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Towards A Vision to Connect Africa

Background Paper – Session One

1. BACKGROUND

During the World Summit on the Information Society (WSIS), world leaders from Africa and around the globe recognized the significant role of Information and Communication Technologies (ICTs) as a catalyst to help achieve the UN Millennium Development Goals. ICTs are not only transforming the way we live, work and interact, they are also critical in the achievement of key goals for development in the fields of health, education and poverty reduction. At the WSIS, world leaders also agreed on a set of specific indicative targets, including ICT connectivity and applications, to be achieved by 2015¹.

The *Connect Africa Summit* is a key initiative aimed at mobilizing resources for WSIS implementation, especially for initiatives related to infrastructure development and connectivity. This Summit will develop an African vision for connectivity to unlock the vast potential of the continent and offer major new investment opportunities to investors, consistent with the priorities expressed in the UN Millennium Declaration. How best can this be achieved? How can the business-oriented incentives of operators and investors be reconciled with the socio-economic priorities of governments for the welfare of all Africa's inhabitants? Session One outlines a vision to Connect Africa.

2. OPPORTUNITIES

Africa is a profitable place to do business. As the rise of home-grown pan-African mobile conglomerates bears witness (e.g. MTN, Vodacom, Orascom, Celtel), African markets offer enormous potential to investors. These players are big, profitable and cash-rich, enjoying growth rates that their counterparts in more mature markets can only envy. By 2005, the seven-largest strategic mobile operators had grown to account for over half of all Africa's mobile subscribers — a market that barely existed ten years ago was estimated to be worth \$25 billion in 2005².

Traditional estimates of potential market size, based on official figures for Gross Domestic Product and average income, have often overlooked the strong informal sector in many

¹ See Paragraph 6 of the [WSIS Geneva Plan of Action](#).

² Mo Ibrahim, former CEO of Celtel.

African economies and the impact of falling prices, yielding historically pessimistic projections of potential market demand. In telecommunications, the fixed line market in particular saw comparatively lacklustre growth, hampered by long waiting times for installation, poor maintenance and a lack of competition.

The cell phone market has cut through all these problems to sell handsets directly to consumers, offering pre-payment options with micro-recharges, and using cheaper, easily installed and maintained infrastructures. As the mobile market proves, consumer demand for useful and suitable ICT services is real and substantial. Investors, manufacturers and operators who can position themselves effectively in the market can realize significant profits.

Africa is an innovative place to do business. Furthermore, mobile operators are not just following models developed elsewhere, but are developing their own vision of African connectivity and communications. Unlike operators elsewhere, African strategic investors tend not to be saddled with debt from 3G licences and have been free to develop their own high-volume, lower-margin strategies. African operators are pioneering innovative new services including mobile banking, micro-recharging methods and flat-rate pricing models. For example, Safaricom's innovation of m-pesa in Kenya allows consumers without bank accounts to deposit, transfer, pay for and withdraw money using their SIM card. Safaricom is planning to introduce a similar model in India shortly. Similarly, Celtel has demonstrated genuine business leadership in dropping roaming charges for clients in Eastern Africa. African operators are not just adopting business models developed elsewhere, but are forging their own new models, suited to the African market.

New technologies are being introduced. At the start of 2007, IMT-2000 (3G) mobile services had been introduced in seventeen African economies, broadband was commercially available in thirty economies, WiMAX networks were being deployed in at least nine economies³ and VoIP had been formally legalized in seven economies⁴. Several operators (both fixed and mobile) have announced that they are deploying Internet Protocol (IP)-based backbone networks, in line with strategies to deploy next-generation core networks⁵. Some eighteen countries have now established Internet Exchange Points (IXPs) to reduce transit costs from the international routing of domestic and regional Internet traffic. Far from being left behind, some African operators and ISPs are in the forefront of introducing new technologies.

The African mobile market is growing and mobile operators are expanding. Four-fifths of fresh global market growth over the period 2007-2010 is now predicted to originate in emerging markets⁶ - investors cannot afford to ignore developing countries and must look to develop business models tailored to meet the needs of emerging market consumers. The African mobile market will account for its share of this growth - it has grown from just 16 million mobile subscribers in 2000 to 198 million mobile subscribers in 2006 and is projected to reach 278 million subscribers by the end of 2007, the largest growth yet in any single year (see the Background Paper on *Extending Rural Access in Africa*). In selling services to high-growth emerging markets, African operators are exploring high-volume, lower-margin sales strategies, as discussed above. African operators have already gained considerable experience with innovative new business models and are now capitalizing on this experience through expansion into new markets,

3 Including Algeria, Morocco, Mozambique, Namibia, Nigeria, Kenya, South Africa, Tunisia and Uganda in the 3.3-3.8 GHz range of spectrum – see <http://www.maravedis-bwa.com/>.

4 Algeria, Kenya, Mauritius, Somalia, South Africa, Tanzania and Uganda (with another six economies in the process of doing so, including, for example, Egypt, Ghana and Nigeria – see <http://www.itu.int/osg/spu/ni/voice/papers/FoV-Africa-Southwood-draft.pdf>).

5 Page 48, "Trends in Telecommunication Reform 2007", ITU, Geneva.

6 Nokia "Voice services in new growth markets", presentation to the ITU workshop, [The Future of Voice](#), 15-16 January 2007, by Rauno Granath, Director of Emerging Markets, Nokia.

including Vodacom's recent moves northwards within Africa and Orascom's expansion into new markets in the Middle East and Asia, including Pakistan and Bangladesh⁷.

3. CHALLENGES

New business models and financing mechanisms are needed. As elsewhere, getting the technology 'right' is only half the answer for Africa. New business models and financing mechanisms are needed for selling equipment and services to consumers with incomes that are not necessarily low, but often seasonal and subject to cyclic variations. The predominance of prepaid mobile subscriptions in developing countries arises partly from its ability to match consumer expenditure with variable or seasonal incomes. Financial institutions can help extend access to telecommunications services to many more people through new micro-financing mechanisms allowing consumers to buy and pay for ICT devices, as the Grameen Bank model has demonstrated (now being introduced in Rwanda, Uganda and elsewhere — see the Background Paper on *Extending Rural Access in Africa*).

Governments could also reform their approach to the taxation of telecommunications. Consumers in developing countries often end up paying far more for equipment (e.g., mobile handsets and laptop computers) than in industrialized economies through the imposition of heavy import duties and taxes on luxury purchases. A pioneering report by the GSM Association in 2006 has suggested that governments stand to gain far more in tax revenues by reducing one-off import duties and sales taxes on the purchase of luxury goods and by taxing the ongoing revenues from mobile call services⁸.

Regulatory reforms are underway, but more may be needed in some countries. In many countries, the missing link to improved telecommunications is the policy and regulatory framework. It is revealing that, for Africa's pioneering success story of mobile communications, forty-four countries (or 80 per cent of all African economies) had introduced a degree of competition into their mobile market by 2006⁹. As Session Five will examine, forty-five African economies have now introduced regulators, while thirty (55 per cent) of African economies have partially or fully privatized their incumbent operator¹⁰ (see the Background Paper on *Creating an Enabling Environment for Investment*).

Gaps in infrastructure remain. As Session Two will show, significant gaps still remain in Africa's backbone network connectivity. The high-speed Internet services that are vital for business, government and consumer applications continue to be either very expensive or unavailable in much of Africa beyond main population centres. Furthermore, many landlocked countries in Sub-Saharan Africa rely on expensive and slow satellite services for Internet access, while capacity on undersea cables, where available, is priced well above the global average. These backbone gaps present challenges, but they also offer tremendous opportunities for investors and "win-win" public-private partnerships (see the Background Paper on *Broadband Infrastructure in Africa*).

Services are expensive and mainly available in urban areas. Session Three will examine issues regarding access to ICTs. The main town in each country can account for up to one quarter of the population, but typically accounts for as many as three-quarters of total fixed lines¹¹ (see the Background Paper on *Extending Rural Access in Africa*). Furthermore, the cost of equipment and services puts many services (including Internet and broadband services) far beyond the reach of most citizens. Prices of

7 The Economist, "Out of Africa", 7 December 2006.

8 GSM Association "Global Mobile Tax Review 2006-2007", available at: <http://www.gsmworld.com/TAX/>

9 ITU World Telecommunication Regulatory Database.

10 ITU World Telecommunication Regulatory Database.

11 One obvious exception is Djibouti, where the main town accounts for nearly all the population of the country and a similar proportion of mainlines.

telecommunication services around the world have been falling steadily since 2000¹²; nevertheless, prices in Africa remain high and the high cost of services has been identified as a key bottleneck hindering access (see the Background Paper on *Creating an Enabling Environment for Investment*).

Rural connectivity is weak. Given that an estimated two-thirds of Africans live in rural areas, improving rural connectivity is vital to getting them online. World Bank estimates show that some 57 per cent of the total population in twenty-four Sub-Saharan African countries was covered by a mobile signal in 2007¹³. ITU estimates that 45 per cent of Sub-Saharan villages were covered by a signal in 2006 — although only 7 per cent of rural households are estimated to subscribe to mobile services¹⁴. Less than 3 per cent of Sub-Saharan African villages had fixed line service, while under 0.5 per cent of them had a public Internet facility¹⁵. To help extend access to rural areas, some African countries have established Universal Service Funds (USFs), including Egypt and Uganda¹⁶.

Bottlenecks with rural electrification and the installation and maintenance of infrastructure mean that rural connectivity currently lags far behind urban areas. Nevertheless, new technologies such as WiMAX and CDMA-derived technologies offer great potential for extending coverage over large areas with low marginal costs (compared to higher marginal costs associated with new DSL ports or optical cables).

Services, content and capacity-building: Session Four will examine the development of new services and content appropriate to local needs. Promising applications are now being deployed in health and education to improve provision of basic public services. Online marketplaces and portals now enable farmers and traders to access market information easily using ICTs and to sell their products for higher prices (see the Background Paper on *Services, Content and Capacity-building*). However, applications that can be deployed and scaled up quickly are needed, especially for women and for young people, who account for the majority of the population of Sub-Saharan Africa. Session Four will explore the training and capacity-building needed to promote ICT skills and the local development of applications.

4. CONCLUSIONS AND RECOMMENDATIONS

In designing an African vision of connectivity, the *Connect Africa Summit* will have achieved a major milestone in developing African solutions to the specific needs of African markets. Session Six, “A Commitment to Connect Africa”, will draw together the key outcomes and conclusions emerging from the Summit, including the most appropriate strategies for how best to achieve the widely-endorsed WSIS and UN Millennium Development Goals (MDGs).

A major challenge that remains is how best to reconcile the business-oriented incentives of operators and investors with the sometimes conflicting socio-economic priorities of governments for the welfare of all Africa’s inhabitants, expressed in the WSIS goals and MDGs. As discussed above, some operators are exploring higher-volume business models targeting broader markets. New financing mechanisms by financial institutions are helping extend access. Governments can also play their part with regulatory reforms to help align the profit-oriented incentives of investors with principles of extending access through, for example, market reforms, licensing roll-out requirements, USF levies and by moderating their approach to the taxation of communication services.

12 ITU, “World Information Society Report 2007” [www.itu.int/wisr/] and “Trends in Telecommunication Reform 2007”, ITU, Geneva.

13 See Winrock International and Pyramid Research (2007): “Costing ICT infrastructure needs for Africa”, a Report to the World Bank.

14 Paper on Village Connectivity, “Measuring Village ICT in Sub-Saharan Africa”, ITU, 2007.

15 Paper on Village Connectivity, “Measuring Village ICT in Sub-Saharan Africa”, ITU, 2007.

16 ITU World Telecommunication Regulatory Database 2007.

With the aim of accelerating progress in the implementation of the Plan of Action established during the World Summit on the Information Society and the UN Millennium Development Goals, assembled Heads of State and Government and Ministers from African countries have shown their willingness to collaborate with partners from industry, financial institutions, international and regional organizations and civil society towards achieving the following **Connect Africa Goals**:

Goal 1: Interconnect all African capitals and major cities with ICT broadband infrastructure and strengthen connectivity to the rest of the world by 2012.

Goal 2: Connect African villages to broadband ICT services by 2015 and implement shared access initiatives such as community tele-centres and village phones.

Goal 3: Adopt key regulatory measures that promote affordable, widespread access to a full range of broadband ICT services, including technology and service neutral licensing/authorization practices, allocating spectrum for multiple, competitive broadband wireless service providers, creating national Internet Exchange Points (IXPs) and implementing competition in the provision of international Internet connectivity.

Goal 4: Support the development of a critical mass of ICT skills required by the knowledge economy, notably through the establishment of an ICT Centre of Excellence network in each sub-region of Africa and ICT capacity-building and training centres in each country, with the aim of achieving a broad network of inter-linked physical and virtual centres, while ensuring coordination between academia and industry by 2015.

Goal 5: Adopt a national e-strategy, including a cyber-security framework, and deploy at least one flagship e-government service as well as e-education, e-commerce and e-health services using accessible technologies in each country in Africa by 2012, with the aim of making multiple e-government and other e-services widely available by 2015.



**Connect
Africa**