaluation. The current rapid diffusion of mobile telephony throughout Africa presents new opportunities, and the reach of mobile phones into remote areas can be used to support service delivery, educational initiatives and mobile payments, to name but a few.

One of the concerns of ICT4D is that of using appropriate technology. Many failed initiatives have been characterised by initial enthusiasm around high-tech applications, which could not be sustained in the long run in terms of maintenance, unreliable internet access and electricity infrastructure, among other things. Other risk factors include local ownership and the ability of

ICT4D practitioners to address real needs, as opposed to implementing their own pet projects. Added to this, the communities that may benefit most from ICT4D initiatives are not necessarily accessible to ICT4D researchers and practitioners because of geographical, language and cultural barriers.

In South Africa, with its high inequality rate, high levels of poverty and unemployment, and the large urban-rural development divide, there are many challenges around socioeconomic development, community empowerment and the improvement of the human condition. These same challenges could be viewed as opportunities for local ICT4D researchers and practitioners, who want to make a difference using ICTs.

A group of ICT4D researchers from the Department of Informatics at the University of Pretoria were in the fortunate position to have gained entry into a remote, rural community that is not generally accessible to outsiders. Here they could scope and implement an ICT4D project.

→ The town of Tugela Ferry.


→ The view from a household in Tugela Ferry.

## The Tugela Ferry community

Tugela Ferry is the administrative and business centre of the Msinga district deep in the KwaZulu-Natal midlands. Msinga is the heartland of the amaZulu. Herding animals is the primary economic activity and the area is mostly unsuitable for crop farming, except for some plots along the Tugela River.

Tugela Ferry has a very limited, basic infrastructure. A tarred road connects the town to the national road network. Four out of every five households in the district do not have access to electricity or running water, have no sanitation facilities and no means of transport. The adults in the poor households are largely illiterate and do not speak English. Their subsistence livelihoods have become inadequate as a means to sustain them, and as there are virtually no formal employment opportunities in the area, social grants in the extended family have become the major source of income. The prevalence of HIV/Aids and tuberculosis (TB) in the community, with the associated social, physical and financial burdens, is among the highest in the country.

The implication of the remote dwellings of the majority of the people is that they are not within reach of institutions outside their community. This is because their households are not accessible by car and outsiders cannot interact with them if they do not speak Zulu.

Tugela Ferry is a community of extremes. In contrast to the difficulties described above, a number of very successful, community-owned initiatives have been established since the 1990s. These were largely in association with the Rock of Life Church, a local Christian mission, and include initiatives such as the Khayelisha Care Centre (KCC), the Lobethal Independent School and the Philanjalo Hospice.

The KCC provides an integrated care programme for orphans and vulnerable children in the community. This includes a day crèche, a residence, assistance with the placement of children in foster care and a feeding programme to ensure that there are no street children in the town.

The Lobethal Independent School was founded in 1994. Due to the realities

has maintained a 100% pass rate since its first matric class in 2001 and it is considered to be one of the best schools in the region.

The Philanjalo Hospice will deliver humanitarian support in the form of a holistic care programme for Aids and TB patients when the mandate of the national Department of Health comes to an end. It also does groundbreaking research on drug-resistant TB in partnership with two American universities. While the mission is small in terms of the number of staff members, its influence is widely visible in the Msinga district.

## UP partners with Tugela Ferry

During a visit to the Department of Informatics at the University of Pretoria in August 2008, a representative from the KCC in

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that face the impoverished community, the school cannot afford to pay teachers market-related salaries. As a result, many of the school's teachers are volunteers or former learners who are mentored by senior staff members. Despite these difficulties, Lobethal

Tugela Ferry presented the community's information technology-related needs.

The people of Tugela Ferry required IT literacy training for a number of reasons: it would enable school

leavers to get jobs and it would provide teachers with the skills they needed to process marks and prepare test papers. KCC administrators would be able to manage donor funding and the centre's feeding programme, and nurses would be able to keep better track of patients' medication schedules.

This visit marked the beginning of a long-standing partnership between the Department of Informatics and some of the institutions in Tugela Ferry.

Funding obtained from the United Nations Educational, Scientific and Cultural Organization (UNESCO) enabled the Department's initial involvement in the community. This funding provided the assistance that was needed to establish and maintain a computer centre at Lobethal Independent School, where teachers and other care workers received IT literacy training. Some teachers also completed a train-the-trainer programme, which enabled them to present courses to the nurses at the local hospital.

In 2010, a local businessman was identified who had the vision to establish and manage a computer training centre, whereby training could be made accessible to the larger community. The Department of Informatics facilitated the process of setting up the training centre early in 2011. To date, 58 local people have received training at the centre, compared to the 34 that the University staff managed to train. Since the town has virtually no internet access apart from a handful of slow and costly dial-up modems, internet literacy and the opportunities associated with it were not pursued as part of the ICT4D initiative.
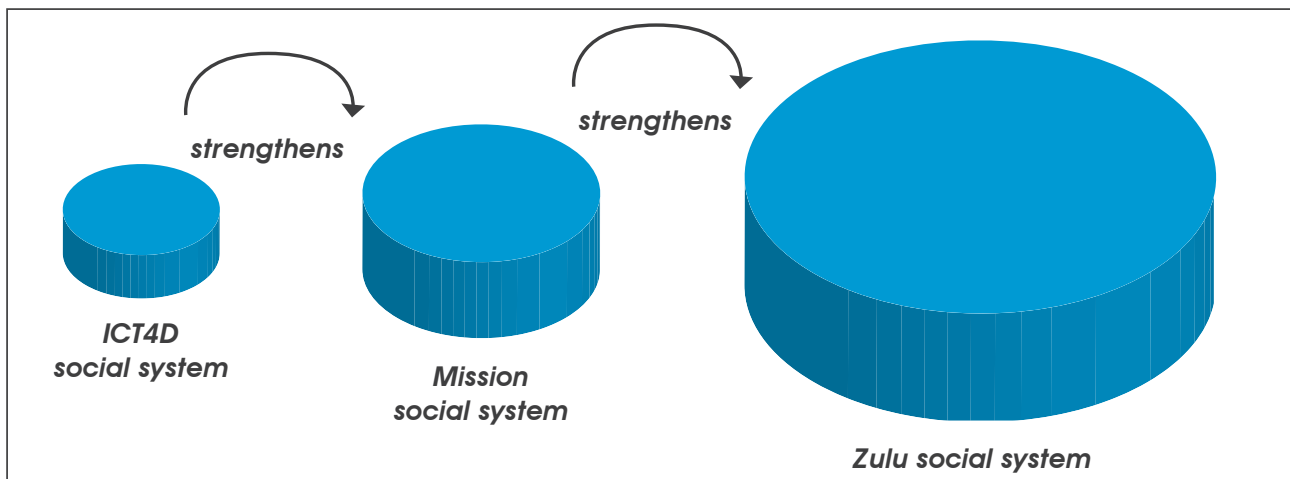
## An opportunity for ICT4D research

The Department of Informatics was in a privileged position to have gained access to a remote, rural community that is not generally accessible to non-Zulu speaking people. In the process, they were provided with a unique opportunity to do ICT4D research.

The two lecturers who utilised the opportunity to do their doctoral research in Tugela Ferry are Kirstin Krauss and Dr Marita Turpin.

Krauss was the primary driver and outsider champion of the project. In partnership with several key community members, he has been involved in many aspects of community engagement and ICT4D that have evolved since the inception of the project. This involvement includes being part of how the project was initiated, and watching it gain momentum, observing relationships with teachers and key community members develop and mature, and witnessing key community members being empowered through ICT and train-the-trainer initiatives. The ICT training slowly progressed to become sustainable and community owned. In the process, Krauss's role evolved from that of project initiator to that of implementer, mentor and guide to community members, who acted as local visionaries and champions.

Krauss's research focused on two specific aspects of community engagement. The first dealt with the issue of community entry and specifically how an outsider should approach ICT4D research and practice in rural communities. The second aspect dealt with the difficulties and realities involved in introducing, interpreting and aligning the ICT4D artefact (such as ICT4D policy and training) in rural communities in South Africa. His choice of methodological approach was firstly based on a desire to affect change and emancipation in the community of Tugela Ferry. Secondly, it illustrated the desire to make a research contribution that

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was practically relevant. "I wanted to do something good and meaningful with my research and at the same time uplift the people I interacted with in a way that is also ethical and truly emancipatory."

Dr Turpin was interested in studying the impact of the ICT4D intervention on the socioeconomic development of the larger community in the Msinga district. One of the key challenges in ICT4D is that the contribution of ICT to development is difficult to describe and assess. This is particularly true when one looks beyond the immediate context of an ICT4D project to its impact on the larger social system of which the project forms part.

Dr Turpin realised that the problem could benefit from a systems approach. Systems thinking is concerned with the performance of the entire system when changes are made to part of the system. Systems thinking recognises that the performance of a subsystem relative to its own goals does not necessarily lead to the increased performance of the larger system. Systems approaches are seldom used in the field of ICT4D and appropriate ways to describe and assess a social system are lacking. Dr Turpin's study contributed theoretically and empirically to the social systems body of knowledge in ICT4D. A social systems framework was developed, based on structuration theory and autopoiesis. The framework was

attractive because it provided a way to describe and assess the sustainability and state of development of the total system.

A concern with the ICT4D project was that it was primarily aimed at mission caregivers rather than the wider and more needy Zulu community. The wider community was not accessible to the ICT4D team, and IT training was too remote from their subsistence livelihoods to be a feasible or appropriate endeavour. In her empirical study, Dr Turpin indicated the contribution the mission's systems could make to the sustainability and socioeconomic development of the wider Zulu social system (see Figure 1). She also found evidence that the IT training strengthened the mission as a system, which enhanced the mission's ability to serve the Zulu social system. In this way, the ICT4D project contributed to the wellbeing of the wider Zulu community.

## Conclusion

The success of the project can be attributed to a combination of factors. These include the ICT4D team's application of appropriate and culturally sensitive community entry principles, working under the close guidance of key community members whose locally established authority and leadership positions were respected, sensitivity to the community's expressed needs and requests throughout the project, mutual openness to and participation

in cultural practices, and ethical research practices and self-reflexivity throughout.

As far as possible the ICT4D team avoided an attitude of simply feeling sorry for the people and their suffering, while cultivating untested assumptions about their position and role, such as the following: "Because we are developed, empowered and educated, we know and could prescribe, without reflection and questioning, how to do ICT4D and how to develop the people." Rather, it was acknowledged that by understanding their own role, limitations and needs, and remaining open to unexpected local innovation, they could continue to create and support ICT4D that is relevant and truly emancipatory.

The ICT4D team took comfort in the fact that even though they were not in a position to directly interface with the majority of the Zulu speakers in the Msinga district, they could indirectly contribute to the wellbeing of the community by helping to strengthen existing local socioeconomic development initiatives. ☉

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