



Cabbling Africa's interior

Many rivers to cross

JOHANNESBURG

A dogged firm with roots in Zimbabwe has brought fast broadband to landlocked parts of Africa, the continent that infrastructure forgot

FOR an hour it seemed as if Liquid Telecom's grand scheme to bring fast internet access to Zambia and other landlocked parts of Africa might be thwarted by a swarm of bees. It had been no small challenge to bring its fibre-optic cable this far—from Cape Town, near the southern tip of Africa, to Chirundu on the Zambezi river (pictured) which marks the border between Zimbabwe and Zambia.

It had taken two years to negotiate the various permits required for Liquid to take its cable across the Limpopo from South Africa to Zimbabwe. A further 18 months of talks for permission to run the cable along one of the two bridges at Chirundu had come to nought. The network in Zambia was ready to be switched on. Then someone suggested suspending the cable between two disused electricity pylons on either side of the river, which would not require any special permits. The cable was strung across the Zambezi but was almost washed away by its powerful current. And then the riggers hired to clamp the cable to both pylons came across a beehive at the top of one of them.

Even the hardiest of riggers would struggle to fix a cable to a tall pylon while being stung by a swarm of African bees. Happily the intrepid cablers were able to improvise a beekeeper's outfit from four Thomas Pink shirts (taken from the boss's suitcase), a pair of overalls, some insulating tape and a mosquito net expensively acquired from a trucker queuing at the nearby border post.

A fainthearted firm might have given up. But Liquid has doggedness in its genes. It is a sister company of Econet Wireless, Zimbabwe's biggest mobile-telecoms firm, which in 1998 won a five-year legal battle with Robert Mugabe's government to be allowed to operate. Liquid's boss, Nic Rudnick, a Zimbabwean, had been a member of Econet's legal team in the 1990s. Liquid was born when Econet saw there was a need to connect Africa's fast-growing mobile network to the rest of the world.

At first Liquid offered internet service and telephony solely by satellite. But satellite relay is expensive and signals have to take a 76,000km round-trip to and from orbit. The small delay is fine for voice calls but can be slow and bothersome for data-intensive downloads or banking transactions. Before long several consortia began to link Africa's networks to other continents by undersea cable. "They brought capacity to the shores of Africa," says Mr Rudnick. "We saw an opportunity to bring it inland." Indeed, Liquid's wires now run a long way inland, as the map on the next page shows. The Cape Town cable recently crossed into Congo's copper belt.

Many trade agreements, little trade

It is quite a feat. Taking anything across borders in Africa typically involves reams of red tape and long delays. In general the commercial links between African countries are weak. Only 12% of Africa's trade takes place within the continent. In comparison, 60% of European countries' trade

Also in this section

- 53 The return of the poison-pill defence
- 54 BlaBlaCar's bonanza
- 54 Israel's "tycoons"
- 55 Spain's fast-fashion rivals
- 56 Schumpeter: The holes in holacracy

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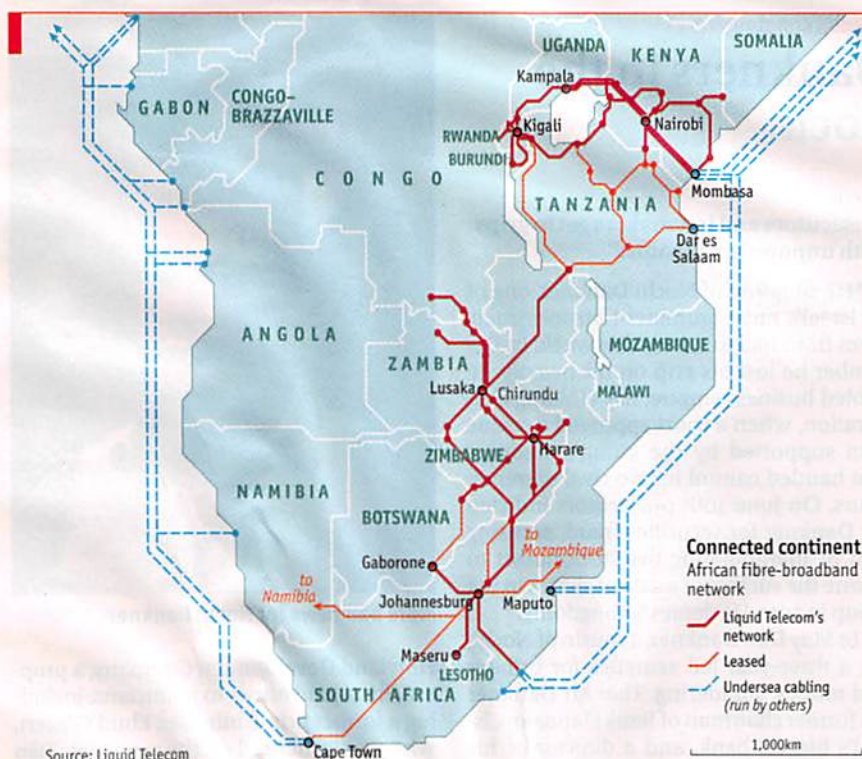
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is with one another. Multilateral trade deals should in principle grease the wheels of commerce. But Africa has too many. Most countries belong to at least two of Africa's 14 trade blocs; some belong to three. And onerous requirements for visas, licences and other permits are as big a hindrance as Africa's bad roads.

In such an environment the stamina and know-how to cut through red tape are useful assets. Liquid has them in spades. Its fibre-optic cable is buried a metre below ground and carries traffic that is invisible to wary bureaucrats. So Liquid's bigwigs spend a great deal of time giving presentations and writing documents explaining its business. "Ultimately it is persuasion that allows us to do what we do," says Mr Rudnick. It helps that Liquid has a policy of training locals. Its use of expat workers in Africa is light, even in senior management jobs. That policy fosters trust in the countries to which it is closely tied by the long-term nature of its investments.

Liquid has so far spent \$350m on its internet network. It now spans 17,000km in 12 countries. Its fibre network in Kenya, Rwanda and Uganda was acquired last year from Altech, a South African firm. It has since rebuilt some parts of it and extended others. Where it makes economic sense, Liquid opts to lease lines. Its networks in southern and east Africa are linked by a line through Tanzania that is on a long-term lease. That is cheaper than using the sea cable that runs from Mombasa in Kenya to southern Africa. The route from Cape Town to Johannesburg is amply cabled and so Liquid leases that line, too.

Such pragmatism shows that Liquid's ambition to build a pan-African network is driven by commercial logic rather than a desire to plant its flag on new territory for the sake of it. Some of its customers are banks, retailers and mining houses which want to connect their African branches or payroll and personnel systems seamlessly. ▶▶



▶ The biggest companies reserve their own separate capacity on the network, which is quicker and more reliable than mingling with other traffic. Much of Africa is sparsely populated: there are 60-80 metres of cable per user compared with 5 metres per user in Europe. But Liquid's cross-border network means it can attract a critical mass of users to make its business viable.

Cable is vulnerable to wildlife: part of Liquid's wire in the Zambezi valley was dug up by elephants (it is now concreted in). It is tricky to do repairs in this terrain. Night work is out, as lights attract wild animals. Even by day an armed game ranger must accompany the engineers. But Liquid's network has a big advantage: redundancy. It now has six cables crossing the Zambezi at different points. The cables in southern and east Africa are arranged in rings so that service can continue even if they are cut at one point.

Though mainly a wholesale business, Liquid also has 50,000 homes as customers. Most are in Zambia and Zimbabwe, where its ads say it takes less time to download a movie than to microwave popcorn. There are pilot schemes to test the market in low-income but densely populated parts of Kenya, Rwanda and Zambia.

The lesson from Liquid's remarkable achievement is that in a continent where infrastructure of all kinds is desperately needed, building it is not as impossible as is often imagined. As it grows, Liquid's network will bring all sorts of new services, from home shopping to video on demand, to consumers for whom such things are barely imaginable.

The company is ploughing on, laying

around 100km of cable a week. It recently raised \$150m from a group of banks to keep expanding. It is preparing to enter a handful of new countries, including Angola. But Liquid will not go into every African country, says Mr Rudnick: "You could lose your shirt." And he has already had to sacrifice four of them to shield his cable-rigger from the bees at Chirundu. ■