SOLUTIONS FOR SMART VIDEO CONNECTIVITY

Apostolos TRIANTAFYLLOU, NEM 14 June 2016

eutelsat

TV VIEWER EXPECTATIONS ARE CHANGING: "ADVANCED TV EXPERIENCE"

	ANY SCREEN	ANY TIME	INCREASED QUALITY
Yesterday		➔ Linear TV 	DVD VIDEO PAL NTSC HD TV
Today		REPLAY  ➔ Catch-up TV ➔ Video on Demand ➔ Interactivity	Blu-ray Disc ULTRA HD HD TV 1080p iPad mini with Retina Display

TV ACTORS COMPLEMENT THEIR BROADCAST SERVICES WITH OTT SERVICES TO FOLLOW MULTISCREEN AND ON-DEMAND TRENDS

How to address all the viewers expectations ?

Challenges:

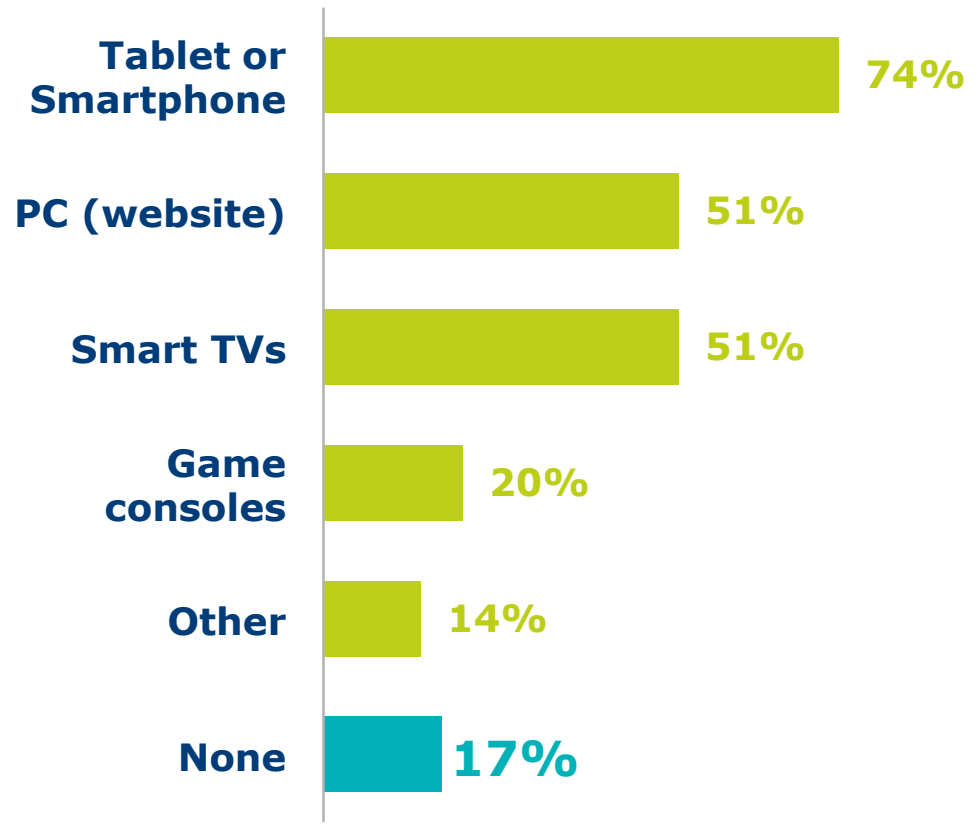
- ➔ Watch TV on a PC or tablet
- ➔ Long-tail catalogue for video on demand
- ➔ …

Reaction as of today:

- ➔ To maintain user experience excellence, most TV platforms complemented their linear broadcast offer…
- ➔ … with new services based on broadband infrastructure (OTT)

Which IP devices are you addressing?

(Broadcasters and DTH TV platforms)



eutelsat

Right: Eutelsat online customer poll, November 2014, based on 37 responses. Answered: 35, Skipped: 2

WHILE USAGES INCREASE, OTT VIDEO DISTRIBUTION SHOWS SEVERAL WEAKNESSES

Inability to reach the entire population

- → Lower image quality …
- → … Or even no video service at all

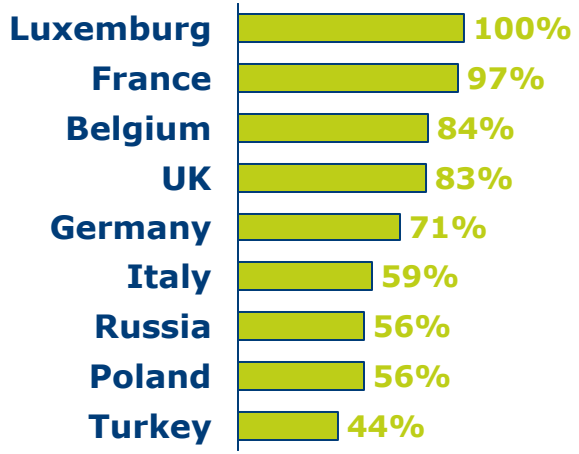
Growing distribution costs

- → CDN costs increase with the audience

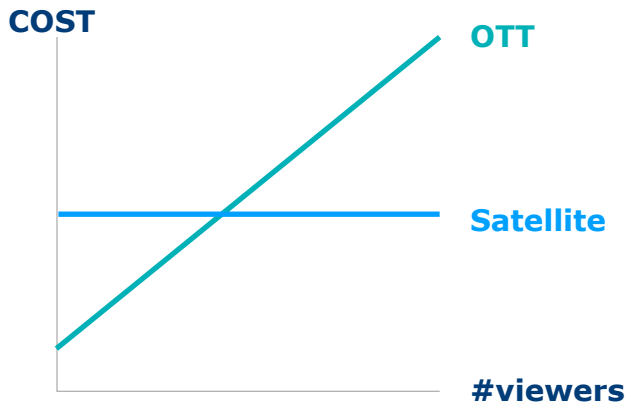
Lower quality of service, especially at peak hour

- → Broadband networks saturated by OTT demands

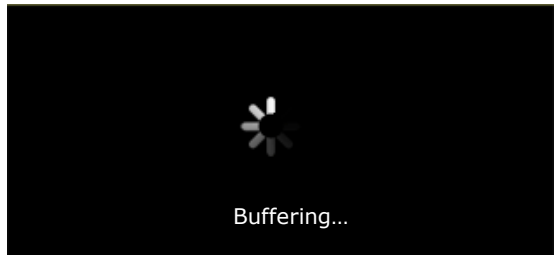
Broadband penetration (2014)



OTT distribution cost pattern



Internet bottleneck at peak hour



Adaptive bit rate transforms your HD content in SD or worse

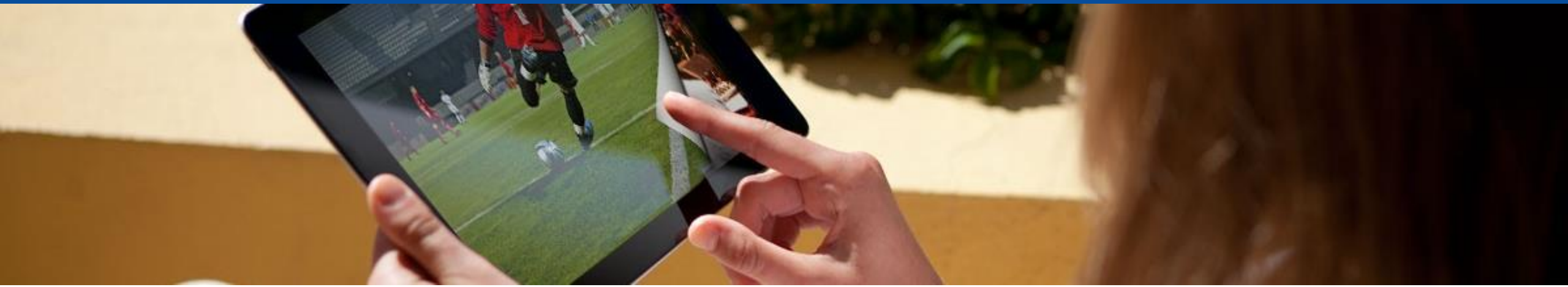
eutelsat

Source: iDate, Eutelsat analysis

NEW SOLUTIONS EXIST TO LEVERAGE SATELLITE FOR "ADVANCED TV EXPERIENCE"

- **Eutelsat innovations in new TV experiences**

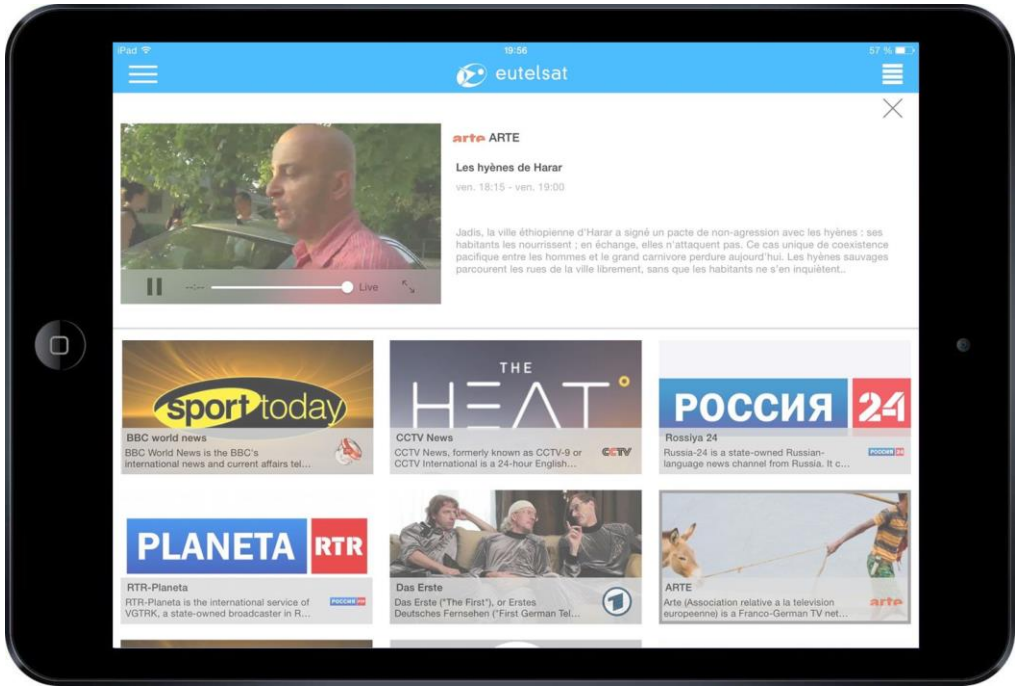
	Solutions	Pay-TV	Free to Air
Multiscreen	**"SmartBeam"**	✓	✓
Personalised TV	**Sat.tv**		✓
Connectivity	**SmartLNB**	✓	



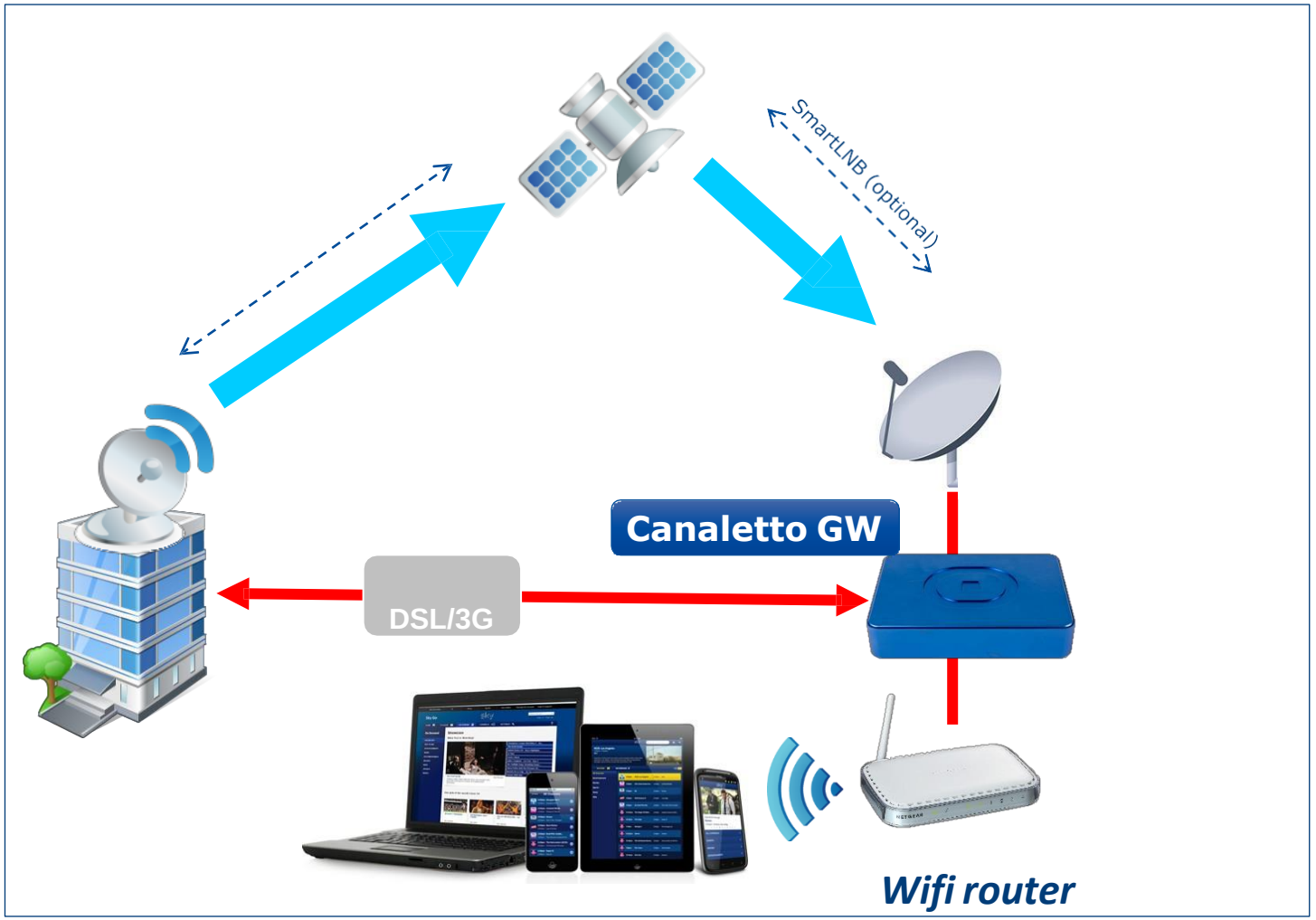
- **SmartBeam**
- Sat.tv
- SmartLNB

SMARTBEAM:
IP-NATIVE MULTISCREEN DISTRIBUTION VIA SATELLITE

- **Based on native IP technologies, this platform paves the way to:**
  - ➔ Distribute dedicated content optimized for portable devices
  - ➔ Reach end-users both at home and in public spaces
- **Distribution service seamlessly integrated into existing broadcaster OTT apps**
- **A Eutelsat user-friendly app is available on iOS and Android**



HOW DOES IT WORK



ON THE TRANSMIT SIDE

- Live streams are encoded in H264 and conveyed through a HLS server
- An IP encapsulator (using DVB MPE) and a standard DVB-S2 platform are used to broadcast the encoded channels via Eutelsat's satellites

ON THE RECEIVE SIDE

- The channels are received in multicacst via a traditional satellite dish and connected to a SmatBeam gateway
- SmartBeam GW receives the DVB transport stream, extracts the relevant IP packets and conveys them to a standard Wi-Fi access point, which provides the direct delivery to the smartphones and tablets
- A terrestrial return link (DSL/3G) allows to collect precise audience statistics and to exchange DRM keys for protected content
- **As an option, SmartLNB can be used as a cost effective return-link when no terrestrial link is available**

TWO KEY USE CASES: “AT HOME” AND “PUBLIC SPACES”

AT HOME

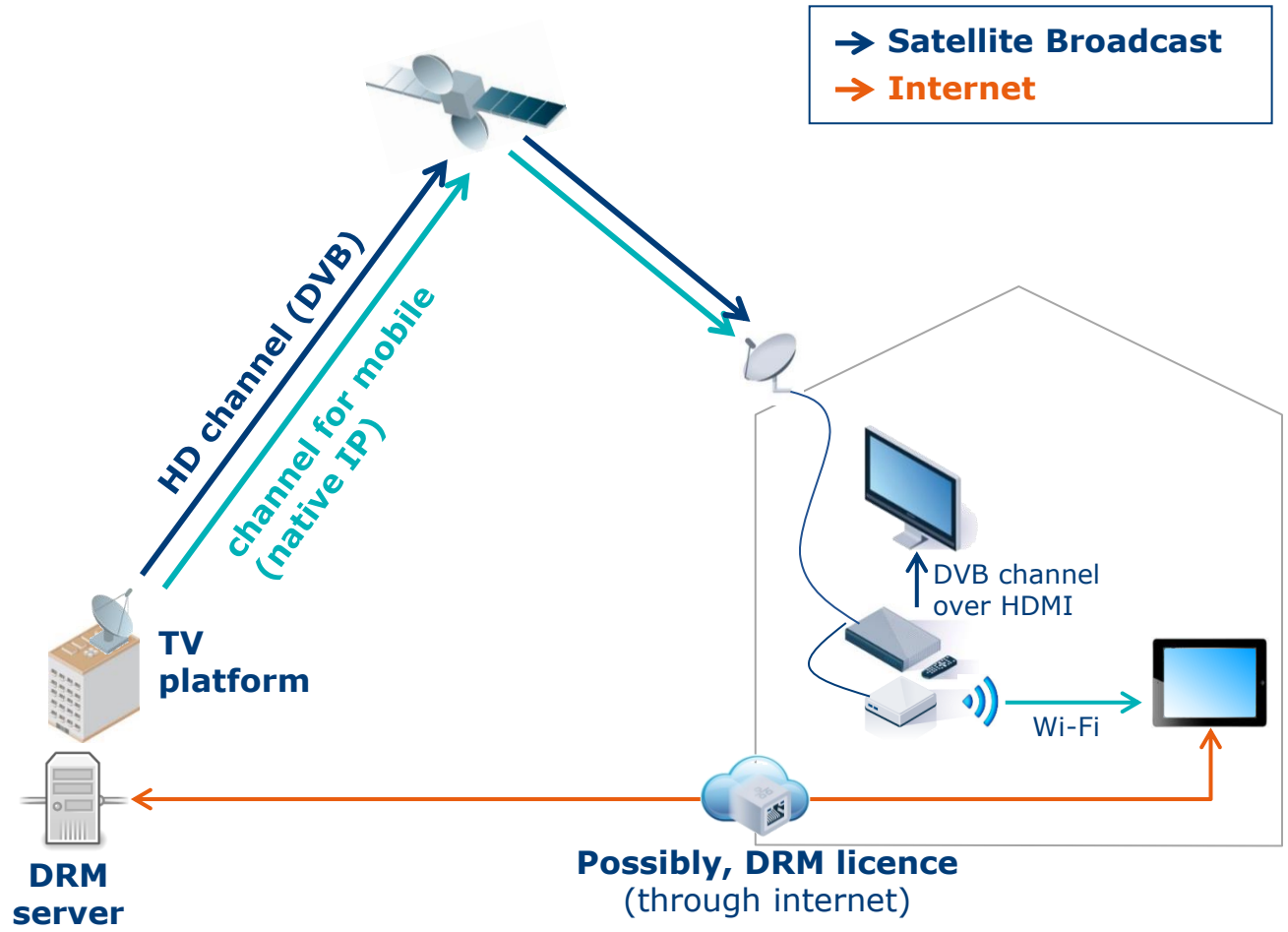
- Receive video content optimized for watching on a smartphone or tablet
- Watch TV easily, everywhere at home. Independently of the availability and quality of terrestrial networks
- Do not incur volume limitations or in additional mobile data traffic costs

PUBLIC SPACES

- Watch TV on a tablet while e.g. relaxing at a hotel or waiting for a plane
- A large number of users can simultaneously watch different channels
- Tenants of public spaces (hotels, airports, shopping malls, hospitals…) can improve their attractiveness and better retain their customer

SMARTBEAM LIVE

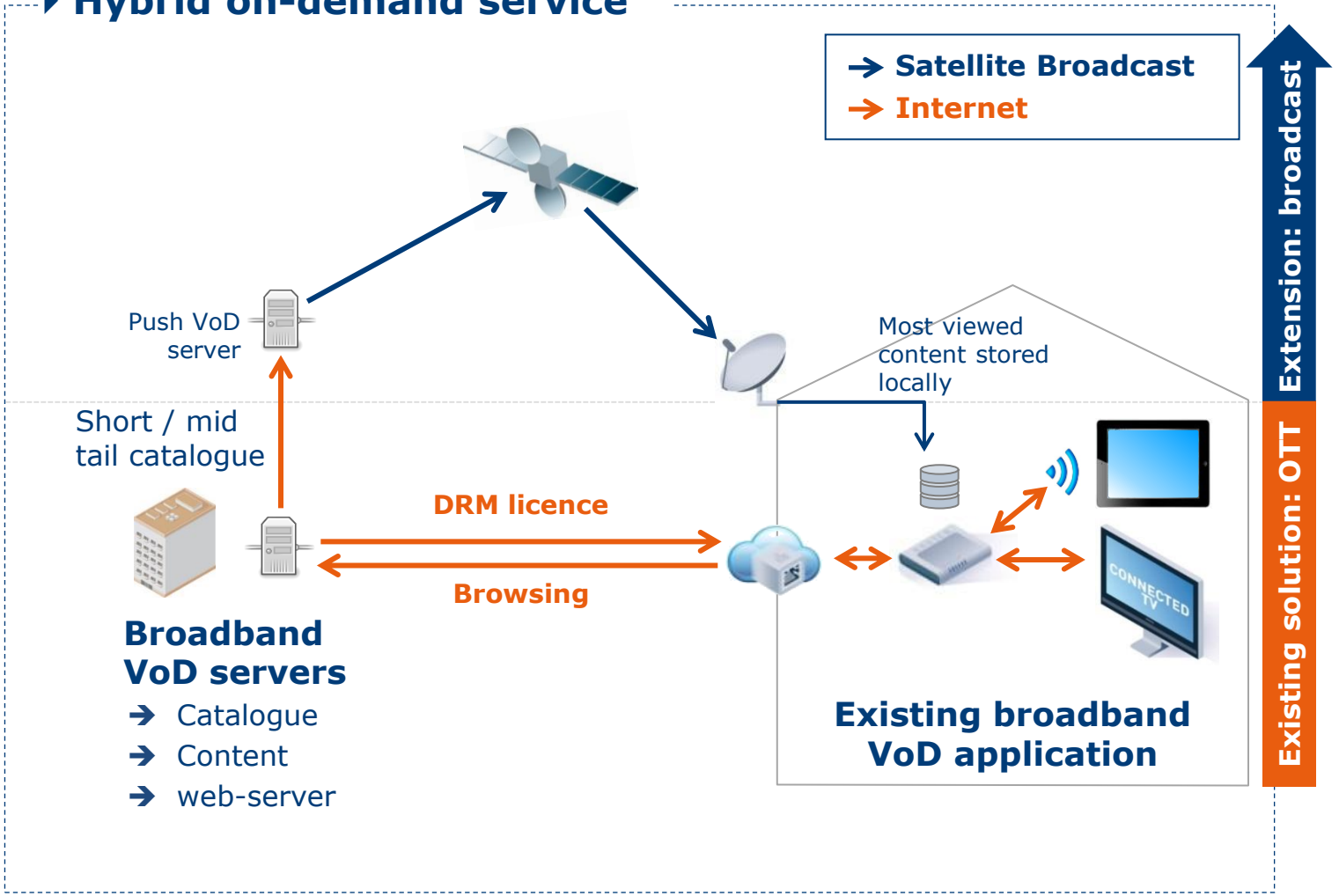
SmartBeam Live



- **IP native channel,** simulcast with existing DVB channel
  - Streaming format (HLS, Dash …)
  - FTA or protected with a DRM
- **Modifications to distribution chain**
  - Dedicated head-end, packaging existing OTT live streams
  - CPE: adds a specific function to convert multicast to unicast
  - Address existing OTT app, with minimal impact (add STP identification in the LAN)
- **Deliver video streams tailored to second screen**
  - e.g. complementary content to main channels (alternate angle / camera in a sport event)

SMARTBEAM ON-DEMAND: INTEGRATE SEAMLESSLY BROADCAST CAPABILITIES IN EXISTING OTT SERVICE

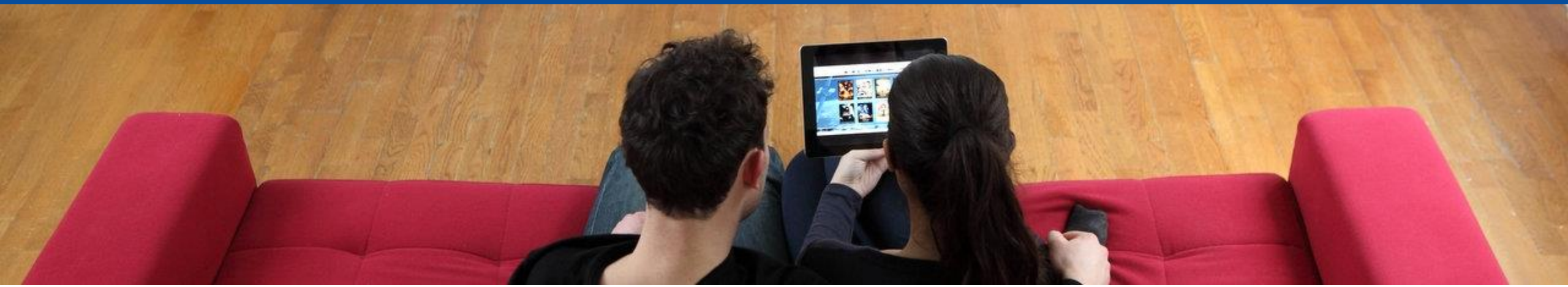
Hybrid on-demand service



SmartBeam on-demand

- Distribute via satellite, store content locally, pre-packaged for tablets/PCs, ready for immediate viewing, …
- … fully compatible with existing OTT VoD services:
  - same back-end (incl. DRM)
  - Same customer applications
  - Access to long-tail catalogue through internet (in lower quality)

1) IP streams protected with DRM



- SmartBeam
- **Sat.tv**
- SmartLNB

EUTELSAT IS TRANSFORMING HOT BIRD FTA EXPERIENCE INTO A MODERN USER-CENTRIC ONE

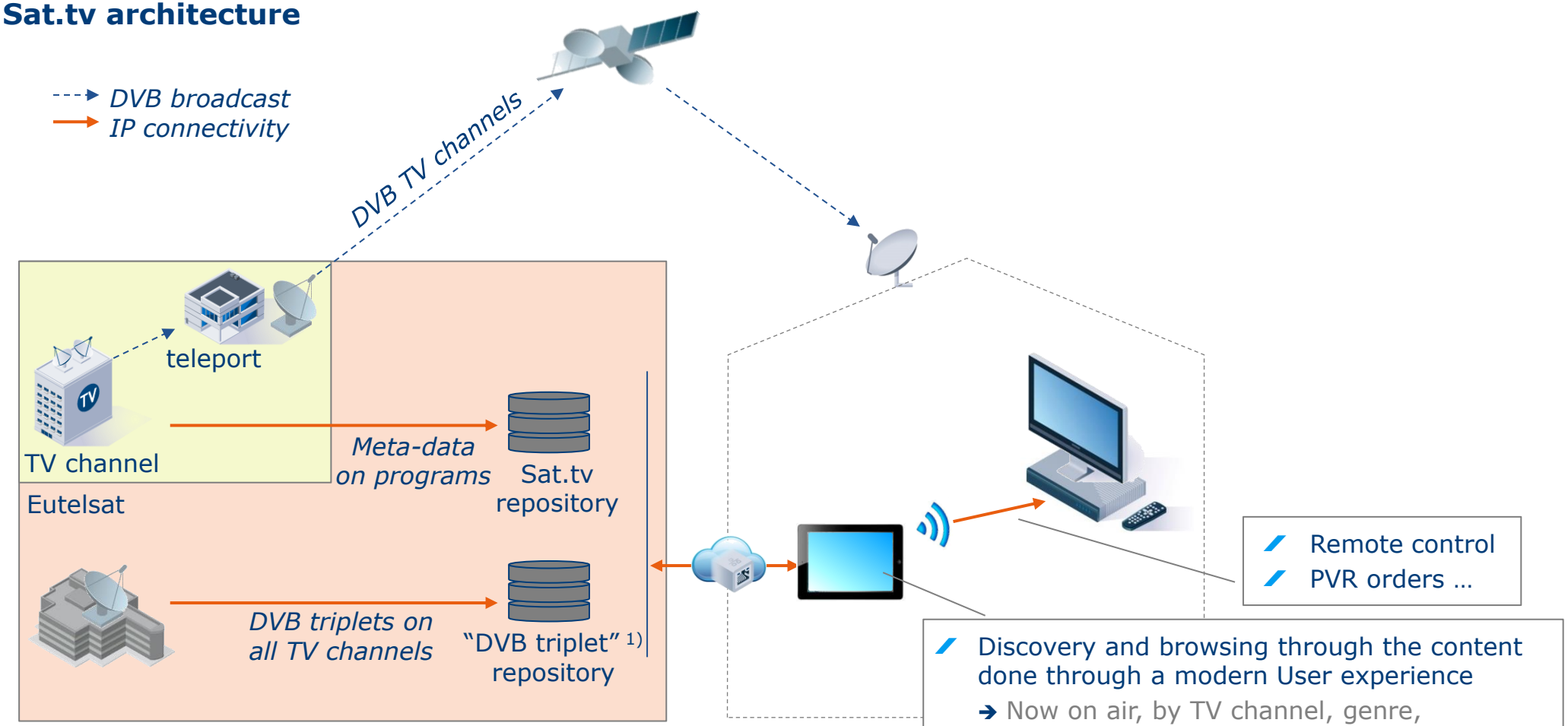
"Sat.tv" project on HOT BIRD

- **TV program guide covering all Free to Air channels on HOT BIRD**
- **Available on smartphone, tablet and PC**
- **Embeds rich programme information**
  - ➔ Programme images
  - ➔ Classified by genre, theme, language, …
  - ➔ Link to additional (non linear) content
- **Included services**
  - ➔ Recommendation engine
  - ➔ Alerts/PVR-record on relevant content, favourite series
  - ➔ Zap on a selected program from the app

Live

THE SYSTEM COMPLEMENTS BROADCAST WITH METADATA ACCESSIBLE THROUGH AN INTERNET-ENABLED DEVICE

Sat.tv architecture

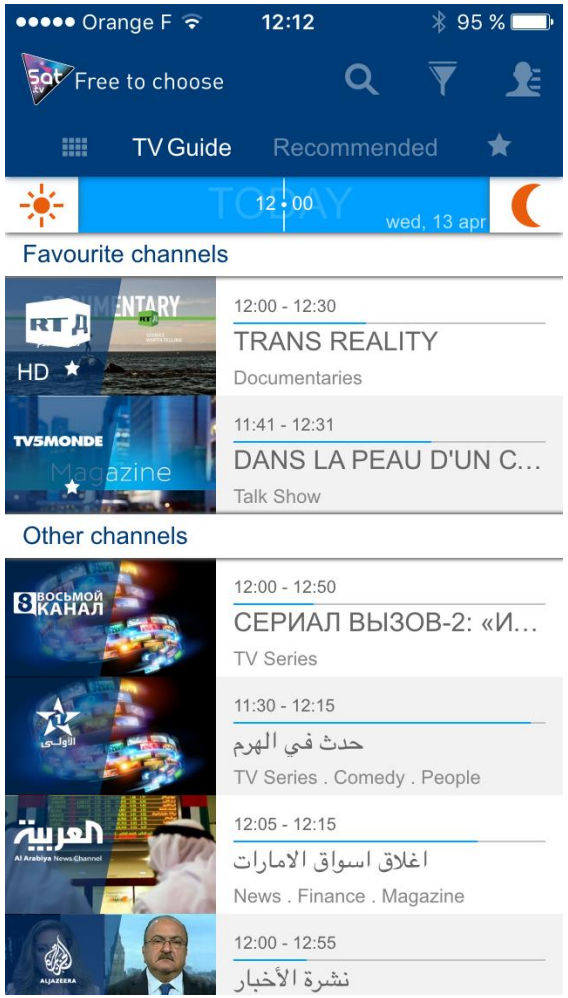


1) "DVB triplet": Network_id, Transport_Stream_id, Service_id, i.e. orbital position, Transponder, service number

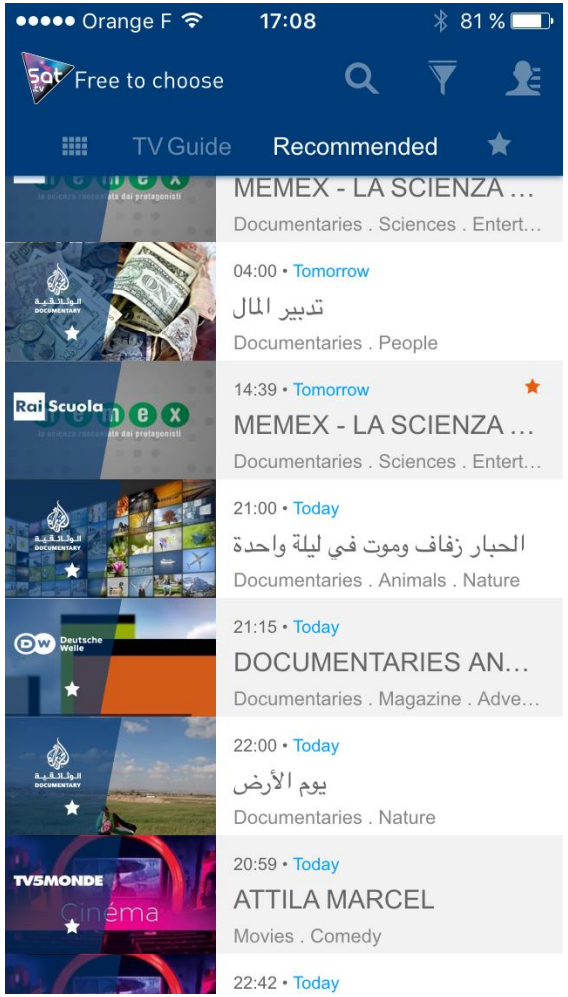
THE APP OFFERS 3 WAYS OF BROWSING THROUGH THE CONTENT

Mosaic of TV channels

TV channel grid



User specific recommendations



eutelsat

Download on **www.WatchSat.tv**

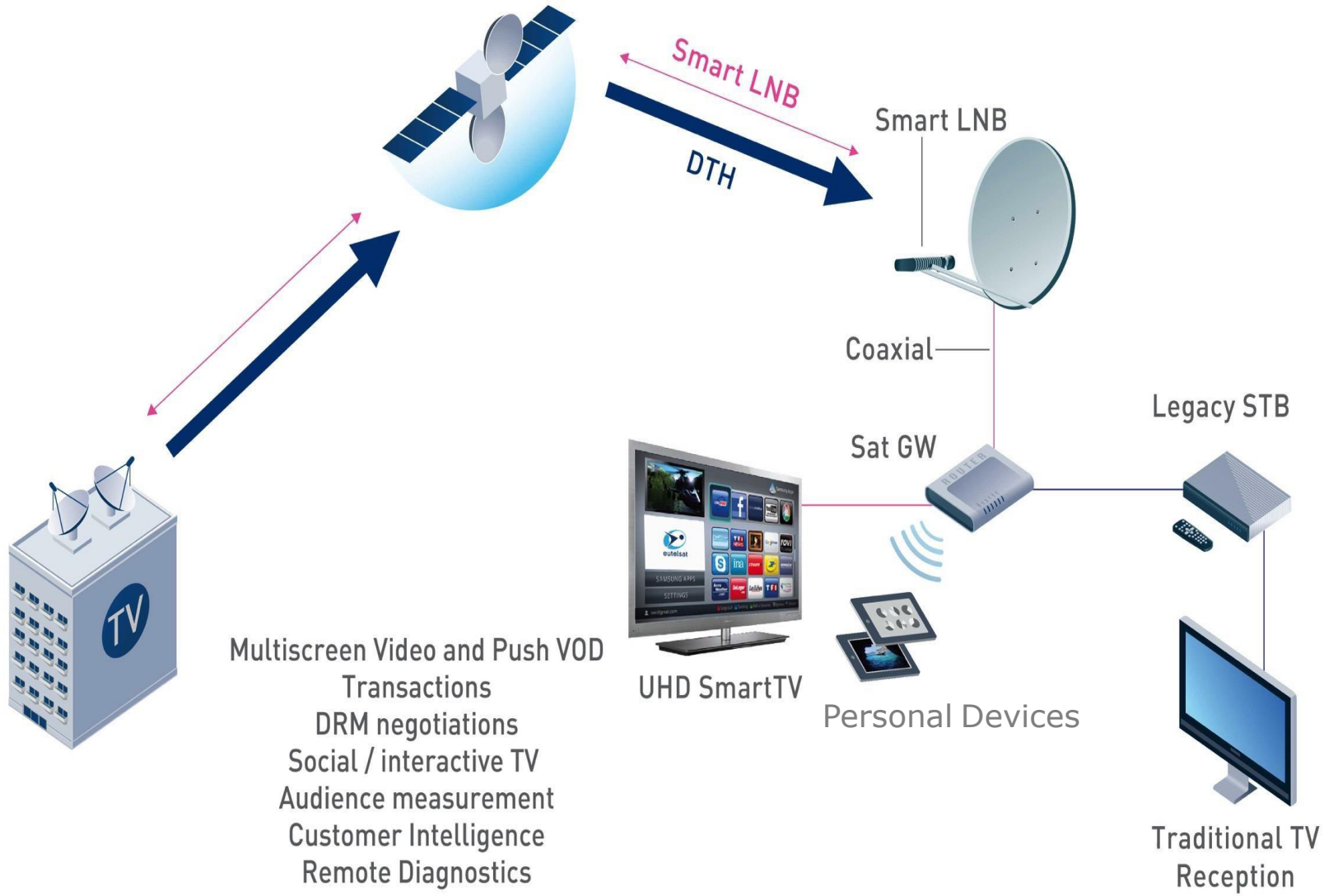
- SmartBeam
- Sat.tv
- **SmartLNB**

SMARTLNB VALUE PROPOSITION

- **Smart LNB provides direct broadcast reception in DVB and IP format + a low cost two way IP connection via satellite**
  - ➔ Everywhere
  - ➔ Anytime

- **Smart LNB enables a multitude of new services via satellite**
  - ➔ Secure Push VOD
    - → Providing 1000's of titles with HD quality
  - ➔ Secure IP Multiscreen
    - → Addressing tablets and smartphones
  - ➔ Customer intelligence
    - → Knowing who is doing what in real time
  - ➔ Internet of Things (IoT)
    - → Customers can manage their homes in real time

THE SMART LNB ENVIRONMENT



SET TOP BOX EXAMPLES

	Basic Splitter	Home Gateway (e.g. SmartBeam Gateway)	Advanced Home Gateway
			
Features	• Smart LNB power supply • Ethernet interface • L-band over F connector output • *No CPU only Ethernet over coax splitter* • *Push & Multicast to Unicast client installed in legacy STB*	• Smart LNB power supply • CPU • Push & Multicast to Unicast client • USB connector for external Hard Drive • Ethernet interface • L-band over F connector output • *No HDMI* • *No content player*	• Smart LNB power supply • CPU • Push & Multicast to Unicast client • Internal slot for HDD • H264/H265/HEVC player • HDMI output • Ethernet interface • WiFi Access Point • L-band over F connector output • DVB S2 single tuner • Optional Home automation access point
	< 10 € ex factory	**~20 € ex factory**	**~ 50 € ex factory**

BROADCASTING EXAMPLE: PUSH VOD VIA SATELLITE

Example of offered services

- Catalogue of movies sent in "push" (datacast) to terminals equipped with storage
- When customer plays content, key exchange with DRM server ensured via the SmartLNB

Push VOD via satellite

- HD VOD everywhere
  - Independent of the fixed internet line availability and quality
  - Best user experience: No image freeze or macro-bloc effect
- Available on every screens at home
  - Use of DRM protection allows to watch content on smartphones and tablets
  - Access on the main screen via an App
- Customer intelligence De-Facto available
  - Profiling of end users allows to provide the best content

With 1 Txp + 5MHz, the system can handle 1.2M subscribers, and a catalog of 600 movies

BROADCASTNG EXAMPLE: OTT VIA SATELLITE

Example of offered services

➔ OTT live streaming via satellite

➔ Multiscreen of IP streams to tablets and smartphones

OTT services for all

➔ Same model than Push VOD except that the content is live TV

➔ Compatible with a large majority of end user devices (use of HLS)

➔ Economically viable for broadcasters depending on number of viewers

- ➔ Save CDN costs for the most viewed channels

➔ QoS is ensured by the satellite link robustness

➔ Reuse the existing infrastructure (DRM, Mobile application,…)

EUTELSAT'A SMART HOME VIA SATELLITE

THANK YOU

eutelsat