

Enabling Successful OTT Deployment in HbbTV

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- What are the key differences of an OTT HbbTV app compared to other HbbTV apps?
- How and why does this make an OTT app harder?
 - Choices
 - Problems and challenges
- What advice do the trail-blazers have?

I'm using OTT in the sense of:

Video delivered via IP over the unmanaged internet

- This could be any HbbTV app that offers video over IP:
 - catch-up or restart
 - transactional, subscription or free VOD
 - live services
- Could be:
 - deployed by a broadcaster, an operator or some other service provider
 - signalled via broadcast, in a TV portal or initiated on another device via whatever means
 - adaptive (DASH) or non-adaptive, live or on-demand, with or without DRM

Key differences of OTT apps

How does an OTT app differ from other types of HbbTV apps?

- Handling/displaying IP video (obviously!)
- Might need DRM
- Might need ad-insertion
- Might want live content
- Might need subtitles



- Handling/displaying IP video



- Might need DRM



- Might need ad-insertion



- Might want live content



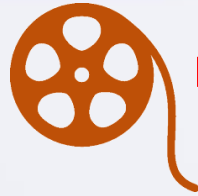
- Might need subtitles



- What video format to use – MP4 or DASH?
- Which DASH flavour? (What vintage TVs you want to support)
- Which video server / vendor to use?
- Choice of DRM: PlayReady vs Marlin vs Irdeto vs Nagra PRM vs ...
- What are your other OTT services using?
- Client-side vs server-side ad-insertion?
- Personalised or the same for all users?
- Prevent skipping?
- Use Live profile?
- Is changing quickly between live streams important?
- Are there regulatory requirements?
- Can your application and receiver render subtitles out of band?

HbbTV 1.5 VS HbbTV 2.0

- Handling/displaying IP video



- Might need DRM



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- Receiver interoperability is a challenge
 - Subtle differences with format support between devices
 - *'Examples of problems we've encountered are issues with switching between the broadcast signal and the HbbTV app'*
- Basic DASH playback works well
 - *'We didn't really see any problems with basic, on demand, no-DRM DASH playback – it seemed to work straight away on most new TVs'*
 - *'Getting DASH in the clear going was pretty straight forward. Most of the issues were on the broadcast side, usually due to DASH being "out of spec"; but were OK once put back in-spec'*
- The app is a small part of the work. Most the work is in the back end and all the media management

- Handling/displaying IP video



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- DRM *'caused manufacturers a lot of headaches'*
 - Timing issues getting licenses leading to delay in playback
- *'Caused problems with one or two manufacturers'*
 - *'A couple of interpretation issues early on with the DRM integration – all fixed now'*
 - *'New manufacturers coming to market now get going with DRM without too many issues'*
- One vendor has used a DRM solution and CA solution from the same provider – allowing secure and easy entitlement for both broadcast and OTT content

- Handling/displaying IP video



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- HbbTV 1.5

- *'Feels clunky from a user's point of view. Pauses between ads. Some receivers have issues coming out of an ad break'*
- MP4 for the ads, DASH for the main content
- *'It's all client side problems. Looked at server-side, but wasn't viable when platform was launched. Use server-side ad-insertion or use HbbTV 2.0'*

- HbbTV 2.0

- *'Ad insertion was the biggest problem'*
- Real apps use the multi-video object in more complex ways than the test cases which tend to be simple/idealised
- Can get strange artefacts between adverts
- *'No one is using DASH for the advert content itself'*
- One respondent, not yet using ad-content, successfully trialled an HbbTV OTT player with VAST function

- Handling/displaying IP video



- Might need DRM



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- Might want live content



- Might need subtitles



- Most HbbTV OTT apps are still on-demand
- It's generally agreed that using Live DASH is more problematic and has greater interoperability challenges
- It's hard to get low zapping time between OTT live TV streams
- *'Live TV via IP is a true challenge related to zapping and an uncontrolled zoo of HbbTV receivers'*

- Handling/displaying IP video



- Might need DRM



- Might need ad-insertion



- Might want live content



- Might need subtitles



- No feedback from respondents – too early!
- Can only do in HbbTV 1.5 via out-of-band subtitles being rendered via the application
 - Hard to get timing accurate
 - Can overload the JavaScript engine on lower end devices
- HbbTV 2.0 adds EBU TTML subtitles (in band and out-of-band) with appropriate timing information for accurate display synchronisation
 - Should make OTT subtitles much easier moving forward

- You have to test the app itself on many receivers:
 - *'You must test the OTT app on each new receiver launched. We ended up doing a lot more app testing than we originally expected. We realised we'd need to automate'*
 - *'Bugs are often unique to a specific model, so when you are deploying a HbbTV app, the practical reality is that you always need to test on all the devices it will run on'*
- Deploy the receivers and apps at the same time:
 - *'If you deploy the receivers without any "real apps" deployed, and try to put the apps on them later, you'll have a nightmare'*
- Use vendors who have done it before:
 - *'Have it built by a specialist who has experience in developing and deploying multi-platform/brand HbbTV'*

- Live DASH is hard:
 - *'Live TV via IP is a true challenge related to zapping times'*
 - *'We don't do Live DASH yet, but we plan to eventually'*
- The interoperability challenges are mainly on the client side:
 - *'The bad news is mediocre implementations in the devices forcing us to test many devices. Therefore we have a certification for boxes with our label including special HbbTV test cases'*
 - *'Try to use common application software across all your different broadcasters – e.g. a common video player core across all the apps. 80% of the issues are around video playback, so a common player makes life a lot easier. If you can get the commercial aspects to work there is a major advantage to this approach'*
- But don't under-estimate the back office aspects of media management

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Thank You!

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