



Push Technology & HbbTV Enabling new Services

Singapore - June 18th 2014





Quadrille was founded in 1998 and is based in Paris.



We started our activity as a **consulting** company providing services to the **digital television and telecommunication industry** :

- Technical consulting
- Broadcast engineering
- Systems integration
- Project management



Since 2010, Quadrille has developed **QuadriFast™**, a **Content Delivery Solution** :

- Push VOD over DVB network
- Push over IP network
- Digital Signage
- Education
- Narrowcasting and VSAT



VOD services on hybrid set-top boxes and NAS (Multi-media storage device)

- DRM & satellite return channel



VOD on satellite and terrestrial (Albania)

- Launched July 2013
- 300 000 subscribers
- Transactional VOD



Interactive services in buses (France)

- Data broadcast over DVB-T2
- Wifi rebroadcast



VOD services on hybrid satellite STBs (France)

- Deployment end 2014
- Replay service



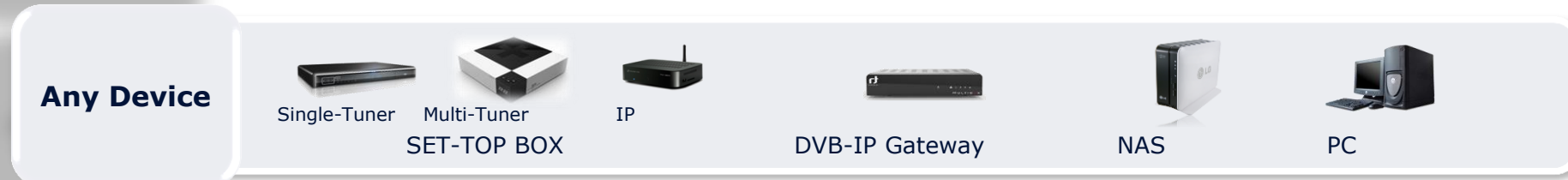
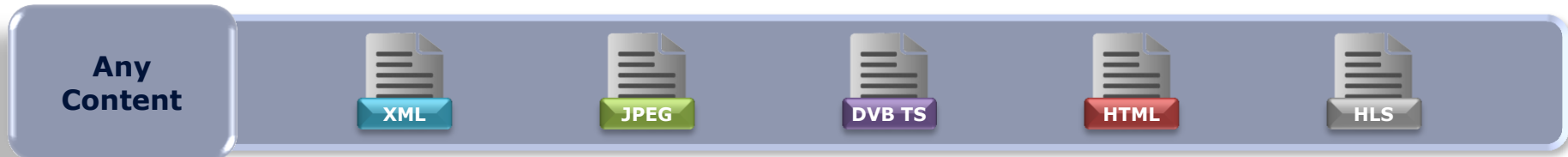
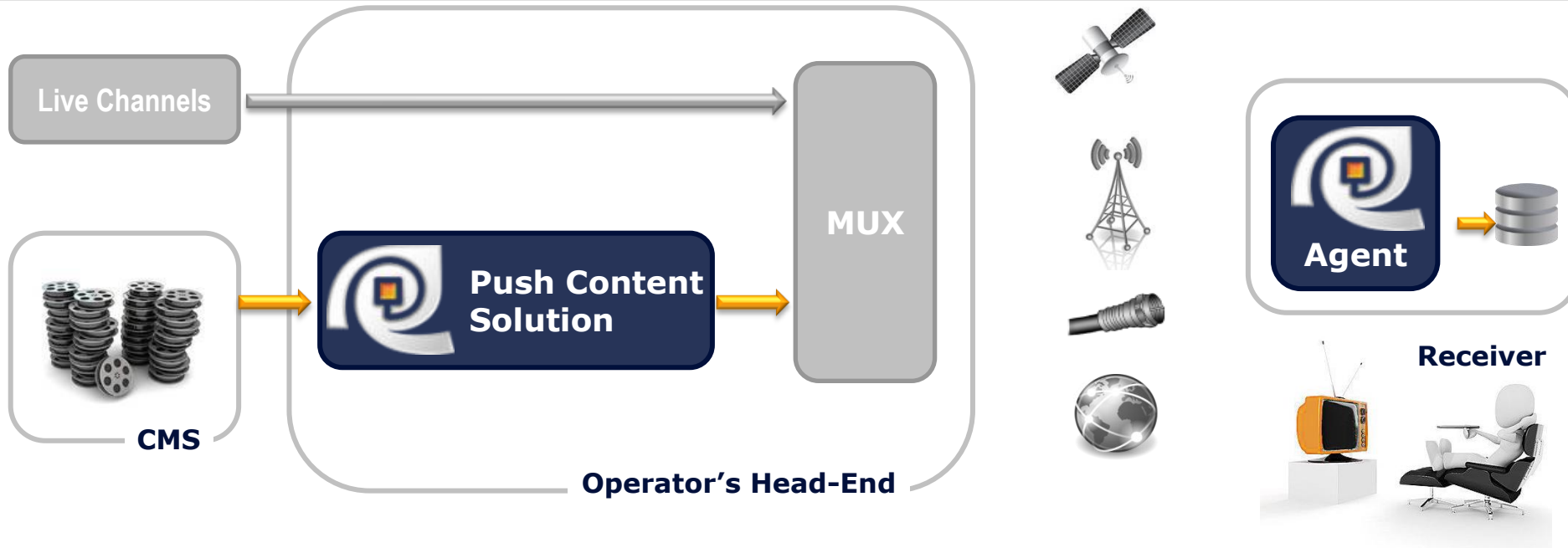
Digital Signage solution (IP based) (France)

- Operational since 2010
- 60 000 Sales Points fed daily



QuadriFast™ - Multimedia Push Technology

Solution Overview





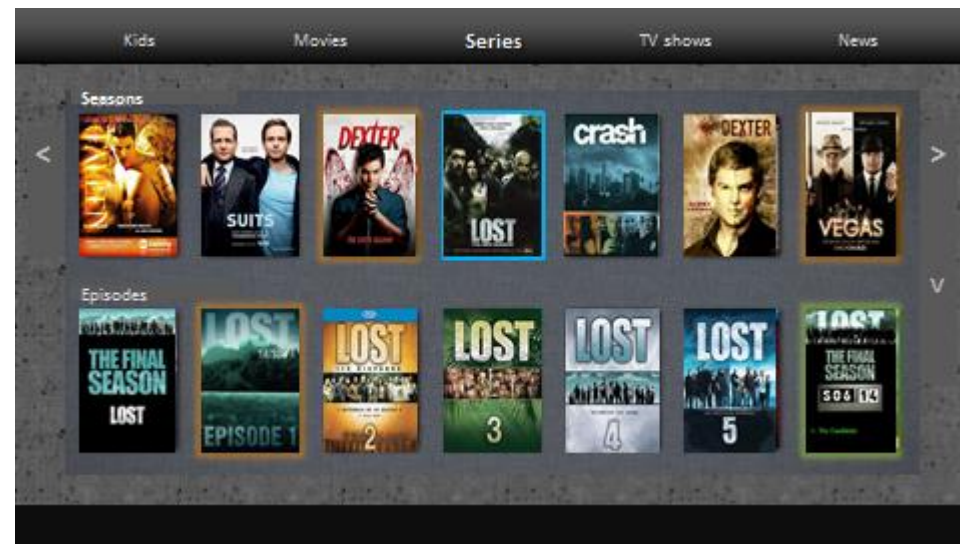
- The HbbTV 2.0 standard integrates a video file transfer mechanism (« Push »)
- Quadrille contributed the protocol to the HbbTV standard
- Broadcast schedules for the video (or other files) are provided through a HbbTV application
- Metadata are managed through a HbbTV application in the receiver
- The HbbTV Push Standard is compatible with most CAS & DRM implementations
- Possibility of additional Forward Error Correction (FEC)
- Eutelsat and Quadrille are implementing a full end to end demonstrator



Typical Applications for Push Technology



- Standard approach to video content
 - S-VOD services (Subscription VOD)
 - Movies
 - Series
 - Education
 - Advertisement financed VOD
 - Replay (Catch-up services)
 - T-VOD services (Transactional VOD, « Pay Per View »)
- Lots of content
 - A 500 Gbyte hard disk connected to a single tuner sub-\$30 zapper can offer for immediate consumption:
 - 100 Movies (1/3 HD)
 - 160 Series Episodes (1/5 HD)
 - 320 education programs of 15mn (SD)
 - 14 hours of replay services (SD)
- using only **4.7 Mbit/s** of bandwidth capacity
- With a Wifi connexion the STB can also offer VOD content for consumption on a tablet and smart phone

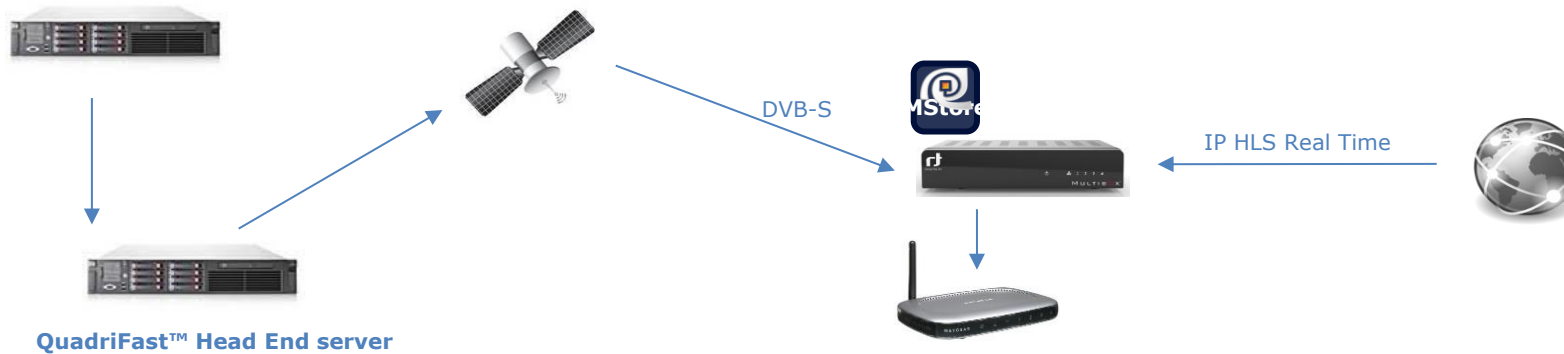




Push as Broadband extension



- Push Technology is not only about Pushing video content. It is about providing using a limited bandwidth return channel (3G/4G or satellite return) broadband services by caching locally the most viewed content (« edge CDN »).
- The same HbbTV broadband OTT applications can therefore be made available to viewers with limited bandwidth.
- The return channel is used for reporting and rights management
- Example: Offering a Replay service on tablets in areas with limited bandwidth





An example: Offering mobility services to customers in buses and trains

The French Terrestrial Broadcast Network Operator (TDF) launched a service in the city of Rennes in France providing video streaming services and multimedia applications (local news, weather, traffic information) on local and regional buses.

Multimedia content and live video (HLS) is pushed using the DVB-T2 signal to a box in the bus which then provides a point to point wifi local link to smart phones and tablets through a specific application.





Thank you!



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