

COUNTRY REPORTS

PAUL BUDDE's selection of updates – from Nigeria, Japan, Tanzania and Brazil



NIGERIA – AFRICA'S LARGEST MOBILE MARKET

Nigeria has more than 125 million subscribers and a market penetration of around 75% in early 2014. The rapid growth has led to problems with network congestion and quality of service, prompting the regulatory authority, NCC, to impose fines and sanctions. Every year the network operators are investing billions of US dollars into additional base stations and fibre optic transmission to support the ever increasing demand for bandwidth. According to some estimates, the number of cell sites in the country – currently around 20,000 – could more than triple in the coming years. (See also Q&A with Vanu Bose, page 9.)

At the same time, efforts are being made to limit the environmental impact of further expansion and to encourage infrastructure sharing. Major tower outsourcing deals have been concluded. Much of the remaining addressable market is in the country's rural areas where network rollouts and operations are expensive. This, in combination with declining ARPU levels, is forcing the networks to streamline their operations and to develop new revenue streams from services such as third and fourth generation (3G/4G) mobile broadband, mobile payments/banking, and others.

Not every operator makes it in this highly competitive market. MTel, the mobile arm of the national telco Nitel, is in liquidation together with its parent company, following a decade of failed privatisation attempts. Mergers and acquisitions are going on among the country's other smaller operators, many originating from the fixed-wireless sector using CDMA2000 technology. Some of them hold suitable frequency spectrum for a technology migration to LTE. Several LTE networks have already been launched.

Although the market is one of the most competitive in Africa, the regulator is tightening price caps and mandating further reductions of interconnect rates. Following years of delays, mobile number portability was introduced in 2013, promising to make the market even more competitive.

FIXED LINE AND INTERNET

Significant consolidation has occurred in Nigeria's internet and broadband sector, from over 400 ISPs three years ago to around 100 in early 2014. Supported by the expansion of several competing

national fibre backbone networks, applications such as e-commerce, online banking and e-payments, e-health, e-learning and e-government are rapidly evolving.

Nigeria is the most competitive fixed-line market in Africa, featuring a second national operator (Globacom) and over 80 other companies licensed to provide fixed-telephony services. The alternative carriers combined now provide around 85% of all fixed connections.

The majority of fixed lines have been implemented using wireless technologies, which gives the network operators the opportunity to 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. However, fixed-wireless connections have declined in the past few years in favour of mobile services. This has prompted mergers and acquisitions in the sector, which is likely to continue in the coming years.

Several microwave and fibre-based national backbone networks 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, followed by other cables in 2010, 2012 and 2013. Additional submarine cables are scheduled to go online in 2014, which will deliver a further boost to the country's underdeveloped internet and broadband sector.

KEY DEVELOPMENTS

- Billions of dollars in investments per year, tens of thousands of new base stations to be built.
- National fibre backbone rollouts continue.
- Explosive growth of mobile broadband subscriptions.
- Rapidly evolving digital media and digital economy.
- Mergers and acquisitions among smaller operators.
- MTel/Nitel in liquidation.
- Several LTE networks launched.
- Regulator cracks down on poor quality of service.
- New price caps and lower interconnection rates.
- Number portability finally introduced.
- New international submarine fibre optic cables planned for 2014.

JAPAN - A WORLD LEADER BUT FACING CHALLENGES

Japan is preparing to face a myriad of challenges in the coming decade with looming social and economic changes ahead. The country has an ageing and decreasing population that demands the creation of appropriate social systems and support services. The market has also seen a change in values and behaviour with people wanting higher quality services. Japan's sophisticated IT infrastructure and high broadband penetration sets the scene for improved productivity, convergence of industries and a more flexible industrial structure.

The government has been particularly active in regulating its telecoms industry in such a way as to introduce more effective competition. A key 2010 government-led initiative is the 'new ICT strategy' which aims to realise a knowledge/information society by switching from a society led by government and providers to a society led by citizens (taxpayers and consumers). It focuses on key strategies in the lead up to 2020 to support the sustained growth of Japan. The strategic goals include:

- Improved e-government
- High-quality medical services using ICT
- A nationwide environment for school education and lifelong learning using ICT
- Creation of new markets worth approximately ¥70 trillion
- Universal deployment of a smart grid
- Using ICT to halve traffic congestion on key roads
- Advancing intensive R&D in strategic fields (eg. next-generation optic networks, next-generation wireless, cloud computing, smart grid, robotics, 3D video).

The government has already ensured that Japan can claim to be one of the world's leading mobile telephone markets, not only in terms of size but also in terms of innovation and, in particular, its ability to be early with the introduction of advanced technologies. With 3G subscriber numbers having peaked at around 97% of all mobile subscribers coming into 2013, Japan has shifted its focus to 4G/LTE, becoming the fourth country in the world to introduce this next generation platform.

Japan has been active in regulating its telecoms industry to reduce the monopoly of NTT, and to introduce more effective competition. This has resulted in an increase in the number and size of competitors, reduced prices and has facilitated the introduction of innovative telecoms applications.

Competition has been intensifying in areas such as low pricing, a wide variety of handsets, music, video, e-books, and other content services. Not surprisingly the volume of smartphones entering



the market has been rapidly increasing.

Japan can also claim to have developed one of the most advanced broadband environments in the world. It is the third largest broadband market after the US and China. Especially noteworthy has been



Japan can claim one of the world's leading mobile telephone markets, not only in terms of size but also in terms of innovation.



the continued strong uptake of FTTH services. In the fixed-line market the expansion of broadband services centred on FTTH is accompanied by an ongoing convergence between fixed-line and mobile communications broadcasting. As a result, competition between

services has entered a new phase.

It is reported that the Ministry of Internal Affairs and Communications is reviewing the anti-monopoly regulations covering the NTT group, and is planning for a sharp rise in traffic in the years leading up to the 2020 Summer Olympic Games in Tokyo.

KEY DEVELOPMENTS

- Continued decline in DSL subscriptions, down to 12% of the total fixed broadband market.
- Launch of NTT DoCoMo's LTE network, branded 'Xi' with aim to cover 70% of population by March 2015.
- Regulator review of mobile bandwidth allocations in the 2000 MHz band by 2020 – to cater for anticipated explosion in demand for mobile and wireless data traffic.
- FTTH subscriptions comprise 63% of the total fixed broadband market; strong government policies over a decade have seen over 90% of households with access to FTTH.
- Strong growth in WiMAX sees the 4 million subscriber mark passed.
- Start of field trials for WiMAX 2.
- Continued rise in VoIP usage as traditional fixed-line services decline.
- NICT and Hitachi claimed a world first with their testing of TV white space in early 2014.
- Further spectrum in the 3.4-3.6 GHz band set to be allocated for commercial 4G networks by 2015.

TANZANIA – MOBILE BROADBAND GAINS TRACTION

Tanzania’s economy has been showing solid growth rates of between 5% and 8% since 2000, despite the global economic crisis. For the period 2013-17, the International Monetary Fund predicts stable GDP growth at around 7% per annum.

The government has actively embraced the principles of competition and a private sector including foreign participation as a means of rapidly advancing economic and social development. Policy reforms have led to the telecoms sector becoming among the most liberal in Africa. However, high import tariffs on telecoms equipment and taxes on telephone facilities by various authorities are still placing a burden on investors and operators.



In mid-2013 Bharti Airtel estimated that in Tanzania over 10% of gross domestic product is transacted through mobile commerce.



phase of a national fibre backbone network to connect population centres around the country. However, the cost of international internet bandwidth has so far not come down by as much and not as quickly as expected.

Tanzania has two fixed-line operators (TTCL and Zantel) and eight operational mobile networks, with four additional players licensed under a new converged regulatory regime. With four major operators – Vodacom, Bharti Airtel (formerly Zain), Tigo and Zantel – mobile penetration is approaching 70%, with annual subscriber growth of more than 20%. In recent years a price war among these players has adversely affected the smaller operators, which have suffered from customer churn.

The new converged licensing regime has brought a large number of new players into the market. The



The landing of the first fibre optic international submarine cables in the country in recent years has revolutionised the market, which up to that point completely depended on expensive satellite connections. In parallel, the government has switched on the first

liberalisation of voice over internet protocol (VoIP) telephony as well as the introduction of 3G and 4G mobile services and wireless broadband networks is boosting the internet sector, which

has been hampered by the low level of development of the traditional fixed-line network.

Following the launch of 3G mobile broadband services, the mobile networks are becoming the country’s leading internet service providers on the back of their extensive national infrastructure and existing subscriber bases in the voice market. Operators are hoping for revenue growth in the mobile data services market, given that the voice market is almost entirely prepaid and voice ARPU continues to fall. To this end they have invested in network upgrades, with both Vodacom and Smile Communications developing services based on LTE technology. A fast developing source of revenue is from mobile money transfer and m-banking services. In mid-2013 Bharti Airtel estimated that in Tanzania over 10% of GDP is transacted through mobile commerce.

In March 2013 the regulator reduced interconnection rates by 70%. Combined with a stringent registration policy, requiring new customers to have a physical ID, the reduced rates dampened growth in the number of mobile subscribers for some operators.

MARKET HIGHLIGHTS

- Price wars continue to hurt smaller operators.
- Low ARPU is encouraging mobile operators to develop mobile data and commerce services.
- Consolidation likely among licensed mobile operators and ISPs.
- Regulator sets voice interconnection rates to 2017.
- Government allocates TZS17.5bn (US\$10.8m) to improve rural telecoms infrastructure.
- Despite two years of delays, the regulator affirms that MNP (mobile number portability) may be introduced later in 2014.
- Smile Communications trials voice over LTE.
- Tigo integrates M-Pesa mobile banking service with 17 banks.
- Government reviews ICT policy; considers measures to tackle cybercrime.
- TTCL opens a new microwave link connecting Dar es Salaam and Zanzibar, doubling data capacity.
- Telecoms traffic monitoring system is delivering about \$1m in incoming international call taxes a month.

ESTIMATED MARKET PENETRATION, END-2013

PENETRATION RATE	
Mobile	75%
Fixed-line	0.4%
Internet	14%

(BudeComm based on various sources)

BRAZIL - WORLD CUP STIMULATES INVESTMENT



With the 2014 FIFA World Cup and 2016 Olympic Games being held in Brazil, operators have been rushing to extend LTE and fibre networks. These undertakings are supported by legislation that offers tax breaks for investments in networks supporting fixed or mobile broadband, as well as by a general competition plan that regulates wholesale services and infrastructure sharing. The asymmetric measures introduced by the competition plan are a significant step. The regulation of network unbundling and controlled wholesale prices should pave the way for a more competitive broadband market. The plan requires operators with significant



Operators with significant market power will share their networks and infrastructure.



market power to share their networks and infrastructure with small or new service providers, at reference prices approved by regulator, Anatel. International infrastructure is also developing well, with the construction of new submarine cables and a regional landline cable being built under the auspices of the Union of South American Nations. These will considerably increase international bandwidth in coming years.

The fixed-line sector is dominated by Telefónica, América Móvil, Oi (being merged with Portugal Telecom), and GVT (owned by Vivendi). Telefónica Brasil has integrated its fixed-line and mobile services under a single brand, while América Móvil has also merged its Net Serviços and Embratel divisions and has started to integrate its fixed and mobile services under the brand name Claro.

Anatel does not regulate VoIP services in Brazil and they are offered by many service providers, including US firms. The main Brazilian VoIP companies are Net Serviços and GVT.

The pay TV market has seen sustained growth since 1996. The country has the largest pay TV subscriber base in Latin America, though pay TV penetration is lower than several other local markets. As a result, there is ample room for further growth, which has encouraged investors to gain a foothold in the market. A favourable pay TV law of 2011 removed restrictions on foreign investment and on telcos being able to provide pay TV services. Brazil is home to more than one-third of all

mobile users in Latin America and the Caribbean. Mobile penetration is upward of 132% and growing by about 7% annually. The four MNOs, Vivo, Claro, TIM Brasil and Oi, are developing 4G services on their 2.5 GHz concessions, encouraged by a government keen to see seamless connectivity during the FIFA World Cup. These networks will see far larger footprints and capabilities following the auction of spectrum in the 700 MHz band in August 2014, though some spectrum will not be fully released by broadcasters until 2016.

The volume of smartphones, in which Brazil has a large manufacturing base of its own, is expected to soar in coming years, supported by a large population, tax breaks on smartphone sales and the tumbling prices of devices. This will have important knock-on effects for the m-commerce sector.

Brazil is connected through submarine cables to the US, Central and South America, and the Caribbean, but it has no direct link with other continents, and insufficient bandwidth has pushed up broadband prices. To meet this shortcoming, the Brazilian government has entrusted state-owned Telebrás with the construction of a new submarine cable network – the Atlantic Cable System (ACSea) – linking Brazil with the US, Europe, Africa and several Latin American countries. Telebrás has also been charged with building a satellite to be used for military purposes and to boost the country's national broadband programme.

Because of remoteness, satellite communications have retained an important role in Brazil. The Amazon jungles of the north make satellites the major communications facility, as it is almost impossible to lay fibre optic cable.

KEY DEVELOPMENTS

- Mobile broadband accounts for 42% of all broadband access.
- Oi's merger with Portugal Telecom approved by the Brazilian and Portuguese antitrust agencies.
- ACSea submarine cable linking Brazil and Europe contracted by Telebrás and IslaLink.
- Seabras-1 cable to provide direct route between the US and Brazil in 2015. Satellites Star One C4 and C5 to be launched in the second half of 2014.
- Claro, Vivo and Oi launch LTE networks.
- TIM Brasil signs LTE roaming with TIM (Italia).
- NET Serviços launches a 500 Mbps service for the residential market.
- Datora rebrands as Vodafone Brazil following a M2M partnership deal.
- Regulator assigns significant market power (SMP) on five operators in the fixed-line sector and four in the mobile sector.
- Regulator proposes assigning unallocated spectrum in the 2.5-2.69 GHz band to smaller ISPs.

PAUL BUDDE is head of BuddeComm, an independent telecoms research and consultancy company specialising in strategic business reports, based in Australia. More detailed country reports are available at www.budde.com.au



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