

Anticipating Internet Growth in Africa

Identifying Market Opportunities

Telecom & Media Insights
Issue 41

Contents

1	Abstract	2
----------	-----------------	----------

2	Introduction	3
----------	---------------------	----------

3	Constraints to Growth of Internet Penetration in Africa	5
----------	--	----------

4	Anticipating Market Evolution	9
----------	--------------------------------------	----------

5	Implications for Investors	12
----------	-----------------------------------	-----------

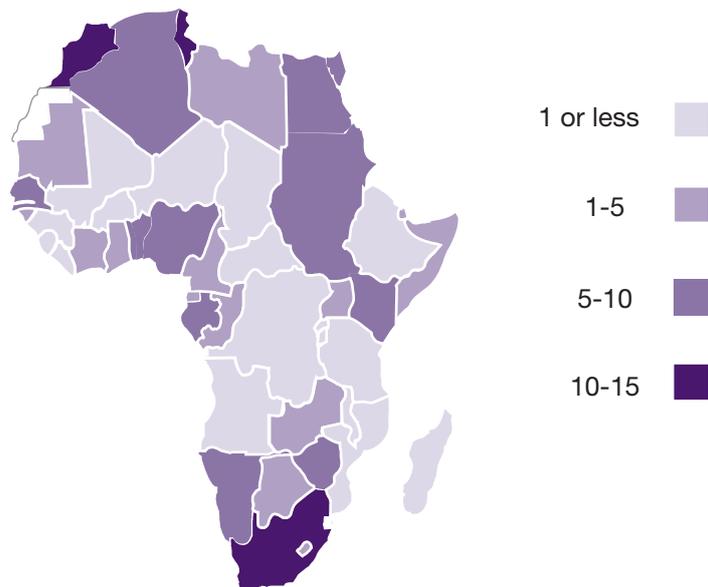
1 Abstract

Internet access in Africa is amongst the least affordable in the world. Our analysis shows that poverty is not a barrier to further development of the market and extension of Internet penetration beyond current levels. High prices, however, are a major factor, driven by low availability of international bandwidth, poorly structured markets, lack of existing infrastructure and low population densities. In this paper, we present a framework for the analysis of markets based on the key constraints of international bandwidth connectivity, PC penetration and government regulation. Application of this framework can help operators to identify regions where the constraints are not too strong or are expected to ease out in the near future. Initially, these regions are in the more developed areas of Northern and Southern African countries. However, operators that enter or invest in these markets and try to stimulate demand too soon could fail as the usage constraints are too significant at the moment to be profitable. The lowest risk strategy for operators is to enter these markets as integrated service providers, with mobile voice supporting infrastructure that is extended to data products.

2 Introduction

Average Internet user penetration¹ across African nations is only around 5%², compared with around 18% in Latin America and around 19% in Europe and Central Asia³. Moreover, there are distinct variations in Internet usage across the continent (see Figure 1).

Figure 1: Internet Users per 100 People, African Nations, 2007



Source: Caggemini TME Strategy Lab Analysis; International Telecommunication Union, "Telecommunication/ICT Markets and Trends in Africa 2007", October 2007

Internet usage is beginning to flourish in the more prosperous regions of Northern and Southern Africa with South Africa, Tunisia and Morocco having Internet penetrations above 10%⁴, with rates of 11, 13, and 20% respectively⁵. However, the penetrations in central African markets remain largely under 5%⁶.

Such low Internet penetration in Africa has attracted widespread interest from a variety of players, including conventional fixed-line operators, pure-play Internet Service Providers (ISPs), wholesale providers and 3G operators. For example, in South Africa, several companies are already competing for consumers through continuing investments in 3G, DSL and WiMAX. Telkom SA expanded from 26 to

¹ This indicator reflects the percentage of people that regularly access the worldwide network through individual or shared dial-up, leased or broadband connections.

² Caggemini TME Strategy Lab Analysis; International Telecommunication Union, "Telecommunication/ICT Markets and Trends in Africa 2007", October 2007.

³ Regional Fact-sheets from the World Development Indicators 2008.

⁴ Caggemini TME Strategy Lab Analysis; International Telecommunication Union, "Telecommunication/ICT Markets and Trends in Africa 2007", October 2007.

^{5&6} Ibid.

Average Internet user penetration across African nations is only 5%, compared with 18% in Latin America

71 WiMAX sites in 2008 alone⁷. In less developed markets such as Tanzania, Internet growth is being led by mobile operators who are increasingly extending their voice offerings to data. Vodacom's HSDPA-based Internet café initiative is typical of such attempts to reach new communities⁸.

However, both new investors and active operators are presented with the same challenge of profitably reaching out to a wide consumer base. On one hand, usage barriers such as inaccessibility, lack of affordability and computer illiteracy continue to exist in many regions and adversely impact market potential. On the other hand, there have been some positive developments that signal potential improvement in market conditions. GDP growth has been strong across the region (5.4% average GDP growth from 1997 to 2007⁹) and the investment pipeline is also seen to be robust with many actors increasing their interest in the region. And the World Bank Group has committed US\$2billion over five years, from 2007 to 2012, towards the development of ICT¹⁰ in Africa¹¹.

In this paper, Capgemini's TME Strategy Lab analyzes the reasons for low Internet penetration in Africa and also presents an analytical framework to help assess the expected market evolution. The study then suggests recommendations for companies that are developing or reviewing their strategies for the African Internet market.

⁷ <http://www.wimaxday.net/site/2008/06/09/telkom-sa-expands-wimax-network/>.

⁸ <http://www.itnewsafrika.com/?p=1456>.

⁹ African Development Indicators 2007, World Bank.

¹⁰ Information and Communications Technologies.

¹¹ UN Chronicle Online Edition, "Connect Africa Summit Commits to Bridging the Digital Divide", 2006.

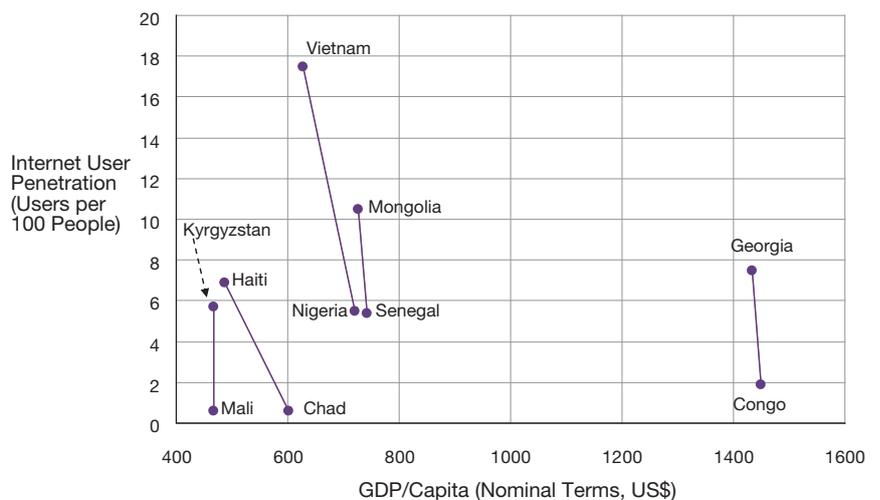
3 Constraints to Growth of Internet Penetration in Africa

The key growth constraint is not the poverty of the populations, but the prohibitively high Internet pricing

In 2003, it was estimated that around 90% of sub-Saharan Africans and 30% of North Africans live on US\$2 a day or less¹². The presence of widespread poverty makes it easy to attribute low Internet usage to the perceived lack of affordability of Internet services among the masses.

However, our analysis shows that the affordability argument does not hold strongly for both the rich and the not-so-rich countries (see Figure 2). For example, while Nigeria has higher GDP per capita than Vietnam, it has less than a third of the Internet penetration.

Figure 2: Internet User Penetration Compared with GDP/Capita (Nominal Terms, US\$), Selected African and Emerging Markets, 2006



Source: Capgemini TME Strategy Lab Analysis; ITU 2006

In addition to discrepancies observed while comparing African nations with their international counterparts, there are differences within Africa itself. In 2007, Libya, with a GDP per capita of around US\$7,300, had Internet user penetration of only around 4.4%. In contrast, Tunisia had less than half the GDP per capita of Libya at around US\$3,000, but had Internet user penetration of around 16.7%¹³.

This de-correlation of Internet penetration from GDP per capita indicates that the key growth constraint is not the poverty of the populations. Low Internet penetration in Africa is due to the existence of usage barriers that are created by high pricing of Internet services vis-à-vis income levels, and exacerbated by unfavorable demand conditions such as adult illiteracy. We now examine the usage barriers in detail.

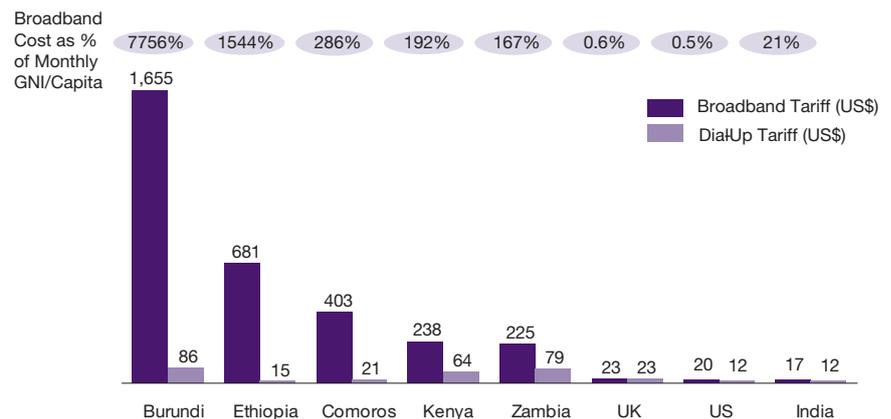
¹² Figures in PPP terms. Source: ILO 2004c, UN Economic Report on Africa 2007.

¹³ Capgemini TME Strategy Lab Analysis; International Telecommunication Union, "African Telecommunications/ICT Indicators 2008: At Crossroads", May 2008.

High Pricing

Affordability is not a function of wealth alone, but also of pricing. Internet pricing in Africa is prohibitively high (see Figure 3), adversely impacting affordability for even countries with higher per-capita incomes. For example, the lowest monthly broadband tariff in Burundi is over 7,000% of average monthly income, a price point that limits the addressable market to very niche segments.

Figure 3: Monthly Internet Tariffs and Broadband Cost as % of Monthly Income (Nominal Terms, GNI) per Capita, Select African and non-African Countries, 2007



Note: Dial-up cost is based on 20 hours of use. UK Internet consumers are assumed to subscribe to Internet plans that include access calls. US Internet consumers are assumed to subscribe to unlimited calling plans that include local calls made for Internet usage. Broadband connection refers to a speed of at least 256kbps.

Source: Capgemini TME Strategy Lab Analysis; International Telecommunication Union, "African Telecommunication/ICT Indicators 2008: At Crossroads", May 2008; Websites of BT (UK), Verizon (US) and MTNL (India); World Bank, World Development Indicators Database, October 2008

The single greatest barrier to price reduction in Africa is the unavailability of sufficient international bandwidth

We now discuss the issues that have led to high Internet tariffs in Africa.

International Bandwidth

The single greatest barrier to price reduction in Africa is the unavailability of sufficient international bandwidth. Africa has around 13% of the world's population but only 0.2% of international bandwidth. In fact, it has been estimated that Ireland, a country with only six million people, has greater international fiber bandwidth than the entire continent of 990 million people¹⁴. Africa was left behind in international connectivity (see Figure 4) as the opportunity for companies laying cable was not as pronounced as in Europe, Asia and the Americas, where enterprise segments and relatively affluent consumers would guarantee demand.

International capacity constraints create wholesale price competition at a national level, increasing the cost base of Internet providers in a manner no longer experienced in other continents.

Monopolistic Market Structures

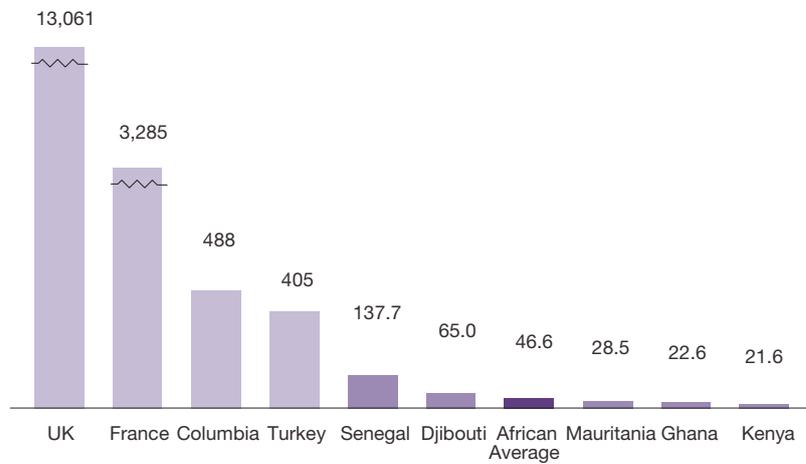
The second factor driving high prices is the lack of open market competition in many African nations. Across Africa, only 56% of incumbent operators were privatized in 2007, compared to 76% in Europe and 74% in the Americas¹⁵. As many countries have retained their nationalized operators, governments have not introduced the strong regulations needed for fair competition with private investors. The lack of free market competition discourages private investors, allowing the status quo to continue unchallenged and hampering the introduction of innovative pricing models, necessary for stimulating growth.

¹⁴ IEEE Spectrum 2004.

¹⁵ ITU World Telecommunication Regulatory Database 2007; International Telecommunication Union, "Ten Years of Regulatory Trends", February 2008.

An entry-level PC costs more than 15% of annual income for the majority of African consumers

Figure 4: International Bandwidth per Capita, Bits, Select African and non-African Countries, 2007



Source: Capgemini TME Strategy Lab Analysis; International Telecommunication Union, "African Telecommunication/ICT Indicators 2008: At Crossroads", May 2008

Lack of National Backbones

Few African countries have a reliable national backbone that provides the necessary capacity and reach, with even wealthier countries such as Nigeria still significantly deficient. In regions where national backbones are absent, service providers are forced to develop their own infrastructure, increasing operator costs and resulting in higher price points. This also leads to areas of parallel infrastructure in major urban areas and the absence of any infrastructure in regions where the business cases are weaker.

Low Regional Population Density

Another constraining factor is that Africa has an average density of fewer than 28 people per km² compared with densities of over 100 per km² in many European countries. Population density is a very powerful component of business cases for both fixed and mobile infrastructure, pushing providers to premium pricing to offset these infrastructure costs.

However, population densities in urban areas are likely to rise continuously over the next few years as a result of urbanization, making this an issue primarily faced by operators that are obligated by licensing terms to rollout services to less populated areas.

Exacerbating Demand Constraints

PC Affordability

PC penetration remains under 10% across Africa¹⁶. Cost is a major barrier. An entry level PC costs less than 0.5% of an average person's annual income in Western Europe, but accounts for more than 15% of annual income for the majority of African consumers¹⁷. In poorer countries such as Zimbabwe, the cost is more than an entire year's income.

Adult Literacy and Absence of Local Content

Africa is home to over 2,000 spoken languages, with approximately 100 of them used widely across ethnic groups. There are over 300 million speakers of the three dominant non-European languages: Swahili, Arabic and Hausa. Beyond these the

¹⁶ World Bank, "ICT at a Glance", 2008.

¹⁷ Capgemini TME Strategy Lab Analysis; International Telecommunication Union, "African Telecommunication/ICT Indicators 2008: At Crossroads", May 2008.

population becomes heavily fragmented in terms of regional languages. The unavailability of local content significantly limits the appeal of Internet services to large groups of African consumers. While local content tends to grow as Internet usage increases, this can be a difficult initial barrier to overcome for operators trying to reach new populations.

4 Anticipating Market Evolution

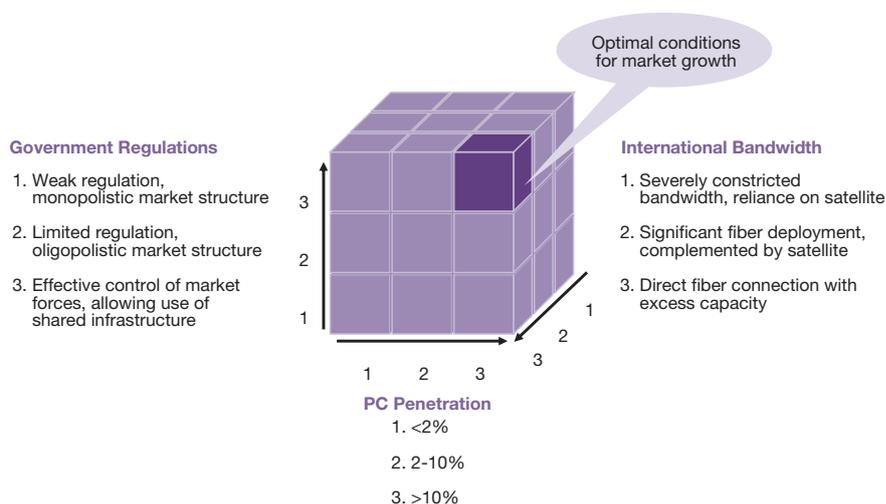
African markets are highly dynamic, with a great many factors making it difficult to gauge an accurate picture of the market opportunity for African broadband investments. Predicting the evolution of these markets requires the identification of constraining factors and an appreciation of the international, governmental and private sector initiatives that are likely to impact these constraints. We now discuss a framework that can help operators to identify regions where the constraints are not too strong or are expected to ease out in the near future.

Framework for Identifying Growth Regions

Figure 5 represents a model for assessing markets based on the key constraints of international bandwidth, PC penetration and government regulation.

By screening markets for availability of international bandwidth, maturity of regulation and PC penetration, we can identify countries where operators will be able to drive further development.

Figure 5: Market Screening Framework for Assessing Fundamental Constraints



Source: Caggemini TME Strategy Lab Analysis

Developments Influencing Framework Variables

We now try to understand how the market is likely to shape up by applying the above framework and examining the likely evolution of each framework variable.

International Bandwidth

The most significant current initiative to increase international connectivity to Africa is the US\$280 million¹⁸ EASSy (Eastern Africa Submarine Cable System), which will connect East Africa with the rest of the world. It is being funded by

¹⁸ Networkworld: Construction Starts on Africa's EASSy Cable Network, March 2008.

the World Bank and a consortium of private investors. This 8,500km cable will run the length of Africa, from South Africa to Sudan, connecting 13 countries en route with a joint capacity of 320 Gbits/s. Once East African countries have been reached, the project plans to reach out to central African countries. As per the International Telecommunications Union, the anticipation of increased competition has already led to reductions of bandwidth prices over the existing SAT3/WASC (South Atlantic 3 / West Africa Submarine Cable) system¹⁹.

Further initiatives include major extensions linking 54 countries across the continent through the US\$40 million NEPAD (New Partnership for Africa's Development) ICT Broadband Infrastructure network²⁰. Some national governments are also trying to improve their situation on an independent basis. For instance, Kenya is in the process of initiating its own fiber connection, while Nigeria and Angola have purchased satellite bandwidth²¹.

It is estimated that Africa lacks approximately 52,000 km of fiber backbone infrastructure, but the issue should be significantly addressed over the next two to five years as current projects reach completion²².

Government Regulations

The quality of market regulation in Africa remains highly variable. In 2007, around 50% of African fixed-line markets were monopolies, with a further ~25% allowing only partial competition²³. However, the trend is firmly towards better regulation and market liberalization. In 2007, around 80% of African countries had established independent regulatory authorities, with cooperation between regulators increasingly occurring at an international level²⁴. Many West African countries have come together in the ECOWAS (Economic Community of West African States) group, which commits members to harmonize ICT regulation under the direction of the ITU²⁵.

Regulations must be assessed at a national level, with particular attention given to the larger political environment and its probable influence on the countries' judicial system. It is also important to ensure precedents exist regarding the enforcement of regulations. Without this support, companies would be unwise to share backbone and access infrastructure.

PC Penetration

In areas with electricity grid access, PC affordability is a major barrier to individual Internet subscriptions. The "one laptop per child" initiative, led by a consortium of leading hardware manufacturers, now provides units for as little as US\$150, with the intention of having a cheaper version costing US\$75 to be available in 2010²⁶. Governmental initiatives²⁷ exist, but none have achieved dramatic increases in PC penetration due to the size of the investment required for widespread hardware subsidization. Therefore, PC penetration may continue to be the key constraint to growth in many markets. In areas where a significant increase in PC penetration cannot be achieved in a short time-frame, Internet cafés and other community offerings become key elements of operator strategies.

19 Telecommunication/ICT Markets and Trends in Africa 2007.

20 http://www.itu.int/ITU-D/partners/Events/2007/Nairobi_4-5June07/Presentations/4-2_NEPAD.pdf.

21 <http://www.eafricacommission.org/projects/126/nepad-ict-broadband-infrastructure-network>.

22 Telecommunication/ICT Markets and Trends in Africa 2007.

23 International Telecommunication Union, "Telecommunication/ICT Markets and Trends in Africa 2007", October 2007.

24 International Telecommunication Union, "Ten Years of Regulatory Trends", February 2008.

25 <http://www.itu.int/ITU-D/treg/index.phtml>.

26 International Herald Tribune, "Design Accolades for One Laptop per Child", May 16, 2008.

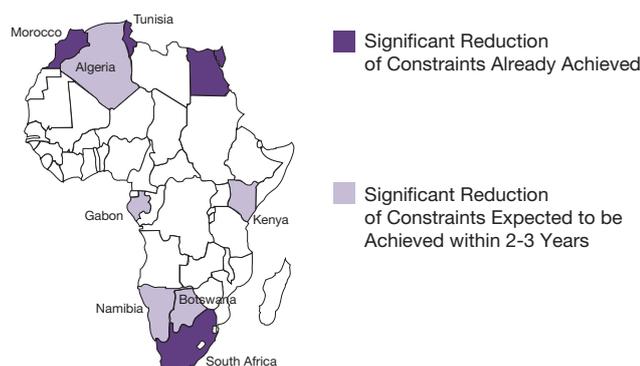
27 Governments, such as those in Rwanda and Ghana, with the help of the World Bank are investing in ICT sector and promoting its growth. Similarly, Kenya is promoting ICT in schools through a US\$1.4 million grant from the US.

The immediate opportunities in Africa are centered in the regions of Northern and Southern Africa, where growth constraints have already been eased significantly

Regional Development Patterns

On application of the market screening framework (see Figure 5), we can identify markets that are likely to witness significant growth of services in the near to medium term due to the relaxation of constraints (see Figure 6).

Figure 6: Illustration of African Countries Poised for Mass Market Internet Penetration



Source: Capgemini TME Lab Analysis; World Bank 2006; International Telecommunication Union, "African Telecommunication/ICT Indicators 2008: At Crossroads", May 2008; World Bank, World Development Indicators Database, October 2008

The immediate opportunities in Africa are centered in the regions of Northern and Southern Africa. These are markets where constraints have already been eroded significantly. In Tunisia, the PC penetration has risen more than three-fold from 2.15 in 2000 to 7.5 in 2007²⁸. It has also enabled competition in the mobile and Internet sectors²⁹. Additionally, international bandwidth availability has increased exponentially from 5 bits per capita in 2000 to around 300 bits per capita in 2007³⁰.

Algeria is an example of a country where the significant reduction of constraints is expected to be achieved within a few years. For example, the ongoing upgrade of the SEA-ME-WE-4³¹ (an undersea cable with landing station in Algeria) is likely to increase its bandwidth capacity by three times³² during this period. Algeria Telecom has also announced that it will deploy fiber across Algeria to improve bandwidth availability to end consumers and offer high speed Internet access³³. Moreover, regulators are trying to increase competition in the market by encouraging the deployments of WiMAX and 3G³⁴. On the PC penetration front, the Algerian government has initiated a family ICT program that aims to provide a PC to each household by 2010 through affordable pricing, low-cost financing and interest subsidies on loans³⁵.

It is notable that despite progress being made in international bandwidth expansion and often reliable regulatory authorities, East African countries (except Kenya) remain a longer term opportunity. Low PC penetration and low average incomes are likely to restrict operator offerings to niche markets such as capital-city based enterprise services and shared community offerings.

28 Website of Ministry of Communication Technologies, Republic of Tunisia; International Telecommunication Union, "African Telecommunication/ICT Indicators 2008: At Crossroads", May 2008.

29 World Bank, "ICT at a Glance", 2008.

30 International Telecommunication Union, "African Telecommunication/ICT Indicators 2008: At Crossroads", May 2008; World Bank, "ICT at a Glance", 2008.

31 South East Asia – Middle East – Western Europe - 4.

32 Fujitsu.com, "Fujitsu Helps Capacity Upgrade Between Asia and Europe with Sea-Me-We 4", March 2008.

33 Company website.

34 Telegeography, "GTI and Algeria Telecom launch WiMAX", February 2008; High Beam Research, "Huawei and Algeria Telecom celebrate successful EV-DO launch", May 2007.

35 ICTRegulationToolkit.org, "Programs to boost household PC penetration", December 2008.

5 Implications for Investors

Service providers poised for growth

Mobile versus Fixed Line

From 2002 to 2006, the number of fixed line broadband operators in Africa grew from 3 to 30³⁶. However, rollouts have typically focused on capital cities and major towns, with some extensions made subsequently to second tier towns. Limited rollout of fixed-line services is expected to continue over the next few years in view of the high costs of laying copper/fiber.

On the other hand, we expect cellular operators in major African markets to drive mobile broadband through technologies such as HSDPA. For instance, in South Africa, the mobile operator MTN uses HSDPA to link Internet cafés at speeds of up to 1.8 Mbps. Vodacom (South Africa) also reported that over 10 percent, or almost 150,000, of its 3G subscribers used data cards for connections to laptops in 2007, reflecting the popularity of 3G as a broadband access method³⁷. High consumer acceptance of mobile Internet is highlighted by the fact that in South Africa, there were over 1.8 million 3G subscribers in 2007 compared to around 335,000 ADSL connections³⁸.

This scenario is expected to be representative of the situation across Africa. We expect regional divides in access technology with fixed-lines being restricted largely to major cities, and mobile technologies reaching the mass market in broader regions.

Pure-Play ISP versus Integrated Communications Providers

Niche or pure-play ISPs operate locally and have a significant presence in many markets, utilizing either wholesale bandwidth from satellite providers or operating small regional networks. There are over 150 ISPs in South Africa, with around 90% of these operators reselling bandwidth from larger players such as incumbents and international operators³⁹. However, as markets mature, we anticipate this 'niche' business model to be the most threatened as these players lack scale, operate on thin margins and are unable to bundle voice services.

The position of fixed-line incumbents is also far from certain. Our interviews with industry experts suggest that the quality of service provided by fixed-line players is on average far below that provided by mobile operators. This makes fixed-mobile substitution a serious prospect in the urban areas.

In general, we anticipate integrated business models to emerge the strongest, with operators providing voice, broadband and community telephony products across a large section of the population. With the demand for voice traffic being everywhere, businesses supported by voice are less risky than those relying purely on demand for data. Moreover, the use of shared infrastructure for voice and data services results in generally higher margins.

³⁶ South African regulator website, ITU 2007.

³⁷ International Telecommunications Union, "African Telecommunication/ICT Indicators 2008: At Crossroads", May 2008.

³⁸ Ibid.

³⁹ www.ispa.org.za (South Africa Internet Service Providers' Association web-site). www.ispmap.org.za.

New Entrants or Existing Players

There are encouraging signs for new market entrants. Given that the development of many African markets will be slow rather than a “big bang” and the current Internet penetration is well below 5% in some markets, there remains a wide window of opportunity. However, with the integrated telecommunications model likely to become dominant in such price sensitive markets, new entrants need to consider whether to provide a wide selection of services (including voice) or identify an exit strategy when this mature market scenario takes form.

For existing players, the challenge is to improve customer service and expand reach to new regions. Industry experts suggest that customer service, in terms of fault response rates and provisioning times in particular, is a major issue in the region. Existing players need to revamp their operations significantly as new operators will try to exploit this weakness.

Critical Success Factors

Market Timing

Although we are positive about the size of the market opportunity, we urge caution to both new entrants and existing players regarding the timing of investments. Operators who invest heavily in infrastructure without fully appreciating the market constraints risk years of poor performance.

New pure-play ISPs are especially dependent on accurate market intelligence as they need to time their entrance appropriately to significantly benefit from a more general market evolution that reduces usage constraints (such as the increased availability of international bandwidth).

Moreover, we urge all operators to closely monitor the variables constricting demand for Internet services, as elements of socio-economic, competitive, regulatory and infrastructure development are the essential levers that underpin commercial success.

Public-Private Partnerships

For both incumbents and new entrants, partnerships with public bodies have never been more important. Many of the constraints to Internet usage might not be addressed profitably by private operators in a stand-alone manner. Therefore, international development agencies, national governments and international infrastructure initiatives also need to play a significant enabling role. Operators that partner with these agencies stand to benefit as barriers to accessibility are reduced. This strategy can also lead to competitive advantages through the subsidization of investments, national publicity and ensuring friendly regulatory support.

Leveraging Vendor Innovation

Vendors increasingly see Africa as a key market for revenue growth. As such, they are competing heavily on price and investing in the design of new products that open these markets. New low-cost 3G phones, datacards, community telephony products and backhaul network solutions can all support a company's strategy and therefore, partnering with vendors to trial these innovations can become a significant differentiator. For instance, becoming a partner in the one-laptop-per-child initiative can help operators distribute laptops to schools as well as homes and drive Internet usage over their networks.

Operators should work proactively with governments, international cable players and vendors to mitigate growth constraints in attractive markets

Conclusion

In conclusion, although Africa holds a lot of promise in terms of growth of Internet services, the evolution of these services in various African nations is not likely to happen in parallel. Although the low GDP per capita of African nations is a dampener, it is not the key constraint to the growth of Internet services in the continent. The primary challenge that needs to be overcome is the very high pricing of Internet services, caused by the lack of international bandwidth connectivity, monopolistic market structures, lack of national backbones and low population density. Companies that enter or re-invest in these markets and try to stimulate demand too soon will often fail as the usage constraints are too significant at the moment to address profitably.

One alternative for operators is to enter the markets when barriers have been overcome and market conditions have improved. This can be facilitated by using a detailed assessment framework to analyze markets and identify regions where usage constraints are likely to reduce in the near future. Another alternative is to work proactively with governments, international cable players and vendors to mitigate growth constraints in selected attractive markets. This can be done by partially funding government initiatives, investing in enabling infrastructure such as international bandwidth and subsidizing consumer equipment such as PCs or 3G-enabled mobiles. However, operators need to ensure that reducing barriers to entry does not bring in excessive competition and reduce their own upside.

Thus, succeeding in Africa requires careful analysis, regulations management, significant investments and a lot of patience to ensure appropriate market timing.

About the Authors

Tushar Rao is a manager in the TME Strategy Lab. His research interests include analyzing disruptive technologies in the broadcasting and mobile segments. Recent work involved an analysis of the emerging open ecosystem in the mobile industry and assessment of its impact on operators. Prior to joining the Lab, Tushar worked with a leading telco in India. He is based in Mumbai.

Kaushal Vaidya is a senior consultant in the TME Strategy Lab. His recent work includes analyzing trends in online advertising and assessing growth as well as profitability drivers of players in emerging markets. Prior to joining the Lab, Kaushal worked as a management consultant with the consulting arm of India's premier business house. He is based in Mumbai.

James Henderson is a consultant in the TME Strategy Lab. His current research focuses on analyzing the converging telecom and media industries, and emerging business models centered on collaboration. Prior to joining the Lab; he worked on a variety of projects across the TME sector with recent focus on emerging market strategies and the entrance of WiMAX into developed markets. He is based in London.



About Capgemini and the Collaborative Business Experience®

Capgemini, one of the world's foremost providers of consulting, technology and outsourcing services, enables its clients to transform and perform through technologies. Capgemini provides its clients with insights and capabilities that boost their freedom to achieve superior results through a unique way of working, the Collaborative Business Experience™. The Group relies on its global delivery model called Rightshore®, which aims to

get the right balance of the best talent from multiple locations, working as one team to create and deliver the optimum solution for clients. Present in more than 30 countries, Capgemini reported 2008 global revenues of EUR 8.7 billion and employs over 90,000 people worldwide. www.capgemini.com/tme

Rightshore® is a trademark belonging to Capgemini

For more information contact:

Jerome Buvat
Head of Strategic Research
Telecom, Media & Entertainment
jerome.buvat@capgemini.com
+44 (0) 870 905 3186

Australia

Level 7
77 King Street
Sydney NSW 2000
Tel: +61 2 9293 4000

Belgium

Bessenveldstraat 19
B-1831 Diegem
Tel: +32 2 708 1111

China

Unit 1101-04, Azia Center
1233 Lu Jia Zui Ring Road
Shanghai 200120
Tel: +862 161 053 888

Denmark

Ørnegårdsvej 16
DK-2820 Gentofte
Tel: +45 70 11 22 00

Finland

Niittymäentie 9
02200 Espoo
Tel: +358 (9) 452 651

France

Tour Europlaza
20 ave. André Prothin
92927 La Défense Cedex
Tel: +33 (0)1 49 00 40 00

Germany

Hamborner Strasse 55
D-40472 Düsseldorf
Tel: +49 (0) 211 470 680

India

Piroshanagar, Vikhroli
SEP2 B3 Godrej Industries Complex
400 079 Mumbai
Tel: +91(22) 5555 7000

Italy

Via M. Nizzoli, 6
20147 Milano
Tel: +39 02 41493 1

Middle East

P.O. Box 502 420
Dubai
UAE
Tel: +971 50 884 77 64

Netherlands

Papendorpseweg 100
3528 BJ Utrecht
Postbus 2575
3500 GN Utrecht
Tel: +31 30 689 0000

Norway

Hoffsveien 1D,
0275 Oslo
Tel: +47 24 12 80 00

Poland

Al Jana Pawla II 12
00-124 Warsaw
Tel: +48 (22) 850 9200

Portugal

Edifício Torre de Monsanto
Lugar de Romeiras
Miraflores
1495-046 Algés
Tel: +351 21 412 22 00

Spain

Edificio Cedro
Calle Anabel Segura, 14
28100 Madrid
Tel: +34 91 675 7000

Sweden

Gustavlundsvägen 131
PO Box 825
161 24 Bromma
Tel: +46 8 5368 5000

United Kingdom

76 Wardour Street
W1F 0UU London
Tel: +44 20 7734 5700

United States

623 Fifth Avenue
33rd Floor
10022 New York
Tel: +1 212 314 8000