

Digital transition  
in Africa



## Gaining ground

# SATELLITE: ACCELERATING DIGITAL TRANSITION

**T**he transition to digital TV in Africa has so far been a slow and laborious process, even in the most developed countries.

Only six African nations have actually completed the switchover from analogue to digital TV.

So what's the story behind this complex transition? In 2006, the International Telecommunication Union (ITU), a UN agency, issued the Geneva 2006 agreement, signalling the development of 'all-digital' terrestrial television services. The motivation behind the transition was to stimulate ICT applications and make more efficient use of spectrum through the digital dividend that comes with phasing out analogue TV. Although the initial deadline, set for June 2015, was missed by most African countries, the digital revolution is nevertheless underway in a number of countries, including Algeria, Equatorial Guinea, Gabon, Ghana, Kenya, Nigeria, Rwanda, South Africa and Zimbabwe.

### CHALLENGES TO DIGITAL TRANSITION

The main challenge to deploying nationwide Digital Terrestrial Television (DTT) is to manage timely and equitable switchover for everyone in order not to create a Digital Divide that separates the homes with digital from the homes left only with analogue. The challenge is particularly steep for countries with a large landmass, mountain ranges or islands that typically remain beyond range of terrestrial networks, or with

interference issues in border regions.

Most terrestrial operators deploy fibre networks and DTT towers on the basis of return on investment, meaning they concentrate on areas with a certain population density and they neglect users in more rural or semi-rural areas. This means there is a real risk that exclusive use of terrestrial technologies can permanently leave too many consumers beyond range of the benefits of digital.

“**Digital homes will grow to 75 million by 2021 – assuming a smooth roll-out of digital transition**”

Funding is another challenge. The cost of a nationwide DTT network is often underestimated and can put the break on switchover. The lack of attractive local content to fill up the channels that have been made available by DTT projects and funding for a public awareness campaign are also major setbacks that need to be overcome.

However, none of these issues need be a deal breaker. There are cost-effective and time-efficient solutions that can resolve the challenges, notably hybrid networks that use terrestrial as the basic platform and satellites to deliver channels to terrestrial towers and directly to homes beyond range of digital reception.

### THE BENEFITS OF DIGITAL BROADCASTING

The transition from analogue to digital TV is a logical development for the broadcasting industry, bringing significant advantages for all players across the value chain:

- Opportunity to transform the diversity, signal quality and reach of channels into viewer homes.
- Opportunity to generate infrastructure upgrades and stimulate Africa's vibrant content creation industry.
- Release of analogue frequencies for other applications such as mobile services.

This is why private players like China's pay-TV provider StarTimes, Canal + Overseas or MultiChoice are already establishing themselves as the continent's key players in fast-tracking digital migration efforts.

“**Satellite and terrestrial: the two key infrastructures driving digital transition**”

**SATELLITE: ACCELERATING DIGITAL TRANSITION**

Whereas terrestrial is historically a dominant broadcasting platform, satellite is uniquely positioned to complement terrestrial infrastructure, by extending digital TV to homes in more remote or less populated areas. Satellite broadcasting calls for no additional massive civil engineering investment: vast regions, including rural areas, islands and border areas are automatically and ubiquitously covered. This means that the financial investment is only a fraction of the full upgrade of a terrestrial network. Homes within a satellite coverage can receive DTT channels immediately without having to wait for new investment in terrestrial infrastructure and its gradual deployment across a territory.

There are multiple examples of countries that have concluded overwhelmingly during the process of digital migration that a combination of infrastructures was by far the

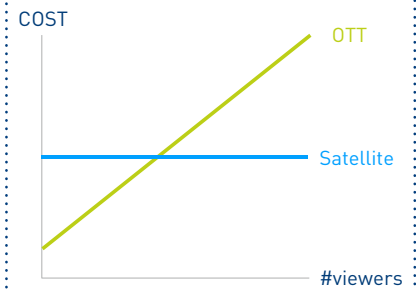
most efficient and cost-effective way forward. For example, in France the DTT network was covering 35% of the population in 2005 rising to 95% by end-2011. This still left 1.5 million households permanently beyond range of the terrestrial television network. The solution was to serve these homes by satellite with a Direct-to-Home (DTH) platform called FRANSAT that inherently covers 100% of the country.

“ **Satellite: a unique infrastructure for feeding terrestrial towers and reaching viewers directly** ”

**THE EFFICIENCY OF SATELLITE DISTRIBUTION TO DRIVE AUDIENCE GROWTH**

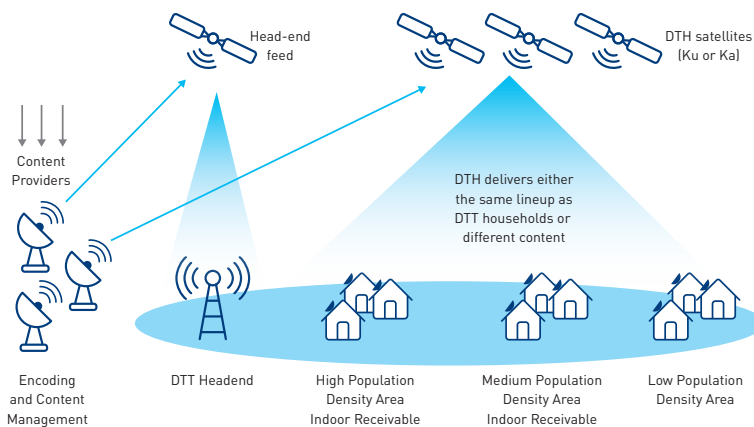
Most governments that have embarked on DTT have quickly understood that, as content and signal quality progress and the number of towers grows, the efficiency of satellites for content distribution comes into play. There is in fact a crossing point where the cost of bringing content from a central hub to more than a dozen towers is less expensive and more reliable via satellite than by fibre. Environmental conditions or the risk of outages and fibre cuts can even make the reliability of terrestrial infrastructure an issue.

► **OTT distribution cost pattern**



Amongst others China’s StarTimes as well as France’s Canal+ Overseas use Eutelsat satellite capacity in Africa to distribute channels to terrestrial towers. In order to complete coverage and reach homes not covered by terrestrial, both companies offer a DTT and DTH package to offer content to everyone in their target countries to capture mass market audiences

► **Hybrid satellite and terrestrial distribution**



### WHICH FREQUENCY FOR WHICH REGION

Once the case for a satellite distribution network becomes compelling, the choice of frequency band comes next. In many regions C-band is the preferred choice for distributing content to terrestrial towers thanks to its resistance to rain fade. Ku-band has the advantage of enabling smaller dishes and is frequently used to complement terrestrial networks by Direct-to-Home (DTH) platform operators.

Two solutions are possible in combining DTT and DTH: hybrid solutions with C and Ku-band, using C-band for feeding towers and a DTH complement in Ku-band for homes in rural areas. Alternatively, a single band solution, adopted notably in Zimbabwe, uses a single Ku-band transmission to feed towers as well as homes equipped with a Direct-to-Home dish.

### EUTELSAT: THE LEADING DIGITAL TRANSITION PARTNER

Globally, Eutelsat has gained a leading position in digital transition, with over 10 years of pan-regional experience and more than 20 countries served, including in Europe (France, Greece, Italy, Ireland ...) and in Africa (Algeria, Equatorial Guinea, Gabon, Kenya, Zimbabwe ...).

Compared to the coverage and capabilities of terrestrial networks, Eutelsat's satellites provide cost-effective and immediate access to TV customers anywhere, with consistent signal quality across the coverage, be it directly with Direct-to-Home (DTH) or indirectly by distributing content to other networks, including cable, DTT and IPTV.

### COMPLEMENTARY SOLUTIONS FOR UNIVERSAL COVERAGE

The bottom line is that in most cases a terrestrial/satellite solution beats standalone terrestrial in terms of cost-effectiveness and speed. Nations that proclaim universal coverage as a policy cannot achieve their goal by placing a bet on terrestrial alone. The basic rules that apply in Europe and the Americas also apply in Africa.

Once the problems of cost, reach and speed of deployment are resolved, the challenges for any country preparing for digital transition include managing the service, sourcing consumer hardware, set-top box distribution and content.

In sharing our longstanding technical and commercial experience from working with public and private broadcasters, as well as regional governments around the world, Eutelsat can provide the most suitable satellite and best-in-class technical solution with the required expertise to drive the digitalisation process and contribute to the growth of a dynamic and lasting broadcast sector.

