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**Unleashing the potential of DTH
broadcast services in Africa**

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DTH Satellite TV is a Windows To The World

- Broadcast Satellite Services include DTH and conventional TV.
- These operate in the Ku-band with uplink frequency of 14.0 to 14.5 GHz and a downlink frequencies of 11.7 to 12.2 GHz..
- Because they use much higher power than do C-band satellites, the terrestrial antenna needed to receive their signals can be as small as 0.5m in diameter.

- The DBS Ku-band dish can be placed on top of a news van or inside a brief case and a news reporter can go to a story as it is breaking, to broadcast it live without any conflict from surrounding systems.
- The advantage of the Ku-band is that it is specifically reserved for satellite use.
- So there is no conflicts from terrestrial systems as is the case with the C-band.
- Since it does not interfere with terrestrial systems, it offers portability as well.

- Digital Ku-band DBS systems offer crystal clear signals even when converted to analog for display on conventional TV set.
- The only disadvantage is that they can experience distortions under bad climatic conditions e.g. humidity, fog and rain; the so-called pixelations.
- Three equally spaced satellites at 35680 km above the equator can cover almost the entire surface of the earth except at some polar region where, in any case, there is no human habitation.

- An example is the Intelsat system which provides global coverage.
- As a result international TV is largely distributed over these satellite networks.
- Satellite Technology allows for remote villages, cities and towns to become connected to the world.
- DBS systems offer far more channels than are available on the terrestrial wireless systems.

- In spite of enormous up-front investment costs, satellite systems are attractive because of the dramatic economies of scale in serving large numbers of subscribers.
- Such systems can accommodate up to 2000 channels.
- They can offer movies on a Near Video-on Demand (NVOD) basis.
- Where each channel is repeated on several channels with staggered starting times of, for example, every half-hour.

- For any given large number of subscribers, a satellite is cheaper per household per channel than the terrestrial wireless system.
- Compared with any terrestrial system, wired or wireless, a satellite system has economic leverage because the incremental or marginal cost of serving a subscriber anywhere is zero; excluding on-premise equipment.
- Whole apartment buildings can be served using a roof-top antenna and interior co-axial wiring - so-called Single Master Antenna TV (SMATV).

The Set-Top-Box (STB) Issue

- The STB serves two functions:
 - As a digital-to-analogue converter (DAC) for conventional televisions.
 - To provide for the prevention of unauthorized reception of a programme
 - This is achieved through encryption and using the Conditional Access System (CAS)-card reader
 - This largely relates to Pay-TV, Pay-per-View and VOD services.

- New Digital TV sets with common circuitry may accommodate any of the encryption services without the need for a STB.
- The so-called iDTV does away with with the need for an STB for converting these signals for reception on a TV.
- Some are fitted with common interface slots to allow the use of CAM; imitating a multicrypt STB.
- This will avoid the need for three or four separate STBs from competing service providers placed next to the TV set.

- Imposing a mandatory regulatory standard may reduce direct switching costs to consumers and encourage competition among operators.
- In this way the regulator can become a fierce consumer watch-dog and not a fairy god-mother to operators.

Community TV and Radio Services

- These services can be provided for if there is enough subscriber or advertiser demand.
- This can be achieved through narrowly focused spot-beam antennas that would reach only specific regions such as isolated communities.
- The larger the satellite antenna the narrower the beam (spot-beam) and the smaller the area to be covered.
- Spot beams can be directed towards desired local communities, countries or regions.

- Each spot-beam antenna could use the same frequencies because the signals would not overlap.
- In this way channel capacity of the satellite could be multiplied several times without increase in frequency use.
- This is akin to the familiar the cellular mobile systems.
- There is, therefore no technical reason why community broadcasting cannot be done.
- It is a matter of economics.

Horizontal and Vertical Polarization

- Satellites can use the same bandwidth twice by transmitting both horizontal and vertically polarized signals.
By using both vertical and horizontal polarization the frequency range may be used twice.
- The low noise block converter (LNB) at the focus of the dish is designed to separately receive these polarized signals.
- This, automatically, results in the doubling of channels.

The Threat of Satellite Broadcasting

- TV and radio broadcasting is in essence considered as the flag-ship of each country's culture.
- The reception of DBS which has been transmitted from another country, threatens to break any country's sovereignty in broadcasting.
- Of strategic concern is the fear of cultural dilution, hostile propaganda and undermining national sovereignty and integrity.

- Undesirable programmes such as pornography would be difficult to censure if it is via DBS.
- Using DBS, it is virtually impossible to prevent anybody from tuning in to foreign broadcasts which do not meet the government's approval.
- It is akin to services from the Internet.
- The viewer can pluck out of the air whatever programme from whichever country they wish.

- All that is required by the household is a satellite receiving dish pointed at the pirate broadcasting satellite.
- This is easily achieved using a Satbeep or Satfinder to align the dish to the satellite
- The problem with satellite transmission is therefore at the point of emission and not at reception.
- So, to the extent possible, countries can limit their broadcast to national reception areas through the use of spot-beams.

Conclusion

Some of the benefits and advantages of DTH or DBS are:

- Easy access to remote areas.
- Coverage of large geographical areas.
- Insensitivity to topology
- Distance insensitive and zero marginal cost.
- High bandwidth and bandwidth doubling via horizontal and vertical polarization.
- Provision of community TV and radio broadcasting using spot-beams.

- DTH or DBS offers an alternative or complementary system to terrestrial wired or wireless systems.
- Satellite broadcasting can help in realizing the world as a truly global village if national cultural problems can be universally resolved through international understanding.
- It truly does open the window to the world outside.
- It has found a unique place in the sun and it is occupying a prominent spot in the broadcasting ecosystem.

- The End

Thank You For Your Indulgence