THE IMPACT OF MOBILE PHONES IN AFRICA

Prepared for the Commission for Africa

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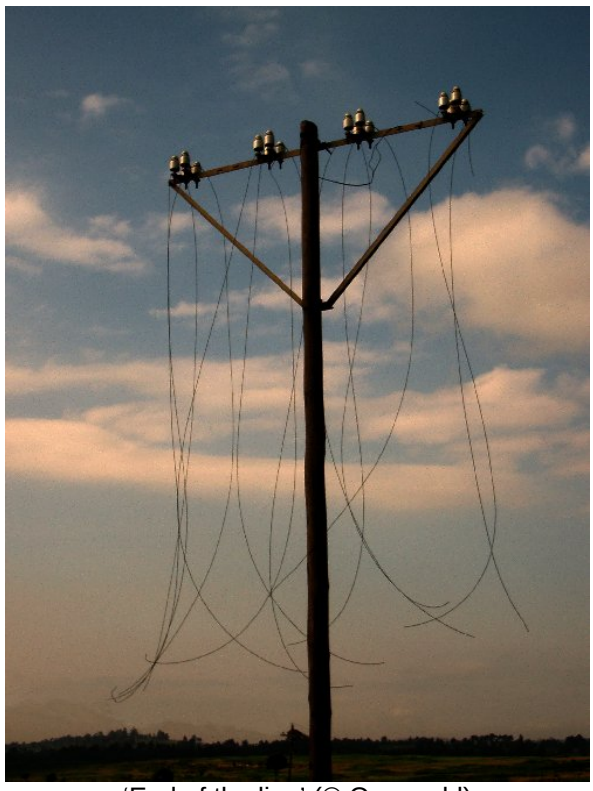

'End of the line' (© Oneworld)

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Executive Summary

The demand for mobile phones in Africa in the last few years has been more than most people expected and continues to expand. Operators have traditionally target urban areas, but it is the demand from rural and low income areas that have exceeded all expectations. The use of phones has already become part of African culture. As urban markets become saturated, the next generation of phone users will be rural based, and they will be using mobile phones.

Demand is driven by voice as opposed to data. Social uses such as keeping in touch with family and friends feature strongly. Benefits include a sense of wellbeing, improved income (e.g. arranging cash transfers from family members), and reduced risk (e.g. call for assistance). There is a growing body of evidence of the indirect impact on the poor arising from improvements in the delivery of pro-poor services that can be achieved through mobile phone based applications (many based on SMS).

In the future, voice telephony will converge with digital services, so mobile phones will enable access to a range of data based services. In the longer term, handheld devices will combine features of radio, television, camera, mini computer (PDA) and phone. These will be even better suited to the culture of Africa's poor, and will offer almost limitless opportunities for delivering services tailored to the needs of the poor. The challenge is to ensure the poor can access services, and that services are useful.

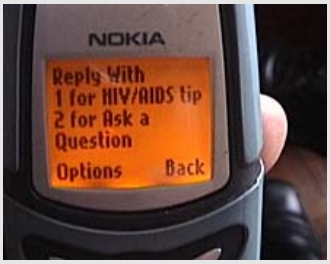
This paper proposes three key areas where support from high level institutions could help African countries exploit the potential that mobile technology offers to the vulnerable:

- Ensure the poor benefit from **expanding access to networks** - develop new business models for network investment which reflect the behaviour of African consumers. This includes low cost, low tariff models, and making sure universal access strategies are effective in extending networks to remote areas. Ensure the poor have equity of access.
- Ensure the poor benefit from the phone network through **appropriate services**. Services relevant to the poor need to be stimulated. Many of the existing commercial services – horoscopes, football results – have little relevance to the poor. Stimulate the development of locally designed, mobile based solutions to African opportunities by supporting local technology entrepreneurs (both for profit and not for profit).
- Ensure the poor benefit from access to **financial services,** enabled through mobile phone networks. Integrating mobile phone operators into the reform of financial services will accelerate the introduction of electronic services to the rural poor. Mobile technology lends itself to this application, and phones offer a means of access through voice or text.

A common theme emerging from the actions proposed is the need to explore innovative partnerships with a view to finding unique solutions to conditions in African countries. Africans have already seized on the opportunities presented to them by the advent of mobile phones. There is now an opportunity to extend the evident benefit to the most marginalized communities, and a challenge to make sure that the benefits of this technology are maximised.

Delivering services by mobile

The Open Knowledge Network project is running a pilot project using SMS push and pull services relating to health (special focus on HIV/AIDS), jobs, and community news. The pilot is based in one of Nairobi's slums, where most people have access to mobiles.



1 Africa's experience of mobile phones

The demand for mobile phones across African is huge and rapidly expanding. 'An Overview of Evidence' pointed out that less than 3% of the population had access to a telephone in 2001, but the number of mobile subscribers has already grown to over 50 million, representing over 7% of the population[1]. The number of subscribers is currently expanding at around 35% a year, and is forecast to continue over the next few years. The rapid expansion of markets is clearly linked to liberal regulatory environments, where operators have been given freedom to respond to customer requirements. Globally, the industry recognizes that its next 1billion customers will be won by companies that develop business models that work for poorer people. This presents enormous opportunities for the delivery of pro-poor services.

Mobile phones are, therefore, becoming increasingly important to African countries:

- as an infrastructure service - improving efficiency of markets, promoting investment, reducing risk from disasters, and contributing to empowerment;
- as an economic sector – mobile operators can make big profits, and pay taxes;
- as a development tool – case studies present innovative applications where mobile phones have increased the efficiency of service delivery to the poor (e.g. weather information, market prices), or opened opportunities for new services e.g. tracking of diseases
- as a household expenditure that maintains social capital and contributes to economic management

The poor in Africa tend to use public access facilities and to share phones, so low teledensity figures can mask the extent to which the poor access telecommunications services. Research shows that in 'typical' rural districts of Africa, up to 80% of households make regular use of phones[2]. One of the key features driving growth in mobiles is that they are mobile, and inherently suited to remote areas with poor infrastructure. In addition, the prepaid system of low denomination scratch cards is perfectly matched to the economic situation of many Africans, and it is recognized that mobiles offer potentially cheap means of communicating, especially through the use of SMS and 'beeping'[3]. It is important to consider constraints facing women in access to and use of mobile phones, but preliminary evidence indicates that the phone appears to be a gender neutral tool.

Research confirms that at present it is social uses that drive phone use amongst the poor. "Chatting" and "keeping in touch" is the most common use of phones. Perhaps the most important impact of phone use is and enhanced sense of wellbeing. It also saves time, makes business more dynamic, improves financial management, all of which tend to improve household income and reduce risk.

We can conclude from the above that phones (especially mobiles) are already part of African culture and are not just for the elite. But what about the future? We acknowledge it is difficult to make predictions - ten years ago it would be difficult to predict the current uptake of mobile phones in Africa. However, it is clear that mobile voice telephony will converge with other digital technology (e.g. VoIP). Therefore, it seems reasonable to suggest that within ten years the mobile phone will be able to access a range of data based services (e.g. market and other agricultural information, financial services), using either voice or text. In 30

[1] A brief overview of mobile phone markets and use in Africa is presented in Appendix 2.
[2] McKemey et al. Innovative demand models for telecommunications services 2003. DFID. www.telafrica.org
[3] Dialling a number and hanging up before it is answered, in the hope that the other person will call back.

years, technology will permit every household in Africa will have access to a handheld device capable of being an all in one radio, television, camera, mini computer (PDA) and phone. However, when we consider the almost limitless uses to which these devices could be put, we need to ask whether the poor will be involved and whether they will share in the benefits. This paper[4] presents three areas where steps can be taken to ensure that they do:

- Ensure the poor benefit from access to **expanded phone networks**. This includes making sure that universal access is effective in expanding the network to remote areas, and that access is affordable i.e. ensure the poor have equity of access;
- Ensure the poor benefit from the phone network through **appropriate services** by stimulating entrepreneurs to develop pro-poor services
- Ensure the poor benefit from **financial services** through the phone network (e.g. Stored Value Accounts); the mobile phone offers many opportunities including accessing banking through voice or text.

A common theme emerging from the three priority areas presented is that viable solutions depend on innovative partnerships.

2 Expanding mobile phone access

2.1 Vision statement

Our vision is to see African mobile markets grow beyond the point at which they might normally peak. Within 10 years a number of 'beacon' countries will have experience of innovative approaches, and consensus on best practice should emerge regarding how to increase subscriber numbers at the bottom end of markets. In the long term, all countries will have devised appropriate policies, such that mobile devices will be usable everywhere, and the vast majority of the population will have affordable access, and will enjoy the improvements in quality of life that this will entail.

2.2 Why is this a Key Opportunity for Africa Now?

The rapid take-up of mobile communications services in Africa, particularly amongst low-income customers, has surprised Operating Companies. In response to this unexpected demand, Operating Companies have initially concentrated on providing coverage in high growth (high density) urban areas, with an emphasis on building subscriber numbers, and they have been remarkably successful in building this business.

The nature of demand for mobile communication services in Africa has caused some Operating Companies to revisit their thinking about profitably serving low-income customers. Some innovative Operating Companies have learnt from the marketplace by observing how customers (both individuals and small scale entrepreneurs) informally bulk-up (or aggregate) demand by on-selling single account services to other customers and have adapted their own services accordingly, such as through Vodafone's Community Services in South Africa. In this context "voice is the 'killer' application"[5].

Despite the organic growth in these markets there have been few incentives for North based Operating Companies to change their core business models (in which capital resources are

[4] It is recognised that this paper has been researched by non-Africans, however the comments draw heavily on field research and experience of working on the continent and discussions with African Stakeholders.
[5] Vodafone's Director of International Institutions, personal comment to the author.

reserved for the development of high margin products with short-term revenue-stream potential) with maximisation of average revenue per user (ARPU) anchoring business strategy. Indeed, commercial providers have generally been slow to develop innovative approaches to providing coverage to the mass market at affordable prices[6].

In addition, regulatory disincentives may prevent Operating Companies from extending access to low-income customers or to low-density areas. The prosperity of some Operating Companies means that they are (perhaps understandably) viewed as "cash cows" that may contribute substantially to national revenues through taxation and other contributions. However, the impact that these disincentives may have, over the longer-term, upon the Operating Companies appetite to serve the needs of low-income customers, particularly in rural areas, has not yet been fully considered.

The approach currently taken by Operating Companies and regulators threatens to prematurely slow the growth in access to mobile telecommunications services. This means that although the current growth rate is very rapid, penetration as a proportion of the total African population (or market) remains low. Operating Companies and regulators may be tempted to skim profits/revenue if a short-term view of this market is taken, and such a strategy threatens the more extensive growth that will truly benefit Africans.

Alternatively, a significant opportunity exists to take advantage of the unique features of African markets, to extend access to mobile networks in ways that are profitable for the Operating Companies and beneficial to the governments and people of Africa. The ICD in Africa paper asserts that the technology to extend low cost networks exists, but the regulatory and business environment needs to catch up.

Box 1: Innovative Business Models – some examples

The introduction of **prepaid** technology completely revolutionised mobile markets in developing countries, by removing the tie between use and an account holder (with a physical address).

Sonatel's mobile operator, Alize, offered a pre-paid 'student' tariff which included **free SMS** use. The 'student' criteria did not seem to be strictly enforced, and SMS use grew rapidly. Alize later charged for SMS, but usage remained high as people were used to it.

Operators compete on several criteria, including **services charges** and air time rates. As competition increases and cost drop, operators change the mix of charges in their offer. Extending the life of air time (bought on prepaid cards), reducing service charges, and lowering the credit limit for keeping an account live would all help attract low income customers.

Nokia's **E-refill** is available in increments that are much more affordable than traditional scratch card pre-pay schemes (typically $5 minimum). In the Philippines E-refill was attracting one million load transactions (of as little as $0.54 each) per day from only one provider.

MTN Mobile Payphone, featured in the New Vision Newspaper.

A mobile pay phone is another innovation by MTN

2.3 Purpose Statement

To foster the development of new business models for network extension and access throughout Africa, that reflect the unique features of African markets. This will require

[6] For example, ARPUs for India and China are US$9.8 and US$12 respectively, compared to a figure of about US$55 in the U.S. The ARPU for India would appear wholly insufficient to support necessary and huge capital expenditure in new networks in rural areas, where many of the poor live. However, India's operators are building networks on an expected ARPU of as little as US$7 a month.

enabling the **pull** of new market opportunities balancing the gentle **push** of well-considered regulations and incentives. It implies Operating Companies exploring new ways of providing services to market segments that may not currently meet corporate measure of profitability. It also implies a key role for regulators, who must find a balance between their duties of managing through control, with their wider responsibilities of enabling the development gains that are likely to result from a financially sustainable and accessible telecommunications network.

2.4 Relevance to CfA's priority themes

- **Governance, Peace and Security**: African organisations are becoming better managed and more transparent through the use of technologies that join up information e.g. microfinance, health care. These features can be enhanced through the use of mobile communication networks.
- **Human Development, Culture and Inclusion**: the cost (and viability) of providing public services at national scales can be significantly reduced through the use of networked systems. Mobile telecommunications can bridge network gaps and connect rural communities.
- **Opportunity and Growth, Aid and Debt Relief**: many African entrepreneurs are making innovative uses of mobile communications to overcome barriers to information and services. Expanding networks will provide new employment and commercial opportunities, and help realise the potential of African entrepreneurs.

2.5 The role of stakeholders

The target groups are operating companies and telecommunications regulators. Operators need to be willing to engage in research and to change the way they do business. Regulators need to be aware of new technology, and to be prepared to explore new partnerships in the industry. Both groups need to work together to share information and experience. Local private sector and possibly civil society or government structures may have a role as micro operators. The role of wider stakeholders is presented in Appendix 1.

2.6 Recommendations

Although market conditions throughout Africa are not homogenous, the Commission is well positioned to influence the development of the overarching principles that can underpin the maximum possible extension of mobile communications networks.

Recommendations for the G8/EU: establish a task force to develop a common set of principles to guide policies regarding network extension and access to networks. The task force will:

- work with Operating Companies (and Regulators) to foster the development of business models that take advantage of the unique features of African markets;
- undertake research to support the development of low cost of entry models for providing mobile coverage (e.g. micro-telephone operators[7]);
- work with regulators (and Operating Companies) to develop an enabling environment in which innovative approaches to achieving market reach are viable.

Recommendations for African countries:

[7] As proposed in 'Profitable universal access providers' Engvall and Hesselmark. SIDA. 2004

- work with governments to formally explore the value of mobile telephony in supporting development goals, and to develop policies (and policy statements) that position mobile telecommunications networks as nationally important development tools (as with microfinance, for example);
- ensure that the commercial objectives of the mobile telecommunications industry (as a whole) are taken into account when planning national infrastructure development (including budget allocation); and
- promote a long term view of investment in the telecommunications industries through the use of tax incentives, and shared risk and investment by operators and governments.

3 Capacity Building of African Entrepreneurs

3.1 Vision Statement

The rural poor currently use mobile phones mostly for social purposes, but the vision is for the poor to be able to access a wide range of really useful services using mobiles. The poor will benefit from improved services, and will be empowered by opportunities to engage with governance structures. In the long term, it will be the norm for government departments to use portable technologies to deliver public and pro-poor services. Pro-poor services and applications will be driven by a network of African technology entrepreneurs and a vibrant private sector working in collaboration with development agents.

3.2 Why is this a Key Opportunity for Africa Now?

Straightforward voice based use of mobile phones has a direct impact on the poor e.g. keeping in touch with family, improving business, getting help in emergencies. Moreover, the widespread use of mobiles provides a platform which can be used to deliver a range of services to the poor, resulting in an indirect impact on the poor. Recent case studies illustrate a number of innovative pro-poor applications of mobile phone technology in a range of sectors such as:

- agriculture (Manobi provide local market prices),
- health (On-Cue improve use of drugs), and
- community information (OKN mobile).

Whilst most of these examples use data services offered under GSM, notably SMS, mobile phones tend to be used as an integral part of hybrid networks using various interface technologies e.g. internet, WAP, and voice. The power of such applications lies in their ability to provide local content in local languages.

Market information – Manobi

Manobi have offered services such as market and trading information for farmers in Senegal, supply chain management services and credit information since 2003. Manobi has recently entered the South African market where they have developed a rescue system for fishermen, using GSM and satellite tracking. They have just won an award for Most Innovative Company and Overall Organisational Winner of the year by the Africa ICT Achievers Award.

But are these example businesses or development projects? In some cases technical solutions have been developed by entrepreneurs but funding for implementation has been provided by

donors. In others, solutions have been devised by NGOs which focus on the application of technology. Our definition of entrepreneurs, therefore, includes highly qualified individuals from the private and public sectors and civil society. Recent success of the mobile phone sector in Africa has demonstrated that it is possible to make a profit from providing services to low income consumers and this has attracted private sector entrepreneurs, many of whom provide services that benefit the poor. An opportunity exists to scale up benefits to the poor by encouraging African entrepreneurs to enter low income markets.

Whilst good case studies exist, most are still in their pilot / demonstration phase and have yet to prove their profitability, sustainability and scalability. Evidence indicates that there are a number of common constraints faced by African ICT entrepreneurs:

- Weak networks and problems of access to key actors (especially telcos, on whom they depend).
- Lack of access to capital and knowledge of financial opportunities (falling between the two chairs of micro financing and VC funding).
- Limited business skills as well as the fact that the African environment does not always foster a spirit of entrepreneurialism.
- Lack of access to technical systems and skills, with few software offerings relevant to content service delivery.
- Lack of collaboration between stakeholder groups, which would enable sharing of best practice and learning what has worked.
- Lack of understanding of hybrid social/commercial models. Outdated pigeonhole thinking creates problems for social ventures in investment, support and partnership building.

The opportunity is in lowering these barriers and thereby speeding up the development outlined above. There is growing recognition of the potential benefits from this type of approach, and a number of initiatives are beginning to explore ways forward[8].

3.3 Purpose Statement

To stimulate the development of locally designed GSM based solutions to African opportunities through support to local technology entrepreneurs (both for profit and not for profit).

3.4 Relevance to CfA's priority themes

SMS and campaigning

SMS massages helped bring down the president of the Philippines in 2001. Thousands of Filipinos, unhappy with their corrupt government, took to the streets to demonstrate against President Joseph Estrada, ultimately forcing him to resign. Mobile phones played a key role in stimulating and organizing the protests, as SMS was used to spread the word on where demonstrations were being held.

- **Governance, Peace and Security**: Mobile phones are a powerful tool in democratic processes . They offer a two-way channel that can be used to give poor people a voice, and to help government bodies engage with marginalised communities and disseminate public information (increased transparency).
- **Human development, Culture and Inclusion**: Mobile applications have already demonstrated the potential to address Africa's health challenges. Future generations of portable devices will be able to transfer educational materials to rural schools (e.g. Bridge*it* pilot project, the Philippines). Furthermore, voice based applications can be used in any language.

[8] e.g. Global Knowledge Partnership, GSM4 Africa group research for DFID (2004).

- **Opportunity and Growth, Aid and Debt Relief**: Mobile phones stimulate growth in the informal sector by improved access to information. Improved communication increases mutual accountability between NGOs and donor organizations e.g. financial accounting applications.

3.5 The role of stakeholders

Small IT companies and local NGOs with a high degree of IT skills are seen as most important in driving innovative applications; they are the target for support. Support can be channelled through existing donor funded private sector support initiatives. The poor themselves, and agents delivering services to the poor (e.g. NGOs, government), will benefit from mobile based applications. The role of wider stakeholders is presented in Appendix 1.

3.6 Recommendations

Recommendations for G8/EU:

- Initiate a programme of activities to support African technology entrepreneurs. Lobby existing private sector development initiatives to target mobile applications; set up an information and referral function to help entrepreneurs share experiences and ideas, find technical expertise, sources of funding, research etc.
- support programmes promoting cross sector collaboration e.g. GKP[9]. Case studies demonstrate the power of new partnerships emerging between the private sector and pro-poor service delivery agents (e.g. NGOs).
- find research into hybrid business models that fall between being purely 'social' and purely 'profitable'. Support research into best practise, and monitoring & evaluation studies, and dissemination of experience relating to the business models behind pro-poor mobile applications.

Recommendations for African Countries:

- African governments should specifically include small businesses in national ICT policies e.g. SME business incubator programme, business parks, mentoring schemes and tax breaks for small businesses.
- African regulators should work towards creating a business climate that is favourable for small businesses in the ICT/telco sector as well as the large and vocal operators.
- African regulators to legislate for National Short Codes (like most European countries have) to ensure that the applications can be used across networks.

4 Pro-poor Remittances

4.1 Vision statement

Accelerating the introduction of pro-poor electronic accounts and using mobile technology for remittances will strengthen social safety nets, make local markets more dynamic (diversification of goods and produce), and increase the flow of remittances, especially the transfer of small amounts. Given that charges on remittances to Africa are of order $1.5 billion a year[10], the potential financial benefit of introducing cheaper systems is huge[11]. In

[9] Global Knowledge Partnerships. Multi-stakeholder partnerships issue paper. 2003.
[10] Estimated at 12% on remittances to Africa of $12 billion a year.
[11] mobile operators suggest a 4% transaction cost for international remittances.

the long term they will strengthen governance and infrastructure through improved payment of taxes and utilities. Mature systems can be used for international trading, and to offer an extended range of financial services e.g. virtual micro finance institutions. This is an area where Africa could lead the world.

4.2 Description of the Opportunity

A significant use of phones is for making financial arrangements, much of which is linked to cash transfers from cities to rural areas, as most families in rural communities have family members living in cities. Many households also have family members working abroad, and benefit from international remittances. Globally, remittances continue to grow, as does their importance to national economies; for example, Lesotho receives remittance payments totalling 37% of the country's entire GDP[12]. Remittances are the second largest financial flow into developing country economies after foreign direct investment. Remittances were estimated at $93 billion in 2003, of which around $12 billion is to Africa, and it is estimated that unrecorded remittances could be even greater than the recorded figures.

Estimates of average transaction costs are around 12%. This means that over $10 billion a year is being diverted from the intended beneficiaries in developing countries. The G8 countries have recognised that this constitutes a barrier and have agreed to 'facilitate and lower the cost of remittances' at this years Summit. President Bush has stated that he wishes to see the cost of remittance transaction to South America halved by 2008.

Of importance to the poorest households is cash transfers (within the country), which can contribute between up to 40% of household income. Informal cash transfers are recognised as an integral part of safety nets providing protection for vulnerable households. These are families without bank accounts and beyond the reach of traditional financial services. Cash tends to be transferred to rural areas via informal channels (carrying cash), which carries a high degree of risk.

Mobile phones and virtual currency

Africans are already making innovative use of mobile phone technology to meet the need for a cashless transfer system. For example, people in Uganda are buying scratch cards and texting the code number to each other as a means of making cashless transfers; MCel in Mozambique has recently introduced a credit swapping service (the ability to transfer credit from one phone to another) which is poised to be very popular. Air time is effectively being used as a virtual currency.

All of this emphasises the need for, and potential benefit from, a system of **electronic accounts** (the ICD in Africa paper also identifies electronic payment systems as a key opportunity)**.** Phones offer a compromise between a formal bank account and a temporary money transfer account which can be set up easily and cheaply and lasts a few days until the transfer is complete (e.g. Western Union). The account could be cheap and easy to use, yet also provide a flexible means for people to manage their money.

It is proposed that the technology and expertise of mobile phone operators can help devise a solution. Financial sector reforms concentrate on banking and traditional financial services with the aim of promoting a sound financial environment to attract FDI. However, the prevailing view is that traditional services are unlikely to reach the rural poor, on the basis that this is not a profitable market. Furthermore, developments in this area may be hampered by the need to address money laundering and terrorism. The two are not incompatible. By reducing transaction costs, finances that currently move through informal channels can be brought into formal channels.

[12] Commission for Africa: An Overview of Evidence. May 2004

There are a number of **opportunities** presented by mobile phone operators:

- Technology - prepaid mobile phone technology deals with large numbers of customers, giving them the ability to add cash to their accounts (top up), and to make transfers to other account (credit swapping), and accounts have proven secure to date;
- Rural reach - where mobile phone networks provide coverage, a large proportion of African populations can access services – as mobile coverage expands so too would financial services;
- Transparency - phone technology can enable the monitoring and analysis of large numbers of transactions which can inform the regulatory authorities.

4.3 Purpose statement

To integrate mobile phone operators into the reform of financial services. This will accelerate the introduction of electronic financial account services that are accessible by the rural poor. This will be achieved through innovative partnerships, and there may be a role to be played by a number of networked organisations, but mobile phone operators offer two important features:

- the technology needed to run a large number of low transaction value secure accounts.
- an extensive means of access to electronic accounts, that is proven to be appropriate to the rural poor.

4.4 Relevance to CfA's priority themes

- **Governance, peace and security**: increasing the flow of finance into developing countries will help alleviate instability, and provides a way for diasporas to repatriate financial capital. The use of electronic accounts means that cash movements (and international remittances in particular) can be traced more accurately.
- **Human development, culture and inclusion**: a safe and accessible system of cash transfers will strengthen the safety net supporting vulnerable families, such as those living with AIDS.
- **Opportunity and growth, aid and debt relief**: cheaper remittance procedures will increase the amount of remittances reaching developing countries, and help strengthen economic growth. Electronic accounts will make local markets more dynamic.

4.5 The role of stakeholders

Ministries and regulators concerned with financial reforms need to be convinced that an electronic account system is technically feasible, and could become reality once the regulatory and commercial issues are sorted. Phone operators and financial institutions would need to collaborate to devise solutions to technical and commercial concerns. The role of wider stakeholders is presented in Appendix 1.

4.6 Recommendations

Recommendations for the G8/EU:

- Set up a research programme targeting Operators, research institutions and regulators to gather information needed to identify potential solutions to outstanding issues.
    - Regulation - new players, new technology and new threats will require revised regulation;

  - Technology - to manage a large number of secure accounts and provide transparency to the regulatory authorities;
  - Access - low income consumers need to be able to access the service (access), and able to conduct transactions (capacity);
  - Cash handling - users need a means of 'topping up' accounts with cash, and of withdrawing cash from their account.

  This should include the implementation of a pilot system within a country where regulatory conditions are favourable.
- Encourage regional financial regulatory bodies to engage in the research programme. Financial sector performance to date is characterised by lack of innovation, and lack of competition so there is a need to lobby regulatory authorities to take steps necessary to enable institutions to implement the proposed system.
- Once the concept is proven, provide support to regional and national bodies to draw up standards that will be required.

Recommendations for African countries:

- Include specific pro-poor conditions on financial service institutions to encourage them to seek solutions for rural customers;
- Change the focus of financial services from credit and savings to cash transfers and management;
- Promote partnerships and support the development of local electronic payment systems.

5 Summary for the CfA report

The recent success of the phone industry shows that vast numbers of people in Africa feel that the phone is a positive force for good in their lives. Although companies have traditionally targeted subscribers in urban areas, the next generation of users across the continent is likely to be rural, and they will be using mobile phones. There exists an opportunity to maximize the benefits that this technology can bring to the poor, and to make sure that this includes the most marginalized communities (i.e. remote).

The new found dynamism in the African market has, to a certain extent, been driven by north based multinational companies. However, it is argued that meeting these opportunities will require the forging of innovative partnerships to meet the challenges of a uniquely African market. The Commission could play an important role in a number of key areas:

- New ways of thinking and new partnerships are required to develop low cost tariffs, and low cost solutions to network extension into remote areas; both are needed to ensure the poor can ***access mobile phones*** and benefit from services;
- A vibrant industry of technology entrepreneurs (from both private sector and NGOs) needs to be supported in order to foster the local development of ***mobile phone based applications*** which can improve the delivery of services to the poor;
- Introducing mobile phone operators to financial institutions will bring forward the advent of ***electronic accounts***, enabling the poor to benefit more from remittances and to enjoy cashless transactions.

Appendix 1

Stakeholder Matrix

	Expanding access	Capacity Building of African Entrepreneurs	Remittances
Mobile operators – international (including African) and national (incumbents)	Target group – need to be prepared to change business practice, and to engage with consultation and research processes.	Primarily concerned with increasing their subscriber base. The sector typically lacks the experience to translate their generalised CSR[13] aspirations (where these exist) into GSM based services. Potential role as sponsors and strategic partners.	Beneficiary; potential new business from entering into financial services markets; need to bring technology, and customer base. Enter into partnerships with financial institutions.
Local private sector – small, high tech companies providing support services to the telecoms industry e.g. franchises, ISPs, software houses	Beneficiary – services will be needed to in supply and distribution chains for expanding networks. Possible role as micro-operators.	Target for support – improve their ability to develop and supply pro-poor applications.	Likely to have a role, particularly in cash handling (e.g. ATMs in local shops)
Government (national and local) – draw up development plans, and deliver services	Needs to give regulators pro-poor mandate. May be fiscal measures to stimulate market expansion.	Potential role as content providers and strategic partner. Stand to benefit through improved efficiencies in service delivery e.g. health agriculture, trade etc. New opportunities for e-government services and democratic engagement. Exhibit some scepticism towards new technology, hampered in particular by lack of ICT awareness at the highest level.	Target for advocacy - National government needs to catch the vision (and be committed to pro-poor policy) if they are to drive the process through policy.
Regulators – responsible for achieving the benefits of competition	Target group – responsible for achieving balance between incentive (commercial opportunity) and coercion (obligations).	Minor role – e.g. ensuring fair access to networks	Target for advocacy – financial and telecommunications regulators need to collaborate.
Donor agencies – support projects across a range of sectors, influence policy	Funding for research (and pilots) into innovative business and network models. Support experience sharing.	Several agencies have private sector development initiatives. These can be encouraged to focus on technology entrepreneurs.	Regulators are supported by donors; they need to be encouraged by donors to engage in the process.
NGOs – delivering services in a range of sectors	Stand to benefit from improved access to communications.	Target for support. Potential role as content providers and experts in community needs. Those delivering services to the poor stand to benefit from applications.	Consultative role (voice of the poor); may have a role in cash handling (e.g. micro finance institutions).
Civil society – advocacy groups, trade associations and forums (regional and national)	Possible role as micro-operator. Stand to benefit from improved access to communications.	Potentially content providers and beneficiaries from wider applications.	Consultative role – members will be aware of how a system can be defrauded.

[13] Corporate social responsibility

Appendix 2

Mobile Phones in Africa – Markets and Impact

Penetration of phones

The demand for mobile phones across African is huge and rapidly expanding. 'An Overview of Evidence' pointed out that less than 3% of the population had access to a telephone in 2001, but the number of mobile subscribers has already grown to over 50 million[14], representing over 7% of the population. A snapshot of the penetration of mobile phones across the continent is presented in Figure 1. The number of subscribers is currently expanding at around 35% a year, and is forecast to continue over the next few years (see Table 1). Figure 2 shows that current rates of growth are highest in developing countries, and the industry recognizes that its next 1billion customers will be won by companies that develop business models that work for poorer people. This presents enormous opportunities for the delivery of pro-poor services.

Table 1 Forecast growth in GSM subscriber numbers (by continent)

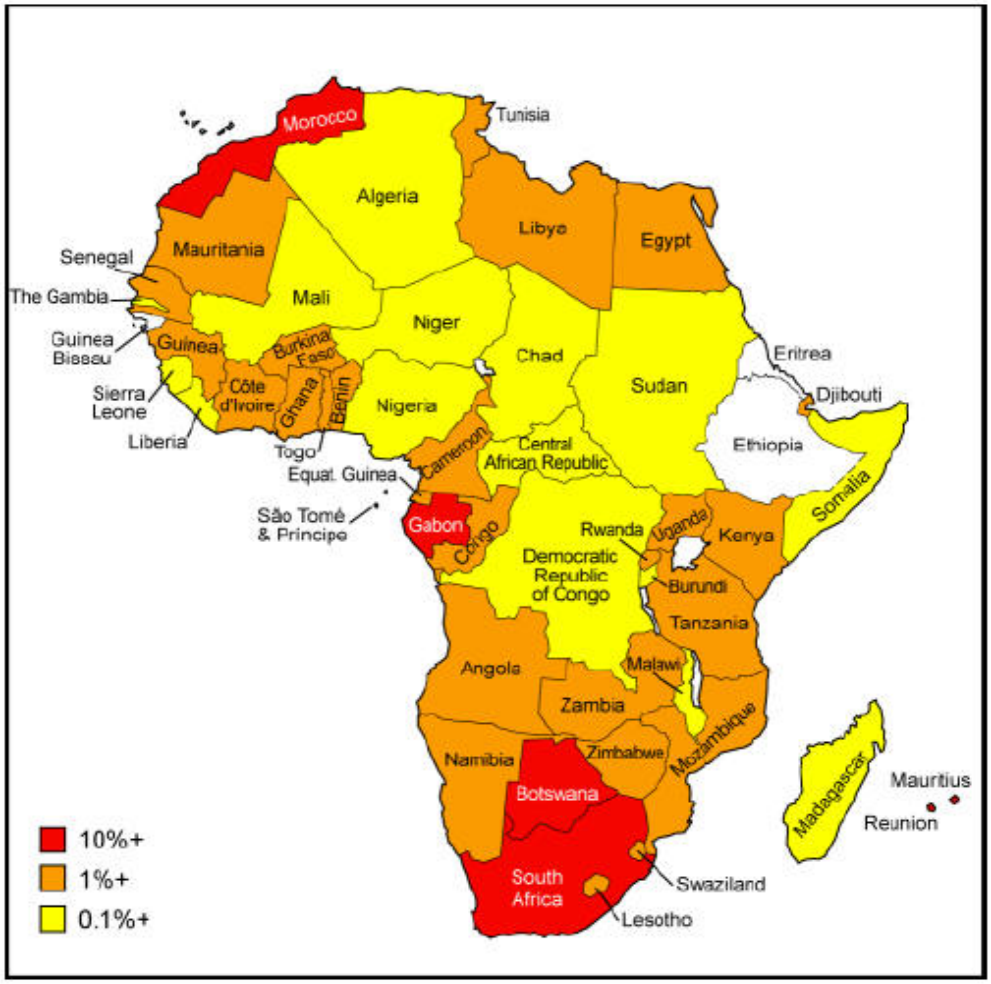
GSM SUBSCRIBER FORECASTS - REGIONAL BREAKDOWN – SOURCE: EMC WORLD CELLULAR DATABASE (6APR04)

	Dec 03	Dec 04	Dec 05	Dec 06	Dec 07	Dec 08	Dec 09
Total	**1377.5**	**1642.5**	**1884.2**	**2090.1**	**2248.8**	**2366.2**	**2452.0**
Africa	49.1	72.6	98.8	122.4	140.8	153.9	163.0
South America (Americas)	122.5	160.5	185.8	207.6	225.3	239.5	250.8
Asia Pacific	543.2	656.0	772.5	880.1	967.7	1034.4	1083.1
Eastern Europe	108.9	147.3	176.8	193.0	200.6	204.2	206.0
Western Europe	353.8	388.3	406.2	417.8	425.0	429.4	432.4
Middle East	27.4	29.1	40.8	52.2	61.0	67.0	71.1
USA/Canada	172.6	188.7	203.3	217.0	228.4	237.8	245.6

Source: GSM Association :
http://www.gsmworld.com/news/statistics/pdf/mar04.pdf

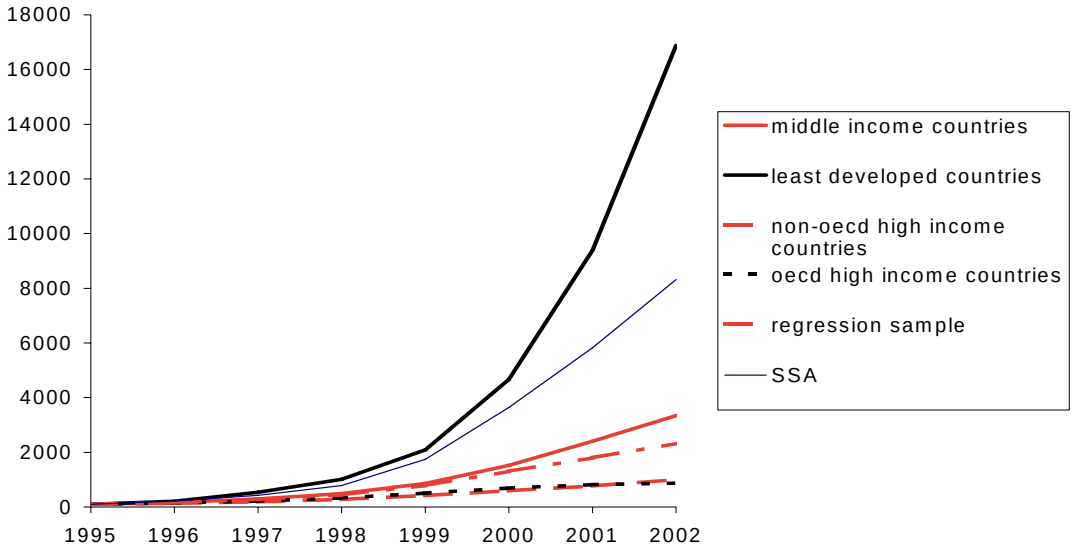
[14] African indicators May 2004. http://cellular.co.za/stats/stats-africa.htm

Figure 1 Penetration Rates in Africa (%) - August 2004



Source: http://cellular.co.za/stats/stats-africa.htm

Figure 2 Growth in overall mobile penetration



Source: Vodafone's SIM project: impact of mobile in Africa. Interim Report. 2004

Rapid expansion of mobile phone markets is linked to liberal regulatory environments, where operators have been given freedom to exploit demand and competition has been effective in encouraging operators to address rural and low income markets. Those countries with most positive e-readiness environments[15] are listed in Table 2, and these also have the highest mobile penetration rates. Not surprisingly, there is no overlap of these countries with the poorest countries on the continent[16].

Table 2 Groupings of countries (HDI/Pop.; Mobile penetration %/rank)

Most Needy Countries (HDI)	High level of e-readiness*	Most Ready for Wireless (Mob. %)
1. Sierra Leone (173/5.43m; 0.55%/35)	**1. Egypt**	1. Seychelles (47/0.08m; 55%/1)
2. Niger (172/10.4m; 0.02%/46)	**2. South Africa**	2. **Mauritius** (67/1.2m; 25%/2)
3. Burundi (171/6.3m; 0.29%/39)	**3. Mauritius**	3. **South Africa** (107/43.6m; 24%/3)
4. Mozambique (170/19.4m; 0.84%/30)	4. Tunisia	4. Gabon (117/1.22m; 20.5%/4)
5. Burkina Faso (169/12.3m; 0.61%/34)	**5. Botswana**	5. **Botswana** (126/1.6m; 16.7%/5)
6. Ethiopia (168/65.9m; 0.007%/47)		6. Swaziland (125/1.1m; 6.5%/7)
7. Guinea – Bissau (167/1.32m; n/a)		7. Namibia (122/1.8m; 5.6%/8)
8. Chad (166/8.7m; 0.27%/43)		8. Congo Rep. (136/2.9m; 4.8%/9)
9. Central African Republic (165/3.6m; 0.29%/39)		9. Cote D'Ivoire (156/16.4m; 4.5%/10)
10. Mali (164/11m; 0.39%/37)		10. **Egypt** (115/69.5m; 4.3%/11)

** Category 1- countries with a high level of progress towards e-readiness.*
Source: Bridges, WEF-NEPAD E-Readiness Policy Programme Stage one report, 7 January 2003

The importance of communication in a culture that is comfortable with voice is now being realized. One of the key features driving growth in mobiles is that they are mobile, and inherently suited to remote areas with poor infrastructure. The prepaid system is perfectly suited to the economic situation of many Africans, as their incomes are irregular. Moreover, mobiles are regarded as a cheap means of communication, especially in remote areas where travel, rather than using a fixed line, is the alternative. SMS is recognized as a cheap means of communicating, although its takeup varies widely between countries. The use of phones to receive calls (for free) is important; this is evident in the widespread practice of 'beeping' – the practice of dialing a number but hanging up before it is answered in the hope that the other person will call back (and pay for the call).

The impact of phones

Teledensity figures remain low compared with European countries. However, this belies the value that African communities derive from access to phones. Research shows that in 'typical' rural districts of Africa, up to 80% of households make regular use of phones[17]. Moreover, most respondents make use of public access points. In this way low teledensity figures can mask the extent to which the poor access services. To take a Asian example, Grameen village phone operators in Bangladesh make up only 3.5% of the subscriber base, yet provide 15% of revenues. In Africa we might expect a similar aggregation of demand. Having said this, the extent of private phone use is surprisingly high[18], and likely to grow.

Given such high levels of use, why do households find the phone so valuable? Whilst one

[15] assessed on the basis of a combination of policy environment, infrastructure, ICT projects, and e-readiness assessments.
[16] Defined by human development index.
[17] McKemey et al. Innovative demand models for telecommunications services 2003. DFID. www.telafrica.org
[18] over a quarter of households in Uganda and Botswana have a private phone (McKemey et al. 2003)

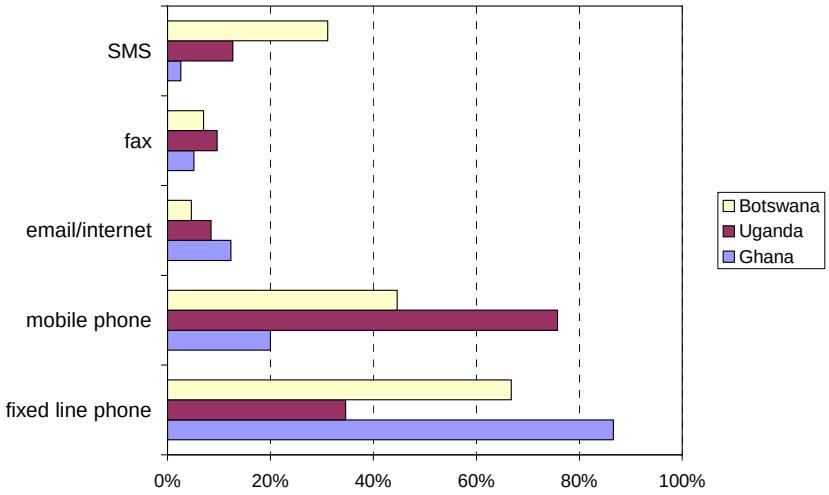
might expect most calls to be related to economic issues, research confirms that at present it is social uses that drive phone use amongst the poor. "Chatting" and "keeping in touch" are the most common use of phones. This is of value because it strengthens social capital through improved networking with friends and family. Other social calls concerning urgent matters (e.g. funerals and festivals) and financial matters (e.g. calling to family members working in cities to ask for money) rank highly, and business and official/government matters currently rank the lowest. Calls enable people to save time, increase production (business), diversify (e.g. crops, goods in shops), and to get news. Together this means that phones have a positive impact on improved incomes, reduced risk, and an improved sense of well-being.

It is interesting to note that this research recorded remarkably few differences between the way men and women use phones - both in terms of patterns of use (where they access, and how intensively they use), and purpose (what they use them for). This indicates that the phone appears to be a gender neutral tool.

Phone related services

To complete the picture, whilst use of phones is high in Africa, current use of email / internet and fax is low (see Figure 3). The internet is more widely used for email than internet browsing, and cybercafes remain the most common means of access. High costs are the main constraint, and are coupled to slow speeds and poor infrastructure (e.g. power cuts). Fax appears to be regarded as unreliable, and is used mostly for business purposes.

Figure 3 Use of telecommunications services



source: McKemey et al. Innovative demand models for telecommunications services. DFID. 2003.

There is mixed experience on the uses of SMS. Although it is recognised as a cheap means of communication, its use in East Africa is limited. This appears to be in contrast to West Africa where use is widespread. This is counterintuitive as literacy is higher in the East African countries. It may be due to the approach of the Telecom operators who offered free and very low cost SMS messaging to students in West Africa, which developed a culture of text messaging.