RHODES UNIVERSITY
Where leaders learn

The Rhodes University Community Newsletter

Rhodos

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Members of the University Sports South Africa (USSA) delegation: Head of Sport of University of the Western Cape, Ms Ilhaam Groenewald and Rhodes University Head of Sport, Mr Mandla Gagayi in Kazan, Russia.

A natural instinct for community engagement

Project leader of the Siyakhula Living Lab Management Unit, Ms Sibukele 'Spooky' Gumbo heads up a dynamic team of postgraduate researchers from the universities of Fort Hare and Rhodes.

Originally from Zimbabwe, Gumbo moved to South Africa in the early 2000s to study and began her association with Rhodes University while doing Honours at the University of Fort Hare. Through the collaboration of the Telkom Centres of Excellence at Rhodes University and Fort Hare University, some Fort Hare Computer Science Honours courses were hosted over video conferencing to grow the postgraduate work at the University of Fort Hare.

In 2006, while doing Masters research, she became a part-time administrative assistant at Fort Hare's Centre of Excellence and had substantial interaction with researchers from Rhodes University on the development of the Dwesa field site that had just been established in the Mbhashe Municipality of the Eastern Cape.

Dwesa is the main field site that is now more commonly known as the Siyakhula Living Lab (more recently, the eYethu field site in Grahamstown and a new site in Keiskammahoek have been added to the initiative). Ms Gumbo assumed the position as Project Leader following the establishment of the Siyakhula Living Lab Management Unit in 2009. This was a central structure to support the field site operations and plan towards the sustainability of the Siyakhula Living Lab.

"Being project leader has been a natural process for me because I have a natural instinct for community engagement, logistics planning, marketing, project management and event coordination, on top of the technical know how to support the ICT initiative," Ms Gumbo said.

Her Nguni background is a bonus allowing for easy isiXhosa interactions with community members. The highlights of the role so far include organising a site visit for former South African minister of science and technology Derek Hanekom in 2008 and the high-level Siyakhula Living Lab marketing launch attended by deputy communications minister Stella Ndabeni-Abrahams in April this year.

In her capacity as project leader Ms Gumbo coordinated the setup of the Siyakhula Living Lab community executive committee, with 10 members from 17 communities to facilitate more effective communication within the community, strategise logistics and tackle issues on the ground.

Ms Gumbo said, "This enables us to function as a single unit. We have worked well with each other, with each community knowing that I am just a phone call away.

"We have arrived at the point where the softer network/IT infrastructure-related challenges are solved over the phone." She publishes and makes presentations at local and international forums and exhibitions, where the living lab methodology has been adopted in many platforms, and is the contact person in the Living Lab in Southern Africa and European Network of Living Labs, of which Siyakhula Living Lab is a member.

Ms Gumbo is also responsible for coordinating week-long field trips, for researcher data collection and computer literacy training. These are carried out bimonthly at least.

"I always encourage the researchers to integrate themselves into the rural system and forge relations with the community members, through living within the community for week-long visits.

"I avail myself for as many of these trips as possible. It makes it easier to encourage the community to assist the students with the research and to participate in the proof of concept of the eService application development," she said.

"I enjoy rural settings and the associated Eastern Cape culture. I have lots of time and patience to work with underprivileged communities and I believe in the Siyakhula Living Lab cause," Ms

Ms Sibukele 'Spooky' Gumbo

Gumbo said.

Working in rural communities required a lot adjustment as situations change from day to day, she said. The team faces numerous problems ranging from power failures to flooded rivers, "all because rural communities still remain at the end of the line in terms of service delivery."

She believes the Siyakhula Living Lab still requires a lot more support from government, NGOs and industry entities who are interested in entering these types of rural communities and supporting innovative models of ICT for development.

Despite the challenges a temporary lack of support involves, she is motivated to continue her association with Siyakhula.

"I see the meaningful difference ICT is making in the rural communities we are working in. It is very fulfilling to do research based on real world issues.

"If only if we had more resources and manpower to do more."

Siyakhula — bridging the technology gap for

Premised on the Living Lab methodology, which focuses on the principle of co-creation of solutions with empowered users, the Siyakhula Living Lab aims to find models for sustainable information communication technology (ICT) use in poor and marginalised rural or peri-urban areas, common in developing countries.

The project is the brainchild of Professor Alfredo Terzoli, head of the Telkom Centre of Excellence in Distributed Multimedia in the Computer Science Department at Rhodes University and also Research Director of the Telkom Centre of Excellence in ICT4Development, hosted at the University of Fort Hare. Partners for the project include private companies in the ICT industry and the South African government.

The programme has to date produced tangible benefits for the impoverished communities of the Mbashe district of the Eastern Cape in South Africa, close to the Wild Coast's Dwesa-Cwebe Nature Reserve, the main site of the Siyakhula Living Lab (SLL). According to Prof Terzoli, Siyakhula is an example of how marginalised rural communities that are very difficult to reach can be joined with the greater South African and African communities to the economic, social and

Fascinated by phones

Inspired by a lifelong fascination with mobile phones, Dr Mosiuoa Tsietsi is applying his software development and research skills to inform the inclusion of telecommunication services into the Teleweaver application server currently being built by Reedhouse Systems. The server is being built for deployment in the Siyakhula Living Lab.

"I think we are doing a good thing. It's quite unique that a computer science department is involved in such work, but I believe we are enhancing technology and helping to bridge the technological divide," Dr Tsietsi said.

Dr Tsietsi completed his undergraduate degree at the University of KwaZulu-Natal before joining Rhodes University as a Masters student in the Department of Computer Science in 2006. He obtained a PhD degree in Computer Science at Rhodes University in 2012 after developing a framework for the incorporation of user preferences and operator policies in a next-generation mobile network.

Dr Tsietsi's research allows for a broad analysis of the impacts of the new technology on more traditional forms.

"This technology is allowing us to leapfrog the traditional development paths and to do the same research as people in America. There are no boundaries information-wise," he said.

Dr Tsietsi is also a postdoctoral researcher in the Department of Computer Science at Rhodes University and is the Technical Lead of the Convergence Research Group in the same department.

This group conducts research in the fast-changing world of telecommunications and the internet. He was recently appointed a lecturer under the Kresge accelerated development programme.

The programme, initiated as a result of the University's strategic intent to enhance the diversity of staff, seeks to accelerate the academic careers of individuals from designated groups, thereby better equipping them to compete for permanent positions at Rhodes University.

This is done through providing opportunities to acquire, within a mentoring system, teaching experience, research skills and further disciplinary and/or teaching qualifications. These are three-year part-time contract posts, at the level of lecturer or junior lecture.

Appointment at the level of lecturer requires at least a Masters degree, and appointment at Junior Lecturer level requires at least an Honours degree.

"The work I accomplished during my PhD yielded a novel model for service orchestration in mobile telecommunication networks and also resulted in the construction of a prototype that was developed using open-source and free software," Dr Tsietsi said.

"The main purpose of my postdoctoral appointments has been to implement this model more extensively than I was able to during my PhD, and to evaluate its suitability to deliver complex, converged services."

As the only postdoctoral researcher in the Convergence Research Group, he has also been responsible for providing strategic direction for research projects and has assisted Professor Alfredo Terzoli, founder of the Siyakhula Living Lab, in the supervision of Honours and Masters students.

This has involved chairing weekly meetings in which technical problems were discussed and resolved, as well as spending a significant amount of time working hand in hand with individuals outside meetings.

rural communities

cultural benefit of all.

The original objective of the project was to develop and field-test the prototype of a simple, cost-effective telecommunication solution for marginalised and semi-marginalised communities where the majority of the South African population live. The project has evolved to include a generic service integration platform, TeleWeaver, to support services for those communities. According to Prof Terzoli, the TeleWeaver business model makes it a "game changer", making ICT infrastructure sustainable in marginalised areas.

Transforming the experimentation in the Siyakhula Living Lab into robust industrial products has given origin to software house, Reed House Systems (RHS, www.reedhousesystems.com), which started its operations in 2010. RHS is currently hosted at Rhodes University, and offers internships to Rhodes and Fort Hare students.

Prof Alfredo Terzoli

'Living out his passion for ICT'

Professor Alfredo Terzoli, head of the Telkom Centre of Excellence in Distributed Multimedia in the Computer Science Department at Rhodes University, is living out his passion for information communication technology (ICT) for development.

Also Research Director of the Telkom Centre of Excellence in ICT4Development, hosted at the University of Fort Hare, Prof Terzoli founded and leads the multi-disciplinary long-term, cooperative research project in Dwesa, in the rural Eastern Cape.

Established in 2006, the project was re-organised in 2008 as the Siyakhula Living Lab. In 2010, the project was complemented by the start of a software factory, Reed House Systems which is commercialising and turning into products the innovations realised in the Siyakhula Living Lab. The project has since introduced ICT skills and technology to 17 schools and their associated communities in Dwesa.

Apart from his involvement with Siyakhula Terzoli also has a strong interest in building advanced telecommunications.

He is the recipient of the 2012 Department of Trade and Industry (DTI) Technology award in the human resource development category for the project titled 'Mobile Services for Ubiquitous Communication and Multimedia Delivery'.

As a result of this project, service delivery platforms such as Mobi-Ser will have the capacity to offer the widest possible variety of future services. These will range from live translations into any language to video telephoning to registrations of births, deaths, marriages and divorces (in collaboration with Home Affairs). They will also include supporting cashless societies, where all financial transactions can be done via cellphone.

The awards recognise individuals and organisations that significantly contribute towards technology development and innovation in South Africa.

Prof Terzoli obtained a Laurea cum Laude in Physics from the University of Pavia, Italy.