

MTN Uganda's Migration from Satellite to (sub-marine) optical fibre





Use of satellite as a primary uplink

- We were previously using 2 satellite uplinks as our primary upstreams - Intelsat and Skyvision
- Latency to any site was never below 500ms compared to that of fiber which is about 200ms
- We are currently using the satellite links as one of our back-up links in addition to the secondary up-link, Seacom, in case of any failure on the TEAMS which is our primary uplink

Issues with satellite



As always, it has high latency to the internet, which in tandem does not deliver satisfactory internet speeds.

- Temporary disruption in service due to the weather especially during heavy rainstorms.
- There are a few days around the Equinox, every March and September, when the sun passes directly behind the geosynchronous satellite, creating an interference ergo a degraded signal and temporary disruption in satellite reception causing a phenomenon popularly known as a solar outage. These outages usually last between 6 - 10 minutes.
- There were satellite tracking faults as well
- It was very expensive

Delays in migrating to Fibre



- The migration to fiber was mostly affected by the capacity capability of the router as most of the routers (Cisco 7200) did not have SDH modules and Gigabit Ethernet interfaces.
- Upgrade and purchase of compatible routers, Juniper M10i, was paramount.
- Delays in connecting to the fibre i.e. connection to Mombasa needed laying new fibre legs
- Delays in commercial agreements between the different parties

Fibre projects and their status



TEAMS is our primary uplink

SEACOM is our secondary backup uplink

Migration to EASSy, in which MTN (group) has a major stake, is expected to commence in Q3 this year.

MTN Uganda's move to fibre...



Basically, all we needed was to setup the fibre link to be primary (TEAMS) while the second fiber link, SEACOM, as well as Intelsat and Skyvision, the 2 satellites become the failover uplinks (Here we accept a full BGP table on the TEAMS link and accept only a default on the others)

Plans with fibre and satellite?



Long term plan is get fully redundant on the fiber connection
and “ditch” the satellites

So, how is the network responding to the (increased) bandwidth?



- MTN has reduced prices, launching 3G and other data products
- Clients are purchasing 3 times more bandwidth than they used to.
- The company is now installing Gigabit Ethernet and extending fibre connectivity all in a bid to increase capacity in the access network.