DEDICATED TO PROVIDING THE LATEST INFORMATION, TRENDS, TECHNOLOGY AND FRAUD ON VOIP & VOICE BYPASS IN THE INTERNATIONAL TELECOMMUNICATIONS INDUSTRY

Trans-Sector Strategies In Africa

The trans-sector approach that BuddeComm is promoting for national broadband infrastructure has its pioneers in some perhaps unexpected places.

In 2007 our Senior Analyst for Africa, Peter Lange, was part of a team of consultants that advised the government of Angola and recommended to bundle all state-owned backbone infrastructure into a separate company which would then offer access to service providers on a neutral wholesale basis.

An 'Inter-ministerial Commission for the Coordination of Multi-Sectoral Telecommunications' was formed to coordinate a US$500 million national fibre rollout by Angola Telecom (AT) with fibre and microwave rollouts by other entities such as the Transport Ministry (following the railway lines), the Electricity Ministry (following the power lines), and the Water Ministry, in a bid to avoid duplication of efforts.

Separate companies have already been established for satellite and international fibre connections (see our recent News and Views.

INSIDE THIS ISSUE

Unleashing The Hidden Power of the SIM Card

Mobile network operators (MNOs) have traditionally measured the quality of their networks through techniques such as drive testing, network probing and analysis of engineering data from various network elements. However, to measure true service quality, it is also necessary to evaluate the users' experience from the handset. Until recently this has not been possible, but some interesting changes in SIM card standards have provided a potential solution to this problem.

Users' perception of service performance is very much influenced by the performance of their handset. If the performance of the radio aspect of the handset is poor, then events such as loss of access and dropped calls can be wrongly attributed to poor performance of the serving network; MNOs have often, until now, been blind to these issues with network-centric measurement systems.

However, a functionality of SIM cards that enables the recording, storing and forwarding of data relating to all handset activity has now been unlocked by recent changes made to the SIM and (U)SIM Application Toolkit standards by the 3rd Generation Partnership Project (3GPP) and Smart Card Application Toolkit standards by the European Telecommunications Standards Institute (ETSI). This relates in particular to the ability of the card to handle the transfer of handset activity data back across the air interface to the host network.

As a result, monitoring solutions based on SIM cards now appear to be gaining traction in the wider industry. With these solutions, MNOs should be able to detect, for example, service-related problems by collecting feedback on call attempts, dropped or blocked calls, call success rate, SDCCH/TCH capacity and handover failure rates in line with existing base-node-probing techniques.

VoIP Developments
Open Internet

On October 22, 2009, the Federal Communications Commission (FCC) adopted a *Notice of Proposed Rulemaking* (Notice) to propose rules to codify and expand the previous Administration's Policy Statement on Internet Principles. Those principles were adopted by the FCC in 2005 to prevent a more detailed codification of Net Neutrality. While all five of the FCC's current Commissioners voted to adopt a proceeding to discuss Open Internet principles, only the Democrat Commissioners, with the Republican Commissioners objecting, voted to approve the substance of the proposed codification and expansion of Net Neutrality principles.

The FCC provided an inordinately long comment period – six months, which implies that the issuance of the *Notice* was in response to pressure from Open Access advocates. The FCC presumably does not wish to grapple with Net Neutrality principles in the near term, and instead has delayed serious consideration until after the issuance of its National Broadband Plan. The Plan is required by the broadband stimulus provisions of the American Recovery and Reinvestment Act, and due in February 2010.

Officially titled *Preserving the Open Internet and Broadband Industry Practices*, the *Notice* proposes to codify the existing four Internet Principles adopted in Policy Statement by the Chairman of the FCC during the Bush Administration. Those principles are: (1) consumers are entitled to access the lawful Internet content of their choice; (2) consumers are entitled to run applications and services of their choice, subject to the needs of law enforcement; (3) consumers are entitled to connect their choice of legal devices that do not harm the network; and (4) consumers are entitled to competition among network providers, application and service providers, and content providers. Open Access critics had argued that the 2005 Policy Statement was insufficient, particularly because it lacked enforcement rules.

The *Notice* adopted this October would add and codify two more principles, all of which would be enforceable. The first new principle is: subject to reasonable network management, a provider of Internet access must not discriminate between lawful content, applications and services. In proposing the additional non-discrimination principle, the FCC acknowledged that the key challenge is to distinguish socially-beneficial discrimination from socially-harmful discrimination.

For the sixth principle, the *Notice* reiterates an Obama Administration theme – increased transparency. The

proposed transparency principle would require an Internet access provider, subject again to reasonable network management, to disclose information on network management "and other practices" as is required to Internet content, applications and services.

Chairman Genachowski, during the Obama presidential campaign, helped to develop the candidate's strategy for on-line messaging. As Chairman of the FCC, he has sought to expand the policy dialog to the on-line world, inviting comment on proposals from bloggers. He has argued that this expanded dialog will result in more transparency in the policymaking process. Of course, it is one thing for the government to promise to be more transparent. It is altogether a different thing for the government to mandate that private sector service providers be more transparent in their commercial dealings with other private sector players, some of whom are direct competitors.

All six principles would be subject to the needs of the government for public safety and national security.

Network operators like AT&T and Verizon lobbied strenuously against adoption of the *Notice*. However, with the likes of Google and the public interest groups – two important constituents to the new FCC, the odds were in favor of its adoption. However, like much of government regulation, the marketplace may develop a new paradigm, rendering the regulation obsolete. Google and Verizon were long-time opponents on Net Neutrality. However, just days before the FCC issued its *Notice*, Google and Verizon announced they will collaborate on the development of applications for Verizon's network, including Google Voice. The same week, AT&T announced that it will no longer block its iPhone customers from receiving VoIP applications, such as Skype.

Google's interest in an Open Internet has expanded with its involvement of an open handset. Its development work on the Android phone, which would offer Google Voice – in competition to other VoIP vendors like Skype – has increased the economic benefit of an Open Internet to Google. Ideally for Google, the Android would give some competition to the iPhone.

The fact that players in two of the biggest rivalries - AT&T - Verizon and Google - Apple -- resolved their regulatory differences in a negotiated commercial deal just prior to the release of the FCC *Notice* may also explain why the FCC gave such a lengthy period for comments. Perhaps it wants to first observe whether these commercial deals will answer whether the FCC really does need to expand, codify and enforce more detailed Net Neutrality rules, or whether it can simply leave those questions to market participants.

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Unleashing the Power of the SIM Card

Furthermore, with the added layer of granularity that operators can achieve with SIM-based solutions, MNOs will be able to drill into subscribers' quality-of-service data based on specific requirements, for example by location, handset make and model, time of day or a subset of subscribers.

The events notifications captured on the card (for example, when the handset is switched on, time to first service and dropped network notification) can also provide a unique insight into a user's phone usage and service experience that could not be captured from traditional sources.

Typical solutions based on SIM cards are implemented in a client/server architecture. The client, a small application ('applet') installed on a subscriber's SIM card, processes raw performance-related data into event notifications pertinent to its own operation and that of the serving network.

This data is subsequently sent over the air interface to a remote server hosted by the operator or a specialist third party.

While this data has obvious value to MNOs, it is also of potential interest to mobile virtual network operators (MVNOs) who previously had little direct insight into the network quality their customers experienced from the host network.

It also provides a new independent source of data that can be used for revenue-assurance purposes.

Actual end users, in particular corporate customers, may also be interested in the service quality their user communities are receiving from the network provider – a notoriously difficult area to measure.

Large corporate clients could use this information as leverage in contract negotiations with an MNO.

In addition, for corporate users who are now able to access data relating to the way phones are operated by their staff, the audit trail held on the SIM card could help to deter abuse of the system by field staff who are issued work via their mobile phones, who may, for example, deliberately turn off their phones and make false claims about being 'out of coverage'.

Given the quite recent emergence of this new SIM card functionality, the market is still relatively immature.

The key intellectual property for these systems resides with the applet for the SIM card and the way data is subsequently processed.

The volume of data collected for an MNO with a large number of SIMs deployed can run into terabytes – mining this data for usable information will require a secondary level of processing and, depending on the final applications of the data, innovative ways of presenting it.

MNOs may therefore benefit from outsourcing this activity to a third-party organisation that specialises in providing this type of service.

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For additional information or assistance on this subject, please visit www.analysysmason.com

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Trans-Sector Strategies in Africa… *continued from page 1*

Prior to this, a Multi-Sector Hub Project had already been initiated under which a satellite-based national backbone network with thousands of nodes would benefit service providers and institutions across various sectors of the economy, including telecoms, media, energy, health, education, transportation, water, fisheries, finance, justice, and defence. True trans-sector thinking!

As part of the project, telecom service providers in the country and the Ministries responsible for each sector were systematically queried to identify the capacity demand in each sector, as a basis for the technical network design and costing. The consulting provided to the government also aimed to harmonise the various technologies used in the different projects: Fibre for the major cities, microwave for second-tier population centres, satellite and wireless systems for the rural and remote areas.

Angola is the second-largest producer of oil in sub-Saharan Africa and has been blessed with double-digit GDP growth since the end of a long civil war in 2002. In 2006 it replaced Saudi Arabia as China's main oil supplier. The global economic crisis is affecting the country, but GDP growth is forecast to continue at around 6% p.a.

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For further information please visit www.budde.com.au ❖

The Future of Telecommunications 2008-2013

Market Research Report

These are facts: the PSTN is moribund and IP networks are taking over; on a global basis, mobile communications is the preferred mode of connecting people and information; traditional telecom equipment vendors can only survive by selling software and services that use commercial computing platforms; and regulatory oversight is being replaced by market competition.

Networks must now be designed and operated from the bottom up rather than from the top down so that centralized control defers to peripheral control. Convergence will mean that companies which used to be in separate industries – telcos, mobile operators, ISPs, cable and entertainment firms –are now in the same business (any firm that can deliver an IP stream can offer any service). OEMs must come to terms with the fact that their business models increasingly rely on software and services; yet do not guarantee higher margins.

The report will examine what the industry makeover will mean for telcos, mobile operators, ISPs, systems integrators and OEMs, and what they need to do to remain competitive. We analyze the impact of the technology shift on economic growth prospects in developing and developed countries, and the opportunities and risks it represents for service providers and equipment vendors, as well as governments. To understand how the future of networking is being developed today, read this report.

1.1 IP Changes Everything

Two years ago, in our study entitled *The Future of Telecommunications 2006-2011*, INSIGHT examined the possibility that, by the close of 2011, of the three ubiquitous networks—PSTN (public switched telephone network), wireless, and IP (Internet protocol)—one could potentially come to dominate the others and thereby change the telecommunications revenue picture completely. In one scenario we posited that the three networks would continue to evolve along current trajectories, and in the other two scenarios we had Internet and then wireless dominating all of communications. Two years later, we have our answer: communications is converging on IP backbones.

The dominance of IP marks the merging of the previously separate communications and entertainment services—fixed and mobile telephony, broadband Internet access, and television.

It marks the convergence of markets, but it is *the result* of the telecommunications industry's embrace of Internet technology, which provides a cheaper and more efficient way to convey information as it eases the pressures on margins. Convergence allows operators to replace multiple networks for services such as voice, data and video—each with its own order-entry, billing and fault-reporting systems—with a single network on which everything travels as interleaved streams of IP packets. The convergence affects not only wireline networks, but wireless ones too. Today, operators run separate but interconnected networks for fixed and mobile phones. The new converged networks are access "neutral".

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Skype Sale Dispute Nears End

A messy legal dispute that has cast a cloud over eBay Inc.'s pending sale of a controlling stake in Skype could soon be resolved. A deal to end litigation involving the Internet-calling company – which would drop a prominent investor from the transaction – could be disclosed as early as this week. In September, an investor group agreed to buy 65% of Skype from eBay for $2 billion, however Skype's founders later sued in an effort to block the deal.

The proposed settlement would reconstitute the investor group, dropping one investor and adding Skype co-founders Niklas Zennstrom and Janus Friis, who sold Skype to eBay in 2005. Dropped from the group would be London-based Index Ventures Management S.A., home to partner Mike Volpi, who used to work for Messrs. Zennstrom and Friis as chief executive officer of their online video startup, Joost N.V.

Mr. Volpi was the driving force behind the investor group's bid for Skype, but quickly found himself the center of controversy after Messrs. Zennstrom and Friis alleged he breached his fiduciary duty while CEO of Joost by using confidential information to broker the group's bid for Skype. Under the proposed agreement, Messrs. Zennstrom and Friis would receive a stake in Skype and at least one seat on its board. They would also end a separate dispute against eBay. I do not believe this will hinder Skype growth or deployment of new products and services.

Timothy Thompson, President, TJT Associates, Inc.

WHAT'S NEWS IN TELECOM

- AT&T Challenges Verizon Over Wireless Coverage Ads

- Sprint plans dozens of layoffs in wholesale business

- Smartphone market growth slows in 3rd Qtr 09

- Sony Ericsson unveils first Android phone

- Korean ISP SK Broadband Unleashes Korea's Fastest HFC Data Speeds with ARRIS C4(R) CMTS Four Channel Upstream Bonding Technology

- Motorola MC3100 Raises the Bar for Mid-Range Mobile Computing with High-End Features

- Bell to launch Canada's fastest, largest wireless network November 4

- AT&T Global Network Extended to Kuwait Through Agreement With Qualitynet and NavLink

- China Mobile and Futuremark Sign Benchmark Development Agreement

- Wi-Fi Alliance Welcomes T-Mobile as New Sponsor Member

- Avistar Launches Two Industry-Leading Visual Communications Solutions, Delivering Business-Class, Desktop Videoconferencing to Microsoft OCS and Citrix Users

- Verizon Business Takes Virtual Private LAN Service Global

- Sprint Follows Wireless Rivals Into Netbooks

INTERNATIONAL WHOLESALE SPOT RATES US$

AFGHANISTAN MOBILE	0.1675	↑	GERMANY MOBILE	0.0080	↓	JAPAN MOBILE	0.0155	↓
BANGLADESH MOBILE	0.0190	↓	INDIA MOBILE	0.0120	_	MEXICO MOBILE	0.0369	↓
CONGO MOBILE	0.1167	↓	INDONESIA MOBILE	0.0205	_	PAKISTAN MOBILE	0.0481	_
CUBA	0.5500	_	IRAN MOBILE	0.0580	↓	PHILIPPINES MOBILE	0.0900	_
DOMINICAN REPUBLIC	0.0730	↓	IRAQ MOBILE	0.0728	_	THAILAND MOBILE	0.0062	↓

What is VIDS

VIDS (*Voice Intrusion Detection System*) is an auditing service that detects voice Bypass at the entry point of a network, including internal fraud, network faults and other unfavorable traffic conditions.

Usually fraud detection for Bypass occurs after the activity has occurred and the damage is done. With VIDS – Bypass activity is detected real-time.

Fixed line and mobile Bypass (GSM, CDMA, TDMA) are detected by VIDS whether the Bypass is VoIP over VPN or VSAT.

VIDS adapts to any network with no hardware or software investment by the customer, it's a service.

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