



CONVERGENCE & 2/3 GSM EVOLUTION AFRICA PERSPECTIVE

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INTRODUCTION

- Mobile contribution to social and economic development, creating employment opportunities with GDP growth recognised by WB
- Mobile has transformed the way Industries and individuals perform business in Africa
- Mobile if used in combination with Satellite can reach very remote rural parts of Africa
- Mobile provides basic voice; SMS; now moving towards broadband services; MMS; data; image service
- Regulatory reforms tailored to expand access to digital communication services across Africa in cost-effective
- Penetration of mobile exceeds fix in all regions except North America

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Mobile Growth in Africa

- Globally there are over 1.3 billion GSM users, 660 operators in 210 countries accounting for 75% of digital phone market
- Mobile covers 80% of the world population but only 20% use the mobile
- In Africa mobile subscribers outnumber the fix lines by 4:1 and has reached 90.5 million, 115 networks in all countries, however it cannot not be a complete substitute to fix in meeting the needs of the population
- There is suppressed demand in Africa, thus massive potential growth exist
- Africa forms 36% of Emerging Markets: ie markets below average in the World Bank's GNP per capita index (GNI) and has mobile penetration below 50%.

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Mobile Growth in Africa

- Mobile average penetration of 6.5% more than double the fixed line 3% but still one of the lowest in the world
- The prepaid has contributed much to this growth and forms 81% of the subscriber base
- The ease of rollout and the fixed lines remaining at 25.1 million, a penetration of 3% if not declining
- GSM Association Project to rollout low-cost handsets targeting low-end users (US \$40-30 ex-factory) Motorola awarded the Contract to stimulate growth in emerging markets

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Mobile Growth in Africa

- In top growth countries the mobile is growing by 50% per annum on average. To mention a few: South Africa: 21 million subs; Nigeria over 11.7 million, Morocco 7 million, Kenya 4 million
- However operators are all striving to maintain a sustainable ARPU level in low GDP environment
- Investment is concentrated in high reruns areas at the expense of rural population
- Operators need to be assured of broader economic benefits, using attractive Universal Service Policies
- Initiatives ITU digital solidarity Fund can used to extend services to wider cross-section of the society rural to MDG

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Mobile Growth in Africa

- Rural coverage will increase the traffic flow from urban to rural with appropriate interconnection regulations.
- Internet Access and need for broadband services driven by government initiatives to foster e-services such as e-learning; e-health; e-education can be provided economically in rural Africa using the GSM technology
- There exist opportunity for mobile operators to use 3GSM to fill the broadband services gap for low cost voice and high speed data needs
- Considering the geographically large and diverse continent as Africa, widely spread population and span of deserts use of combination of future GSM, Satellite and other wireless technologies will make it possible to reach any part of Africa where there is need

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Sustaining Mobile Growth

- For emerging markets the mobile business is focused to:
 - Sound Business cases that are sustainable for emerging services
 - increasing the number of users, market still growth stage in mobile life cycle
 - Cost reduction of customer acquisition and provide affordable talk time charges.
 - Challenge is to maintain sustainable ARPU level in low GDP
 - Heavy cost associated with taxation and regulations slows growth
- Operators focus on customer care, deliver services they expect and value
- Sound business cases required necessary to attract Investors

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Sustaining Mobile Growth

- SMS has new channel for customer information and product promotion and automated customer care services
- SMS is great success in many countries: for Visa transactions; travel alert; access to product prices; Banking services; voting results etc
- Identify new ways of working and thinking beyond what exists today, GSMA is at tipping point for the Next Generation Mobility (the 3G evolution)
- The basic voice has been dominant, time for network operators to offer their customers enhanced messaging services, but Africa is still struggling for voice access
- Pressure is on to change our legislations to support these innovations as well to sustain the growth of basic voice

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Fix-Mobile Convergence

- Voice calls are made using VoIP and WLAN networks, cable and ADSL connections, without use of a fix or mobile phone specific
- The future removal of barriers that exist between services of different networks by accessing services of different networks
- Need to address realisation of security by risk reduction to win customers confidence.
- Convergence is the vision of fabric connection of people; information and ideas
- For Africa the bottom-line strategic goal should be to make all services accessible, available, and affordable (the 3As), to reduce cost and stimulate growth

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Fix-Mobile Convergence

- First step is for the operators with both mobile and fix assets to unify their core networks, or Virtual Fix or Virtual Mobile Operators
- Realisation of convergent billing solution for prepaid and post-paid is more relevant to Africa at this moment in time
- The billing options available: per minute/ second, per megabyte/kilobyte confusing the customers as move to content based services.
- The FMC end user perception will be one network, one terminal single user ID; a single bill for Voice; SMS; GPRS; 3GSM; Wi-Fi
- As operators are moving to flat rate, and consideration to be given on how can value be incorporated

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2G – 3GSM Evolution

- On Global scene SMS dominated and enhanced by the development of SMS Inter-working agreements
- The growth of MMS not yet explosive, talks imminent
- There over 60 3GSM networks in 30 countries, few countries in Africa
- Migration of core services off the legacy networks
- Adopting EDGE where there is no 3G or delayed rollout, but used mainly in North America
- 3G mobile video downloaded straight to customer handsets in Europe, e.g. Vodafone Live in a number of countries
- There 6 networks in Africa offering commercial GPRS: South Africa (3); Egypt (2) and Kenya (1)

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2G – 3GSM Evolution

- Use in micro-transaction payments for prepaid top-ups and move to m-commerce for mobile entertainment; ring tone service; games; digital music with the development of Mobile Internet
- Spam; unsolicited advertisements copyrights and digital rights management (DRM)
- Mobile security is more than just protecting virus, and worms attack, it about protecting critical business access and information
- Provide an open and secure architecture for future wireless services

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2G – 3GSM Evolution

- **Integrated Messaging:**
 - GSMA working on innovative solution to deliver Integrated Messaging
 - Customer friendly and cost impact reduction on existing infrastructure
 - Support for SMS; MMS; and Instant Messaging and e-mail, ring tone, ring back tones and false background tracks, LBS, and multiplayer gaming, Java applets over GPRS and 3GSM
 - Year 2005: for MMS and 2006 as beginning of Integrated messaging – GSMA working program
- **Integrated messaging future in Africa:**
 - Backward compatibility to minimize on cost impact
 - Handset development and cost: challenge to manufactures to develop low-cost handsets
 - Cross-Network Integrated messaging traffic and roaming is necessary
 - Is Integrated messaging approach a solution for Africa?

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2G – 3GSM Evolution

- MMS Interoperability: Difference in interpretation of standards: GSMA task force defining four content classes:- image basic; image rich; and video rich
- MMS Roaming: GSMA defining charging principles; MMS size classes and Inter-working agreements and the GRX carriers
- The task force moved to address area of content-to-person messaging
- Shortage of handsets and lack of content agreements
- Mobile share of market for video and music grows in Europe, Africa will follow though

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2G – 3GSM Evolution

- The WiFi and Mobile WiMAX designed to handle more data than 3GSM, niche market not a mass market for Africa
- There is need for 3GSM as W-CDMA inherent increasing demand for capacity
- OFDM-based and WiMAX could offload the data traffic to protect the revenue generated by from the voice traffic over the cellular networks
- If WiMAX could backhaul ADSL and complement 3GSM then both will have use in Africa
- However building parallel networks will not be economical and with 3GSM fully developed can be used in Africa here the need of capacity

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Policy & Regulatory: Issues

- Convergence should not misconstrued to licensing services with total disregard to technology and standards to be applied
- How do we address licensing of Infrastructure and extension of 3G licenses to exiting 2G licensees
- Most the existing 2G licenses have a life span of 10-15 years on average, renewable for similar or shorter periods.
- Will convergence imply increase in license fee when the current 2 G licenses are renewed Africa?
- The impact on the USA Policy? Will it imply additional USF?
- Licensing policies that will support the growth of mobile and convergence in decades to come

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Licensing in Convergence Era

- Some Regulators intends to adopt a model based on the following distinct and technology neutral market categorization:
 - **Network Facilities Provider (NFP)** – who shall own and operate any form of communications infrastructure (based on satellite, terrestrial, mobile or fixed)
 - **Applications Service Provider (ASP)** – to provide all forms of services to end users using the network services of a facilities provider
 - **Contents Services Provider (CSP)** – to provide contents services such as broadcast (TV& Radio) material, and other information services and data processing services etc
- The operators position is that clear guidelines, and consultation with all stakeholders be undertaken before making this move. It may be too early for final decision
- Operators recommends and expects phased implementation

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Licensing in Convergence Era

- Licensing cellular mobile operators (GSM) to construct and operate own international gateways if required
- License additional Internet Backbone and Gateway Operators , Broadcast Signal Distributors ,etc
- License commercial Satellite in line with WTO General Agreement on Trade in Services (GATS)
- Allow for direct Interconnection between mobile networks mobile ; mobile to fixed and vise versa
- Allow for operators to provide services without hindering their growth in area as VoIP; Image, Internet, using 2.5/3G technologies
- Licensing Internet exchange points at regional and national level to lower the cost of international bandwidth connections by using regional peering and implementation of International Charging Arrangements for Internet Services

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Policy & Regulatory & Ethics

- Content control on the side of pornography censoring, restrictions on promotions of such services
- Commercial mobile content easier to regulate than the fix counterparts because majority of downloads through operator's portal
- However it is a difficult task with prepaid customers as in Africa
- Need to for the operators to opt for voluntary code of conduct, requiring customers to provide proof of age for adult content as pornography and gambling.
- Copyrights and Digital Rights Management (DRM); are real problems to be addressed by GSMA

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Policy & Regulatory: Spectrum

- The IMT-2000 Spectrum Reservation for 2/3G Evolution
- The need for GSM 900 and GSM 1800 to sustain rapid growth
- The need for reservation on the spectrum for 2-3G evolution in Africa
- Interference results in call drops and loss of revenue
- It is important to note that without adequate spectrum the growth of mobile cannot be sustained
- Spectrum Management is key aspect for the sustainable growth of mobile and the evolution to NGN

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FMC Challenges in Africa

- Human resource capacity building: regulator and operators as well
- Lack of infrastructures in mobile but more so in fix currently
- Lack of supportive infrastructure as access roads and commercial power sources
- License Policies in areas of International gateways and Satellite Services
- Convergence should not mean over regulation and price control and additional taxation
- Development of ICT policies and regulations
- Private and Public Sectors Partnership
- Create investment attractive opportunities

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CONCLUSION

- Implementation of Convergence & 2/3 G evolutions path should be gradual as the technology evolves to include others technologies as Wi-Fi; Wi-MAX
- Policies and regulations are required for services as VoIP
- Regulatory bodies consider phased implementation and gradually, not to opt for radical changes
- Growth sustainability needs reservation for IMT-2000 spectrum, putting in place the right policies to support emerging services
- Effective management of the resources necessary to achieve the MDG goals by all the stakeholders

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THANK YOU

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