Why South African enterprises will benefit the most from 5G technology

By Grant Chivandire

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Over the past 40 years, the mobile industry has introduced a new generation of technology every decade. The enhanced capabilities introduced by 5G technology are valuable for business because of the potential to directly impact on core operations, unlocking much-needed efficiencies, and enhancing productivity, to an extent that we have not seen before.

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Key capabilities offer big benefits to business

Prior to 5G, mobile technologies were primarily focussed on the individual consumer. The benefits to business have been indirect, particularly across Africa, where the coverage of fixed-line infrastructure could not provide the mass connectivity needed to impact on core operations.

5G was designed with the needs of the enterprise in mind, and its key capabilities - Enhanced Mobile Broadband (eMBB); Ultra Reliable Low Latency (URLL); and the Massive Machine Type Communication (mMTC) - translate into opportunities to massively improve the core operations of enterprises.

Enhanced Mobile Broadband

eMBB is set to be the first commercial 5G service to launch. It will deliver a higher capacity of broadband availability to both indoor, and outdoor areas, in densely populated areas such as city-centres; office buildings; and public venues like stadiums, or conference centres.

The expansion of 5G coverage will provide a consistent user experience across Fixed Wireless Access and Mobile settings.

Users will be able to access mobile broadband services in moving vehicles including cars, buses, and trains; while enterprises can exploit the benefits of working in the cloud, and imbedding virtual, and augmented reality, within their core operations.

Ultra-Reliable Low Latency

5G's ultra-reliable low latency (URLL) will enable users to establish reliable connectivity, and near real-time responsiveness, even in industrial settings. As a result, machines can be operated remotely, via wireless systems, from control rooms across the country. This could be used for industrial applications such as in the mining, and manufacturing environments. The medical field will also benefit from URLL as it allows for increased image quality and definition, and faster transmission of data – all critical during remotely-assisted medical interventions as they allow off-site medical teams to make faster decisions based on a wealth of information.

Speeds in the range of gigabits per second (Gbps) are possible with 5G, compared to the Megabits (Mbps) range we are experiencing with LTE. These higher speeds combine with URLL capabilities to effectively deliver mission-critical applications such as industrial internet; surveillance; smart grids; and intelligent transportation systems, to enterprises and government.

Massive Machine Type Communication

The rapidly increasing growth in the Internet of Things (IoT), and related applications, will give rise to smart ecosystems comprising interconnected smart cities; industries; homes; and public safety. The accompanying generation of Big Data will require matching analytics capabilities; and the integration of data-driven insights will enable smarter, and faster decision-making across the spectrum.

5G has the capacity to provide IoT connectivity at a significantly higher scale than any of the existing technologies. Industries requiring a greater connection density — such as those using asset-tracking for the logistics sector, or sensor-imbedded manufacturing processes — will find 5G very useful to their core operations. The benefit will be increased efficiency, and enhanced productivity as a result of more streamlined technology-driven operations.

Public or private – it's your choice

Enterprises will have the choice of using a private 5G network – where they own the spectrum and purchase their own network infrastructure; or operating over a public 5G network as an enterprise client of an operator.

In the latter, the network-slicing capabilities of 5G will be used to configure a piece of the public network (network slice) to their specific needs, just as if they are on a private network. Both models can co-exist.

The final choice will likely come down to comparing cost against the benefits for the specific use-cases being pursued. To operate a solely private network, the enterprise will need to factor in the costs of purchasing spectrum; the equipment necessary to run it; and the availability, and cost of skilled specialists, who will be required to design, deploy, operate and secure this advanced network. It is likely that even in private 5G network deployments, Telco operators will still have an important role to play.

Is South Africa ready for 5G?

There is enough evidence to suggest that South Africa is ready for 5G. To date, all major operators have successfully conducted and concluded 5G trials. A few have already launched 5G services, and are working to expand their existing coverage.

The recent, temporary release of spectrum to help operators meet the spike in broadband-services demand, during the Covid-19 crisis, has seen some operators deploying 5G as a complement to current fibre deployments for home

broadband, and mobile users.

While this is a positive step towards addressing the current increased demand for connectivity, the temporary nature of the assignments could potentially limit the scale of further deployments in the short term. Long-term assignments, through an open market process (e.g. auction), will likely encourage bold investments required for 5G infrastructure, to create healthy competition, and accelerate more widespread deployments.

Enterprises will be the primary beneficiaries of 5G deployments, as they are best positioned to take advantage of 5G capabilities, but important choices will need to be made, including which use-cases to target; when to activate them; and what type of network deployment (private 5G network or public 5G network) to use.

Independent specialists who understand technology and business, will play an important role in supporting executive decisions. Furthermore, opportunities exist for additional research and development of cybersecurity, internet of things (IoT), automation and smart solutions that can leverage 5G technology to solve uniquely South African challenges, with the potential to scale into Africa, and the rest of the emerging markets. Businesses should anticipate and prepare for these new opportunities accordingly.

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