

Building smart cities through ICT Innovation

The concept of the 'smart city' has emerged as a term to describe a city that uses technology to address service delivery challenges. However, building a smart city is about more than just using technology – it is about ICT innovation and transformation that improves the quality of life of citizens. People are at the heart of the smart city concept, and it offers benefits for all concerned – but delivering on this ideal requires all parties to be involved. Smart cities need not only Government commitment, but also engagement from citizens and the collaboration of the private sector in order to succeed.

A smart city is one with well-defined processes, connected by smart innovative technologies that enable citizens to experience all public services with ease and low cost, fuelling economic development to stimulate a high quality life for all. From basic service delivery provision of water and electricity, to ease of mobility within a city across public and private transport, to the ability to provide quality healthcare and education to all citizens – smart cities are all about making the lives of citizens better and easier.

The success of the smart city concept can be seen in T-City, a collaboration between T-Systems, Deutsche Telekom and Friedrichshafen, a city in Germany. The aim of T-City was to utilise technological innovation to achieve sustainable improvements in the quality of life in the city. The initiative ran for five years, from 2008 to 2012, and during that time more than 40 projects were implemented across education, transport, tourism and culture, business, smart metering and energy, healthcare and more. An area broadly based on eGovernment was also implemented to improve the efficiency of administrative processes for residents and businesses. The city acted as a showcase for innovative ICT technology, demonstrating how such technology can improve the quality of life within the city.

Broadband connectivity lay at the heart of the success of T-City. By connecting each and every citizen, they were empowered to access a wide variety of additional services online, including purchasing tickets, paying bills and so on. Internet-based learning and virtual classrooms were implemented and textbooks were made accessible online, extending education to all. An integrated emergency number ensured citizens could always get hold of the relevant services with ease. Through connectivity and connected smart devices, the Government was also able to gain feedback. Smart metering solutions enabled monitoring of electricity consumption as well as more effective billing and processing. Public transport systems became more efficient, and a single ticketing system not only delivered valuable data to Government, but was also highly convenient for citizens.

While T-City was conceptualised and demonstrated in a first world country in Europe, the lessons learned from this project can be localised and made relevant for the South African market. Connectivity is the foundation for the delivery of smart services, whether it is delivered via mobile, wireless, fibre or satellite, and this fact remains the same regardless of location. The basic needs of people also remains the same, regardless of their location – access to water, electricity, education and healthcare are fundamental human needs that transcend cultural and geographical boundaries. These areas are all aspects that can successfully addressed using the smart city concept.

At the heart of the smart city is the ability to connect the dots between ICT and basic services, and to innovate in using technology to deliver better services to citizens. For example, a library in the city of Johannesburg can become so much more than just a repository of old books – using technology it can be transformed into a multimedia centre with computers that can be used to improve education, and also for a host of other areas

such as paying municipal rates and accessing other services.

While ICT and broadband connectivity are critical components, technology is simply the enabler of the smart city eco system. Building a real smart city requires a holistic view – one that includes changing cultures and behaviours alongside the introduction of enabling technology. Hand in hand with this is a requirement for collaboration between Government and the private sector, and the need to incorporate innovative ways to fund socio-political development objectives to achieve economic transformation in South Africa. Private sector has the technology and process skills required, and needs to work with Government to achieve a long-term sustainable vision for the South African economy. In addition, cities and municipalities need to stop working in isolated siloes, but share processes and lessons learned to permeate success across the country, and create interconnected systems that can then add value to all citizens of South Africa.

The smart city also requires the buy-in of communities and citizens. Active participation of both the Government and its communities is essential in creating the two-way feedback that makes the smart city a success. Cultural change management is essential in ensuring people adopt new solutions - awareness of technology, education around the benefits of new solutions, and the assurance that all personal information will be kept secure are just some of the issues that need to be tackled.

The smart city is mutually beneficial to both public and private sectors, as well as citizens themselves. It promotes collaboration and transformation, which in turn stimulates economic growth, more intelligent use of resources, access to up to date information, and the creation of jobs and skills. Intelligent management of natural resources is made possible through participatory action and engagement. Citizens can access self-help services to ensure effective collaboration between the public and the municipality. Enhanced information security and a cohesive system at a Government level reduces the chances of identity theft. Revenue can be assured, and services can be cost effectively delivered, benefiting all parties.

These are but a few examples of the advantage of the smart city. By working together, public and private sector can collaborate on the transformation of municipalities and the country as a whole, using innovative technology as an enabler. By localising global innovations to fit local needs, South Africa can remain relevant on a global stage while improving the lives of all citizens and meeting its service delivery obligations.