# ABOVE YOU. BELOW YOU. ALL AROUND YOU.





# LIQUID TELECOM IS TRANSFORMING COMM

Liquid Telecom already provides National and International connectivity throughout Zimbabwe as well as to and from Botswana, Zambia, Lesotho and South Africa. Their next generation fibre optic network began commercial operation in 2010, connecting these regions to the world.

Liquid Telecom's regional fibre optic network will also connect these countries to the various sea cables including, Seacom, SAT 3, and the West African Cable System. They will also connect Namibia, Mozambique, the Democratic Republic of Congo and the Great Lake regions of Central Africa into what has now become the largest regional fibre optic network in Central Africa.





# This telecommunications revolution will be broken down into three phases over the next two years:

**Phase One -** Links the Seacom and SAT 3 cable systems through Northern South Africa into Zimbabwe, Botswana and Zambia and includes two metro rings and local access metro network for Zimbabwe in Harare and Bulawayo.

**Phase Two -** Provides connectivity to Zambia including Lusaka and Ndola in the Zambian Copperbelt and connections between Bulawayo and Victoria Falls and a metro network within Victoria Falls.

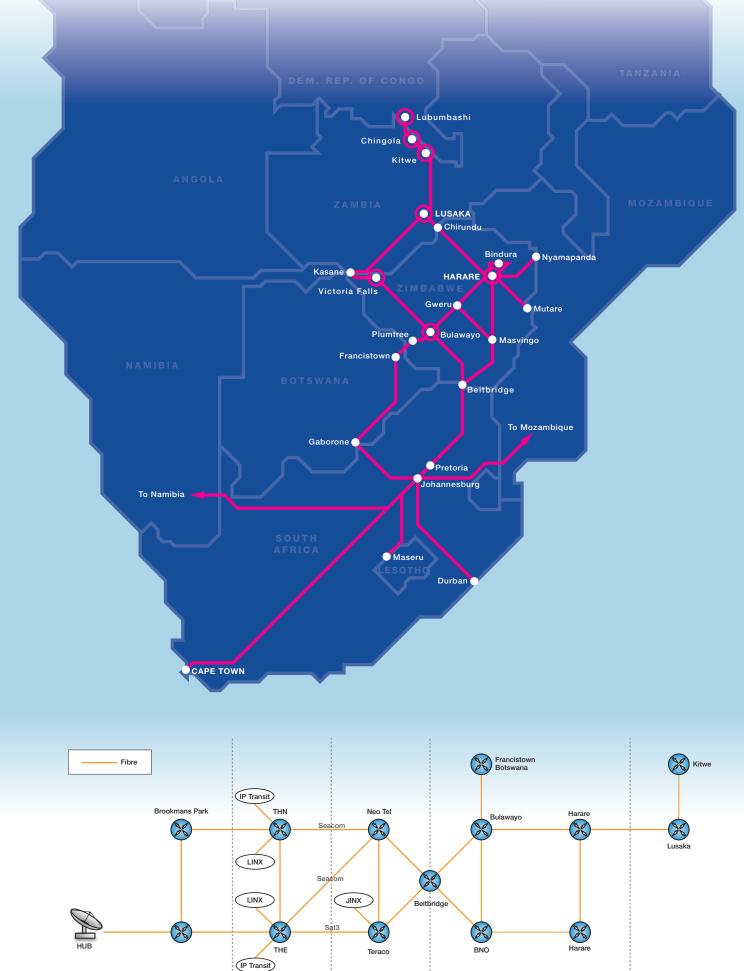
**Phase Three -** Will see construction of a fibre optic link from Johannesburg through Botswana, linking Gaborone and Francistown.

The fibre network uses state of the art equipment for high capacities and ultra high speeds in the transmission of voice, data, video and TV signals.

Liquid Telecom's goal is to create a fast, modern network that will keep the region on the move. To this end Liquid Telecom have built an MPLS core network that provides customers across the region with a high performance international network capable of linking them with their respective countries as well as to any across the regional network and the world.

With the completion of all three Phases in 2012, Liquid Telecom will have laid down in excess of 8500km of fibre optic cable. This will be one of the largest single investments in telecommunications infrastructure across the Central African Region.

# **UNICATIONS ACROSS CENTRAL AND SOUTHERN AFRICA**



UK (London)

South Africa (Joburg)

Zimbabwe

Zambia

# **UNICATIONS ACROSS CENTRAL AND SOUTHERN AFRICA**

# **Services**

# **MPLS**

Liquid Telecom Layer (MPLS) is a highly scalable, protocol agnostic, data-carrying mechanism. In an MPLS network, data packets are assigned labels. Packet-forwarding decisions are made solely on the contents of this label, without the need to examine the packet itself. This allows one to create end-to-end circuits across any type of transport medium, using any protocol. The primary benefit is to eliminate dependence on a particular Data Link Layer technology, such as ATM, frame relay, SONET or Ethernet, and eliminate the need for multiple Layer 2 networks to satisfy different types of traffic. MPLS belongs to the family of packet-switched networks.

#### Layer 2 Services

Layer 2 services are typically provided to customers who want to control the end to end connectivity between their devices and maintain their own IP addressing. There are two types; L2VPN, which is equivalent to a leased line, and VPLS with is equivalent to a LAN connection. Liquid Telecom will not provide any routers at the customer sites with layer 2 services.

### Layer 2 VPN

For L2VPN, the client is given two Ethernet ports on each end of the connection. The presentation point could be fibre or Ethernet on VSAT.

#### VPLS

Virtual Private LAN Service is a service offered to customers requiring at least three remote points connected together in a typical LAN scenario.

### Layer 3 Services

L3VPN service allows customers to have private VPN service with Liquid Telecom participating in customer routing. Typically, the customer will required at least three branches for this service. For each site, a customer edge (CE) router will be connected to a Liquid Telecom router. The CE can be owned and maintained by the Liquid Telecom or could belong to customer. Specific VPN configurations will allow for Hub and Spoke, Full or Partial Mesh scenarios depending on customer requirements.

# Layer 3 VPN with Liquid Telecom CE

When liquid Telecom provides the CE, the demarcation point will be the connection between the CE and the customer router or switch.

#### Layer 3 VPN with Customer CE

When the CE belongs to the customer, the demarcation point will be the Ethernet port (media converter) connection to the customer router.

#### Key Benefits to Your Business:

MPLS benefits include better performance, lower total cost of ownership, greater flexibility to accommodate new technologies, better security and survivability.

#### **Better Performance:**

Uses Classes of Service (CoS/QoS) and priority queuing so your network knows which traffic is most important and ensures that it takes priority over other traffic.





# **IP Transit**

This global transit Internet service is designed for high grade ISP's operating at 10Mbps and above using simplex or full duplex topologies. Whether you require a multi-megabit solution for your ISP operation or a distributed platform for your SME and corporate clients our solutions will accommodate all your needs. Customers must have their own Autonomous System (AS) Number to be eligible for this service.

# Internet Backbone

Our internet Autonomous System (AS30844) offers up to 99.99% availability. Liquid Telecom has more than 300 peers in London and Africa on well established Internet exchanges. This provides robust connectivity to our customers with shortest path and lowest latency access. Liquid Telecom's International links connect Europe to Africa over multiple undersea paths between multiple data centres on both continents. In Europe Liquid Telecom has multiple tier 1 global transit internet backbone providers. This approach offers world class internet connectivity with approved service levels.

# **GSM Backhaul**

Liquid Telecom specialises in flexible network topologies and business models for GSM Mobile networks. Whether you want high capacity trunking links between Mobile Switching Centres and Base Station Controllers or to fully outsource existing transmission network to all your BTS sites then talk to Liquid about your needs for a bespoke solution.

# **IPLCs**

Liquid Telecom has established the necessary cross border interconnects to offer IPLCs between countries on Liquid Telecoms fibre network. This can be a half circuit or full circuit arrangement. Using the networks of its interconnect partners and bulk capacity arrangements, IPLCs can be provided to Europe, USA and Asia. IPLCs can be offered at various link speeds from E1, DS3, up to STM1 and STM4.

# Broadband

In some countries Liquid Telecom will be offering broadband services to end users and white label services to ISPs. A range of broadband technologies will be used where best suited to the environment. This can include Fibre to the Home (FTTH), WIMAX, WIFI, VSAT. Prepaid, postpaid and pay as you go services may be offered. In every country where Liquid Telecom offers broadband it will be fully licenced and have 100% nationwide coverage (using VSAT to fill in rural areas).

# Partnership or Joint Venture

Talk to Liquid Telecom if you are interested in co-operation on fibre backbone projects on a Joint Venture (JV); Build Own Operate (BOO), Co Build, or turnkey project basis. Liquid Telecom has a flexible approach and can consider different partnership business models within the territories where we operate.





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