

End user needs for 3G services in rural areas

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With the introduction of mobile technology and mobile telephones in society, information and communication technologies (ICTs) have been strengthened to transform the way in which we live and work.

According to research conducted at the Meraka Institute at the Council for Scientific and Industrial Research (CSIR), the digital divide between urban and rural areas, and the disparities between first- and third-world countries have led to very few people having access to the internet.

Mobility and mobile business can benefit from allowing a subscriber freedom of movement, ubiquity (the utilisation of services independent of location), reachability (ability for subscribers to be reached anytime, anywhere) and convenience.

Mobile data connectivity

Preliminary findings and investigations suggest that many rural and isolated communities and industries in South Africa do not have adequate and sufficient infrastructure for data connectivity and ICT applications. The data connectivity can either be in the form of fixed-line or mobile connections, but due to the lack of existing fixed-line infrastructure in South Africa (especially in rural South Africa) the only option is via mobile connectivity supplied by mobile network operators (MNOs).

Research conducted in the Graduate School of Technology Management

sought to answer the following questions:

- What are the actual needs and drawbacks for rural and isolated communities and industries when it comes to mobile data connectivity and broadband data connectivity?
- What information and communication technology (ICT) applications and development can arise if mobile broadband is supplied in these locations?
- Is sufficient education provided for the application of ICT development?
- Do people know and understand the choices and freedom of gaining information via applications such as the internet?

The researchers intended to answer these questions by assessing the actual data connectivity issues in the rural areas of South Africa (in particular, Mpumalanga and Limpopo), assessing the actual desires or wants of the communities and individuals with regard to data connectivity, ascertaining the day-to-day business and functionality of ICTs in the areas, and distinguishing the possibilities of improving the quality of mobile broadband.

The researchers conducted two tests with the data that was collected. These included an analysis of the research questions. The results obtained with regard to what the respondents have indicated they own and use, illustrate that the population in the two provinces indeed have the necessary means to communicate effectively. The survey results also illustrated that cellphones are the dominant means of mobile network connectivity and that the majority of respondents are satisfied with the current coverage in the locations.

Although the results indicated that coverage in general was satisfactory, there was still a split between 2G and 3G technology. Many respondents did not know the difference between the two technologies and their attributes. Satisfaction and data speeds were stringent needs for the respondents, especially with the online results, which corresponded to the higher living standard measure (LSM) market, where the need for faster data connectivity was necessary for both work and personal use.

With regard to the availability of sufficient education and knowledge for the application of ICT development, respondents acknowledged the need for education and knowledge-sharing for future provisioning and the access needs of data connectivity.

The results, coupled with the frequency of times the respondents gained access to ICT applications and the internet, and the belief that ICTs and the internet had enhanced the livelihood of the respondents, demonstrated that although subscribers utilised data connectivity on a regular basis, the actual limits to their application and possible data usage could be enhanced.

In 2010, the broadband penetration rate for the entire population of South Africa was 9.76%. With respect to the survey response, a total of 89.2% of respondents indicated that they accessed ICT applications and services via their cellphones, 23.7% of respondents indicated that they had 3G coverage in the area, while 53.8% indicated that both 3G and 2G

→ Table 1: Mid-year population estimates for 2011 for Limpopo and Mpumalanga

Province	Population
Limpopo	5 554 657
Mpumalanga	3 657 181
Total	9 211 838

(Source: Statistics South Africa, 2011)

were available. This indicated that 77.5% of the respondents had mobile broadband infrastructure in the area.

By considering the mid-year population statistics for Mpumalanga and Limpopo for 2011 (see Table 1), the total market can be estimated as the total population of the two provinces (9 211 838 inhabitants) for this period.

The researchers considered the fact that 77.5% of the respondents had access to mobile broadband and accessed the internet from their cellphones. This did not correlate with their calculations of the number of respondents who had adopted mobile broadband (only 13.64%).

Conclusions and recommendations

Infrastructure is mainly available, and obtaining better coverage from a rural perspective is not necessarily a stumbling block. There is, however, a need for better and more stable broadband services.

The wants and needs of subscribers are becoming more demanding with regard to capacity and the improvement of speed due to the high adoption rates of smartphones and tablet PCs.

The researchers are of the opinion that handset sales and assistance from mobile network operators may aid the adoption rate of data and decrease segmentation between rural and urban locations.

Education is, however, needed for data connectivity adoption in lower LSM markets, which will enhance the day-to-day living conditions of these people. The network analysis indicated that data connectivity and communication is increasing rapidly. ➔

References

Statistics South Africa. 2011. Mid-year population estimates 2011. Statistical Release P0302. [Online]. Available at: www.statssa.gov.za.

About the authors



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