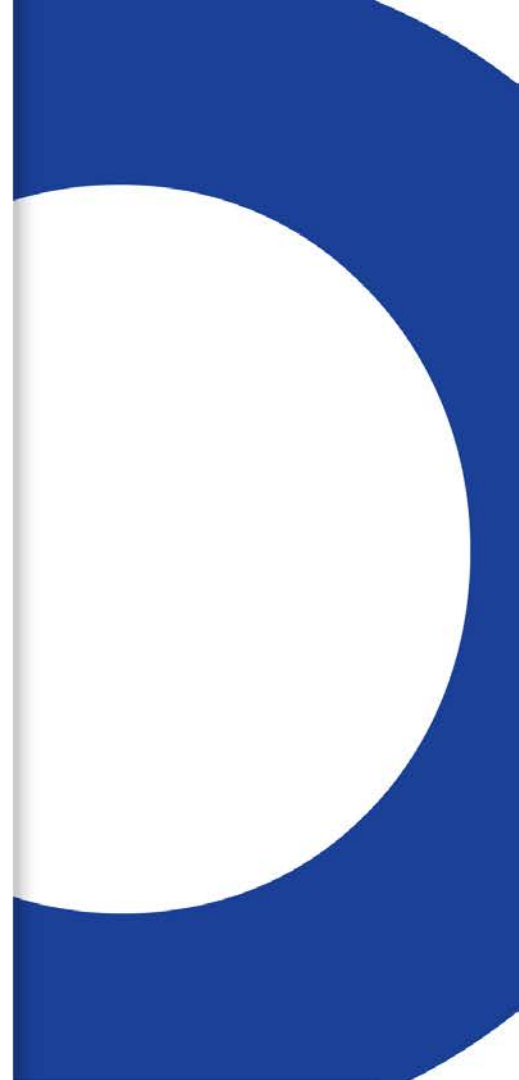


DIGITAL MIGRATION: THE OPPORTUNITIES OFFERED BY DTT

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A scenic view of a frozen lake at sunrise. The sky is a mix of blue, orange, and yellow, with the sun low on the horizon. The water is frozen into large, irregular chunks of ice, some of which are melting, revealing the sandy or rocky ground underneath. A person is walking on the snow-covered shore in the distance.

**Opportunities are like sunrises.
If you wait too long, you miss them.**

William Arthur Ward

CONTENT

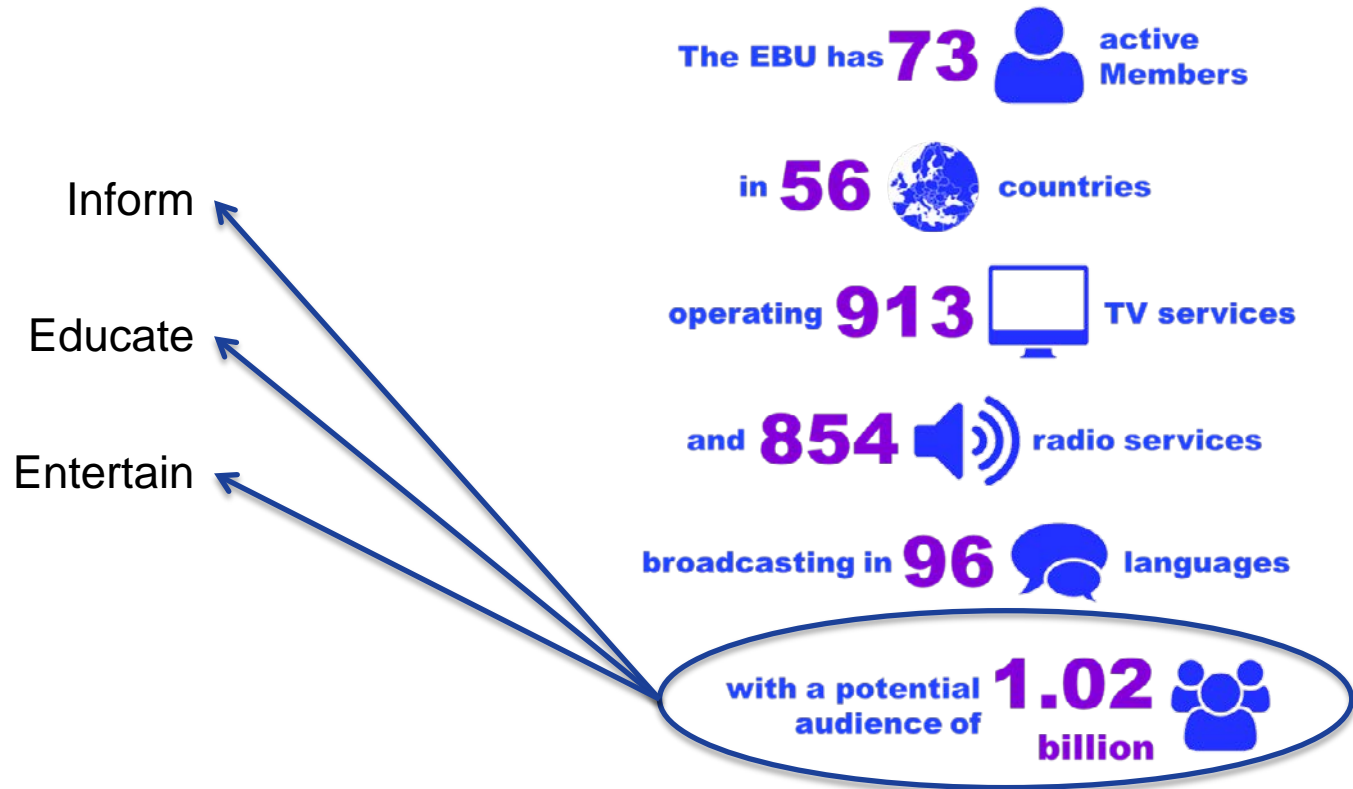
1. ABOUT THE EBU

2. KEY FACTS ON DTT

3. WIRELESS DELIVERY OF MEDIA

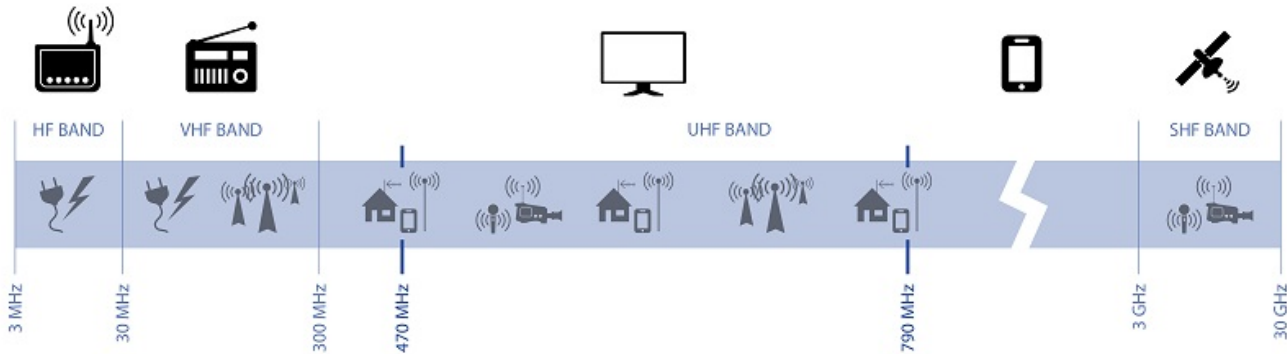
4. KEY REASONS FOR IMPLEMENTING DTT

1. EUROPEAN BROADCASTING UNION THE WORLD'S LEADING ALLIANCE OF PUBLIC SERVICE MEDIA



1. EBU – CENTRE OF EXCELLENCE FOR SPECTRUM MEDIA

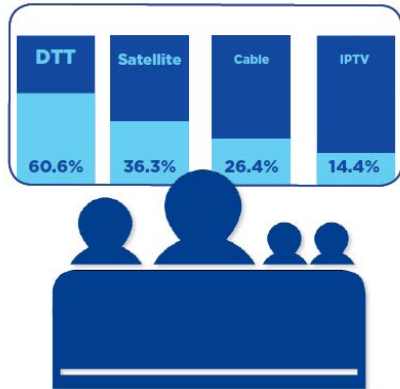
- Activities in spectrum allocation, usage and protection
 - Frequency planning for DTT (ITU-R GE06 planning) and digital radio with DAB
 - Protection of broadcasting from interference
 - Analysis of new distribution platforms



2. DTT IN EUROPE

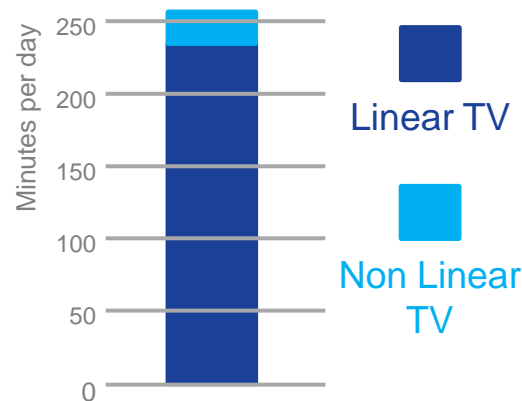
Dominant platform

118 million households
rely on DTT



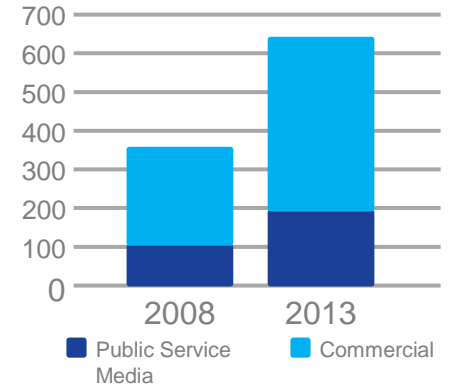
Linear TV is alive

3 hours of watching
per day



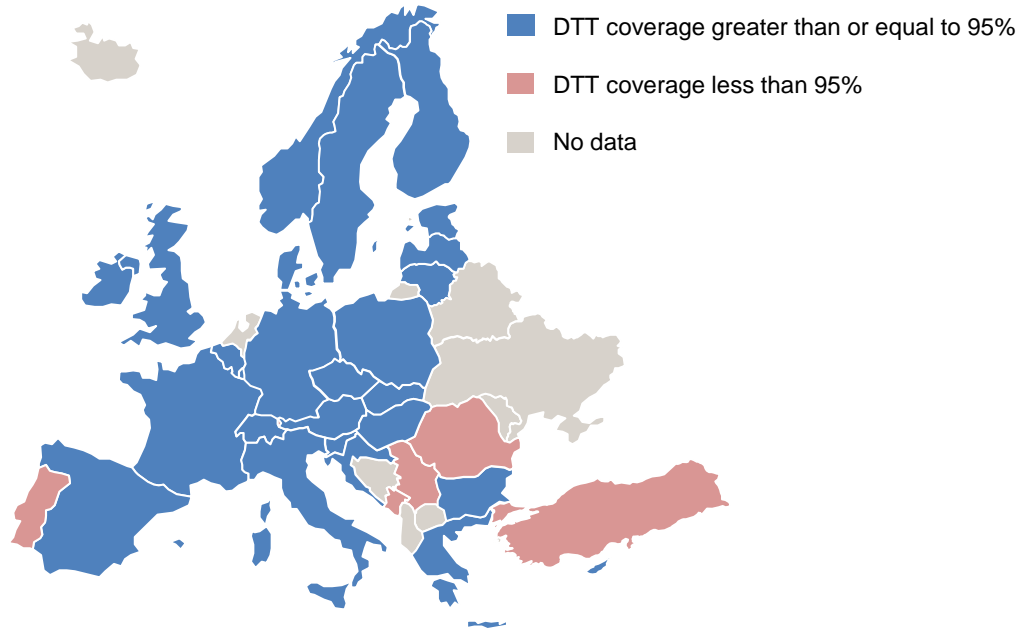
DTT is growing

80% growth in 5 years



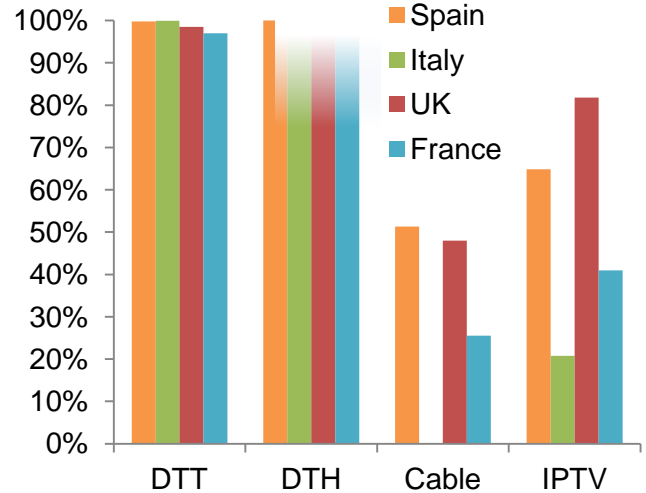
2. DTT IN EUROPE

In many European countries, DTT networks reach more than 95% of the population, which in nearly every case is higher than alternative platform technologies



In markets where the DTT platform has strong support, DTT remains the only means to achieve universality

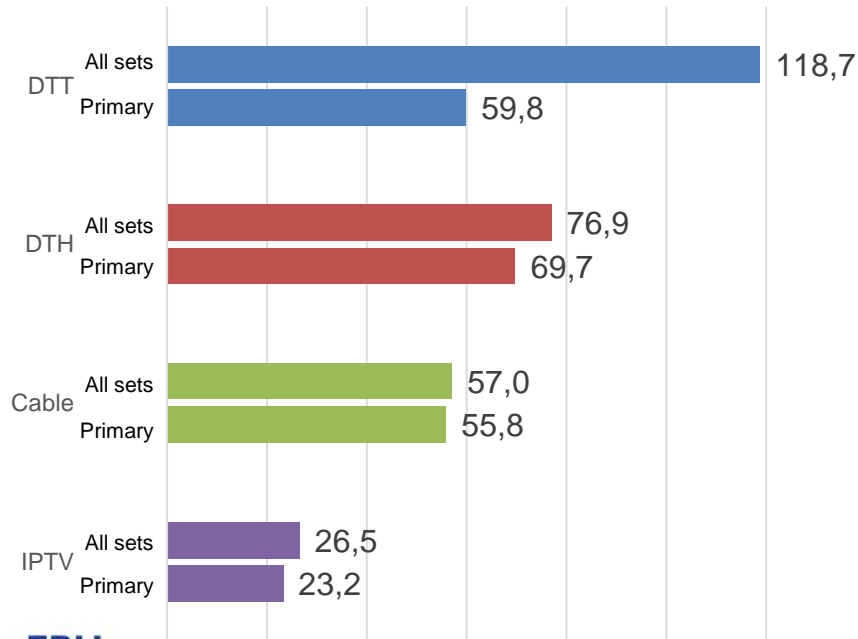
% HHs able to access TV platform



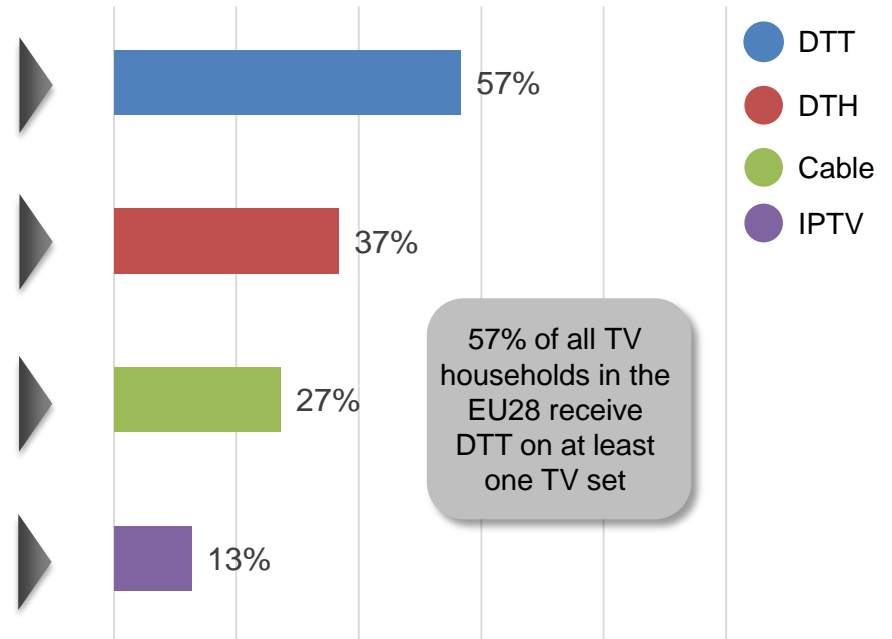
2. DTT IN EUROPE

DTT is significantly the largest platform overall: 118m households in the EU28 receive DTT on at least one TV set and 60m use DTT on their primary TV set

EU 28 TV households by transmission technology, millions of households 2013

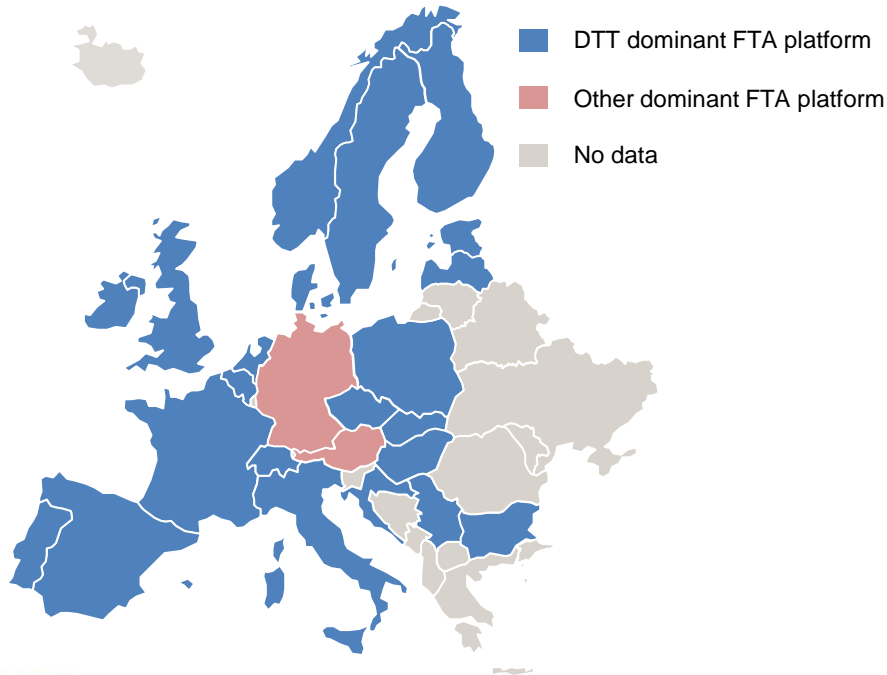


% EU households that receive TV signals on at least one TV set, 2013



2. DTT IN EUROPE

DTT is the major free-to-air (FTA) channel platform in Europe; in 22 out of 24 European countries, DTT is the dominant platform free at the point of use



Key observations

In all 24 sample countries, DTT gives viewers access to TV services free at the point of use (with no on-going subscription charges)

Of the 24 countries, only two have a dominant FTA platform other than DTT

The importance of FTA TV

Free-to-air and free-to-view television plays an important economic, social and cultural role. In particular it:

- Allows for wide-ranging reach and delivery of Public Service Broadcasting
- Delivers platform choice and range
- Contributes to the overall level of competition in TV markets
- Mitigates the potential risk of powerful gatekeepers

2. DTT IN EUROPE

Cornerstone of the European Audiovisual sector

Broadcasters invest the **80% of revenues** into national TV content

Contributing to European economy

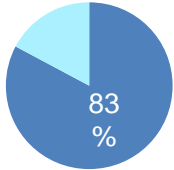
6.8% European GDP (€860 billion)

6.5% European employment (14 million)

2. DTT IN EUROPE

In a number of major European countries, DTT platforms account for a high proportion of TV viewing time/audience and advertising revenues

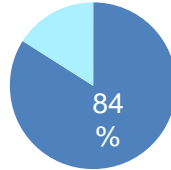
DTT proportion of total viewing time/audience, %



Total TV ad revenue, 2012, €m

€1,815m

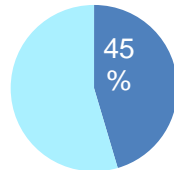
DTT proportion of total viewing time/audience, %



Total TV ad revenue, 2013, €m

€2,920m

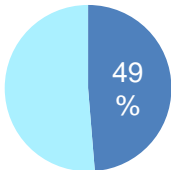
DTT proportion of total viewing time/audience, %



Total TV ad revenue, 2012, €m

€5,348m

DTT proportion of total viewing time/audience, %



Total TV ad revenue, 2012, €m

€3,721m

- In the largest DTT markets, DTT platforms tend to over-index in terms of viewing
- This is the case due to a combination of secondary set viewing and higher viewing times on DTT than on other platforms
- The DTT platforms in these territories are an important source of advertising revenues
- DTT platforms command a higher CPM than other platforms, so in all of these markets DTT commands the majority of TV ad revenue

2. DTT IN EUROPE

Cost effective

DTT is one of the most cost effective options for media delivery: with network costs of typically between **€0.2-1.5** per household per month for up to 60 channels distributed 24/7.

Resilient

The ITU endorsed the importance of Terrestrial Broadcasting for public warning, disaster mitigation and relief in Report ITU-R BT.2299-0.

Terrestrial network is resilient in emergency situations and impossible to hack.

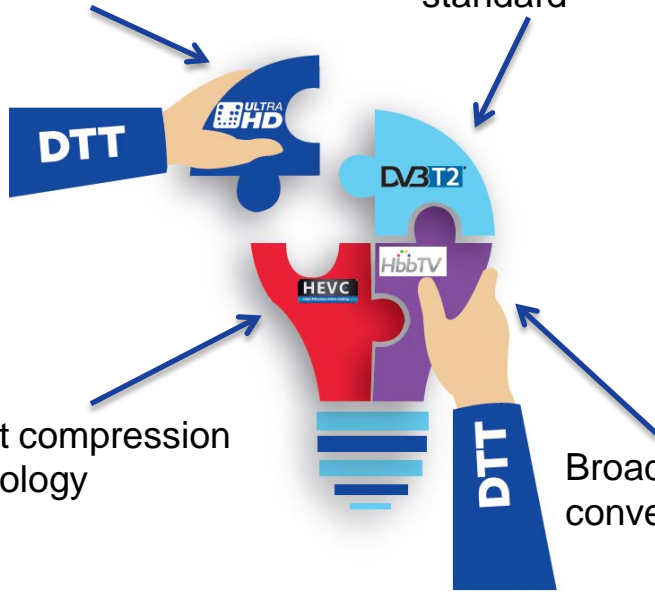
2. DTT INNOVATION

Upcoming picture quality standard

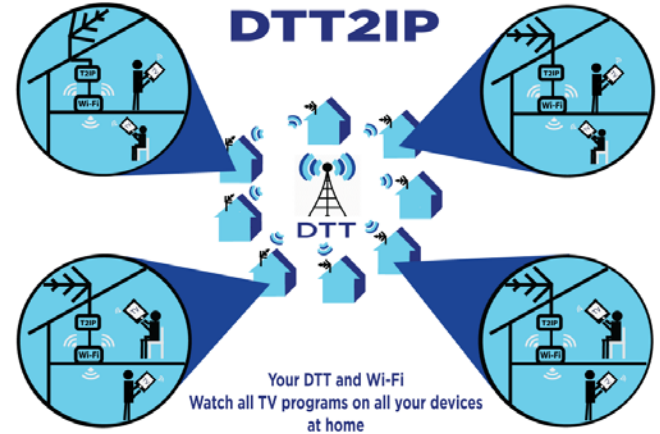
Latest transmission standard

Latest compression technology

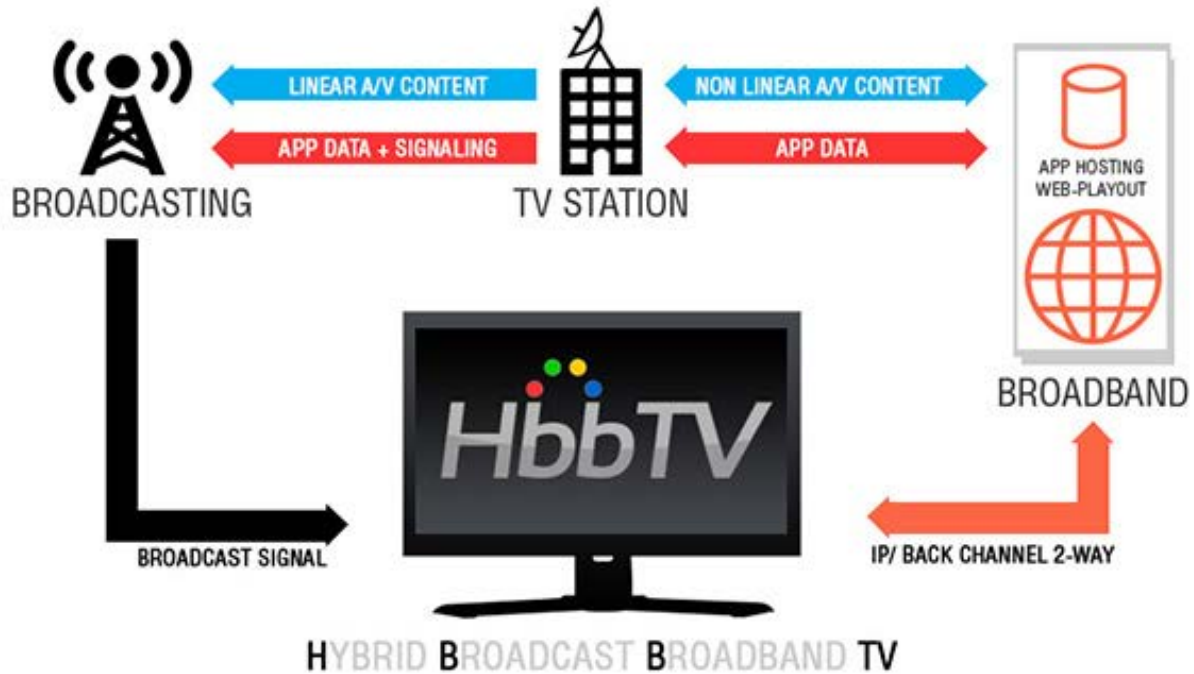
Broadcast/broadband convergence



DTT can also be received on all your screens



2. DTT INNOVATION



3. WIRELESS DELIVERY OF MEDIA A PUBLIC SERVICE BROADCASTING PERSPECTIVE



3. LTE COULD MEET THE BROADCASTERS' REQUIREMENTS BUT ...

- LTE real-world performance differs from that quoted in theoretical studies
- LTE eMBMS spectral efficiency depends on the inter-site distance, and is often not sufficient for media distribution.
Real LTE networks spectral efficiency varies from as low as 0.1 bit/s/Hz to more than 3 bit/s/Hz
- The EBU work continues on
 - LTE eMBMS coverage assessment methodology (for simulation purposes)
 - The use cases that are relevant for PSM and could realistically be served by LTE
 - Establishing a QoS criterion for the distribution of TV over LTE, including eMBMS
 - Contribution to the relevant standardisation work [ITU, 3GPP]
 - Platform for cooperation between the broadcast and the mobile industries

*EBU Technical Report 026: <https://tech.ebu.ch/publications/tr026>
EBU Technical Report 027: <https://tech.ebu.ch/publications/tr027>*

3. WIRELESS DELIVERY OF MEDIA A PUBLIC SERVICE BROADCASTING PERSPECTIVE



Wireless broadband is currently not a real alternative to DTT but a complement

3. KEY REASONS FOR IMPLEMENTING DTT

1. DTT platforms achieve unparalleled coverage
2. DTT platforms uphold the quality of the television viewing experience
3. DTT platforms ensure price competition and innovation in European TV markets
4. Choose DVB-T2
 - Germany is implementing it now and many other European countries will follow
 - All countries that are in the switchover process now are implementing DVB-T2
 - The injection in the market of new receivers is enabling economies of scale
5. Choose HEVC, it will enable HDR transmission that will guarantee an immediate added value to viewers
6. DTT fosters the establishment of local economy
 - Local broadcasters cannot afford to be on satellite and it's not convenient for their reach
 - Local content production enables job creation and local economic growth
 - DTT platforms command a higher CPM than other platforms.
7. DTT is resilient and anonymous