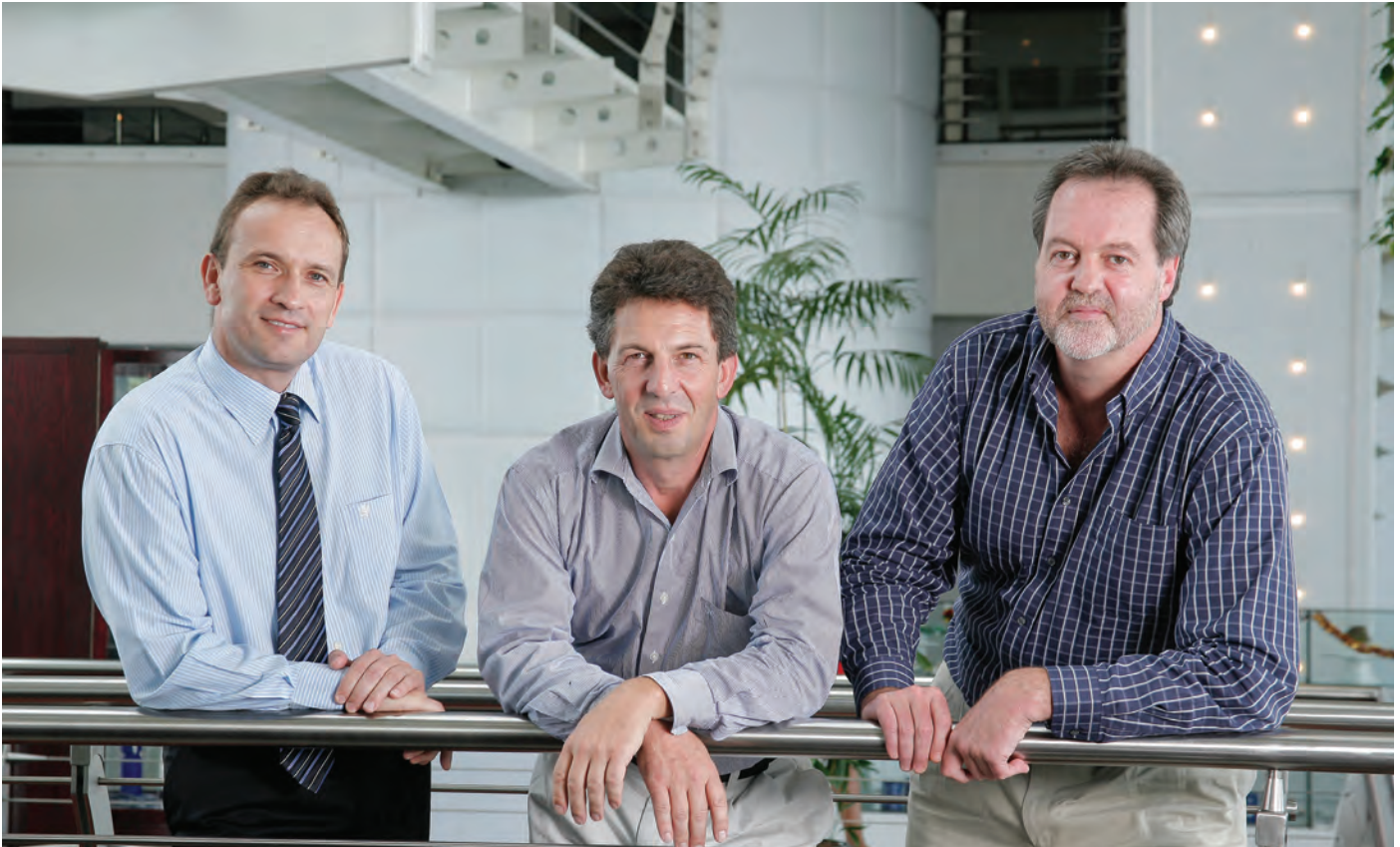


Leader of the Pack

Vodacom South Africa overhauls its network to pursue new opportunities — and reinvents itself as more than just a mobile operator.

By Raymond Conway



Andries Delpont, Vodacom Executive Director, Engineering and Technology; Kurt Misteli, Tellabs Sales Director; Andreas Uys, Vodacom Managing Executive for Transmission

Vodacom South Africa is used to making a name for itself with fresh ideas. Founded in 1993 as one of the first two mobile carriers licensed by the South African government, the company quickly earned a reputation as an innovator.

“The average income per user relative to network CapEx was very low at that time, and mobile devices were very expensive,” recalls Andreas Uys, managing executive for transmission at Vodacom. “We had the philosophy of liberating the telecommunication industry in South Africa and the market from that situation by making mobile more affordable to the man on the street. As it turned out, that was the key for the entire mobile voice market to succeed here.”

Today, Vodacom continues to press forward with bold strategies that few wireless carriers would consider attempting. The one-time upstart is now pursuing new IP and optical technology to self-provision its own mobile broadband backhaul capacity.

Room to Grow

“In the South African market, Vodacom was definitely a first mover, and we have always wanted to remain a first mover, the first to leverage new and innovative ideas,” Uys said.

Among the company’s achievements: Vodacom was among the first mobile carriers in the world to launch a pre-paid service offering, and moved aggressively into 3G as fixed-line penetration in South Africa continued to lag, especially for data services to support email and internet access.

Although most new voice service additions in the country are mobile, voice traffic may be reaching its ceiling. By comparison, there’s no ceiling in sight for wireless data. Vodacom boasts approximately 35 million mobile customers, and as of April 2008, had about 1.4 million customers on its 3G/HSPA network. As a percentage of Vodacom’s total network traffic, mobile data continues to rise rapidly.



“Mobile penetration is very high, but on the data side, there is still huge opportunity,” Uys said. “Mobile broadband traffic growth is exponential right now, and we don’t see that tapering off for several years to come.” As exciting as that kind of growth in data traffic might be, it frequently translates into an operational cost burden for the mobile carrier, whose mobile network backhaul facilities are typically E1 lines leased from incumbent transmission service providers. As is the case throughout the world, such leasing is extremely expensive, typically accounting for 30 percent or more of a mobile carrier’s OpEx.

In addition to their cost, leased lines can be time consuming to provision, and they lack the bandwidth flexibility needed in a market where the next broadband application is hard to predict. Few would argue, then, that leased lines are a less than optimal solution for exploding data traffic, yet Vodacom had little say in the matter.

“When we launched, all operators in South Africa were obliged to lease backhaul transmission facilities from the fixed-line incumbent telco,” Uys said.

That rule changed in 2004, leaving Vodacom free to decide what alternatives, if any, it would pursue for backhaul.

In fact, the company already had been actively reducing its backhaul costs. Several years ago, it deployed the Tellabs® 8100 Managed Access System and the Tellabs® 8000 Network Manager to enable access network efficiencies such as digital cross-connect timeslot grooming. The new nodes also allowed Vodacom to begin using Ethernet for backhaul where available.

As that system proved beneficial, Vodacom then deployed the Tellabs® 6300 Managed Transport System, which enabled faster provisioning of Ethernet private lines with SDH networks’ more defined QoS assurances.

Taking Control

About three years ago, Vodacom deployed the Tellabs® 8600 Managed Edge System to facilitate its ongoing transition from 2G to 3G. With the Tellabs 8600 system, Vodacom was able to realize a number of goals. The company leveraged IP/MPLS capabilities to support evolving hybrid RAN needs. It also achieved even greater backhaul efficiencies and lower costs by using virtual Pseudowires to backhaul a broader variety of traffic types over Ethernet.

Coming on the heels of these deployments, the 2004 ruling opened the door for Vodacom to gain full control of its network. After conducting an internal financial analysis that weighed numerous options, Vodacom decided to invest in its own IP optical network infrastructure, which enables the company to self-provision its backhaul capacity. That includes building metropolitan fibre rings to self-provision its backhaul routes through microwave access facilities.

Investing in new gear hardly sounds like a money-saving tactic, but in the long run, the decision makes solid business sense, said Andries Delpont, Executive Director, Engineering and Technology at Vodacom.

“It is an investment, for sure, but when you weigh the total cost of building our own network against the ongoing cost of leased lines for backhaul, the leased-line tariffs would have to come down by about 70 percent from where they are now for us not to pursue this strategy. That is how much money can be saved by doing this.”

Getting Down to Business

As if it didn’t have enough on its plate overhauling its backhaul, Vodacom is simultaneously taking on a second major new initiative. In February 2008, the company established a subsidiary, Vodacom Business, to satisfy the growing appetite for Metro Ethernet bandwidth among corporate enterprises and other businesses.

“Vodacom Business was created to find new sources of revenue stream because for businesses, we can’t just focus on the mobile broadband side,” said Andreas Uys, Managing Executive for Transmission at Vodacom.

Wireline penetration in South Africa is still lacking, creating opportunities for the mobile operator to compete with the nation’s two wireline operators. Deploying its own transport and access infrastructure for Vodacom Business as well as its mobile needs gives Vodacom an early advantage.

“We are well ahead of our current competitors in bringing fibre into the metro,” Uys said. “It is another way in which we are being the first mover.”

Vodacom projects that the infrastructure investment will pay for itself within a few years. The move to microwave access for backhaul alone will deliver a return on investment within two years for high capacity access link requirements greater than 14 Mbps. The metro infrastructure build will provide a return within four years.

Having decided on a course of action, Vodacom again turned to Tellabs to help carry out the plan.

“When we went about planning this network, it was new to us, and we needed to know which technologies provided the best way to proceed,” said Delport. For its part, Tellabs organized technology workshops and provided potential solutions that assisted Vodacom in putting together its final road map.

Ultimately, Vodacom opted to deploy the Tellabs® 7100 Optical Transport System (OTS) to fulfill its new core network demands. The deployment, being carried out with South Africa-based systems integrator Grintek Telecom, is ongoing. The Tellabs 7100 OTS brought to the table, among other aspects, WDM ring support and ROADM capabilities to enable the dynamic path provisioning tools that Vodacom required.

Also of particular importance, optical layer traffic protection capabilities and the Tellabs 7100 OTS’s support for interconnecting multiple metro sites give Vodacom the ability to groom Ethernet data traffic and TDM voice traffic on the same network facilities.

“That is an absolutely essential part of our self-provisioning strategy going forward,” Delport said.

Another key deciding factor for Vodacom was that it could still use the Tellabs 8000 manager for end-to-end management of its entire backhaul system.

“We’ve had a great relationship with Tellabs over the years,” Uys said. “They have always had the equipment features we have been looking for, and the willingness of Tellabs to listen to network operators I think is a major strength.”

Although the company is in the early stages of implementing its new backhaul strategy, Vodacom is comfortable out there on the leading edge. After all, it’s never been one to follow the crowd. Innovators seldom do.



Acronym

CapEx Capital Expenses
HSPA High-Speed Packet Access
IP Internet Protocol
Mbps Million Bits Per Second
MPLS Multiprotocol Label Switching
QoS Quality of Service
RAN Radio Access Network

ROADM Reconfigurable Optical Add/Drop Multiplexing
2G Second Generation
SDH Synchronous Digital Hierarchy
3G Third Generation
TDM Time Division Multiplexing
WDM Wavelength Division Multiplexing

North America

Tellabs
 One Tellabs Center
 1415 West Diehl Road
 Naperville, IL 60563
 U.S.A.
 +1 630 798 8800
 Fax: +1 630 798 2000

Asia Pacific

Tellabs
 3 Anson Road
 #14-01 Springleaf Tower
 Singapore 079909
 Republic of Singapore
 +65 6215 6411
 Fax: +65 6215 6422

Europe, Middle East & Africa

Tellabs
 Abbey Place
 24-28 Easton Street
 High Wycombe, Bucks
 HP11 1NT
 United Kingdom
 +44 870 238 4700
 Fax: +44 870 238 4851

Latin America & Caribbean

Tellabs
 1401 N.W. 136th Avenue
 Suite 202
 Sunrise, FL 33323
 U.S.A.
 +1 954 839 2800
 Fax: +1 954 839 2828

Statements herein may contain projections or other forward-looking statements regarding future events, products, features, technology and resulting commercial or technological benefits and advantages. These statements are for discussion purposes only, are subject to change and are not to be construed as instructions, product specifications, guarantees or warranties. Actual results may differ materially.

The following trademarks and service marks are owned by Tellabs Operations, Inc., or its affiliates in the United States and/or other countries: TELLABS®, TELLABS and T symbol®, and T symbol®.

Any other company or product names may be trademarks of their respective companies.

© 2008 Tellabs. All rights reserved.
 74.2044E Rev. A 12/22/2008