MOBILE AFRICA
REPORT 2011

REGIONAL HUBS
OF EXCELLENCE AND
INNOVATION

MOBILEMONDAY™

e×tensia

Mobile Africa Report 2011

Regional Hubs of Excellence and Innovation

by

Dr Madanmohan Rao
Research Project Director, MobileMonday
March 2011

TABLE OF CONTENTS

AFRICA MOBILE SNAPSHOT

According to industry estimates, there are more than 500 million mobile phone subscribers in Africa now, up from 246 million in 2008. In 2000, the number of mobile phones first exceeded that of fixed telephones. The four biggest mobile phone markets in Africa are Nigeria, South Africa, Kenya, and Ghana. Strategic investors in Africa's mobile industry include South Africa's MTN, India's Bharti Airtel, France Telecom (via its Orange brand), Britian's Vodafone and Luxembourg's Millicom. The mobile innovators' network Mobile Monday is now in seven cities in Africa and targets a dozen cities in the coming years.

The largest fixed line broadband market is South Africa, followed in order of market size by Egypt, Morocco, Algeria and Tunisia. According to Facebook statistics tracker Socialbakers, there were around 10.5 million Facebook users in Africa in 2010. Mobile broadband subscribers in Africa -- users of data cards and USB devices via cellular 3G networks – crossed 3 million in September 2009 and were expected to break the 4 million milestone in the first quarter of 2010. In total, 4.54 Terabytes of cable capacity is available across 13 submarine cables in Africa. These will further expand to 24.5 Terabytes by 2011, according to Africa Analysis.

INTRODUCTION

This report draws on primary research (including questionnaires sent to key mobile stakeholders in Africa) as well as secondary research (reports and articles from AfricaNext, BizCommunity, Dataxis Intelligence, International Telecommunications Union, Africa Analysis, Voice of America, TMCNet, BizCommunity, Computerworld Zambia – see full list at end of report).

In 2008, imports of data enabled phones exceeded that of non-data enabled phones in many African markets. In 2009, the undersea cables hit East and Southern Africa in a big way. In 2010, mobile operators became serious about data availability and cost packaging for everyday Africans. 2011 is expected to bring a new type of data-enabled mobile user in Africa, and brings the mobile web to center stage.

McKinsey estimates Africa's gross domestic product at about US $2.6 trillion, with US $1.4 in consumer spending. Africa's population growth and urbanisation rates are among the highest in the world.

Yunkap Kwankam and Ntomambang Ningo, authors of the paper titled "Information Technology in Africa: A Proactive Approach," maintain that African countries can bypass several stages in the use of ICTs.

On the technology front, Africans can accelerate development by skipping less efficient technologies and moving directly to more advanced ones. The telecommunications sector continues to attract a flurry of public and private investment.

Alex Twinomugisha in Nairobi, manager at Global e-Schools and Communities Initiative, says telecom investment in sub-Saharan Africa is coming not only from foreign sources but also local banks. But the investment should be in software and services as well, not just cabling infrastructure.

MOBILE INFRASTRUCTURE AND INVESTMENTS

Stiff competition in Africa's broadband market sparked by undersea cables has started forcing down telecommunication prices in the region, with mobile phone service providers announcing significant reductions in Internet service prices.

The development of underground and underwater fiber optic cables will be a major foundational infrastructure in Africa. Kenya and Rwanda have both encouraged investment in ICT infrastructure. Kenya has invested more than $US 80 million in an initiative called TEAMS (The East African Marine System), which will link East Africa to the rest of the world through an underwater fiber optic cable. TEAMS moves Kenya away from expensive satellite communications, thereby lowering costs.

SEACOM aims to provide inexpensive bandwidth to cell phone and Internet customers, including businesses, in southern and eastern Africa, connecting them to global networks in India and Europe. Broadband access can not only reduce the digital divide, but bootstrap local industries, especially those based on outsourcing. 70 per cent of SEACOM's cost was reportedly raised in Africa.

Airtel, MTN and Vodacom are battling to control the region's broadband market in the face of heightened competition as a result of number of undersea cables including the East African Submarine Cable System (EASSY), Seacom and Teams. As the cable companies bring down wholesale broadband pricing for mobile operators, the mobile service providers in turn have lowered prices to their own end users. In some cases, the mobile operators are investors in the cable systems. A further drop in broadband prices is expected when another cable, the West Africa Cable System (WASC), becomes operational later this year.

Operators Airtel and MTN claim the launch of cheaper broadband will allow subscribers to have access to faster Internet services using their mobile phones or modems. Over the past few months, Airtel has been investing in a number of broadband projects. In Zambia, as in many of the other 16 countries where Airtel has operations, the company has invested $150 million in infrastructure development in order to increase its broadband capacity.

MTN has also announced cheaper broadband services across its operations in Africa and the Middle East. The reduction in broadband services by MTN follows the company's substantial investment in undersea cables.

MTN Business Kenya, bought a 60 percent stake in UUNET Kenya, a corporate internet service provider, in 2008. MTN has launched cloud-based data backup services to deal

with frequent power cuts in Kenya.

Telkom South Africa has been hurt by a money-losing Nigerian business and the decline of traditional telephony at home after selling a stake in wireless phone operator Vodacom, which was its main profit driver. The former state-owned company has since paid an estimated $800 million to launch its own mobile phone business, entering an overcrowded market dominated by Vodacom and MTN Group.

France Telecom's Kenyan unit awarded a 4 billion-shilling ($47 million) contract to ZTE to build a third-generation mobile-phone network that it expects to help double customers.

ZTE will install 1,500 3G base stations across Kenya. "We expect to double our subscribers from the current 2.3 million active customers by the end of 2011," according to Telkom Kenya Chief Executive Officer Mickael Ghossein.

According to Frost & Sullivan, the sub-Saharan Africa mobile network backhaul infrastructure market spent $355 million in 2009, a figure that is likely to go up to $1.45 billion in 2015.

Subscribers are relentless in their pursuit of feature-ridden, high -quality, low delay services from their mobile operators. The explosion of tablets and smartphones on the scene makes more demands and operators are struggling to cope with demands for increasing bandwidth across a limited spectrum. Landing of undersea cables and deployment of 3G and 4G technologies in various African countries is only going to exacerbate the increasing demand for data services.

However, according to Frost & Sullivan ICT Senior Research Analyst Vitalis G. Ozianyi, upgrading is a costly process, so markets have to be segmented. High capacity fiber technologies need to be deployed in high demand areas while wireless backhaul technologies can still be used in low demand rural areas.

Operators needed to share costs and invest in network technologies that support transmission of large quantities of data such as optical fiber. The high CAPEX and OPEX associated with backhaul infrastructure will influence investment into higher capacity technologies.

The African telecoms market has been transformed by the launch of new submarine cables, according to a new report by Investment Research firm AfricaNext Research. The impact of the SEACOM, EASSY and Main One cables has been far-reaching according to the firm. Median international wholesale bandwidth prices have fallen by more

than 70% in many markets; sub-Saharan African lit bandwidth supply rose nearly 300% in 2010, and many countries have raised their international bandwidth intake nearly tenfold.

Spotlight: Mobile Investment from Finland

The growing interest in the budding ICT sector has attracted a range of companies from countries like Finland. The World Bank and Nokia have launched a project aimed at increasing foreign investment in key ICT emerging markets around the world.

"Kenya is an economic powerhouse in East Africa and its mobile telephone market is ranked as one of the most competitive in Africa. This, combined with the high penetration of mobile phones among Kenyans, makes it a place of interest to Finnish companies," according to Eeva Nuutinen, Finpro Project Manager.

Finpro is an association of Finnish companies looking for international investment opportunities. The Mobile Applications Laboratory is run by the World Bank's infoDev program funded by the Finnish Ministry of Foreign Affairs.

Among the companies with an interest in Kenya is 3D Arts Mobile, a UK-based company that runs a development team in Finland and has sourced its main funding from Nigerian based Verod Capital. Another, Mixem Solutions is about to launch the Jalumba social networking platform in East African countries including Kenya, Uganda and Tanzania.

"The Jalumba social networking platform allows people to access and create local mobile communities and social services that improve their daily lives. We have solutions in agriculture, health and educational services," according to Markus Lonka, Mixem Solutions CEO.

Pajat management has already piloted its services in the country and is working on solutions to improve sanitation in Kenyan schools. "We have been working together with professors and students from the University of Nairobi. Their good insight and expertise have been crucial for us to get a good start in Kenya", says Pajat Management's Managing Director Pertti Lounamaa.

The growth in international bandwidth has been a catalyst for, and an outgrowth of strong Internet usage growth, according to the report. Internet user numbers are set to rise, with more than 120 million users projected for sub-Saharan Africa by 2015, along with more than 100 million active mobile packet data customers, creating a demand stimulus for bandwidth. But increased bandwidth supply will make little difference to prices in countries with concentrated international gateway markets.

Several microwave and fibre-based national backbone infrastructures are being rolled out by various companies. Nitel's monopoly on international fibre bandwidth via the SAT-3/WASC submarine cable system ended in 2009 when Globacom's Glo-1 cable landed in the country, which will also deliver a boost to the country's underdeveloped Internet and broadband sector. Additional submarine cables are scheduled to go online in 2011 and 2012.

Huawei has deployed NGBSS solution for Cell C in South Africa, it was announced at Mobile World Congress 2011. With the implementation of NGBSS solution, Cell C will be able to focus its resources on rolling out and delivering compelling services.

The NGBSS solution provides Cell C with the capabilities to generate accurate and real-time usage data for its postpaid, prepaid and hybrid services and offer a single bill for all services. This enables Cell C to launch innovative and unique products and services to the market, reduce time to market for new products and more importantly address issues previously experienced by customers around billing.

On the infrastructure management front, telecom services companies IBM and Bharti Airtel have announced they will provide IT services for 16 African countries. As part of a 10-year agreement, IBM will deploy and manage the information technology infrastructure and applications to support Airtel's goal of providing affordable and innovative mobile services throughout Africa.

Airtel Africa employees will now be able to work at its parent company in India under a new exchange programme. The initial group from Africa to India will be employees from the firm's operations in Congo, Tanzania, Kenya, the Democratic Republic of Congo, Niger and Zambia. The initial phase of this new programme has also lead to the integration of specialised staff from Bharti Airtel into some African markets.

They will spend up to one year working within various units which include Bharti Airtel's network infrastructure development, solutions for medium sized enterprises, sales and distribution, financial systems, marketing and other functions. Bharti Airtel intends to replicate its low cost model in India in the African market and this programme is a way to equip key staff with the necessary experience.

MOBILE DATA TRAFFIC:
FROM GROWTH TO BOOM

Networking giant Cisco predicts an exponential growth in mobile data traffic in Africa. The Middle East and Africa are expected to experience the largest regional growth, with an expected 129 percent compound annual growth rate projected in the Cisco Visual Networking Index (VNI) Global Mobile Data Traffic Forecast for 2010 to 2015.

According to the VNI report, worldwide mobile data traffic will increase 26-fold during this time period reaching 6.3 exabytes per month or an annual run rate of 75 exabytes by 2015 due to a projected surge in mobile Internet-enabled devices delivering popular video applications and services. Of the 6.3 exabytes per month, 4.2 exabytes will be due to video.

"Consumers and business users continue to demonstrate a healthy demand for mobile data services. The fact that global mobile data traffic increased 2.6-fold from 2009 to 2010, nearly tripling for the third year in a row, confirms the strength of the mobile Internet. The seemingly endless bevy of new mobile devices, combined with greater mobile broadband access, more content, and applications of all types (especially video) are the key catalysts driving this remarkable growth," according to Reshaad Sha, strategy director at Cisco Internet Business Solutions Group.

Mobile video content has much higher bit rates than other mobile content types and will generate much of the mobile traffic growth through 2015. The Middle East and Africa will experience the highest Compound Annual Growth Rate (CAGR) of 129 percent, increasing 63-fold over the forecast period. The Middle East and Africa will have the strongest mobile data traffic growth of any region at 129 percent CAGR, followed by Latin America at 111 percent and Central and Eastern Europe at 102 percent.

By the year 2015, the mobile network will break the electricity barrier in more than four major regions. Sub-Saharan Africa will have more people with mobile network access than with access to electricity at home. The off-grid, on-Net population will reach 138 million by 2015.

The Cisco study predicts that by 2015, more than 5.6 billion personal devices will be connected to mobile networks, and there will also be 1.5 billion machine-to-machine nodes — nearly the equivalent of one mobile connection for every person in the world. Mobile video is forecast to represent 66 percent of all mobile data traffic by 2015, increasing 35-fold from 2010 to 2015, the highest growth rate of any mobile data application tracked in the Cisco VNI Global Mobile Data Traffic Forecast. Mobile traffic originating from tablet devices is expected to grow 205-fold from 2010 to 2015, the

highest growth rate of any device category tracked.

There will be 788 million mobile-only Internet users by 2015. The mobile-only Internet population will grow 56-fold from 14 million at the end of 2010 to 788 million by the end of 2015. This traffic increase represents a compound annual growth rate of 92 percent over the same period. Two major global trends are driving these significant mobile data traffic increases: a continued surge in mobile-ready devices such as tablets and smart phones, and widespread mobile video content consumption.

The Cisco study estimates that by 2015, there will be a mobile connected device for nearly every member of the world's population (7.2 billion people per United Nations' population estimate) and more than 7.1 billion mobile connections to handsets.

Today, the average mobile connection generates 65 megabytes of traffic per month, equivalent to about 15 MP3 music files. By 2015, the average mobile connection is anticipated to generate more than 17 times that amount, to a total of 1,118 megabytes of traffic per month, equivalent to about 260 MP3 music files.

Smart phones, laptops, and other portable devices will drive more than 87 percent of global mobile traffic by 2015. Mobile network-connected tablets will generate more traffic in 2015 (248 petabytes per month) than the entire global mobile network in 2010 (237 petabytes per month). The same will be true of machine-to-machine (M2M) traffic, which will reach 295 petabytes per month in 2015.

INTERNATIONAL ALLIANCES AND DEALS

Zimbabwe operator NetOne is deploying digital security firm Gemalto's LinqUs solution for Mobile Money Transfer. The offer, being marketed as the OneWallet service, works on 100% of the handsets and will enable all NetOne subscribers to perform secure and convenient money transfer using their mobile phone. Subscribers can make secure and easy peer-to-peer money transfers, pay every-day bills and top up their prepaid phone cards. NetOne's customers can have their salaries paid directly onto their phones – a feature that greatly empowers the unbanked with a secure and convenient digital wallet solution.

NetOne also intends to work with the Government of Zimbabwe and Pension Fund schemes to allow the OneWallet to be used for pension payments and thus remove the need for traveling long distances for purposes of collecting pension payments. Gemalto conducts Mobile Money events in countries such as Ghana.

Bangalore-based value-added services provider OnMobile has announced a partnership with Starfish Mobile, a leading content aggregator, to offer ring back tones (RBT) and interactive voice response (IVR) to mobile subscribers in Africa.

Under the agreement, Starfish Mobile's content would be deployed on OnMobile's RBT & IVR technology platform, enabling telecom operators in the African continent to offer innovative music services to their subscribers, the company said in a statement today.

Starfish Mobile International has operations in 21 countries in Africa, and has announced relationships with operators like Vodacom, MTN, Tigo, Zain (now Airtel Africa), Qtel, and Warid. It has partnerships with over 65 different content suppliers, covering Text based Information on Demand, Wallpapers, Ring Tones, Games and Applications, and Video.

Starfish also has partnerships with the likes of the BBC and German media company Deutsche Welle. The OnMobile partnership allows Starfish to leverage its relationships with content partners and telecom operators to offer RBT and IVR services. In Africa, OnMobile has deployments in Tanzania and Egypt.

Deutsche Welle is now offering a new text messaging (SMS) news service for its listeners and users in the Republic of Tanzania. The initial launch will focus on text-based services in Kiswahili covering news from Africa and around the world as well as sports-related services. In order to disseminate content to the widest possible audience, multiple language services and products will follow the first phase of launch.

Deutsche Welle's Kiswahili service is among the most popular radio programs in

Tanzania. Around 70 percent of Tanzanians are familiar with Deutsche Welle and 33 percent are frequent listeners of the Kiswahili program.

Deutsche Welle has appointed Starfish Mobile East Africa Limited as its technology provider in Tanzania, where the broadcaster will have the opportunity to deploy mobile services in the Kiswahili language to more than 19 million subscribers from the Vodacom, Tigo and Airtel mobile networks.

With a current audience reach of nearly 90 million around the globe, Deutsche Welle is aiming to widen its reach in countries like Tanzania, where Web penetration is low. By making news services available through mobile technology, subscribers will be able to access news updates. Deutsche Welle viewers and listeners also have the opportunity to view and listen to television and radio programming via mobile.

"To some extent, mobile phones have succeeded in an area where the Web has struggled," according to Naser Shrouf, Deutsche Welle's Head of Sales and Distribution Africa and Middle East.

"Mobile communication has made it possible, both in affordability and accessibility, for people who are in the most remote areas to communicate not only with family, friends and colleagues, but also to be a 'voice' in current events by interacting in polling and comment activities via SMS," according to Reshma Bharmal-Shariff, Managing Director of Starfish Mobile East Africa.

In other deals, Bangalore-headquartered Subex has been chosen for a $12 million licence contract by a mobile group operating in Europe and Africa to implement its Revenue Operations Center (ROC) platform for fraud management and revenue assurance. ROC fraud management is built to help CSPs (Communication Service Providers) move toward fraud prevention by eliminating known frauds, reducing free-run time, augmenting internal controls and continuous fraud management process improvement. ROC revenue assurance also assists an operator with its investigation, diagnosis and recovery of these revenues.

NATIONAL MARKET DYNAMICS

For market leader MTN, South Africa and Nigeria are the main markets of growth; they brought on board a total of 6.2 million subscribers, with Nigeria accounting for 4.2 million new subscribers in 2010.

MTN announced a 22 percent increase in the subscriber base in 2010. The total number of subscribers for the MTN Group rose from 116 million in 2009 up to 141.6 million in 2010. MTN has achieved an average of 50 percent subscription penetration on the African continent.

MTN Group plans to invest $1 billion in improving its mobile phone network in Nigeria's growing market. This will include building a fiber optic network, improving transmission capacity, building more base stations and improving the capacity of its network.

MTN holds a 50 percent market share in Nigeria, a lucrative market as mobile phones have become widespread since their introduction in 2001. The mobile market remains largely the only way to make calls in the country, due to problems at Nigerian Telecommunications (Nitel).

On the international roaming front, MTN South Africa has introduced free incoming calls and SMS for both postpaid and prepaid customers travelling in the South and East Africa (SEA) region. This applies to MTN operators in Botswana, Rwanda, Uganda, Swaziland and Zambia.

Historically, roaming charges have presented pricing challenges, with customers accumulating exorbitant monthly bills due to a lack of knowledge about pricing structures and varying tariffs per country.

The MTN brand has been rated as South Africa's most valuable brand, according to a league table of both African and South African brands compiled by Brandirectory. It is valued at US$4.7 billion, almost double that of its nearest rivals on the continent, Vodacom, Orascom Telecom (Egypt), FNB and Standard Bank.

MTN recently reported that their data revenue grew 47% over the last twelve months while Vodacom grew its data revenue by 33.8% on the back of a 54.6% increase in data usage. Cell C is aggressively rolling out a country-wide 21Mbps HSPA+ network, and will start to upgrade this network to 42Mbps. Vodacom and MTN are also extending their 21Mbps HSPA+ coverage, and both companies are looking at 42Mbps broadband services.

Bharti Airtel, the world's fifth largest telecommunications company, has also entered the Nigeria market. Its purchase of Kuwait-based Zain brought it into 15 African nations. In the time since, Bharti cut call prices by 50 percent or more in 11 countries to attract more customers. It aims to target the low-end, rural customer segment in the region.

Bharti wants to double the company's Africa business in 30 months to 100 million subscribers. At the end of September 2010, Bharti Airtel said it had about 40 million subscribers in Africa. In July 2010, Bharti announced plans to spend $600 million in Nigeria to improve its service.

Telkom South Africa has a range of offerings including mobile service 8.ta; Multi-Links, which provides a range of telecommunications services in Nigeria; iWayAfrica, the Internet services offering outside of South Africa formed by merging the operations of MWEB Africa and Africa Online; and a selection of other local operations.

In 1993, Telkom branched into cellular communication and successfully bid for one of South Africa's first two mobile network licenses. Vodacom launched in March 2004, with Telkom as a 50% owner. In 1997, 30% of the company was sold to Thintana, a consortium made up of SBC from the US and Telekom Malaysia Berhad.

The company listed in 2003. In 2008, Telkom sold a 15% stake in Vodacom to Vodafone. Telkom is years ahead of the competition, despite the development of fixed infrastructure networks by the likes of MTN, Vodacom and Neotel, according to Frost & Sullivan.

For the six months to 30 September 2010 Telkom's interests outside of South Africa accounted for only 5.5% of group revenue and delivered negative earnings. Mobile enterprise services and fixed-mobile convergence services are the next growth frontier for the South African mobile market, playing to Telkom's strengths.

Egypt's broadband development could be key to the country's revenue generation of the telecommunications sector, according to Pyramid Research. With the post-revolution atmosphere possibly bringing about a more stable country, it could nurture market growth.

The Egyptian telecom sector generated $6.4 billion in revenue last year and has grown by nearly 25 percent in the past two years. Egypt will remain one of the fastest growing markets in Africa and the Middle East going forward.

During the recent political instability that led to the overthrow of President Mubarak's regime, telecom use increased and was heavily utilised to mobiles the masses, according

to Pyramid Senior Analyst Hussam Barhoush.

According to Pyramid's report, mobile penetration has increased from 23 percent in 2006 to nearly 80 percent by the end of 2010 year and the consultancy sees it expanding to over 100 percent by the end of 2015.

Etisalat Nigeria has sealed agreements for a $650 million syndicated loan with eight local banks to expands its mobile phone network across Africa's most populous nation. "The additional funds will be used to roll out both our 3G and 2G network on a national basis," according to Etisalat Nigeria chief executive officer Steven Evans. The banks involved are First Bank, Zenith Bank, Access Bank, Fidelity Bank, United Bank for Africa (UBA), Bank PHB, Guaranty Trust Bank and Oceanic Bank. Etisalat's main rivals in Nigeria -- Africa's fastest growing telecoms market -- are South Africa's MTN, India's Bharti Airtel, and local firm Globacom.

Nigeria is the most competitive fixed-line market in Africa, featuring a second national operator (SNO, Globacom) and over 80 other companies licensed to provide fixed-telephony services. The alternative carriers combined now provide over 95% of all fixed connections. The majority of fixed lines has been implemented using wireless technologies, which gives the network operators the opportunity to also enter the lucrative mobile market under a unified licensing regime and has helped them to secure hundreds of millions of dollars in investments from local and foreign investors.

On the handset front, Nokia was the leading handset manufacturer in Kenya though its market share had reduced from 64% in September 2010 to 57% in February 2011. In the same period, Samsung increased market share from 12.5% to 13%. Android-based devices made an entrance in the top 10 devices to displace Sony Ericsson at fourth position with 4% share. Sony Ericsson dropped to fifth position though market share. Huawei made an entrance into the top 10 to settle at 7th position with 3% market share. Apple, Motorola, ZTE, LG and RIM round up the rest of the list.

MOBILE APPS AND STORES

Operators such as MTN are looking to expanding Africa operations by launching app stores. MTN operates in 21 countries across the Middle East and Africa and has seen a huge growth in data usage on its networks. Christian de Faria, MTN Group's Senior Vice-President for Commercial and Innovation, says increased online activity drives operators to respond to customer trends.

"The time when operators could dictate what they offered to customers is over," says de Faria. Operators need to go into partnerships with content providers to offer services such as cloud computing, solutions for small and medium enterprises and to provide rich content in terms of music, gaming, entertainment and news.

It is no longer about selling airtime, but bundling airtime with products and services. These can range from app stores and music to value-added services like m-learning and m-health.

A good example of business information services extending their reach from print media to mobile is directory services. Yellow Pages search brings the ability to find products or services in consumers' neighbourhoods by any of hundreds of categories, from attorneys to garden services to huts. Targeted businesses can then be contacted telephonically or via SMS, and also navigated to.

"Yellow Pages are a powerful search engine that enables one to find a desired listed businesses in just a few clicks, while on the move," according to Lionel Smith, General Manager for marketing at Trudon Yellow Pages.

Its partner Garmap for Mobile offers a one-stop shop for local search and related mobile services, according to its CTO Chris Crozier. For instance, a Computicket event guide and detailed accommodation and restaurant listings are already available within the application with convenient, full featured booking facilities.

Users demand accurate, relevant local search results and a seamless 'find, locate and communicate' experience. Direct integration allows users to call, make bookings, navigate and share locations and routes via Facebook and Twitter, SMS and email, according to Crozier.

SMS AND SMARTPHONES:
FROM MESSAGING TO BROADBAND

A recent report from the global telecommunications body, the International Telecommunications Union (ITU) titled "The World in 2010: ICT facts and figures", shows that 940 million out of the total 5.3 billion mobile subscriptions are third-generation (3G) mobile services subscribers. Mobile phone subscription is estimated to be at 5.3 billion, more than 90 per cent of the world's population, and 6.1 trillion text messages have been sent in three years.

More than 90 per cent of the world's population now has access to a mobile network, making mobile telephony truly ubiquitous. Growth was strong in developing countries (which have 3.8 billion subscriptions), from 53 per cent of total mobile subscriptions at the end of 2005 to an estimated 73 per cent at the end of 2010.

In Africa, penetration rates were forecast to reach an estimated 41 per cent at the end of 2010 compared to an estimated 76 per cent globally, leaving a significant potential for growth.

As for data traffic, 6.1 trillion short message services (SMS) were sent globally between 2007 and 2010. The total number of SMS sent globally tripled between 2007 and 2010, from an estimated 1.8 trillion to a staggering 6.1 trillion. In other words, close to 200 000 text messages are sent every second.

Equally, the number of Internet users has doubled in the last five years. The data says the number has surpassed the two billion mark at the end of 2010. But in Africa a mere 9.6 per cent have Internet access, which is far behind both the world average of 30 per cent and the developing-country average of 21 per cent.

According to the report, though fixed broadband subscriptions are increasing with 555 million globally, Africa's penetration rate is less than one per cent which demonstrates the challenges that persist in increasing access to high speed, high-capacity internet access on the continent.

Addressing the news of low-bandwidth data users, Google announced that it has launched Gmail SMS in Uganda, Tanzania and Malawi. In Uganda Google is working with MTN, Uganda Telecom and Orange, in Tanzania with Vodacom and in Malawi with Airtel and TNM. Gmail SMS has been around for some time in Africa. The service is currently supported in Kenya, Nigeria, Ghana, Senegal and Zambia. Gmail SMS enables Gmail users to chat with mobile subscribers on any mobile phone capable of SMS. The Google Talk user is not charged for the chat messages they send but the mobile phone

subscriber is charged the regular SMS rate for the chat messages that they send to Gmail.

SMS is used more in customer relationship management (CRM) in developing countries like South Africa than in other markets because more individuals have cellphones than Internet access.

"This is why more innovative SMS applications are being developed in Africa," according to Pieter Streicher, MD of BulkSMS.

Travel agents are keeping clients up to date with the progress of their bookings by SMS and airways companies are using it to issue flight booking codes. It is being used to alert customers about deliveries or that items are ready for collection, remind them to pay bills, thank them for payment and inform them of progress with vehicle service.

Banks are using SMS to alert customers about financial transactions going through their account and brokers are notifying customers when they buy and sell shares on their behalf. Doctors and dentists are also using it to remind patients about appointments and about test results being available.

In Kenya, individuals can subscribe to a list to be alerted about job vacancies. It is as easy for website developers to add an automated SMS functionality to a website as it is to add e-mail functionality to it.

For instance, BulkSMS is providing a service to Safarinow.com, a bed-and breakfast portal that allows customers to post inquiries on a website and be informed about availability of bookings by SMS.

SMS is more efficient than other means of communication, says Streicher. For example, people are not always connected to the Internet and are not always available to take phone calls. SMS speeds up two-way interaction and a lot of people are now using it instead of voice mail.

Still, global technology researcher firm Gartner predicts that smartphone penetration in South Africa will likely reach 80 percent by 2014. Even Maasai vets are reportedly benefiting from the use of donated Google smartphones through a Vet Aid charity project. Pre-loaded software has enabled farmers and vets to use the Global Positioning System (GPS) to monitor how animal diseases are spreading in their area and begin vaccinating to prevent them.

MTN, Africa's largest mobile operator, has invested 15 million rand in the past two

years in network upgrades to accommodate the high-intensity data requirements for smartphones. It is widely predicted that by 2012, smartphones will outsell laptops.

Data usage has continued booming across MTN's network in Africa and the Middle East, with Ghana reportedly recording the highest data revenue increase in recent months. In Zambia, 10MB of MTN broadband now costs $1 and the cost is expected to decline further as competition in the broadband market heightens.

Spice, the Indian mobile value-added services company, has launched Mobile Radio, one of its flagship services, in partnership with Safaricom. Branded as iDJ, the service enables users to access music on phone. The iDJ service is available to Safaricom's over 17 million subscribers by dialling the short code 813 at a browsing fee of Sh1 per minute. Spice subsidiaries are operational in West African markets of Nigeria and Ghana, as well as neighbouring Tanzania where it operates a Caller Ring back Tone (CRBT) platform in partnership with Airtel.

THE MOBILE INTERNET

Mobile operators are offering competitive data plans and providing coverage for a vast stretch of the continent, renewing hope for a significant reduction in Internet access prices and wider connectivity on the continent. As mobile phone operators invest heavily in data connectivity, the resulting scramble for a share of both the corporate and the consumer markets has re-ignited the battle over Internet users.

Mobile phone networks now cover three-quarters of the population in many African countries, according to Amos Kalunga, a telecom analyst from the Computer Society of Zambia.

Mobile phone operators are rolling out Internet services in order to capture a data market that up to now has not had the same high growth as the voice market experienced. Data services have become competitive as mobile operators aim to sustain their operations and increase sales following a leveling off of voice revenue.

Over the past year, mobile operators have been recording lower revenue from voice due to reduced interconnection rates, which have come about as a result of stiff competition. Traditional ISPs are now heavily investing in the data market and are expanding services even to remote rural areas in a bid to wrestle the market from mobile operators.

Zambia Telecommunication (Zamtel) recently announced a reduction in Internet connectivity from US$86 to $70 per month after the company invested $23 million in the installation of its New Generation Network (NGN) platform.

Zamtel's goal is to increase Internet penetration from the current 10 percent. Over the next 30 months, Zamtel will spend close to US$170 million for the rollout of the 3G network in order to increase Internet penetration in both rural and urban areas, according to managing director Hans Paulsen. Airtel, with a presence in over 16 African countries, is also rolling out mobile Internet services.

As a result of competition, small ISPs in the region are being acquired by bigger ones, especially those from South Africa with enough financial muscle to expand their services.

Altech, MTN and Telkom South Africa have bought, respectively, Kenyan Data Networks, UUNET and Africonnect. While mobile data service providers Telkom Kenya, Airtel, Essar and Safaricom battle for the low-end market, more-established players including MTN Business are aiming for both low-end market and a share of the lucrative

corporate and small and medium size enterprise (SME) market.

In another notable development, the Africa Top Level Domains (AfTLD) organisation has announced its decision to seek a mandate from the African Union (AU) Commission and to apply to ICANN to manage the .africa registry as well as .afrique.

AfTLD has close relationships with otherAfrican Internet organisations such as AfNOG, AfriNIC and AfrISPA, and sees their support as crucial to the success of.africa, as is support by African business, governments and the global communities. "Dot Africa" presents a unique online identity for the whole of Africa and should be seen as being complimentary to African ccTLDs.

MOBILE + INTERNET TV

In markets like South Africa, the nascent mobile TV market has recorded a "massive leap" in interest, according to the Mobility 2011 survey from World Wide Worx, which also found 39% of urban South Africans and 27% of rural dwellers are now browsing the Internet from their mobile phones.

One in ten of the survey's respondents – from a pool of 1,400 consumers and businesses – indicated an interest in mobile TV, compared to just one in 100 recorded in previous years.

 "Appetite has increased tenfold," observes Arthur Goldstruck, managing director of Johannesburg-based consultancy World Wide Worx.
Two of South Africa's major mobile networks recently revealed rival devices to connect to the Internet using televisions as monitors. The devices are aimed at emerging markets where there is limited access to the Internet, but where TV penetration is typically very high.

Vodacom introduced its Vodafone WebBox - a multimedia plug-and-play keyboard with built-in modem that can be connected to a television, turning it into a computer monitor. The device connects with a standard RCA cable. It is supported by the Android 2.1 platform, and uses the Vodafone Opera Mini browser to surf the Internet. Other features include a video player, picture viewer and FM radio. MTN's version is called InternetOnTV.

SOCIAL MEDIA:
GOOGLE, TWITTER, FACEBOOK ON MOBILE

Google is reporting record growth in sub-Saharan Africa, benefiting from 50 percent annual growth in search requests coming from the region. Google Business Development Associate Ayite Gaba revealed that four out of every 10 Google search requests come from a mobile phone.

Facebook now receives 100,000 new Senegalese users each month according to Gaba. Twitter recently played a massive part in Egypt's revolution and the number of YouTube video plays in sub-Saharan Africa is doubling each year. But less than 10 percent of sub-Saharan Africa enjoys Internet access, hence the growing importance of mobile Internet.

"We are convinced by the potential of Africa and the importance it will play in the world," according to Google's Vice President for Operations in Eastern Europe, Southern Europe, Middle East, and Africa Carlo d'Asaro Blondo.

South of the Sahara, the number of YouTube plays is doubling each year, according to Gaba. Orange Uganda reported local traffic jump from 3Mbs to over 30Mbs in just two weeks due to partnering and implementing Google's Global Cache.

Phones and not laptops, will eventually make up the majority of Internet access points on the southern side of the world's widest desert. Sub-Saharan Africa may have some of the lowest rates of web users in the world, due to high device and access costs. Just 0.2 percent of the world's web pages were created by Africans. If every person on the planet had just one website to their name, Africa's share of the web would be 14.7 percent – a number that would grow, considering that as much as 40 percent of Africa's population is 15 years old or younger.

Google has set up offices in several countries in West Africa and is encouraging a new generation of tech-savvy Africans to lead the way in fostering Africa's burgeoning tech movement. About 1,000 developers and entrepreneurs attended the Google conference in University Cheikh Anta Diop in Dakar, Senegal. The conference is one of three planned for West Africa this year, as Google seeks to promote its products while at the same time educating developers and entrepreneurs about creating their own business opportunities.

When Google first started in Senegal, it was difficult to get a hold of the developer community, which was spread out and not connected. Early events by Google attracted maybe 150 people, but the community is now starting to come together, according to country manager for Google Senegal, Tidjane Deme.

As for other social media, Twitter is working on relationships for expanding SMS service across many countries in Africa. Twitter shortcodes for some African countries have been announced, such as Nigeria (40404: Zain, 20644: Glo Mobile); Kenya (8988: Safaricom) and Madagascar (40404: VIP).

Mobile growth is particularly important on the African continent where cell phones represent more than 90 percent of telephone lines, according to telecommunications research group BuddeComm.

Internet penetration in Senegal hovers around 7 or 8 percent of the population, and no one can benefit from the new technologies if they don't have access to it. The last decade in Africa was dominated by cell phones, but now the continent is on the cusp of an Internet revolution.

MOBILE PAYMENT AND COMMERCE

Mobile-savvy consumers want to do more for their phones and this presents opportunities for Africa's banks and their merchant partners, according to Buzzcity's K.F. Lai. In 1998 there were fewer than two million mobile phone users in Africa, according to the African Development Bank. The number grew to over 400 million in 2009.

Banks and other providers now recognise the potential of reaching millions of prospective customers, especially the rural population who account for more than 60% of Africa's total population and have no access to banking services.

An increasing number of banks and financial institutions using mobile advertising to share information and promote services. As financial institutions embrace mobile as a distinct channel - not just a supplement to PC banking - their number-one challenge is the same as they faced when first rolling out online banking: consumer confidence.

In countries such as Kenya, or South Africa, research indicates that users have a higher propensity to make e-commerce and m-commerce transactions with 46% of Kenyan and 43% of South African users having made remote purchases via mobile internet, fixed internet and telephone respectively.

This is probably because the level of trust and openness to transacting online has grown, and users are ready and willing to make the transactions. The most popular items for remote purchases are downloads and virtual gifts, with 25.99% of South Africans and 30.13% of Kenyan's polled having purchased these items.

Many Kenyan users requested more banking services such as money transfers (31.97%) and bill payments (23.76%). Given that Kenya has a successful mobile banking platform, this could be a result of effective education, and proof that more awareness can lead to greater demand.

Other m-commerce services on Kenyan and South African users' wish-lists include buying tickets (movies, transport), buying groceries and paying restaurant bills. This provides many opportunities for banks to partner with merchants such as cinema operators, supermarket chains and even fast food or restaurant outlets.

In South Africa, Standard Chartered allows consumers to use their phones to check their bank account balance, manage credit cards or loans, pay bills, transfer money between accounts and more. However consumers are often required to register first from a PC before being able to bank with a phone.

When done correctly, mobile banking can create and grow new markets, enabling consumers in a variety of settings to save money and pay bills and in the process create value in communities.

M-Pesa was launched in 2007 and is used by six million people around the country, including in rural areas. It has transferred 135.38 billion Kenya shillings, equivalent to US $1.8 billion (representing about 5% of GDP).

M-Pesa launched in Kenya in 2007, and quickly overtook traditional banks there by gaining 10 million users in a country of 37 million citizens. Now it has come to South Africa as well, though it will face competition from alternative services.

The key to M-Pesa's success, in Kenya and a growing number of countries, is the African love affair with the cell phone. Sometime in 2011, the continent will cross a threshold of mobile phone use, with one mobile phone for every African adult.

Four years ago, Safaricom launched M-Pesa in Kenya. The mobile operator which introduced the first mobile payment scheme in Africa on March 6, 2007, has since witnessed this service been introduced in several African countries by other mobile operators including its competitors in Kenya. Mobile payment services have launched in South Africa, Madagascar, Uganda, Côte d'Ivoire, Senegal and Tanzania, eg. via Orange in Côte d'Ivoire, Telma in Madagascar and MTN in Uganda.

The m-payment offerings differ based on joining fees, payment to subscribers of competing operators, transfer fees, off-network transactions, withdrawal charges, and sender-receiver fee shares, and degree of "walled garden" features.

It seems that there is considerable demand and a strong market for such M-Money (Mobile Money) services. In the first four months of operation, M-pesa, the mobile phone enabled payment system set up by Safricom in Kenya, gained more than 1.6 million customers.

The number of active users of mobile money services predicted to double in the next two years, exceeding 200 million by 2013 (according to Juniper research). Nearly 40% of active users in 2015 are estimated be in the Africa & Middle East region.

Consumers in Africa are looking for a robust e-commerce solution that delivers security, accessibility, acceptance, ability and a global reach, according to Manoj Kohil, Airtel CEO and Joint Managing Director.

Africa has close to 500 million mobile phone users and an unbanked population of

230 million households. It is expected that by 2014, Africa will see 56 percent mobile penetration.

But East African banks are proving slow to embrace the Internet, and systems that take mobile e-commerce payments, reported Kenya's leading software developers at the recent AITEC Banking and Mobile Money Conference in Nairobi.

Kenya's growing hub of software developers has made the connection between e-commerce and mobile payment systems such as M-Pesa, Zap, Orange Money and Yu Cash. Two of the companies at the forefront have been Zege Technologies, based at I-Hub along Ngong Road, and Intrepid Data Systems, in Hurlingham, Nairobi, each of which has developed software unique to Kenya making mobile payments faster, and viable across different software platforms, including banks' systems.

Payment software M-Payer helps increases customer retention and reduces payment delays. Intrepid Data Systems, the company behind I-Pay, is powering more than 20 clients selling music online, such as Pewahewa, and bargain shopping, such as Zetu.

Kenyans reportedly seem reluctant to embrace other e-commerce avenues such as credit and debit cards, for reasons of lack of trust and delivery bottlenecks.

Cell phone penetration is estimated at 98 percent in South Africa. "Interestingly, in Africa, some consumers might not have shoes, but they have a cell phone," according to Brian Richardson, a former banker and founder of mobile payment services firm Wizzit.

By the end of 2008, the company had an estimated 250,000 customers in South Africa, and today it has 2 million customers across Africa and Europe. Customers can use their cell phones for such functions as viewing bank statements, sending money and paying bills, all with low transaction fees.

Mobile banking is an example of cell phones being used in innovative ways to bypass the gaps in traditional infrastructure in Africa — in this case the shortage of bricks-and-mortar banks in rural areas, and lack of Internet access.

"It's very difficult to build a sustainable, viable economy when the bulk of your population is unbanked. There is the equivalent of $2 billion under mattresses in South Africa at any time. If even a portion of that was in banks, it would have a huge impact on the economy," according to Richardson.

The Johannesburg-based company has since expanded into Zambia, Rwanda, Tanzania and Romania, and plans to launch in three more African countries, with talk of expanding

into other major emerging markets.

According to a 2009 survey by the World Bank's Consultative Group to Assist the Poor, about 2.7 billion people globally do not have banking services. Access to banking can help people to lift themselves out of poverty by providing ways to save money and make payments without having to travel.

Wizzit customers tend to be employed on contract or temporary work, for example at a farm, mine or construction site, where they are usually paid in cash. They are often from rural areas and need to regularly send money home, so mobile payment helps them avoid the risks of crime and the cost and hassle of travel. Wizzit sales staff are called "Wizzkids," and earn a commission by selling start-up kits, which include a debit card, for as little as $10.

At the 16th Annual Global Mobile Awards during MWC, Airtel Africa, Standard Chartered Bank and MasterCard Worldwide were awarded the Best Mobile Money Product or Solution for the Airtel Card. M-Pesa, from Vodafone Group, Safaricom, Vodacom, Vodafone Essar and Roshan, won the award for Best Mobile Money for the Unbanked Service.

The Airtel virtual card product was recognised as an innovative mobile payments solution that will offer consumers in Kenya, and eventually across Africa, greater participation in the financial system through mobile commerce. According to the judges, the Best Mobile Money Product or Solution award aims to recognise and reflect the rapid emergence of the mobile payment, transfer, banking and a host of innovative "cashless" mobile services.

This product provides a developed world service to the developing world with great use of existing and readily accessible technologies such as MasterCard's network to open up commerce and banking to the unbanked and under-banked.

The virtual card product lets Airtel Africa customers in Kenya to use their mobile phone make online purchases from MasterCard merchants around the world. Each time an Airtel customer is shopping online he or she will be able to request a single use shopping card number. Airtel money services then generate a special 16-digit number that enables the completion of the transaction.

The single-use feature of the virtual card product is designed to provide the consumer with a convenient and secure online shopping experience.

"We believe that innovations like the virtual card product will help ensure the long-term

growth and sustainability of mobile commerce in Africa," according to Daniel Monehin, area head, East & West Africa and Indian Ocean Islands, for MasterCard Worldwide. The key is industry collaboration and fostering innovation as well as building interoperability across closed loop systems in Africa and abroad.

M-Pesa, meanwhile, won the award for best mobile money for the unbanked service. The service was launched in 2007 but has been expanded recently. "This solution is enhanced further with the addition of new features and territories," the MWC judges said. "It is winning ground in a way seldom seen in the mobile industry and is a true and sustained success story."

The World Bank is also tapping the expertise of former Safaricom boss Michael Joseph to advise on the expansion of mobile money programmes in member states. Joseph, who is credited with the success of the M-Pesa programme in Kenya, is the first appointee under a new fellowship initiative at the World Bank that is designed to attract high-level experts who are globally recognised practitioners in their field.

As a fellow, Joseph will provide strategic advice to the World Bank and governments beyond Africa on policy and regulatory issues to promote development of mobile banking and payments.

The World Bank's December 2010 Kenya Economic Update estimated that more than 21 million Kenyans have access to phones, with 15 million using mobile money services. In December 2010, mobile money services in Kenya reached a new record of almost US$1 billion in transactions.

Safaricom and other mobile payment companies operating in the country continue to expand the reach with innovative new applications, including current trials to pay the salaries of 13,000 sugarcane cutters and other casual workers at the Mumias sugar company via mobile phones.

M-Pesa, which allows mobile phone subscribers to send as little as Sh50 in seconds, is now being emulated across the globe with countries such as South Africa, India and Afghanistan having launched such a money transfer service. Transactions worth Sh596.8 billion have gone through M-Pesa since its inception in Kenya. Commercial banks, fearing loss of business as more Kenyans use M-Pesa are now racing to partner with mobile phone firms to remain relevant.

The World Bank is keen to replicate this model in developing countries as way of fighting poverty and deepening financial services. The service accounted for 11 per cent of Safaricom's revenues or Sh5.2 billion in the six months to September this year up from

Sh3.2 billion in the same period in 2009.

The biggest growth area in Africa's banking sector is seen as retail banking – set to account for nearly 40 percent of African banking revenue by 2020 – and mobile banking in particular is seen as being a powerful driving force after the success of the M-Pesa mobile money transfer service in Kenya and others elsewhere.

There are various models of mobile money flow: m-banking, m-payments, m-transactions, via a range of technologies like NFC and Smart Cards.

The recent Mobile Banking Southern Africa Conference 2011 featured solutions such as "Tap-A-Tag" contactless solution from EEC Solutions, Entersect Technologies mobile banking security solutions, Vodacom M-PESA and Wizzit electronic wallet.

Banks are seeking to increase their customer base and offer convenience to their customers through investment in mobile banking. Mobile operators are on a drive to increase their customer base and value chain through offering value added services in the banking market.

After M-PESA in Kenya, FNB and ABSA in South Africa are other success stories in Africa. The partnership between Mxit and WiWallet is a very good example of a relationship which will leverage on an existing social community and offer mobile banking services.

Security remains a major concern, but it seems gradually users are becoming confident about the security systems. For the success of the mobile banking industry there is need for good coordination between all the stakeholders to deliver the convenience of service to the people.

The annual AITEC Banking Conference now includes a Young Innovators Mobile Applications Hub, sponsored by Google. "One of our objectives at the Kenya ICT Board is to develop homegrown innovation," according to Paul Kukubo, CEO of the Kenya ICT Board.

Featured companies include Media Edge Communications (developing a mobile banking system and farm-inputs purchase mobile transaction solution for farmers), Jumuika (opt-in permission-based mobile advertising) and OTB Africa (mobile tools).

In other developments, Western Union's mobile money transfer service will be introduced in 18 countries where mobile telecommunications firm Etisalat operates following an agreement between the two companies.

The agreement will enable subscribers to Etisalat, which operates in Asia, the Middle East and Africa, to send and receive Western Union money transfer transactions using their mobile 'wallets', or accounts tied to their mobile phones.

This is part of Etisalat's broader mobile commerce strategy for its 135 million mobile customers across 18 countries, according to Rashed Alabbar, Etisalat's director of mobile commerce.

MOBILE USER BEHAVIOUR

The growth of the mobile market has resulted in a greater need for getting more insight into the growing main market in countries like South Africa. Unlike with traditional advertising, the consumer can now speak back. By entering into a dialogue with their brand they are just as likely to correct or criticise as they are to praise and promote.

The mobile medium is too dynamically connected to the market's lives for superficial song and dance strategies. Real, personal level market insights are now essential in connecting with this consumer. Social media communities are growing rapidly and more than anywhere they reflect the dynamics of South Africa as they occur in everyday life.

South Africa had 5.3 million Internet users and over 3 million people on Facebook at the end of 2010. Mobile phones are a business necessity to Africa's growing economy.

Informal traders in rural communities now use mobiles to communicate and connect with the world via mobile phones to grow their businesses. The rural communities, with limited access to electricity, use mobile phones as their only Internet source. A recent World Wide Worx study indicated that 27% of rural dwellers and a further 37% of all urban South Africans access the Internet via their mobile phones. With 18% Smart Phone penetration in South Africa, communicating directly with the consumer is at record highs. Never before has the marketer been able to reach their market so instantly and personally.

Opera Software and On Device Research also conducted a survey which revealed that mobile Internet is the only Internet access method for many users; they have been dubbed the 'Mobile Only' Internet Generation. South Africa has emerged as the largest base of the mobile only Internet generation after South Africa, followed by India.

A gender comparison in the study shows that mobile Internet users are heavily male dominated (95.2%) while female comprise only 5% of the total users. Mobile Internet users are also dominated by young people with 94% aged between 13 and 34. The young and male skew is the typical early adopter profile.

In many countries social networking has been the catalyst for the mobile Internet boom. Social networking requires fast page loading due to its interactive nature. The browsing experience on mobile is the key catalyst to attract content purchasing. Once users are comfortable with the browsing experience, they are more likely to taken on mobile purchasing.

According to other statistics from Google Mobile, top searches in Kenya were Football

(Manchester United, Chelsea, Arsenal), Mobile Content (ringtones), Music (Rihanna and Britney Spears), Finance (scholarships, life insurance), Life (Love, HIV) and Cars (Toyota, LandRover).

Respondents who used mobile Internet comprised of 82% male and 18% female. 39% of the respondents owned a phone and did not own a television. 62% owned a phone and did not own a computer. 78% accessed Internet on their phones only while the rest accessed it on both a phone and computer. 80% of respondents accessed the Internet on their phones daily while 12% accessed mobile Internet for 3 times a week or less. 73% of respondents said that they clicked on mobile ads.

Firefly Kenya, a new unit of Millward Brown East Africa, has offered an insight of how Kenyans have experienced a fundamental shift in how they communicate. Through social media, Kenyans have contributed to the massive global conversation.

According to a social media survey carried out across 15 countries by market research firm Firefly Millward Brown, Kenyans are increasingly using social media to get local and international news, keep up to date with their favorite football clubs, find out what's on at their local bar or nyama choma, and importantly, keep up to date with small fashion retailers who use Facebook as their marketing tool of choice.

Kenya has just over one million Facebook users - 2.8 percent of the population. This is higher than Nigeria and India, with 1.8 percent and 1.7 percent respectively. Facebook penetration in South Africa is at 7.5 percent. With half of Kenyan Internet users accessing the Web via their cell phones and the high penetration of cell phones v/s computers in this market (63 percent v/s 3.6 percent), Firefly expects Internet usage to grow in this market.

Other services have been target for rural farmers. The Reuters Market Light (RML) service developed in India is now being rolled out in African countries like Nigeria as well. It is an SMS-based, local language agricultural market information service, offered commercially by Reuters. According to a World Bank/Oxford University evaluation, 64% of farmers report higher prices because of RML, 59% report increased crop income and reduced expenditure on inputs, storable crops (onions, soya, wheat) report better results that perishable crops (tomatoes, pomegranate). Significant numbers of farmers also report changes in behaviour, for instance on planting dates (37%), timing of fertiliser applications (44%) and sprays (43%).

MOBILE MARKETING AND ADVERTISING

The African mobile market can grow to rival Europe, with figures showing that Africa is now serving more mobile ad impressions than Western Europe. This was announced at the inaugural Mobile Marketing Summit Kenya, organised by the recently formed Mobile Marketing Association (MMA) of East Africa.

InMobi, one of the world's biggest mobile advertising firms, is seeing a huge increase in ad-impressions across its African businesses, according to Naveen Tewari, its founder and CEO. Mobile impressions grew 19 percent in Africa over 90 days due to increased mobile Internet adoption. The company delivered over 520 million new monthly impressions.

The mobile marketing industry in Kenya is set to see significant growth with the launch of the East African chapter of the Mobile Marketing Association (MMA). Since the local mobile phone industry took off a decade ago, there has been both a knowledge and policy gap to give direction on what consumer engagement should be in matters related to mobile.

The knowledge gap has seen many marketing managers and business owners shy away from implementing mobile strategies for their businesses, which in this day and age should be one of the central pillars to any marketing strategy.

The operators, while being key players in the ecosystem, do not have mobile media marketing as their core business. The MMA has a global membership of over 700 companies, with local chapters to ensure relevance. The key mandate of the MMA is to entrench the use of the mobile channel in marketing.

The founding council of the East African chapter draws from some of the best and most recognised minds in marketing and mobile services. There will now be a body to champion best practices, to bring about innovation in mobile marketing, and increase stakeholder confidence.

Statistics presented by Brett St Clair, MMA South Africa co-chair and head of mobile, Google South Africa, indicate that Africa has grown from 1.5 billion impressions in 2009 to 5.2 billion impressions in 2010 versus 1.8 billion impressions from Western Europe in 2009 and 3.7 billion in Western Europe for 2010.

Kenya leads with 83,280,081 impressions, followed by Sudan, Tanzania, Ethiopia, Uganda, and Rwanda. TNS research also shows that mobile activity is stronger in countries where 3G was deployed earlier.

Moving beyond marketing to sales and delivery is a bit of a challenge. East Africa lacks a reliable physical addressing system, a challenge to physical delivery of electronically purchased goods. Candy Goodman, Managing director of Mobitainment anticipates that Kenya will go through the same mobile cycle that South Africa underwent.

The mobile and online social media market mean that the people are more connected, more savvy to what is out there and are expecting media to talk to them as individuals. By capturing insights and using mobile technology to make the message relevant, smaller more specific group focused mobile campaigns could be more effective in reaching the mass market than one nationwide campaign.

Capital Group Chairman Chris Kirubi has been appointed as co-chairman of the newly established Mobile Marketing Association (MMA) East Africa Council, joining Saracen media agency Chief Executive Officer Frank Mania.

MMA Chief Executive Officer Paul Berney said the council would play an important role in bringing together the marketing and business communities and growing the importance of mobile marketing in East Africa. The Council will officially be launched during the Mobile Marketing Summit in March 2011 in Nairobi.

MOBILE ENTERPRISE

Consumerisation, cloud computing, tablet computing and mobile collaboration are among the major trends that will drive the market for enterprise mobility solutions in 2011. Robyn Milham, head of enterprise sales for Southern Africa at Research In Motion (RIM), says many organisations have already deployed basic mobile solutions such as personal information management (PIM) and sales force automation tools to their workforces.

As a result, many of them are getting up to an extra hour of productivity a day from their employees, improving responsiveness to customers, and ensuring a faster flow of information and business processes across their organisations.

In the next phase, enterprises face a range of challenges and opportunities driven by trends such as consumerisation of information technology (IT), rapid adoption of social networking as a business tool and the move towards cloud computing, according to Milham.

"Consumerisation is flipping the traditional IT model on its head in many companies. Many end-users are bringing their own devices such as smartphones and tablet computers to work rather than simply using the devices and applications supplied by their IT departments," observes Milham.

A related trend is the rise of applications and services such as social networking tools that straddle the professional and personal worlds. BlackBerry Messenger, Facebook and Twitter are examples of services that are useful both as professional and personal tools.

"The challenge for IT is to leverage these tools without allowing them to undermine productivity and information security," Milham says. CIOs need to secure corporate information, ensure productivity and manage their infrastructure when users are accessing their networks using their own devices.

The challenge for IT managers is two-fold: putting clear corporate policies in place to govern how users use their devices and access information, and putting an infrastructure in place that allows them to centrally enforce these policies. The right technology solution will offer a good balance of flexibility and control.

One of the next important waves in mobility is tablet computing. People are just starting to recognise the power that tablets can have in all aspects of life, both at home and at work. "Tablets will complement smartphones, giving workers the ability to take

communication and productivity to the next level," claums Milham.

As for cloud computing, cloud applications will power the mobile social Internet in the years to come. Small-to-mid-sized business solutions in the cloud, can help to truly mobilise business processes by giving end-users access to exactly the same data and apps wherever they are and whichever access device they are using.

Events such as the IT Leaders African Summit aim to help businesses to find new ways to better utilise their ICT infrastructure to the maximum. IT departments should integrate more closely with sales, production and operations.

In the 21st century, the importance of information technology becomes greater. Small scale businesses need to harness IT to cater to their specific management, operational and functional needs. Manufacturing businesses need IT to manage inventory, business-to-business (B2B) and fast moving consumer goods (FMCG) in the retail business sector.

Accessible and affordable technology empowers employees and managers in Africa to share documents, collaborate on projects and communicate among team members. Discussion and reflection on how to stimulate positive growth of African IT infrastructure are unique and timely, according to government officials.

Managing mobile devices still has some way to go if one considers the operational standards, policies and procedures that come with managing desktop and laptop devices. ITWeb, in partnership with Kaseya, carried out the Managing Mobile Devices Survey.

At the very least, just the contacts and e-mail addresses captured on these devices are tactically important to any organisation and it is important to have policies and procedures in place that protect that information for the company. Ideally, all access devices, whether they be server, workstation, laptops, iPads or smartphones should be monitoried from the same management platform.

Africa stands at a significant growth point; not only is there growing demand for its natural resources but there is also a tantalising opportuninity up ahead for productivity and innovation via e-transformation. There is now instant powerful business intellignence (BI) in users' hands, with more mobile devices supported than ever before, according to SAP Africa.

"In order for African governments and businesses to attract investment and keep talent, they have to improve governance and empower all stakeholders to analyse and present information in many different ways to different audiences," according to Simon

Carpenter, Director of Strategic Initiatives at SAP.

SAP enterprise solutions can enable easy mobile BI on any device. Across mobile platforms and devices, workers can access intuitive, real-time BI and respond instantly to events as they unfold. New interactive visualisations and user experience enhancements make it easier for users. SAP has acquired the Sybase Unwired Platform to offer a comprehensive mobile BI suite that taps rich content from SAP and non-SAP business applications.

MOBILE CLOUDS:
FROM RESILIENCE TO PRODUCTIVITY

Increased attention and investment in disaster recovery and business continuity have led to the growth of cloud services in Africa. According to a recent study by IDC on cloud adoption, 63 percent of companies in South Africa are either already investing or planning to adopt some form of cloud technology.

The African economy has suffered from infratructure and investment problems, but the operation of several submarine cables over the last two years has restored a notable degree of confidence in the regions telecommunications infrastructure.

Regulatory requirements for disaster recovery have been put in place in various countries, especially for sensitive sectors like financial services. In Kenya, the central bank has regulations on disaster recovery.

"Most companies will now have an easier way to put services in place through secure cloud computing, which will relinquish the burden of financial pressure on capital expenditure," according to Mike Macharia, CEO of Seven Seas Technology in Nairobi.

South Africa has the majority of data centers while Kenya and Nigeria have emerged as regional hubs and data center locations to serve Eastern and Western Africa markets respectively.

The emergence of regional hubs is bridging a lot of the historical challenges of disaster recovery and business continuity. As Africa matures, the need for nearshore/onshore data centers is increasingly becoming important," according to Pieter Kok, a research manager for IDC in South Africa.

Big corporations with big budgets have been able to benefit from large-scale cloud services involving computing infrastructure and software. Smaller companies' use of cloud services is reportedly more limited, however, and often focuses on marketing via e-mail and mobile devices. In Africa, the growth of the "mobile cloud" has been spurred by efforts to expand business into areas with poor infrastructure, which typically provide minimal economic returns on investment. Cloud-services and infrastructure providers who take the lead in offering mobile services are therefore likely to be early winners, according to market observers.

MOBILE SOLUTIONS IN HEALTHCARE AND PHARMACY

Mobile communications can improve healthcare reliability and security via secure tracking solutions in Africa. For instance, HP and mPedigree, which assigns a code that is revealed by scratching off a coating on the drugs' packaging. This code can be text messaged by the consumer or medical professional to a free SMS number to verify the authenticity of the drug.

If the drug packaging contains a counterfeit code, the consumer will receive a message alerting them that the pack may be a fake, as well as a phone number to report the incident. Pharmaceutical safety regulators in Ghana and Nigeria are working to ensure that the concerns of users are promptly addressed.

"Counterfeit pharmaceuticals are a big problem for developing nations, particularly in Africa. It is important that we develop an African solution to an African problem, using the resources and technologies that are widely available and easy to implement," according to Bright Simons, founder, mPedigree Network.

The service, which was recently endorsed by the West African Health Organization, is expected to be available for other medications and in more countries in the near future. All GSM mobile network operators in Ghana and Nigeria are signatories to the scheme.

"Technology plays a critical role in solving many serious health problems around the world," according to Gabriele Zedlmayer, vice president, Office of Global Social Innovation, HP.

GlaxoSmithKline has become the latest drugmaker to sign up to Sproxil's text-message based verification system for pharmaceuticals, adding the codes to a widely-used antibiotic product that sells around 2 million units a year in Nigeria.

Sproxil's Mobile Product Authentication (MPA) codes are steadily being added to all blisters of GSK's Ampiclox 500mg (ampicillin plus cloxacillin) product in circulation in Nigeria, and coded packs are already widely-available.

The initial roll-out with Ampiclox is seen as an initial foray into SMS-based verification for GSK, and it has been predicted that - if successful - the scheme will be rolled out to additional products and also into additional markets in Africa.

E-TOURISM AND THE MOBILE POTENTIAL

The 4th Annual E-Tourism Africa Summit was launched recently in Cape Town, drawing speakes from leading travel firms, social networks and best practice destinations from around the globe.

Damian Cook, the CEO and Founder of E-Tourism Frontiers, said online tourism was growing rapidly across the world. "Last year the sector recorded 7% growth and stands at well over US $160 billion in sales. Statistics show that 55% of travel sales are completed online and more than 95% of travel research is done online. Mobile is also a growing area with 28% of mobile users in the UK using their phones to access the Internet every day. In Africa, where we are only beginning to realize the full potential of technology for tourism," according to Cook.

"It is vital that destinations and tourism companies in Africa wake up and smell the cyberspace if they want to gain their rightful share of the vast $160 billion plus online travel market business. In Africa we have some of the richest, most diverse and dramatic destinations on the planet and the limitless world of the web to tell our stories," according to William Price, the Global eMarketing Manager for South African Tourism.

"E-marketing is the cornerstone of Cape Town Tourism's marketing strategy. This year will see the introduction of our real-time booking system and a strong focus on converting web traffic into transactions" according to Mariette Du Toit-Helmbold, CEO of Cape Town Tourism.

SOCIO-ECONOMIC IMPACTS AND ACTIVISM

In addition to business and government services, mobile communication playes a major role in civil society. Mobile phones can help improve safety for at-risk communities. For instance, young girls in Kenya can use a mobile device to pinpoint the dangerous places to avoid, dodging threats of gender-based violence. A UNICEF report says that Map Kibera – a digital mapping project that helps people identify "safe and unsafe physical spaces" – has helped young people in Kibera to "gain new awareness about their surroundings, empowering them to amplify their voices on critical issues."

The UNICEF State of the World's Children Report 2011 acknowledges, however, that the poor in many developing countries "remain largely excluded from ICT and its benefits." ICT offers the potential to remove barriers to education and literacy and to hand adolescents a key to unlock many of the benefits of the modern knowledge economy and not be left adrift by globalisation, according to UNICEF.

Goodyz Media, in partnership with Cape Town based MobiZAR, has launched a new version of its Goodyz mobile phone software that lets users to support a charity of their choice at no cost – simply by downloading and running the free Goodyz4Charity application on their mobile phones (from www.goodyz4charity.co.za). Cotlands, Childline, Food and Trees for Africa, Habitat for Humanity, The Sunflower Fund and Operation Hunger have joined the initiative.

In another major development, the developer of FrontlineSMS, a simple yet powerful program that is speeding social change in over 60 nations, has become the fifth annual winner of the Antonio Pizzigati Prize for Software in the Public Interest.

The $10,000 Pizzigati Prize honors software developers who, in the spirit of open source computing, are fashioning exceptional applications that aid activists and nonprofits. Tides -- a partner to philanthropists, foundations, activists, and organizations worldwide -- hosts the prize selection process.

This year Pizzigati Prize winner, Ken Banks, has created software that speaks directly to a harsh global communications reality: millions of people in remote areas have no access whatsoever to the Internet. But many of these millions do have simple mobile phones.

The software Banks created six years ago enables grassroots groups to reach these millions, using only a laptop computer, a USB cable, and a plain-vanilla mobile phone. And the constituents of these groups can use their own mobile phones to communicate back.

Since 2005, nonprofits have downloaded the totally free — and easy to use — FrontlineSMS software almost 13,000 times, for use in a strikingly varied assortment of projects across the globe. In some African countries, the software is enabling groups to monitor human rights violations.

Banks, an anthropologist by training, has lived and worked all around Africa since the early 1990s. A long-time computer coder, he first started thinking about connecting computers and mobile phones while working on a conservation project in South Africa.

In 2005, Banks raised a small amount of money, bought some equipment and cables, and sat down, over five summer weeks, to write the first FrontlineSMS software. That October, Banks released his new code over the Web.

A number of groups and organizations, ranging from National Geographic to the MacArthur Foundation, have noted the wide and positive impact that Banks has had with FrontlineSMS. Banks himself is hoping that his work will have an equally positive impact on the next generation of software developers.

However, a number of African countries have tried to crack down on citizen activism by restricting SMS or Twitter access during protests, or even cutting off international Internet access entirely, as Egypt did during the February movement.

Cellphones in Africa have become a crucial tool for communication and organisation, according to Ushahidi founder Ory Okolloh. "We are raising a generation of children who may not know how to mobilise without Facebook," cautions Okolloh

The Uchaguzi platform – the word means "election" in Kiswahili – grew out of earlier Ushahidi software developed during the violence that rocked Kenya after the 2007 presidential election. Over 1,230 reports via SMS were sent by the time polls in a 2011 referendum closed to a Kenyan project that married traditional election monitoring with social media and Internet crowd-sourcing.

That program, Ushahidi (meaning testimony), has since been used to map the fallout from the Gulf of Mexico oil spill, earthquake victims in Haiti, and xenophobic violence in South Africa.

During the 2011 referendum, messages were to be filed under a series of headings including Police Action, Security Issues, Hate Speech, Vote Counting, and Positive Events, among others.

"It's something very new for Kenyans to know that they can instantly report an incident to an independent monitor far away who will guarantee to investigate," according to Charles Kithika of Uchaguzi.

"There is a significant uptake not only of mobiles, but of the different things handsets can be used for here," according to Erik Hersman, one of Ushahidi's five founders, who is helping manage Uchaguzi.

Messages slotted under the Positive Events heading include: "Voting under way – no problems" in Gachoka. "Long queues of voters waiting peacefully" in central Nairobi. "Good voter turnout" in Timbila. "Needy voters assisted" in Muranga.

The scheme's developers plan to introduce similar platforms to other East African countries that have elections looming in coming months, including Tanzania and Uganda, Hersman says.

Elsewhere in Africa, South African voters can check their registration details - including the voting station where they registered - on the IEC website or by calling 0800 118 000 (toll free from a landline) or by sending their ID number via sms to 32810 (R1 per sms sent and received).

MOBILE INDUSTRY REGULATION

African governments are pushing for further reductions in connectivity prices to allow more people to access the Internet and mobile services.

Governments in the region hope to use new broadband capacity to transform their economies as land-based infrastructure is being laid to bring capacity in from the coast, an especially important project for landlocked countries including Zambia and Zimbabwe.

Broadband services are expected to improve Africa's telecom sector as more countries move to implement e-governance, e-learning and e-health programs, which have been hindered by the region's insufficient broadband infrastructure and capacity.

In the third quater of 2010, the number of mobile-phone users in Kenya alone increased 9.5 percent to 22 million. This surge in usage is linked to Kenya's telecommunications regulator in August ordering mobile phone operators to halve the rates they charge each other to transmit calls across networks. Vodacom, South Africa's largest mobile phone operator also reported a 5.6 percent increase in revenue during the same period.

Mobile operators in Kenya are becoming more reliant on data for revenue after the industry regulator in August halved the rates that operators charge each other to connect voice calls across networks to 2.21 shillings. That triggered a round of cuts in call costs by companies to less than 2 shillings per minute and in some cases free calls during off- peak hours.

Zimbabwe has licensed a fourth company to offer mobile phone services in the country. The Postal and Telecommunications Regulatory Authority of Zimbabwe (Potraz) has granted state-owned phone company, Tel-One, a licence to set up a mobile phone division.

Tel-One will become the second state-owned mobile phone operator after Net-One, the country's oldest. The other two are privately owned. The government has been trying to woo continental operator, MTN, to partner cash-strapped Net-One to expand its services in the country. But the deal appears to have collapsed over pricing and regulatory controls

The South African government has required Telkom to unbundle the local loop – the last stretch of infrastructure that supplies Internet connections to homes and businesses – by November 2011. This is one of the last monopolies the operator still enjoys.

But according to analysts, the government's influence has been blamed for much of Telkom's indecisiveness. Its desire to use the operator as a vehicle for job creation, for instance, is in opposition to Telkom's business imperatives of right-sizing and cutting costs.

The Uganda communications ministry has had to interven in a dispute between MTN Uganda and Uganda Telecom in order to ensure there would be no disruption of services for citizens, a press release from Uganda's ministry of communications said.

THE GREEN FACTOR

As Africa continues grappling with increasing imports of ICT equipment without a corresponding rise in recycling capacity, regional mobile operator MTN has teamed up with Germany-based Deutsche Gesellschaft fuer Internationale Zusammenarbeit (GIZ), to foster development for e-waste handlers in the region.

The move comes in the wake of increased interest in e-waste management by countries in the region including Zambia, Uganda, Nigeria and Tanzania, which are pushing for regulations to support the recycling of obsolete computers, mobile phones, refrigerators and television sets. African governments say that the continent has continued to be a dumping ground for electronic equipment from the developed world.

MTN will roll out e-waste collection points at key publicly accessible sites including schools, shopping malls and many other public places in a bid to collect mobile-phone e-waste, regardless of network operator or handset manufacturers. The project will start in South Africa and will be replicated by MTN across its operations in more than 21 countries in Africa and the Middle East.

According to the latest e-waste Assessment Report South Africa, e-waste volumes are expected to increase significantly in South Africa in the next few years. As in many countries in Africa, the expected rise in e-waste volume in South Africa is compounded by the challenges South Africa faces at the level of consumer awareness, collection, recycling processes, and the disposal of e-waste.

Several countries in the region do not have the ICT policies in place that support the establishment of e-recycling plants. Uganda, Nigeria, Rwanda, Zimbabwe, Burundi and Zambia are all currently struggling to cope with e-waste management.

Another sector in the green movement is local energy. Sweden's Ericsson, at the 2011 Mobile World Congress in Barcelona, and Swedish telecom site solution supplier Flexenclosure were awarded the Global Mobile Award by the GSMA for the Community Power project in the "Best use of Mobile for Social & Economic Development" category.

Lars Linden, Head of Ericsson Sub-Saharan Africa, said the company's innovative products and sustainable business models form the building blocks of a connected and sustainable Africa.

Having adopted the Ericsson Community Power solution, MTN in Liberia becomes the first operator in the world to implement a system of this type. With this, many of the residents of Liberia's Kokoyah District could soon enjoy access to electricity in their

homes for the first time.

The project will take what has started in some markets as a way of charging mobile phones to a whole new level, enabling the electrification of the world's remotest villages. Telecom operators on the continent are spending millions of dollars every month on diesel generators and fuel to power their networks.

This has led to experiments with renewable energy sources such as solar, wind and locally produced biofuel and MTN is now building its own power plant with some welcome side effects: free air conditioning, and carbon credits that can be sold.

INNOVATION NETWORKS:
MOBILE MONDAY IN AFRICA

The key to sustainable growth in the mobile economy is local innovation linked to global communities of investors, customers and peer entrepreneurs. MobileMonday ("MoMo") is a global community of mobile industry creative thinkers, developers and innovators. MobileMonday, founded in 2000 in Helsinki, now has over 100 city chapters around the world. Each city chapter discusses issues specific to the local needs in monthly forums, but given the global nature of the mobile industry there is also an exchange of ideas and speakers from around the world.

MoMo is now present on every continent of the world, and this annually constitutes the largest event network for the mobile industry. MoMo also holds annual global summits and awards for the best mobile startups in its member network. MoMo is highly regarded by the mobile industry leaders as the cutting edge of mobile innovation.

The first MobileMonday chapter in Africa was launched in Johannesburg in 2009, followed by Capetown. Kampala, Nairobi, Dar es Salam and Algiers launched MoMo chapters in 2010, to be followed by chapters in Egypt, Nigeria, Ghana, Morocoo, Senegal and Mozambique. Mobile Monday is a global community of mobile industry visionaries, developers and influentials fostering cooperation and cross-border business development through virtual and live networking events to share ideas, best practices and trends from global markets.

MoMo Africa Chapters on the Web and Twitter

MoMo Johannesburg	http://www.mobilemonday.co.za	@momojoburg
MoMo Kampala	http://www.momokla.ug	@momokla
MoMo Kenya	http://mobilemonday.co.ke	@mobilemondayke
MoMo Dar es Salam	http://mobilemonday.co.tz	@momodar
MoMo Nigeria	http://momonigeria.org	@momonigeria
MoMo Algiers	http://www.mobilemonday.dz	

The MoMo community aims to encourage innovation within the mobile sector; facilitate networking between small and large companies, and between local and foreign firms; help local companies effectively participate in international initiatives through the import and export of visions, concepts, technologies, know-how and best practices; to present innovative visions, trends, studies and forecasts from the mobile marketplace; to facilitate and create partnerships; and to contribute to the education of the broader public through its publications, online presence and media partnerships.

Over the last two years, dozens of mobile tech hubs have sprouted in the capitals of many African states, forming tech incubators and co-working spaces like the Hive Colab in Uganda, the iHub in Kenya, and Limbe Labs in Cameroon.

MoMoJoburg has held recent events on Mobile in Retail (featuring speakers Candy Goodman, Baron Marshall); Mobile Trends in the Western Cape (featuring Jenny McKinnell, Executive Director of the Cape IT Initiative (CITi); Nicholas Haralambous, co-founder of Motribe); and Hot Mobile Innovations and Mobile Gadgets of 2010. Regular features introduced include the "Mobile Gadget Spot" showcasing the best mobile gadgets of the year and the "Spotlight on Startups" giving mobile startups in Joburg the opportunity to give their five-minute elevator pitch.

Mobile Monday Kenya acts as the catalyst for the different groups that are in the mobile space, and helps them move from idea and product to business deals and scalability, according to organiser John Wesonga.

On September 27th 2010, Virtual City signed on as premium sponsors of MoMo-Kenya. "We've grown from a small attendance of about 20 to over 100. Attendance at our last MoMo meet up on October 18th was over 150 people," according to Wesonga. There are plans to set up Mobile Monday-Mombasa and even MoMo-Kisumu.

In January 2011, the World Bank announced that it has opened public voting on the applications submitted to the Apps for Development Competition (http://worldbank.org/appsfordevelopment), a challenge issued to software developers by the World Bank to get new perspectives in identifying solutions to development problems. The Popular Choice Award will be determined by public vote and the winner will receive a cash award and a feature on the World Bank website.

Earlier last year, in March 2010, the World Bank in partnership with mobile handset maker Nokia announced its funding of mobile applications laboratories in Africa in a move to boost innovation in the field.

"We hope to increase the competitiveness of innovative enterprises in the mobile

content and applications area, and to ensure that locally relevant applications are created to meet growing developing country user demands," according to Tim Kelly, the lead ICT specialist at The Word Bank's infoDev global grant unit.

The mobile phone could be one of the keys to unlocking Africa's development problems, according to Kelly. For instance, Kenya's MPesa provides employment for around 15,000 agents.

"There are no adequate substitutes available as mobiles outnumber PCs by16:1, low barriers to entry and standard-based tools are available free of charge, the market is highly segmented and localised," according to Kelly.

He compares the current mobile phone to the typewriter in the 1950s; the current mobile focus is on the device rather than the applications. In the next 40 years, mobiles will be "impossible to count" because they will appear in so many different forms.

Barriers to entry in mobile applications development are relatively low as compared to other sectors. Support has also been received from the Finnish government and the Korean ICT for Development Trust Fund.

Youth are hungry for local content, for things relevant to their personal success, an outlet for their creativity, really interesting news and more and the World Bank thinks there is need to innovate locally, according to Kelly.

The mobile laboratories help assist mobile applications entrepreneurs to start and scale their businesses. The laboratories offer training and testing facilities, identification and piloting of potential applications, incubation of startups, business and financial services and linkages with operators.

Entrepreneurs are being recruited through incubation networks and mobile social networks like Mobile Monday Kampala for the Uganda market. The laboratories project is part of the US$18 million project, "Creating sustainable businesses for the knowledge economy."

infoDev has a network of around 300 different business incubators around the world. Mobile lab is the first that targets labs specific to mobile applications. The mLab was realised with help from infoDev. infoDev is a technology and innovation-led development finance program in the Financial and Private Sector Development (FPD) Vice Presidency of The World Bank and IFC.

mLab in Kenya is a consortium comprising Nairobi's iHub, eMobilis, the World Wide Web

Foundation and the University of Nairobi's School of Computing and Informatics. iHub facilitates interaction within the tech community through events and competitions; eMobilis, augmented by the Web Foundation, will increase the skill set of mobile applications developers through training and accreditation; and the University of Nairobi's School of Computing and Informatics will carry out various research studies regionally in the mobile niche in East Africa

The Meraka consortium was the winner in South Africa - a government-supported, four player consortium of: CSIR Meraka, Innovation Hub, Innovation Lab, and Ungana-Afrika.

39 bids were received from potential host organisations in 13 countries and a decision was made to go with East Africa and South Africa. East Africa had five applicants and South Africa four; evaluation visits were carried out to all nine bidders by an evaluation panel comprising infoDev, IFC, Nokia, Mobile Active, and Oxford University.

iHub in Nairobi is the site for regular Barcamps and the MoMo meetups in Nairobi. Interesting initiatives discussed so far include M-Farm (to bring farmers together to buy and sell as a group), pitching startup ideas to investors (eg. by IPO48), and other entrepreneurial ideas (eg. Akirachix).

The M-Farm models uses crowdsourcing and mobile alerts to blend sales patterns, predicted weather, and other information that would help farmers make a better decision about what to grow next.

The Web site Overlap.co.ke tries to tackle the bad driving practice of overlapping, the term used by Kenyans when drivers cross into the wrong side of the road to pass others and cause a massive traffic jam. The solution uses the Ushahidi platform, and is a citizen initiative; it is hoped that traffic police will use it too.

Other startups presenting their offerings at MoMo Kenya events include Dealfish (online classifieds service), Mocality (www.mocality.co.ke), Flix (Flix.co.ke mobile movie guide) and M-Order (social mobile ordering application).

Craft Silicon has developed a platform called Elma which simplifies the creation process for mobile apps across platforms; it also hosts its own Elma developer conferences. Village Telco is a wireless, local, telephone company toolkit.

MoMo Kenya has organised events in 2011 focusing on PesaPal, a payment platform that helps Kenyans buy and sell on the internet using Mpesa, Zap and Credit Cards. One of the biggest projects iHub is housing is Uchaguzi, a technology platform that allows citizens and civil society to monitor and report incidents around the electoral process.

Spotlight: Kenya as an ICT Hub

The recent Kenya Economic Update report by the World Bank states that over the last decade, ICT has outperformed all others sectors in Kenya, growing at an average of 20 per cent annually.

"The benefits of ICT are starting to be felt in other sectors, and have contributed to the conditions for the country to reach an economic tipping point," the report says. ICT consultant Paul Odhiambo says the region needs to develop confidence in its own human sources.

Kenya has opened 2011 with renewed and stronger than expected growth on the back of a new constitution, strong macro-economic policies, and a favourable regional environment. The uptake of ICT throughout the economy could provide the impetus required for high and sustained growth.

An estimated 15 million mobile phone users were using mobile money by the end of 2010, the equivalent of three out of every four adult Kenyans. The World Bank estimates that in 2004, there were 1.65 million active Internet users in the region. By 2007, the number had increased to 4.78 million, and by 2010 the number of regular users had jumped to 6.78 million, a penetration rate of about 5.1 per cent of the population.

Kenya's active Internet usage stands at 8.7 per cent of the population, the highest in the region, compared with Uganda (7.9 per cent), Rwanda (3.1 per cent), Tanzania (1.2 per cent) and Burundi (0.8 per cent).

Those who actually need the Internet the most are the very poor people, according to Bitange Ndemo, Permanent Secretary in the Kenya Ministry of Information and Communication. He believes that the government should step in and bring prices down by making ICT infrastructure an open access platform.

In June 2010, Kenya's telecommunications regulator slashed the licence fee for third-generation (3G) mobile Internet services by 60 percent to $10 million, in order to raise penetration -- and announced that it would not charge for an upgrade to 4G.

The wider applications of ICT are starting to reshape the structure of the economy, especially in the financial sector. In 2010, this sector benefited from a number of innovations, including Equity Bank and Safaricom's M-Kesho, a joint venture allowing mobile phone users to earn interest on their mobile phone-based savings accounts.

Civil society organisations have also effectively used mobile technology to monitor social unrest and human-rights violations, mobilise voters and disseminate election results, and even track the management of local budgets.

According to the Communications Commission of Kenya, in Q4 2010 there were 22 million mobile subscribers in Kenya. 6.63 billion minutes of local calls were made on the mobile networks, and 740 million text messages were sent. Pre-paid accounts for 99% of the total mobile subscriptions. The number of Internet users was estimated at 8.69 million.

Thanks to mPesa, Safaricom reportedly has more transactions each day than Western Union does globally in a year. Number portability and 3G services are slated in 2011 for Kenya.

Linda Kamau of Ushahidi.com has helped highlight Kenya's role as one of Africa's ICT innovation hubs, according to Michael Macharia, founder and Group CEO of Seven Seas Technologies

One of the biggest bottlenecks hindering further innovation and a culture of technological entrepreneurship is the lack of capital for start-up companies and individuals. It is hoped that venture capital can be used to generate jobs for the economy through supporting innovation in line with Vision 2030, the Kenya government economic blueprint aiming at a middle level income status in 20 years.

Whive, a Kenyan social network that started in 2008 on the PC web, recently has deployed a mobi web site Whive.mobi. Location-based services will become popular in Kenya. Mixit is very popular in South Africa; it enables instant messaging at very low-cost on low-end feature phones. Kenya has a similar platform called Sembuse.

MoMo Kenya's sponsors include Nokia, which has worked with East and Southern Africa communities to engage with developers. For instance, they held a training workshop for developers in QT and Advanced Java at the University of Nairobi. 10 universities and key training institutions were engaged and participated in the training.

Nokia also works with local developers and entrepreneurs in helping local app developers to market their product (eg. AfroHotorNot). Other partners that Nokia has helped market internationally beyond Kenya are Sharper Innovations (LSU, Afrohotornot and Wazzup), Symbiotic Media (Tusker Project Fame and Daily Nation Media) and Shimba Technologies (Tuvitu App and MTV Music Awards app). About 30 apps have been reportedly been created by Kenyan developers for the Ovi Store. About 99% of those are locally focused.

Microsoft has unveiled its BizSpark Program to provide software startups resources for Application Lifecycle Management, Student 2 Business (career options), DreamSpark (developer and designer tools and training) and cloud operating systems (Azure).

The Imagine Cup is the world's premier student technology competition. Every year the Imagine Cup invites students to meet a challenge around a social cause. It started in 2003 with 1,000 competitors; it now draws in more than 325,000 students from over 120 countries/regions registered in areas such as software design, embedded design, game design and digital media.

Other speakers at MoMo Kenya events have included operator Safaricom. "I tell my colleagues that you need to get off that ivory tower and start sitting with everyone. See what ticks," says Nzioki Waita, Head of Strategy and New Business at Safaricom.

The operator has formed a "new products" division, which includes Mpesa and other VAS teams. Its SDP (Service Delivery Platform) and App store launched at the same time. Safaricom Academy (a partnership with Strathmore University) gets young innovators working on their ideas with training. Safaricom also has an Incubation Centre for startups to work via its infrastructure), the Safaricom Innovation Board and the Safaricom Garage. However, observers suggest that it would help, of course, if mobile operators opened up the API space in Kenya.

Comments from MoMo Kenya meetup attendees are revealing, and reflect its thought leadership and innovative value:

"We had a great time."
"It's one of those events I look forward to. It was awesome learning new stuff and meeting incredible people."
"Safaricom should understand the power that mobile developers have in developing apps that could bring a lot of revenue to them."
"Make sure you don't miss the next one."

Another regional event is Pivot 25, bringing together East Africa's top mobile entrepreneurs and startups to pitch their ideas to an audience of 400-500 people, with a chance of winning monetary prizes and increasing awareness of their work to local and global investors and businesses. The competition is for 25 entrepreneurs/startups to pitch their best mobile apps or services, in 5 different verticals, to the audience and a panel of judges.

The Mobile Monday Kampala (MoMoKla) in Uganda was officially unveiled by Igeme Nabeta, the chairman of Parliament's ICT Committee in Munyonyo in March 2010; it is the second African chapter after Mobile Monday South Africa.

During the preparatory MoMoKLA meeting in January 2010, Idris Rai, the EuroAfrica-ICT regional coordinator, said Mobile Monday could be the catalyst for deeper exploration of mobile telephony.

Daniel Stern, MoMoKLA organiser, says its meetings are a great platform for validation, scouting, hiring and fund raising. Mobile is one of the most interesting frontiers today, blending IT, telecom, portability, media, sociology, anthropology, politics and business.

In Kampala, MoMoKla celebrated the 10th anniversary of the founding of MoMo in 2010, featuring SMS Media's Simon Kaheru, Michael Niyitegeka from Makerere University, Kyle Spenser and Simon Vass from the Linux Users Group and Ephantas Maina from Crystal Clear Software.

MoMoKLA also held a UNICEF-supported meeting on mobile health, "M Health for Mother and Child." Five presentations were given on a range of mobile applications, including tracking, charting and mapping of illnesses such as malaria, diarrhoea, tuberculosis, based on reports sent by Community Health Workers over mobile. The more efficient dissemination of health care diagnostics information resulted in better coordination of treatment and pharmaceutical logistics.

A meetup on Mapping featured Michael Lipnick from Harvard's Brigham and Mothers Hospital, Sean Blaschke from UNICEF, and Andrew Kasola and Micheal Tendo from UTL. Demos included ways of capturing and sending community level information by a USSD application that works on any mobile phone.

Another popular event organised by MoMoKLA was "Simple, Low-cost Solutions: The Gist of M4D," hosted by Grameen Foundation and held at MTN Uganda. Speakers included Sean Krepp, Country Director, Grameen Foundation; Matt Berg, ICT Director Millennium Villages Project, Earth Institute of Columbia University; FrontlineSMS and Kiwanja.net founder Ken Banks; MoMo CEO Jari Tammisto; Olga Morawczynski, Financial Literacy Project Manager, AppLab; Andrew Dearden, Professor Interactive Systems Design, Sheffield Hallam University; and Jenny de Boer, Consultant Innovation Management in ICT4D at TNO. Karlstad University and Makerere University jointly organised the conference M4D2010.

MoMoKLA and MoMo Kenya were well represented at the 10th Anniversary MoMo Global Summit held in Helsinki and Tallinn in 2010. MoMoKla Peer Awards finalist Revence Kalibwani competed in the Bottom-of-the-Pyramid Startup category, which was won by MoMo Kenya's Alex Nyika (iCheki mobile phone software solution for tracking matatus). Kalibwani's mobile app Adjection enables people to surf the Internet on mobile and computers at lower costs by letting advertisers subsidise the cost of access to the Internet.

Other MoMo Africa speakers at the Summit included iHub project manager Jessica Colaco, Ushahidi programmer, Linda Kamau, and lead organiser for MoMo Kenya, John Wasonga. Uganda's report for the Daily Monitor, Walter Wafula, also spoke at a subsequent Mobile Africa event hosted by Mobile Brain Bank.

"Africans are behind some of the most effective digital tools for driving social change and economic inclusion," according to Elana Berkowitz, an innovation advisor in the US State Department.

For instance, Ushahidi, a Kenyan crisis response platform, has been used by the US Government and the United Nations for emergency response purposes in Haiti. The US State Department has launched its own Apps4Africa competition.

Ugandan engineers have designed a rugged computer kiosk from an oil drum; the product, dubbed the Digital Drum, is now being backed by UNICEF, the government of Uganda and NGO and private sector to roll out models later this year for use in schools, youth centres, and other community access points.

MoMo in South Africa has been supported by companies such as Cellsmart and Cap Gemini. MoMo chapters for Nigeria and Ghana are also being planned this year, as well as Mozambique. MoMoDar (Dar es Salaam) was formed in October 2010 and launched in November 2010.

The launch of MoMo Dar was hosted by COSTECH (Commission for Science and Technology). Organiser Amina Lukanza announced themes for upcoming events such as mobiles for development, m-learning, developer competitions, and innovation awards. Tanzania has a range of mobile app developers such as Dar411Mobile, a business locator service.

MoMoDar has held events on mobile marketing (featuring Bongo Live http://www.bongolive.co.tz; PUSH Mobile http://www.push.co.tz; and MASOKO Tanzania http://www.masokotz.com). Other demo sessions have featured data collection apps for fieldworkers using mobile phones.

The panel on Transforming Innovations to Business featured Leila Janah of Samasource (a social business that connects women, youth, and refugees to computer-based tasks: www.samasource.org), Paul Bragiel (co-founder of I/O ventures) and Russel Simons of Yelp (a website that helps people find local businesses: www.yelp.com).

The panel on State of Mobile banking and Payments in Tanzania featured representatives of some of Tanzania's market leaders in mobile banking: Vodafone m-Pesa, MobiPawa, NMB and e-Fulusi Africa.

Another interesting initiative launched from Finland for regions like Africa is called Grapho Learning. Its partners include Nokia, Rovio and MoMo. It aims to assist millions of children to learn to read in their local language. GraphoGAME helps children to learn to read by an innovative learning game developed by the experts of University of Jyväskylä and Niilo Mäki Institute. GraphoWORLD is an international Network of Excellence that supports. GraphoREAD is a research project on eReading that develops new media formats and business models to support acquisition of functional literacy in low-income countries.

"Mobile Monday and infoDev hope to continue the successful partnership in establishing new MoMo chapters in region. The next focus area is Mozambique," says MoMo CEO Jari Tammisto. The annual Digital Africa Summit has played a catalytic role for some MoMo chapters in Africa, such as MoMoKLA.

"The move to expand MoMo to Africa has inspired the entire Mobile Monday community with passion to utilise the mobile connectivity and content available for empowering inclusion and prosperity," said Tammisto.

"I was honored to announce Alex Nyika of Kenya as winner at Mobile Monday 2010 Peer Awards. Mobile Monday will connect the African mobile innovators to the global community for cross boarder learning and sharing insights," said Tammisto.

Mobile Monday is also organising special events for African entrepreneurs during the 4th Global Forum on Innovation and Technology Entrepreneurship in Helsinki, from May 30 to June 3, 2011 (http://www.infodev.org/en/Article.676.html). Previous Forums were held in Brasil and India.

THE ROAD AHEAD

"Mobile-phone technology is like fire: as soon as a society gets it, it can't imagine life without it," writes Rollo Romig, formerly assistant director of the NYU Journalism in Ghana program.

Some technophiles even hail the mobile phone as a "silver bullet" for Africa and the "entry ticket for Africans to join the 21st century." But as with other emerging economies like India, there are now more Africans with access to a cellphone than to a clean toilet or even shoes. Thus the mobile hype needs to be tempered with other socio-economic development trajectories as well.

Africa's globally plugged-in generation expects more of its leadership, and has access to instant information; older African leaders ignore this political dynamic at their own risk, many observers warn. Sixty percent of Africa's population is under 24. Urbanised youth populations are tech-savvy – and demanding.

"Whatever is cutting edge in San Francisco or London today will start trickling through to the market in places like Uganda from maybe a year onwards," according to Jan Chipchase is a user-experience researcher for Frog Design. And Africa is not just a technology adopter but innovator as well. Awards handed out at the Mobile World Congress (MWC) in Barcelona in February 2011 highlight Africa's innovation in mobile money products and services -- technology developments that benefit people who do not have access to traditional banks.

Most of the continent hovers at between 5 and 15 percent Internet access; SEACOM CEO Brian Herlihy expects that to grow by 50 percent every year. Total Africa-wide spending on IT technology will triple to $150 billion, and downloads and data will drive that.

The Africa Center for Strategic Studies has released a report titled "Africa's Evolving Infosystems: A Pathway to Security and Stability", written by Steven Livingston. The report details the changing climate of media freedom on a continent with traditionally insular media, and the report appeals for the further development of mobile applications which can further security and stability in Africa.

The report found that political instability and biased, often-violent suppression of print, radio and television media has been the norm in many of Africa's states. The rapid growth of mobile phone use in the African market (65 percent over the past 5 years), and the free access to information via mobile Internet applications can give Africans a chance to promote democratic processes and civil society networks.

Africa is projected to add an additional 224 million mobile users over the next five years, bringing mobile phones to 68 percent of the continent's population. Mobile phones in Africa are increasingly being used as a media to get information and use value added services. Whether it's checking market prices, transferring money or simply checking the latest news, Facebook or Wikipedia, mobile phones are transforming life in Africa.

Inevitably, the African mobile Internet market is due for a major transformation. The number of mobile Internet subscribers in Africa has increased dramatically in the last 12-18 months, particularly in East Africa. In Kenya alone, mobile Internet subscribers grew from 1,562,065 in Q4 08/2009 to 3,059,906 in Q4 09/2010. Smart phone and feature rich phones make up as much as 30% or more of the market in countries with higher numbers of mobile Internet subscribers.

Literacy is a key factor in the development of the mobile Internet. However, African mobile voice ARPUs (and margins) have decreased over the past few years, and only the launch of non-voice applications will allow local mobile operators to reverse this trend.

The key to driving mobile data revenues upwards starts with an understanding of how Africans use the mobile Internet and their willingness to spend on mobile applications such as music download, online news, social networking, email, and search engines.

A new breed of operators is now offering bundled services that include voice, Internet, TV and films in Africa. Broadcasters and audiovisual content holders need to make new alliances with telecoms operators to increase their revenues and audiences. Telecom service providers in Africa need to attract new clients using multi-play packages.

Access to new forms of basic banking and payments systems looks set to be a key driver of change for most economies in Africa and Asia, as is the increased ease and flow of international remittances. These payment systems are beginning to provide greater competition and efficiency among financial institutions.

Mobile phones offer a potential gateway for both local and international banking and payment services, and there are a growing number of initiatives from both public and private sector encouraging their use.

By 2015, ITU expects that the household television penetration in Africa would reach around 40 per cent, thus opening up more cross-media strategies for infrastructure and content players.

According to McKinsey research, the number of middle class consumers in Africa may increase by more than 50% during the coming decade. The region's economy has grown

by almost 5% annually since 2000, with 27 of the 30 largest markets accelerating at an even faster pace.

Private consumption also surged by $275billion in the last decade, a figure surpassing Brazil and India. The density of households possessing a combined income of $5,000 a year or above will expand from 85 million at present to 128 million in 2020.

By 2040, the continent is also expected to boast the world's largest working-age population, and another 500 million children could be born by 2030, providing marketers a youthful, aspirational audience in the long term.

Supporting these shifts is the move towards urban living, with an extra 15 cities in Africa containing a minimum 1 million residents emerging in the past ten years, and a further 19 due to join this group by 2020, taking the total to 71.

Overall, 117 million people have migrated to metropolitan centres in the last ten years. The ten busiest cities, including Alexandria and Cairo in Egypt, Algiers in Morocco, Johannesburg in South Africa, and Lagos in Nigeria are projected to yield over $1trillion in GDP collectively by 2020.

85% of local shoppers would be willing to receive mobile advertising, including listening to brand messages. Currently, over 400 multinational corporations claim at least $200 million in annual revenue from Africa, and although challenges remain covering a lack of talent and infrastructural development, the potential cannot be ignored.

Mobile phones sales have boomed in Africa, with more handsets likely to be in circulation than there are people to use them by 2015. Penetration has already attained such a benchmark in Gabon, and is nearing the same level in South Africa, while even in Sudan, a country troubled by war in recent decades, it has reached 45%.

NEWS AND RESEARCH SOURCES

Uganda Daily Monitor, New Vision Uganda, Uganda Independent
Kenya Broadcasting Corporation; The Nation, Kenya; The East African
Sudan Tribune, Tanzania Citizen
IT News Africa, Business Daily Africa, Newstime Africa, BizCommunity
Computer World, TMC Net, Good Gear Guide
AlJazeera.Net, CNN, BBC
Wireless Week, GoMo News, APC Magazine
Reuters, IDG, AFP
Capital Business, Earth Times
Forbes, Business Week
Yankee Group, Frost&Sullivan, Pyramid, Informa
New York Times, The Guardian, Christian Science Monitor

MOBILEMONDAY™

LIST OF ABBREVIATIONS

ADSL	Asymmetric Data Subscriber Line
CD-ROM	Compact disk, read-only memory
CLC	Community Learning Centre
CSO	Civil Society Organisation
EDI	Electronic Data Interchange
GIS	Geographical Information System
GSM	Global System for Mobile communications
HDI	Human Development Index
HDR	Human Development Report
HTML	Hyper Text Mark-up Language
HTTP	Hyper Text Transfer Protocol
ICT	Information and Communication Technologies
ICT4D	ICT for Development
ISP	Internet Service Provider
IT	Information Technology
ITeS	IT-enabled Services
LAN	Local Area Network
MDGs	Millennium Development Goals
NGO	Non-governmental Organisation
NRI	Network Readiness Index
PCO	Public Call Office
PDA	Personal Digital Assistant
PoP	Point of Presence
SME	Small and Medium Scale Enterprise
SMME	Small, Medium and Micro Enterprises
SMS	Short Message Service
VoIP	Voice over Internet Protocol
VSAT	Very Small Aperture Terminal
WANs	Wide Area Networks
WLL	Wireless in Local Loop

Chronology of MobileMonday: Founding of City Chapters

Year	City
2000	Helsinki
2004	Tokyo, Silicon Valley, Milan, Rome
2005	Austin, Beijing, London, Los Angeles, Paris, Singapore, Sydney, Adelaide, Chicago, New York, Seattle
2006	Bangalore, Bangkok, Boston, Chennai, Dublin, Dusseldorf, Geneva, Hong Kong, Istanbul, Kuala Lumpur, Melbourne, Mumbai, Munich, New Delhi, St. Petersburg, Stockholm, Vancouver, Washington DC, Shanghai, Barcelona, Madrid, Copenhagen, Toronto
2007	Adelaide, Amsterdam, Brussels, Caracas, Dallas, Estonia, Frankfurt, Hyderabad, Jakarta, Philadelphia, Seoul, Kiev, Marseilles
2008	Belfast, Berlin, Bogotá, Brisbane, Budapest, Casablanca, Hamburg, Lithuania, Oslo, Zurich, Geneva, Taipei, Tel Aviv, Warsaw, Lisbon, Buenos Aires, Hanoi, Montreal, Sao Paulo, Tallinn, Vilnius, Moscow
2009	Vienna, Johannesburg, Malmo, Malta, Capetown, Portland, Philadelphia, Miami, Bucharest, Riga, Oulu, Boulder, Calgary, Medellin, Mexico City, Rio de Janeiro, Slovenija, Sofia
2010	Kampala, Nairobi, Brooklyn, Orlando, Tampa, Dar es Salam, Palestine, Colombo, Columbus, Pasadena, Karlskrona
2011	Maputo, Dakar, Accra, Cairo

ABOUT THE AUTHOR

Dr. Madanmohan Rao (madan@techsparks.com; twitter.com/MadanRao) is conference chair for the annual Innovation Africa Digital Summit and director for MobileMonday's research projects. He is a new-media consultant and author from Bangalore, and is editor of five book series: The Asia Pacific Internet Handbook, The Knowledge Management Chronicles, AfricaDotEdu, World of Proverbs, and Global Citizen. He is co-founder of the Bangalore K-Community, a network of knowledge management professionals.

Madan was also world music editor for Rave magazine, editor-at-large for Wireless World magazine, and contributor to the Poynter Institute blog on new media trends. Madan was formerly the communications director at the United Nations Inter Press Service bureau in New York, vice president at IndiaWorld Communications in Bombay, and research director at the Asian Media Information and Communication Centre (AMIC). He graduated from the Indian Institute of Technology at Bombay and the University of Massachusetts at Amherst, with an M.S. in computer science and a Ph.D. in communications.

Madan is a frequent speaker on the international conference circuit, and has given talks and lectures in over 75 countries around the world. He has chaired and spoken at a number of telecom events ranging from the WiMax Forum to VoIP Asia. Madan was on the nominating committee of ICANN (International Corporation for Assigned Names and Numbers). He is on the board of editors of the journal Electronic Markets and the Journal of Community Informatics, and was on the board of the journal Convergence.