



Value Creation with HbbTV

Real Life Case Examples

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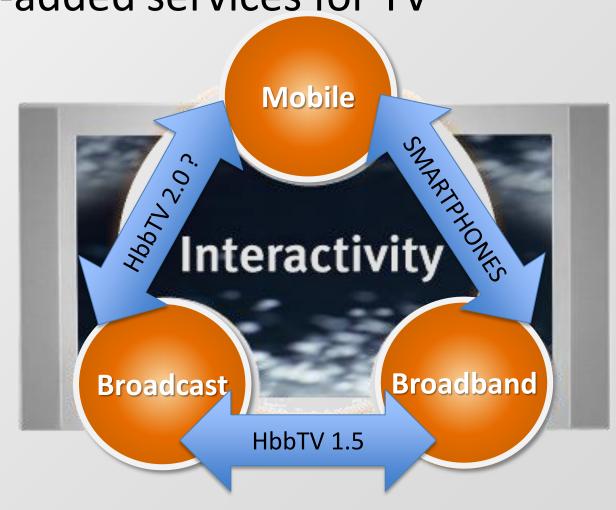
About Sofia Digital Ltd.



Sofia Digital - 15 years history of value-added services for TV

- DVB-MHP (in the past)
- Mobile TV (in the past)
- Current: DVB-Products:EPG systems, PSI-SI, HbbTV Inserter
- And HbbTV and Smart Screens Apps

HbbTV Market activity: Finland (and Nordic), Estonia, Hungary, Turkey, Netherlands, Spain, Malaysia ...

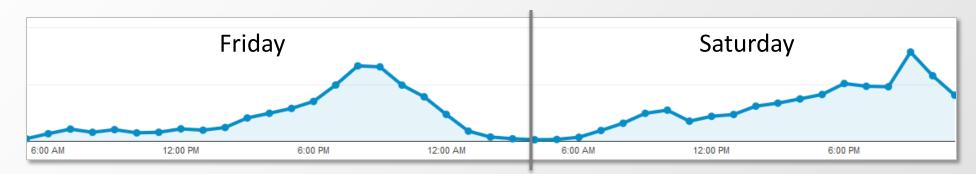




What is The Value in TV business?



- Numbers are always needed to measure it
 - How to measure.... How to get the numbers? Must make TVs to be connected! Simple Formula: More receivers out means more potential, more business!



- Do not look only number of device reach
- Most valuable are viewers who are spend more time with the services

Right now 1834
active users on site

i.e. Google Analytics

Smart Devices viewing times: TV(HbbTV)=3 hours, PC=30 min, mobiles=6 min

Source: Australian Multi-Screen Report Q4 2014, daily average for 2014



HbbTV Core services

MOST

IMPORTANT



"Must have" services must be included with The Red Button

- Rich TV-Guide (EPG)
 - All Linear content in one UI
- -VOD & Catch-up (or network PVR for operator)
 - All online video content
- All other apps
 - News, Weather, Sports, Social Media, etc.

Result: 100% of linear TV content + 100% of VOD content

> TV + EPG + VOD = HbbTV experience!



Broadcasters view



HbbTV brigns OTT video models with Broadcasted TV

- Playback starts with pre-roll Forced ads can shown in brodcast also!
- Every user/usage is measured Let's do this now also in the broadcast!
- Personalized OSD and pop-up offer people more selections (to participate)
- Personal communication But this is not very good for broadcast TV!

How to do personal transactions?

- Must recognize the user!
- Use of companion devices!
- Linking online accounts with TV
- TV is NOT very personal device



IMAGE: Sofia Backstage HbbTV Starter Kit
Easy way to develop and showcase HbbTV services in real TV



Markets are still developing

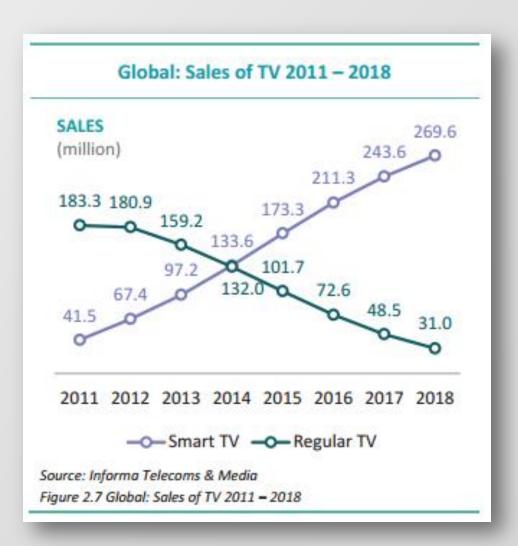


One Scenario for launching HbbTV technology

- 1. Just monitor the audience (i.e. hidden app)
 - How many "lost opportunities"
- 2. Waith while receiver base growing organically
 - New SmartTVs are purchased every day
- 3. Critical mass for HbbTV comes sooner or later!

For 2015 some estimates (how many units delivered):

- 10 Mil Connected-TV devices (Chromecast, etc.)
- 140 Mil Connectable STB
- 170 Mil SmartTVs (> 50% of all TV) going up
- 1500 Mil Smartphones





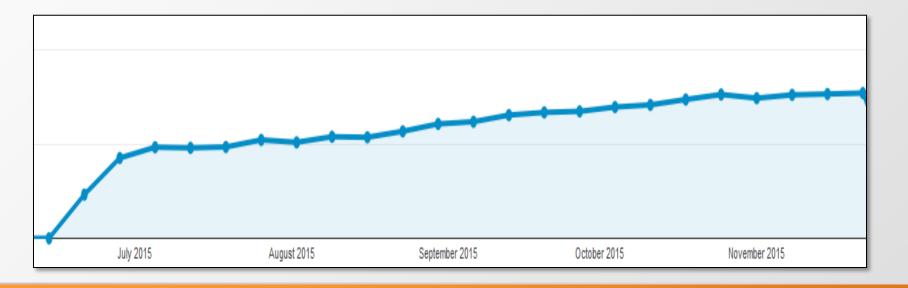
About the deployments

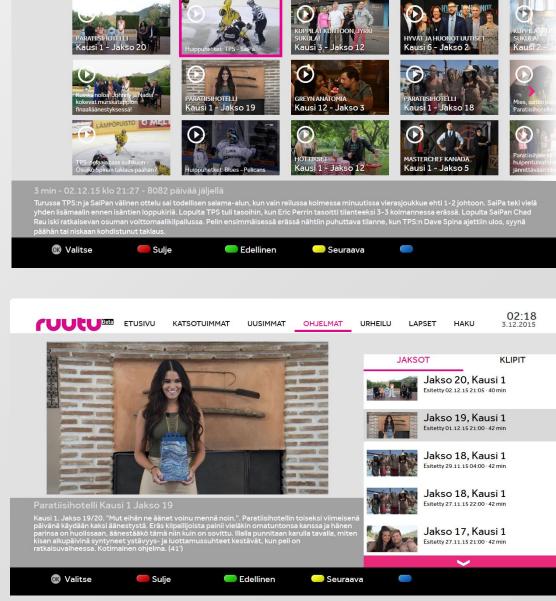


Case Ruutu: Sanoma (Nelonen Media) – Finland

Technical requirement, MPEG-DASH support working fluently in HbbTV 1.5 receivers (and in back-end)

- Ruutu HbbTV service reach all major smart TVs (except one)
- About 40.000 HbbTV viewers in 6 month
- Most important to see how fast the user base grow at launch almost instantly 30.000 users after launch
- Red-Button as "restart this program" using OTT content





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About the deployments



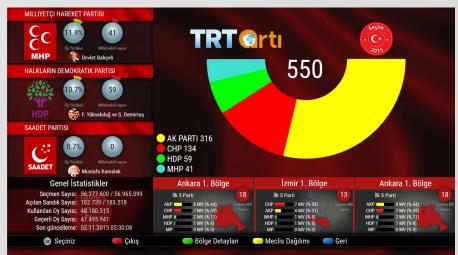
Just launch it: The Red Button does marketing itself CASE TRT-Turkey, TRT ARTI: >500.000 HbbTV viewers without marketing or terminal investment!

- Usage numbers in period of 3 months on right
 - * 100 Million sessions = 100 Million opportunities to monetize
 - 1. Most popular is Seç İzle, catch-up application, linked with Rich EPG
 - 2. Featured programs, with trailers of coming shows, linked with Rich EPG
 - 3. In parliament elections app 14.000 simultaneous viewers in HbbTV











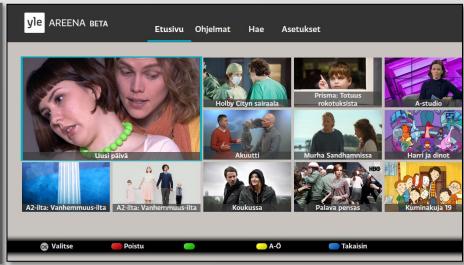
For Operators?



- DTTV Network operators are using HbbTV already in many countries
 - HbbTV is ideal for Free-to-Air terrestrial network
 - HbbTV brings DTTV operators portfolio unlimited number of TV services
 - Niche channels and Pay-TV thru OTT with MPEG-DASH live streaming
 - Network competitiveness against Cable, Satellite or IPTV
- Operator's HbbTV portal could be their own "AppStore" what local markets can control
 Examples below: Levira (Estonia) & Digita (Finland) offer local catch-up TV to DTTV houses









Consumers angle



- More TV content easily available in big screen
- No need to connect various external boxes to the TV
 ...But sometimes need to update the TV set...



- -Then how to know what models are compatible with services?
 - Confusion of technologies must be avoided: DRM, HbbTV 1.5, 2.0, Live DASH, PlayReady, Marlin, HTML5, etc.
- One solution In Finland "Smart HD" logo launched in 2015.

Target to collect all FTA catch-up services for all certified DVB-T2 HbbTV 1.5 receivers. Compatible with LIVE DASH with DRM.

HbbTV the only platform where consumer have easy access to premium online video without install any new applications into device?



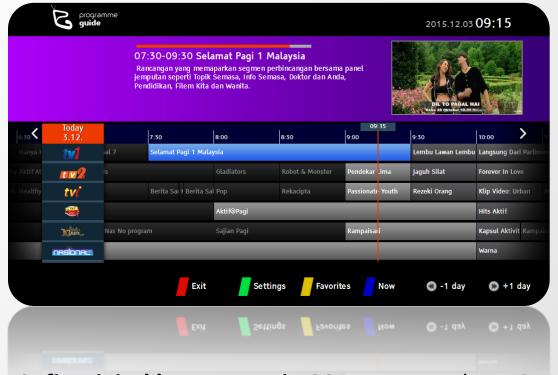
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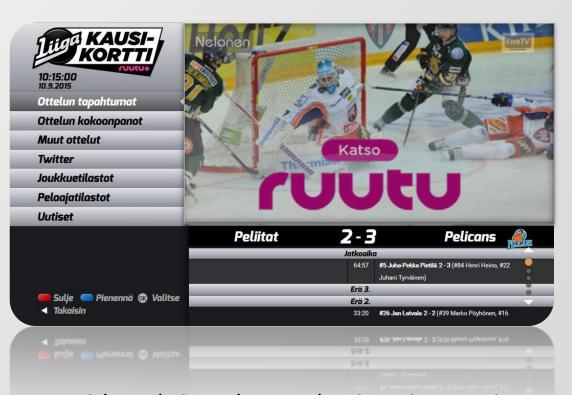


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Sofia Digital latest apps in 2015: New style EPG and Sports app with real-time data and twitter integration