HbbTV SYMPOSIUM: ASIA

Singapore June 18th 2014
with the sponsorship of
Infrastructure Panel

- Régis SAINT GIRONS, HTTV:
  - Welcome and HbbTV introduction

- Keith POTTER, Digital TV labs:
  - HbbTV Interoperability

- Kenny HUANG, Marlin founder group:
  - Marlin Security for HbbTV

- Panel Moderator: Gordon MAYNARD, S&T
Application Panel

- Mika KANERVA, Sofia Digital:
  - HbbTV live applications from Europe

- Gordon MAYNARD, S&T:
  - HbbTV and multi-screen strategy

- Panel Moderator: Régis SAINT GIRONS, HTTV
Coffee Break
&
Networking
New Service Panel

- Gianluca FERREMI, Motive Television
  - Experience in revenue generation with HbbTV

- Jean Philippe PLANTEVIN, Quadrille
  - Push Technology and HbbTV – Enabling new services

- Chem ASSAYAG, Viaccess-Orca
  - Rule of engagement: An operator guide to providing a compelling TV user experience

- Panel Moderator: Jean Christophe JUBIN, HbbTV
Broadcaster Panel

- Markus FRITZ, Eutelsat
  - Facilitating global HbbTV deployments

- Liz ROSS, Freeview
  - HbbTV in Australia

- David COURET, France24
  - Application deployments

- Panel Moderator: Phil SANDBERG, Content+Technology
Cocktail & Networking
HbbTV: Introduction

Régis Saint Girons

HTTV CEO

Vice-Chairman HbbTV Marketing Group
HTTV – High Tech TV

- Technology provider for interactive Digital TV
  - Connected TV solutions based on HTML5 and HbbTV
  - Hybrid TV OS and Head End Play Out Server

- International implementation
  - French Headquarter since 1999, Singapore office since 2011
Connected TV, two separated worlds

Broadcast Context
→ Program lists
→ linear TV
→ broadcast links

Internet context
→ Portals, TV Apps
→ On demand
→ Broadband links

TV-Progr. 1
TV-Progr. 2
TV-Progr. 3
TV-Progr. 4
TV-Progr. 5
TV-Progr. 6
“Smart TV” – Just an Example

- VOD
- App Store
- Recommendations
- Advertisement
- Access to „media“
- TV
Challenges for Broadcasters

How to get onto the portals?
How to get found in the portals?
How to adapt service for each portal technology
How to connect linear broadcast to non-linear services?
From Connected TV to .....
... HbbTV – a new paradigm

Mixing
TV Entertainment
with
the Internet Power

Broadcast Services

Internet Services
(Portals / TV Apps)

(distribution)

(distribution)
Hybrid broadcast broadband TV

- Broadcaster & TV Manufacturer initiative
  - Moving to Pay TV

- Combines the best of Television and the Internet
  - Gives the broadcasters control over the internet
  - Gives the user the best service access through TV channels
  - Provides service interoperability over any HbbTV devices

- The most deployed open interactive TV standard
HbbTV key goals

Broadcast remain anchor for service usage

No portal needed, No central gatekeeper

Independently maintain brand and UI design

Fast application development by using a web browser

Data transmission in broadcast, Broadband not essential

Limited receiver extra cost compared to basic HDTV STB
The Key Building Blocks

- Start from mature & stable technology
  - HTML Web standards
  - DVB DSM-CC object carousel

- Mix in elements from other work where necessary
  - Application signaling & lifecycle management as used in MHP
  - JavaScript APIs for TV from OIPF
  - MPEG-Dash Profile
End to end architecture
HbbTV deployments in Europe

- **in regular operation**
- **announced / trials**
- **no information**
- **other plans**
Fast HbbTV device deployments

- Over 20 Million devices
  - 10 Million devices sold in Germany
- Mix of TVs and STBs
- Technology established in 3 years only
- 90% of Connected TV sold in Europe are HbbTV

Source: SevenOne media

German deployments
HbbTV usage figures (Germany)

Unique Devices - SAT.1, ProSieben, kabel eins
Number of Clients (=Devices) reached monthly

Source: Internal Tracking SevenOne Media
HbbTV is used by people from any Age

Source: 730 respondents
Question: „And how old are you...“
SevenOne Media, July 2013
2011-2013: Europe, Middle East
2014-2015: Asia Pacific
Next: Africa, USA, China
Deployments outside Europe

- **Australia and New Zealand**
  - Freeview in Australia and in New Zealand have announced to move from MHEG5 to HbbTV in 2014 on Terrestrial and Satellite

- **USA**
  - ATSC is in active liaison with HbbTV to use the technology as part of ATSC3.0.

- **ASEAN**
  - Malaysia and Vietnam are specifying HbbTV as part of their DVB-T2 launches
  - Other countries... are actively considering HbbTV for their Terrestrial Analog Switch Off

- **Africa**
  - ASBU (Arabic States Broadcast Union) has specified HbbTV for their Analog Switch Off
  - CEDEAO (West African French speaking countries) has also specified HBBTV for their ASO
  - Sentech (South Africa) is testing HbbTV over satellite
Catch-up, Start-over, VOD services

- 7 days catch-up (ReplayTV) into the past
- Start-over the most used service in France
- Available on both free and premium channels
- Entire program offering: linear and on-demand
- 7 days into the past
- Can be shared across all channels from the same broadcaster
Information services

- High usage in Europe (several million users per day)
- Keeps the established and well known UI (numbered pages)
- Web-based technology offers lots of Internet features
Advertising campaigns

- Microsites user experience
- Improved Brand Awareness
Improved Accessibility

- Change font sizes for readability
- Sign language via additional stream
Education

- Enhanced Live TV Programs with interactive education service
- On demand education programs (VOD or Push VOD)
HbbTV Moving to Pay TV networks

- Deployed on satellite with embedded CAS
  - HD+ SmartTV, Fransat
- Deployed on Pay TV Cable
  - KabelKiosk (Germany)
- On going deployments to replace legacy PayTV middleware with HbbTV
  - Digiturk and more to come in 2014 including Cable and IPTV networks
- Moving to IPTV
  - KabelKiosk and DT (trial)
  - Considered by PayTV operators to access Free To Air HbbTV services (IPTV Telco operators in France)
Network Operator HbbTV services

- Making Network operator’s HbbTV services coexisting with the Broadcast HbbTV services
  - Kabelkiosk, Fransat example
Live demonstration
Thank You

regis.saintgirons@httv.fr
INFRASTRUCTURE PANEL

Régis Saint Girons

Régis Saint Girons is a key figure of the digital TV industry with more than 20 years of experience. Régis Saint Girons is today the CEO of High Tech TV (httv), a leading international technology and solution provider for interactive digital TV, Régis is also the President of the French HD Forum, as well as the Vice Marketing Chairman of the HbbTV Association. He has previously served as Senior Vice President OpenTV for NAGRA, a Kudelski group company. Prior to NAGRA, Régis Saint Girons was one of the OpenTV co-founder, a joint-venture between Thomson Consumer Electronics and Sun Microsystem. As its European General Manager, Régis was instrumental in positioning OpenTV as a Digital TV middleware world leader. Before that, Régis Saint Girons lead Thomson Research & Development laboratory in Los Angeles during 8 years. He positioned MPEG as the Digital TV solution for DirectTV and ACTV, the US HDTV standard.

Kenny Huang

VP/GM Greater China, S. Korea and ASEAN Region

Kenny Huang is responsible for Intertrust’s growing East Asia business and technology activities. His regional responsibilities include Greater China, South Korea and South East Asia. Huang has over 20 years of experience at pioneering Internet companies, with substantial experience in the digital media and Internet security markets. Mr. Huang first joined Intertrust in 2000 to run our Professional Services business unit. He led the opening of our regional HQ in Beijing in 2008, where he currently resides. In the past, Mr. Huang has held a variety of engineering and business management positions at major Internet companies including Trend Micro, HelloAsia, Netscape and Silicon Graphics. Mr. Huang holds a MS Degree in Computer Science from Tufts University and a BS degree from National Taiwan University.

Keith POTTER,

Keith Potter is the CEO and founder of Digital TV Labs, a media device testing company. Keith was previously CEO of Cabot Software, part of Vestel Group. Prior to this Keith was European sales Director of Espial. Keith has an MBA and Bsc in Electronics from Bristol University.
APPLICATION PANEL

Mika Kanerva (Sofia Digital Ltd.)

Co-Founder and Chief Operating Officer at Sofia Digital Ltd.
Chairman of Finnish HDTV-Forum HbbTV working group

Mr. Mika Kanerva has over 10 years of experience in development of added-value services for television. He has extensive knowledge about service development for HbbTV and Connected devices. Mr. Kanerva has been closely involved in interactive TV standards development in Europe and the Nordic region in a position where he followed closely and provided insight for the television digitalization process. He graduated in 2008 as Master of Computer Sciences in the University of Tampere, Finland. He has been one of the key persons in Sofia Digital since 2000 - company specializing in Digital TV services and software development for smart devices.

Gordon Maynard, S&T

Gordon Maynard has been working in interactive app development since the early days of digital television when he was technical Director of Teletext in the UK and led the creation of new services on satellite, cable and DTT.

Gordon developed a multi-screen publishing system called OnScreen Publisher and has now joined S&T to lead their new initiative to move beyond their traditional territory of MHEG5 to deliver content to smart TVs, tablets, mobile and, of course, HbbTV.
NEW SERVICE PANEL

Chem ASSAYAG

Executive Vice President of Sales at Viaccess-Orca

Chem graduated in management from EM Lyon, and holds a postgraduate degree in media management from ESCP Europe. He is responsible for global sales strategy and business development, driving business in new markets, managing the expansion of the sales force, and feeding into the product development process. He has strong experience in the world of digital television and content services. During his tenure at OpenTV, the worldwide leader in interactive television, he managed operations in Europe and the Middle East, growing revenues in the company’s largest business region. He also led the worldwide sales, marketing, and business development functions for the MediaHighway® product line at NDS (now part of Cisco Systems). In the late 2000s he was also a key figure in Europe’s mobile TV and mobile broadcast industry, leading Qualcomm’s MediaFLO division in the region. Aside from his corporate sales and business experience, Assayag is an entrepreneur who founded, managed, and sold his own company, and has also driven a number of business startups.

Gianluca FERREMI

Gianluca Ferremi is currently VP Business Development at Motive Television since January 2014. He began working for Motive Television in January 2011 as VP of Sales and Marketing and held the post until December 2013. Before that he held the position of VP of Sales and Marketing at Adecq Digital S.A., owner of the brand Bestv®, since he joined the company in October 2009. Adecq Digital was acquired by Motive Television in October 2010. Since January 2008, Mr. Ferremi is also an independent strategic consultant at WaterJug, the company he founded with the objective to provide strategic sales and marketing services to companies active in the media, entertainment, and technology space. Before 2008, Mr. Ferremi was responsible for developing the worldwide media and entertainment markets for Sun Microsystems, a hardware and technology company based in the United States now part of Oracle. His career at Sun started in 1998 covering a numbers of management positions in the sales and marketing organizations until 2004 when he became Head of Video and Media Business Worldwide. Mr. Ferremi received a Bachelor Degree from the Universita’ degli Studi di Torino and a Master Degree from the Politecnico di Torino. A member of the Society of Industry Leaders, and of Gerson Lehrman Group.

Jean-Philippe PLANTEVIN

Jean-Philippe has been working in the Pay TV and Digital TV industry for over twenty years. He is currently Chief Commercial Officer of Quadrille a French company providing multimedia Push solutions. He previously held key management positions at SagemCom, a STB and Gateway supplier, Nagravision, a conditional access supplier and Harmonic.
Liz Ross

General Manager, Freeview

Liz’s career in media has come full circle since her first role at Network 10. She pursued a media strategy career, and spent 18 years in a number of local media agencies including Bray Media, Mitchell Media and Carat as well as Leo Burnett, London. More recently Liz headed up national media marketing at News Limited and moved across to Fairfax in the role Director of Trade Marketing and Insights. Liz joined Freeview towards the end of 2011 with a primary focus on promoting FTA television through marketing and technology innovation.

David COURET

David COURET is Director of Technical Solutions for Distribution within FRANCE 24. After 5 years at BT Media & Broadcast, he joined the channel at the early stage of the project and started to set-up the EMEA satellite distribution network. Then, he’s been working on the mobile distribution project, notably in collaboration with a technical partner, which allows FRANCE 24 to be the 1st TV channel live on the iPhone in February 2009. Early 2011, in addition to usual distribution, he worked on the harmonisation of the multimedia application for FRANCE 24 across the different devices (mobiles, tabs and connected TV/OTT). Since 2011, he also worked on the worldwide distribution network to provide global footprint coverage to

Markus Fritz

**BIO:** With 20+ years of experience in the satellite, ICT and consumer electronics sectors, Markus Fritz spent more than 10 years with SES ASTRA before joining Eutelsat as Director of Commercial Development and Marketing. He also developed strategic and commercial services in Europe, the Middle-East, Africa and South-East Asia and held several senior managerial positions within ZVEI, which brings together in Germany the manufacturers of electric and electronic products, and within Digital Europe, a Brussels-based association representing the digital technology industry.
HbbTV Symposium Asia 2014
Global deployment of Hybrid TV Services via Eutelsat
Singapore, 18th June 2014

Markus Fritz,
Director Commercial Development & Marketing
Eutelsat
mfritz@eutelsat.com
EUTELSAT AT A GLANCE

Taking you above and beyond

- Over 30 years experience in satellite operations
- 37 satellites in geostationary orbit providing reach of Europe, the Middle East, Africa, Asia, the Americas
- 6 satellites* for high-growth markets to launch by mid 2016
- Strong mix of video, data and broadband services
- An international company uniting 1,000 skilled professionals from 32 countries
- Driving Innovation and best practice
  - In satellite technology
  - In Broadcast and Data
  - In reception equipment
  - In customer service

* 5 fully owned, 1 in partnership with RSCC **Eutelsat Communications financial year ends June 30
EUTELSAT – A GLOBAL LEADER IN SATELLITE COMMUNICATION

Global fleet of 37 high performance satellites covering every continent of the world

Partner of choice for most of the leading broadcasters and telecommunication companies, system integrators and governmental institutions in EMEA and beyond

EUTELSAT FLEET
MAY 2014

- stable orbit
- inclined orbit
- capacity on third-party satellites

FUTURE SATELLITES
- EUTELSAT 9B
- EUTELSAT 8 West B
- EUTELSAT 36C

EUTELSAT 115 West B (ex. SATMEX 7)
EUTELSAT 117 West B (ex. SATMEX 9)
EUTELSAT 65 West A

SATELLITES UNDER DEPLOYMENT
- EXPRESS-AT2
- EUTELSAT 3B
OFFICES AND TELEPORTS CLOSE TO CUSTOMERS ACROSS THE GLOBE

Global end-to-end service provisioning combined with local, market specific expertise and customer service.

Proven capability to support development and role-out of satellite centric Hybrid-TV services globally.
VIDEO : A STRONG AND GROWING CORE BUSINESS

Our satellites sit at the heart of the video chain, from live outside broadcasting to viewing in the home.

- 30 years of experience in Direct-to-Home (DTH) broadcasting & content delivery to terrestrial networks: cable, DTT, IP
- Long-term relationships with key players (pay-TV platforms, telcos, video service providers)
- Steady channel growth. Broadcasting 5,000 free-to-air and pay-TV channels
- Solid video neighbourhoods developed for targeted video markets
- Strong exposure to emerging markets
- Benefiting from trends in broadcasting: Digital switch-over, HD, OTT, Ultra HD …
EUTELSAT IS ACTIVE IN EVERY STEP OF THE BROADCASTING CHAIN – EITHER DIRECTLY AND / OR THROUGH PARTNERS

Professional video links

Video contribution for sports, news events
Editing play-out

Broadcasting
Cable, ADSL
Direct-to-Home
DTT

Plus additional Value-Added-Services
THE BEST OF BOTH WORLDS: HIGH QUALITY LINEAR TV AND BEST IN CLASS ON DEMAND TV SERVICES

Hybrid Broadcast Broadband TV framework

Historical situation with stand alone broadcast and broadband

Broadcast homes

- Broadcast
- Broadband

IPTV homes

- Broadband

New situation with converged hybrid solutions on top of pure broadband solutions

Hybrid solutions

- Broadcast
- Hybrid TV solution

Pure broadband solutions

- Broadband
- Home network
- Fibre, VDSL or digital cable
HYBRID TV IS A REALITY: DOZENS OF TV PLATFORMS WORLDWIDE HAVE LAUNCHED HYBRID SERVICES

Examples of bundled Terrestrial and Satellite TV Broadcast Broadband services
... as well as telcos, to increase their reach or optimising their video service offering and distribution

Examples of Telcos Hybrid Broadcast Broadband TV - 2013
What is Eutelsat’s role and position with regards to HbbTV?

- Eutelsat in an active supporter of HbbTV
- In coordination with its customers Eutelsat is committed to drive best practice HbbTV applications and user experience
- Eutelsat supports the development and roll-out of HbbTV globally (Europe, MENA, etc.)
- Eutelsat supports its customers in HbbTV tests and implementations locally and globally
  Test-case: with France24 at Cabsat 2014, Dubai
- France: Fransat a fully owned Eutelsat video platform in France is continuously improving its HbbTV based platform services
Fransat HbbTV

- Operator portal, mixing broadcast channels and broadband video services
- A wholly owned subsidiary of Eutelsat; launched back in 2009 in France
- Compiling connected TV services of the different broadcaster through a common user interface
- > 2 million subscribers

- Program guide (incl. backward EPG)
- Direct access to catch-up and VoD services
- Radio portal
- Companion device (on tablet)
Fransat Connect

FRANSAT Connect, 
• an interactive TV Portal for STBs, connected TV sets and companion devices (tablet etc.) – offers “red button” functionality
• offers linear TV, live radio channels, plus
• access to interactive TV and other service
• Using the HbbTV standard 1.5
• with Dash streaming and DRM support (Marlin and PlayReady) - Direct access to interactive services

FRANSAT Connect is acting as a blueprint satellite TV platform to globally support Eutelsat customers in order to launch HbbTV type services within their own respective national markets.
### Key principle of the Smart LNB

- Return link by satellite
- Messaging type of application
- Low cost home equipment, compatible with DTH installation
- Very low OPEX thanks to high spectrum efficiency

### TV platform/channel benefits (examples)

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<th>Track viewer usage</th>
<th>Audience intelligence</th>
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<td>- churner behavior detection</td>
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<td>- Delinearized content monetization</td>
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<td>- Push content efficiency</td>
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<th>Allow transaction</th>
<th>Payments</th>
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<tr>
<td>- Access to DRM protected content</td>
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<tr>
<th>Allow interactive &amp; social TV</th>
<th>New interactive experience</th>
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<td>- (voting, Twitter, Like ...)</td>
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<tr>
<th>Access to customer STB</th>
<th>Call-center monitoring the STB</th>
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<tr>
<td>- Anti-piracy / CA improvement</td>
<td></td>
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<tr>
<td>- Terrestrial link back-up</td>
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- Monetize content
- Offer new services
- Manage customer
- Reduce costs
WITH SMART LNB THE HBBTV EXPERIENCE CAN BE PROVIDED TO HOMES OUTSIDE TERRESTRIAL NETWORK COVERAGE

SMART LNB – enabling HbbTV delivery everywhere!

1) With future evolutions of HbbTV supporting Push VoD, and a hard-drive enabled set-top-box

- Watch TV
- Access the HbbTV portal (locally cached or in a data carousel)
- Interact with the broadcaster program
Eutelsat supporting HbbTV in ASIA

- Eutelsat is committed to support its customers in the deployment of Hbbtv type services for APAC region via E70B
- E70B satellite at 70.5E with high power DTH capacity
THANK YOU FOR YOUR ATTENTION!

Interested? – Please talk to us!

Markus Fritz, Director Commercial Development & Marketing, Eutelsat, mfritz@eutelsat.com
FRANCE 24:
PART OF ‘FRANCE MEDIAS MONDE’

TV
41.7 million
weekly viewers

RADIO RFI
34.5 million
weekly listeners

RADIO MCD
6.7 million
weekly listeners

NEW MEDIA
24 million
visits per month

1703 employees

1069 journalists

Nearly 1000 correspondents

Sources: (1) Media research department – weekly audience, 15 yrs +, (calculation method used without extrapolation in 55 of the 177 countries where the channel is broadcast) (2) « Digital Analytix, ComScore
FRANCE 24: A DIFFERENT LOOK AT WORLD NEWS

In English
24/7

In Arabic
24/7

In French
24/7

FRANCE 24 reaches 250 MILLION households worldwide 24/7

AUDIENCE Weekly Viewers: 41.7 MILLION
FRANCE 24: Why HbbTV?

More Contents

More Reach

More Interactivity

More Innovation
FRANCE 24: a 1st HbbTV F.U.T.

Objectives: test a HbbTV live in DTH environment
- technology
- user experience: usage and perception
- statistics

Planning:
- press announcement: January 2012 (40 + agencies took the PR)
- test implementation: April 2012
- on air test: April - December 2012

Partners:
- FRANCE 24 for content and application
- Globecast / Orange for HbbTV inserter and Origin server
- SES Astra and Arabsat for space capacity
FRANCE 24: a 1st HbbTV F.U.T.

What’s in the application?
FRANCE 24: a 1st HbbTV F.U.T.

- Main player (resized live at 1st launch)
- Navigation menu
- Related content
- Language selection
Global test architecture

- **Inserter**
- **DVB plateform**
- **Uplink**

Satellites:
- **Arabsat Badr 4**
- **Astra 1**

Content & application flow:
- **Origin Server**
- **Orange CDN**

Distribution:
- Orange CDN to TV devices across Europe and the Middle East.
Results of the test:
78,600 connections in 5 months
FRANCE 24: Next steps

New architecture: inserter is now internal

DTH and contribution worldwide satellites
FRANCE 24 : Next steps

Link the application and the Live
  • polling
  • additional content (longer video, bibliography, etc..)
  • statistics

Issues to sort out
  • Editorial Team to use it
  • Top Management to believe in it
  • Make easy to use
FRANCE 24: THANK YOU!

ANY QUESTIONS?

David Couret  
Director Technical Solutions – Distribution  
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E-mail: dcouret@france24.com
Introduction to Digital TV Labs

Media & Device Testing Specialists
Certification – Interoperability – Conformance - Quality

Testing and Certification Services for over 40 Platforms Globally
Background: Connected TV
Connected TV Issues

- Fragmented
- Deployment is not easily scalable
  - Across platforms
  - Within single manufacturer
- Expensive for broadcaster, content providers
- No connection with broadcast experience
- Overall poor quality experience
  - UI / UX
  - Video Quality
  - Security / DRM

- Low adoption by consumer
New HbbTV Paradigm

Mixing TV Broadcast with the Internet Power

Broadcast Services

Internet Services (Portals / TV Apps)
Connect TV Interop Issues

Pay-TV Operator

Connected TV Operator/Broadcaster

“OLD WORLD”

Proprietary Middleware
Operator owns STB
Interoperability by heavy testing
Head-end “camping”

“NEW WORLD”

Multiple platforms
Horizontal market
No control of platform
Interoperability regime
HbbTV Standards

There are 3 main versions of the standards

HbbTV V1.0
First version

HbbTV V1.5
MPEG-DASH

HbbTV V2.0
HTML5, Second Screen…

TS 102 796 V1.1.1
To be finalised

TS 102 796 V1.2.1

To be finalised
Test Suites

HbbTV V1.0
First version

HbbTV V1.5
MPEG-DASH

HbbTV V2.0
HTML5, Second Screen, Ad-Insertion, HEVC

To be finalised

V0.95

To be finalised
Stakeholders for Quality Assurance

Apps Developer
Regulator
Broadcaster
Manufacturer

HbbTV Stakeholders

End User
Stakeholder Considerations

**Apps**
- Specific and limited W3C technology implementation
- Cannot re-use standard Web debug tools
- UI / UX
- Interoperability across devices

**Regulator**
- Author and publish specification
- Test Material and test laboratory
- Guidance to manufacturers
- Consumer awareness and information

**Broadcaster**
- Integration to Head End Systems (EPG-Synchronisation)
- Use of Adaptive and MPEG-DASH (HbbTV has a DASH Profile)
- Scalable Infrastructure / Availability
- Cost Effective application development

**Manufacturer**
- Standards conformance / Certification
- Application rendering capability
- Support for streaming, DRM technologies
Case Study: Spain

- **Manufacturer**
- **Official Test Suite**
- **Test Harness Ligada iSuite**
- **TNT2.0 Suite**
- **TDT Suite**
- **Test Report**

**abertis**

- **Ligada iSuite Audit Test**
- **Certificate Issue**
- **Abertis White List for Certificates**
Global Landscape

HbbTV

TS 102 796 V1.1.1

ETSI World Class Standards

ETSI World Class Standards

DASH Industry Forum

TNT 2.0

CI+

freeview+plus

tdt HIBRIDA

HbbTV Forum Nederland
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http://twitter.com/DigitalTVLabs

Booth 1D3-07
Marlin For HbbTV Content Protection

Kenny Huang
June 2014
OPEN

PROVEN

COMPETITIVE
Marlin

- Open DRM standard created in 2005 by Intertrust, Panasonic, Philips, Samsung, and Sony
- The most widely deployed DRM platforms for OTT video services and devices today
- Supports several use cases
  - Premium Content VOD
  - Catch-up/Replay TV
  - Second Screen
- Robust and Hollywood endorsed
OPEN STANDARD

- Not limited to a single vendor’s implementation
- Technology specifications are publicly available at: www.marlin-community.com
- Any company can join as a solution partner or to further develop the specifications
<table>
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<th>EXAMPLE SOLUTION PROVIDERS</th>
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<td>CRYPTANIAM™</td>
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<td>EXPRESSPLAY</td>
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OPEN
PROVEN
COMPETITIVE
Marlin Embedded Devices

Over 200 million+ devices deployed globally

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<th>FUNAI</th>
<th>HITACHI Inspire the Next</th>
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<td>HUAWEI</td>
<td>HUMAX</td>
<td>I-O DATA</td>
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<td>LG Life's Good</td>
<td>maxell</td>
<td>MITSUBISHI ELECTRIC Changes for the Better</td>
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<td>NEC</td>
<td>Pace</td>
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<td>SAMSUNG</td>
<td>SHARP</td>
<td>SONY</td>
</tr>
<tr>
<td>TOSHIBA</td>
<td>TPVISION</td>
<td></td>
</tr>
</tbody>
</table>
Marlin Enabled Services

KDDI

NTT

Sony Entertainment Network

Libertà di visione

Marlin
Supported by major studios

All major studios have supported Marlin since 2008 to protect content for rental, subscription and electronic sell through of their digital assets, including of HD & premium content.
Supports HbbTV/OTT Platforms World-Wide

Nordic countries
“NorDig” (common platform for DTV)

Denmark
“OTT live TV”
By mediathand

England
“Youview”

France
“My TF1”

Spain
Adopted by AEDITI

Germany
KabelKiosk

Italy
Tivu

Egypt
Vodafone

Japan
NHK on demand / Tsutaya TV / ActVila
50M devices (Jul 13)

China
“Film QQ” (VoD) By Tencent

India
Hungama (VoD for tablet / smartphone)

China
“iQIYI” (VoD) By Baidu
“Wasu”(VoD) By Wasu
Future TV (iCNTV)
PPTV

US
Approved for tru2way
(by CableLabs)

World Wide
PlayStation Network
Sony Entertainment Network

Deployed

Launching soon

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France among the earliest HbbTV deployment
Most popular multi platform VOD & SVOD service in France
Sony, LG connected TV and Xbox
Second screen support on iOS and Android mobile devices as well
Premium content from major studios and European content providers
Marlin & PlayReady dual DRM support
• Premium sports contents on BT Sports channel

• Movies and television shows from all the major studios and content partners (BBC)

• Service partners: BT, Channel 4, Five, ITV…

• National Initiative in UK

• Target devices including STB (Huawei, Humax, Technicolor) and Connected TV
China

- Tencent one of the largest internet video service providers in China has over 120M users
- Movies from all the major studios, including close to theatrical releases such as Argo, Gangster Squad
- PC, Mac, iOS and Android tablets and smartphones
OPEN
PROVEN
COMPETITIVE
END TO END MARLIN DRM SOLUTION DEPLOYED IN THE CLOUD
Easy To Deploy

1. ExpressPlay SDK (Your App)
2. Content Key
   - Your Storefront (CMS)
   - Content Key
3. Encrypted Content
   - CDN
   - ExpressPlay Packager
   - Source Content
TAMPER RESISTANT

- root-detection
- anti-debug
- code diversity
- white box crypto
- superior protection

PROTECTED WITH

CRYPTANIMUM™
MULTI-PLATFORM

SDK available for iOS, Android, Windows, Mac OSX and Embedded SoC platforms.
EXPRESS PLAY PACKAGER

Workflow tools for
• DASH
• HLS
• SMOOTH
• MP4
• eBooks

Available on
• Linux
• Windows
• Mac OS X
Try ExpressPlay for Free

- No Setup Fees
- FREE Test SDK*
- Unlimited Test Tokens
(No credit card required)

When you're ready to deploy, choose a plan that best fits your needs.

<table>
<thead>
<tr>
<th>Plan</th>
<th>Tokens</th>
<th>Monthly Price</th>
<th>Price per Token</th>
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<tr>
<td>1,000</td>
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<td>$0.01 per token</td>
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<tr>
<td>8,000</td>
<td>8,000</td>
<td>$60/mo.</td>
<td>$0.0075 per token</td>
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<td>40,000</td>
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<td>$600/mo.</td>
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<tr>
<td>1,000,000</td>
<td>1,000,000</td>
<td>$2,000/mo.</td>
<td>$0.002 per token</td>
</tr>
</tbody>
</table>

Additional fees

- ExpressPlay SDK
  SDK fee is measured based upon token usage.
  + $0.005 per token used

- 24-hour Premium Support
  Contact sales for premium support options.
  Ask sales

*Test SDK is for iOS and Android evaluation and testing purposes only. Not for use in a production environment. Production SDK is $99 (one time fee).
Complete Media Stack
Available Now

mPEG-DASH
HTTP-based Adaptive Streaming

License/Key Delivery
www.marlin-community.com

For more information, send your questions to:

khuang@intertrust.com
Experiences in revenue generation

Hbbtv and the integration of Internet with Broadcast
About Motive Television

• Publicly listed on the LSE with offices in London, New York, and Barcelona

• Global provider of software and services to the Broadcast and Satellite industries for the cost effective distribution of digital content and assets to audiences

• Management team with many years of experience in the content production and distribution as well as in the technology market

• Customers in operation in Europe and Africa

• Currently expanding in North and South America
About Content Express™

• The most widely used Push VOD solution with more than 5 years of commercial operation in multiple countries it enables the delivery of non-linear content to any screen via any network

• The engine behind a wide variety of solutions such as
  - Video on demand for broadcasters and Pay TV operators
  - Tablet TV in the US and Europe

• Content Express™ turnkey solutions include product planning, system integration, VOD platform operation and content (through partners if required)
Our customers

- Mediaset
- Digiturk
- Syrya TV
- CME
- GBC

© 2014 Motive Television Services Ltd
3 key points to generate revenue from Pay TV

• **Control capital expenditure**
  - Above all STB or viewer’s device costs

• **Understand your target audience**
  - Define the optimal combination of entertainment and information services that makes the product affordable for consumers while ensuring healthy margin

• **Maximize reach to ensure volumes**
  - Ensure your product gets to as many people as possible by distributing it cost effectively through the network that reaches the biggest share of the target market
Case study 1: Mediaset (Italy)

- Biggest commercial broadcaster in Italy (60M people, 40M HH)
- 2M linear Pay TV subscribers
- 500K subscription VOD subscribers with Content Express™
- VOD platform operational since 2010 (5 years)

**Strategy**
- Compete against Sky Italia with linear Pay TV and VOD targeting the high-end market through a high-performance STB

**Lesson learned: it is critical to select the proper platform**
- Stuck with MHP
- STBs from multiple vendors need to be available through retail chain
- No need to compete with existing established players to be successful
Case study 2: Siyaya (South Africa)

- New satellite and broadcast Pay TV operator in South Africa (60M people, 13.5M HH)
- Content Express™ for linear and on-demand Pay TV
- Service to be launched in Winter 2014

**Strategy**
- Compete against MultiChoice (incumbent service provider with 4.9M subscribers) with linear Pay TV and VOD targeting the low-end mass market through a low-cost STB

**Lesson learned: if done properly, the mass market is a huge opportunity**
- Cost effective viewer’s device are possible (below $50 wholesale price)
- Cost-effective devices + cost effective services can generate significant revenue and profit through high volumes (Google advertising model), especially in countries where end-user prices are under pressure
- Hbbtv support for phase 2
Case study 3: Tablet TV (U.S.)

- New linear FTA + subscription VOD broadcast Pay TV operator in U.S.
- 140M tablets initial potential market
- Content Express™ for Pay TV (Virtual Channels) and subscription VOD
- Service to be launched end 2014

- **Strategy**
  - Create a complementary low-cost Pay TV service targeted at connected devices (tablets and smart-phones) that leverages the existing broadcast networks and existing FTA content
  - It uses an external device (T-Pod) for the reception of TV signals sold through retail

- **Lesson learned: there are great opportunities beyond the STB**
  - The broadcast network remains the most cost-effective content distribution network ideal to reach the mass audience especially when consumers are looking for low-cost and targeted Pay TV services
Hbbtv allows you to control capital expenditure

- **Cost effective, open, and future proof MiddleWare solution**
  - Allows you to reach the highest distribution volumes with the capital you have available
  - Uses Internet standards therefore ensuring long-term service viability

- **Hybrid**
  - Integrates broadcast and Internet distribution networks
  - Broadcast gives you reach, Internet gives you 2-way relationship with the audience

- **Horizontal devices distribution model**
  - By being an open standard it ensures a multi-vendor device market which guarantees cost effective products through competition
  - Products can be available on retail, i.e. lower operational costs for the service provider
Hbbtv: competitive prices AND compelling services

• Linear Pay TV subscriptions revenue
  - Through traditional linear Pay TV channels (if bandwidth is available)
  - Through Virtual Channels (if bandwidth is a constrain)

• On-Demand subscriptions revenue
  - Through Internet-based streaming (if consumers have enough bandwidth)
  - Through broadcast Push-VOD (if consumers’ bandwidth is limited)

• Catch-Up TV
  - Through Internet-based streaming (if consumers have enough bandwidth)
  - Through broadcast network (if consumers’ bandwidth is limited)

• Additional Internet applications and services
Hbbtv in summary

- Right cost for the platform
- Right price for the service
- Best distribution network
television.
anytime.
anywhere.

motive

motivelevision.co.uk
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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

Interactive services in buses (France)
- Data broadcast over DVB-T2
- Wifi rebroadcast

VOD on satellite and terrestrial (Albania)
- Launched July 2013
- 300,000 subscribers
- Transactional VOD

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
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
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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Chief Commercial Officer

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HbbTV - with examples

18 Jun 2014

HbbTV Symposium, Singapore
Sofia Digital – Some of the Company Milestones in Digital TV

- 1998 Finnish digital-TV operators started a research project to bring interactive digital TV to Finland.
- **17.5.2000** Company was established as a spin-off from the research project.
- 8/2001 World’s first MHP services started in Finland based on Sofia Digital’s MHP products.
- 7/2003 First major MHP product delivery to Italy. Customer Mediaset.
- 11/2004 Merger with the Finnish mobile technology company Outer Rim Ltd.

- 12/2006 Selected as a Cable Ready test service custodian in Finland
- 09/2007 “Best of IBC” Industry Award for Sofia Backstage® Mobile Television product
- 03/2008 First major mobile TV product delivery to Digita in Finland
- 11/2008 TV broadcast automation system to SBS Voice
- 10/2009 Mobile Teletext consumer application in OVI Store
- 6/2010 Selected as an Antenna Ready test service custodian in Finland
- 10/2011 First Digital Signage system delivery to Citymarket retail stores in Finland
- 6/2012 Finland’s first HbbTV services started and powered by Sofia Backstage®
- 9/2013 First international HbbTV product delivery to Antenna Hungaria
- 5/2014 STB delivery project to Vodafone Iceland with Middleware localization
1998 Finnish digital TV operators started a research project to bring interactive digital TV to Finland.

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5/2014 STB delivery project to Vodafone Iceland with Middleware localization.
HbbTV system high-level diagram of “ecosystem”

Figure: Sofia Digital HbbTV Platform overview with core Apps
Why HbbTV is needed, isn’t it just one more HTML Browser?

Need for specialized apps for support TV-business purposes

- HbbTV enables to control the TV-signal and Internet content in the same screen
- Same application may control OTT and linear DVB-content
  - The "red button" functionalities are missing in TV-apps or www-browsers

- HbbTV is designed to enrich the "TV experience"
  - Push dynamic content over TV-screen
  - Same content can be viewed in ALL HbbTV devices
  - Seamless integration between Broadcast and Broadband video delivery

- Since 2013 the HbbTV is available for every well-known new Smart TV units in European market!
What HbbTV can enable?

- Production houses and content owners
  - Way to make new interactive TV formats
  - On-screen promotions of new productions
- TV Broadcasters
  - New revenue models (Internet models adapted to TV environment)
  - Alternative secondary content delivery network (on-demand and linear delivery)
  - Interactive TV-overlays and "Red Button"
- Network operators
  - Virtual channels in DVB & OTT
  - Data broadcasting
- PayTV operators
  - Promotional content with on-demand purchases
  - Customer self-care (transactions)

HbbTV NOTE BOARD:
- Local Smart-tv Ecosystems
- OTT without STB
- No supplier lock-down
- Compatibility with existing Internet infrastructure
- Freedom to select receiver from open market
- Cost savings
HbbTV relation in TV apps

TV SIGNAL + App

Activate Internet/HBB Content

Television (or STB)

"Press Red Button"

PUSH Content

Wall Between Linear TV and IP without HbbTV

TV-compatible HTML

HbbTV

Broadcasting

Broadcasters Internet Content

Streaming and Internet content

3rd Party Internet Content

Unbound TV APPS

SMART-TV MENU BUTTON
HbbTV and Internet

- **Linear TV** (TV receiver with tuner)
  - Teletext
  - Pay-TV
  - Ad breaks
  - Local PVR

- **Networked Services** (Internet devices)
  - MobileTV
  - Participation TV
  - On-demand Videos
  - Cloud PVR

**Hybrid TV**
INTEGRATED SOLUTIONS with HbbTV
one ecosystem
+ Multiscreen option

Fight between delivery platforms
HbbTV adoption status in 2014

More countries are about to decide...

HbbTV caught interest also outside Europe
Australia; South-East Asia; Africa; America
HbbTV adoption status

HbbTV caught interest also outside Europe:
- Australia
- South-East Asia
- Africa
- America

More countries are about to decide...

HbbTV map in 2011

- In regular operation
- Announced / Trials
- No information
- Other plans

Why HbbTV
Common EPG offer access to programs data 2 weeks ahead and 1 week history.

Thru the EPG is possible to see all the channels in same app:
- Video trailers
- Set Favorite Programs and
- Access to Cach-UP TV!
All Finnish Free-to-Air Channels listed with rich event information, text, images, videos.

HbbTV App Screenshots

HbbTV "TV Guide application" From Finland adapted to Malaysian TV channels in less than one week!
List of available past episodes from TV-channel catch-up service
Currently in Finland:
- ~2,2 M TV-households in total
- 50% reach with DVB-T network, with over 90% coverage
- HbbTV is not carried in most of DVB-C cable networks
- ~100,000 receivers with HbbTV capability
  - Est. more than 200,000 by end of 2014
- During 2014 most of the smart-tv products have HbbTV 1.5 enabled (est.)
- HbbTV services not yet marketed to the end-customers

In Nordic region more than 2M TV receivers are sold annually, more than 50% of those are Internet enabled in 2014

HbbTV Figures provided by Digita
HbbTV stats in Spain

- National reach of 80% with DVB-T network
- By end of 2013, over 500,000 HbbTV devices
- Now in 2014 June more than 700,000 households connect to HbbTV services
- During 2013 the figures have been multiplied with 10
- 1.6 Milj receivers with HbbTV capability
- In 2013 almost 90% of smart-tv products have HbbTV, in 2014 close to 100%
- National extra:
  - HbbTV DRM-requirements (Playready+Marlin)
  - HbbTV Conformance testing with Receiver Certificate
TV Shopping channel QVC

The following figures represent the growth from 2012 to 2013:

- number of inserted Red Button: +155%
- number of activated Red Button: +73%
- number of videos watched: +39%

In Hungary:
The Red-Button services expanded to the public broadcaster MTVA channel at 12th May when it multiplies the usage of HbbTV.

Compared to HbbTV use from the Operator’s own infochannel
HbbTV Service types (Listed by HbbTV Forum Nederland)

- **Social and accessibility services**
  - Amber Alert, spoken subtitles, speech in other languages, synchronous, computer-generated sign language
- **Traditional teletext-like information**
  - with a much more attractive user interface,
  - "super text" with news, weather, traffic, sports scores, stock quotes, exchange rates, etc.
  - A digital newsstand for services by the (local, national) government
- **Advanced EPGs (Electronic Program Guides)**
  - Rich EPG over OTT
- **Enhanced TV**
  - additional information on TV programs
  - statistics in sports programs, extras with biographies, background, etc.
- **Voting and Polling**
  - Participate in TV programs, vote for candidates in talent shows, join programs like the National IQ test etc.
- **Additional video content**
  - "catch up TV" as well as new programs (previews)
  - restart to "rewind" a broadcast from the beginning to see it if you turn in too late ("Salto" in France)
  - Direct access to additional TV channels that do not have broadcast via live streaming
  - there are 15,000 worldwide channels)
- **Games via television (community, simple classical games, Content for kids)**
- **Home shopping (shopping channel add-on)**
- **Courses and education**

HbbTV offers ultimate usability

◆ UX matters: How hard could it?

TV Sets: PUSH A BUTTON

2nd Screens: and TV App stores
Access App store
Create account (optional)
Download & Install
Launch & (optional) Pairing
HbbTV service discovery – TWO OPTIONS

**SIGNALING**

**MENU / LAUNCHER / PORTAL**

**APPLICATIONS**

Option A
Launch from TV Channel (Red button)

Option B
Launch HbbTV as TV channel (autostart)
Market Facts and estimations

- Connected TV market share is increasing
- New televisions are actually connected more often
- Smart TV processing power is higher than STB
- Consumers like to use one device – if possible
- All the services can be reach under same User Interface and one remote controller
- HbbTV enables implementing one single application to reach all well-known TV vendors!
- If LINEAR pay-tv operators cannot reach household using smart-TV then customers will be lost to multinational OTT operators
Thank you!

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www.sofiadigital.com
Engagement and HbbTV
Communicasia 2014

Chem Assayag
EVP Sales and Business Development

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Engagement model

- Premium content
- Interactivity
- Personalization
- Immersion

Past → Today → Power to the people → Tour guide → Engagement model
Monetization strategies

- Advertising
  - Subscription
  - T-commerce
- Transactional
  - Subscription
  - Multi-screen
- Non-subs Transactional Subscription
- Subscription

- Premium content
- Interactivity
- Personalization
- Immersion
- Sponsored branding
- Merchandising
- Incentive to upgrade
- Targeted advertising
A new paradigm: from couch to rocking chair

Many
Lean back
One screen

One
Lean back/lean forward
Multiple screens
What does it mean for HbbTV?

• Big screen is for video centric applications: forget about people doing TV banking on their 42” screen
• Proper interaction is about second screen
• Monetization is key

• Any technology including standards has to deal with this: standard matter when they make sense

• HbbTV:
  - Efficient and easy to deploy for video apps
  - Needs to be extended to second screen
  - Interfaces for monetization (ad serving, e-commerce…)

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Shape the ultimate content experience

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