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Topic: Challenges facing operators in the transition from 2G to IMT 2000 and 3G in Africa

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Abstract:

The majority of African countries still have networks that are based on the old technologies predominantly analogue FDMA & TDMA. These networks cannot support bandwidth hungry applications such as high-speed data, Internet & transmission of video signals to the terminal or desktop. The access networks in some of the countries are too small and dilapidated. It is therefore very difficult for operators in those countries to reach their customers with new applications even if the core network is modern.

This paper shall analyse the critical issues that hinder the smooth transition of 2G networks in Africa to IMT 2000 networks and beyond. The critical issues of much concern are as follows:

- Existing legacy networks that are narrowband
- Poor and dilapidated telecommunication infrastructure
- Limited frequencies
- Current usage of IMT 2000 and UMTS candidate frequencies by operators and broadcasting stations in 400,600 and 800 MHz
- Deficiencies in spectrum management across the continent leading to RF interference between operators
- Frequency licensing models are too restrictive
- Excessive emission of EIRP power by some telecom operators and broadcasting stations
- Lack of political goodwill from governments in ICT development
- Some African countries do not have ICT policies
- Interference by politicians in regulatory matters
- ICT is not a priority for some governments
- Hoarding of frequency bands by regulators and governments
- Very high tariffs set by regulators and operators

The paper shall look at the above areas and recommend how we can overcome the challenges in order to utilize the available resources and technology in the transition from 2G networks to IMT and beyond. The paper shall also highlight the technologies that can be used by African operators to cost effectively implement 3G using the existing 2G infrastructure in respective countries.

Jared Baraza, Nairobi September 05