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Security Level: External Public

Web on TV

Aaron Zhang
zhangchuxiong@huawei.com

www.huawei.com

HUAWEI TECHNOLOGIES CO., LTD.

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Overview

- **Use Cases**
- **Requirements**
- **Possible Architectures**
- **Main Problems**

Use case 1 - Viewing Top N Video

- Linda opens her TV for which the contents and services on the web are made available.
- In the EPG home page, she sees a “Top N Web Video” label, then she invokes it with remote control and then sees a video list which includes the name (as well as the website name, the count of viewers etc.) of the top most popular videos. (The popularity is determined for example by the count of viewers)
- Linda can pick anyone of the videos to enjoy.



Use case 2 - Viewing Related Information

- Linda is watching a TV play in which the main actor is one of her favorite stars.
- Linda wants to know anything new happens to him, so she pushes some button on the remote control and sees 5 choices for her, i.e. basic info, news, blog, products or comments about this actor.
- Linda can pick anyone of these to view. E.g. if she selects “2 News” then she can see a list of news about this actor.



Use case 3 - PC to TV Recommendation

- After lunch in the office, there's some leisure chat, and Linda hears that there's an interesting video about UFO on some website. Quickly she finds it and begins to watch through her laptop.
- Some minutes later she thinks her family member may like it too. So she recommends it to her family by click some menu or button.



- Soon her family member sees on the TV a message says “Linda has recommended a video, do you want to view it ?”.
- Her family member selects ‘yes’ and can further make a choice between viewing it from beginning or viewing it from where the recommendation happened.

Requirements

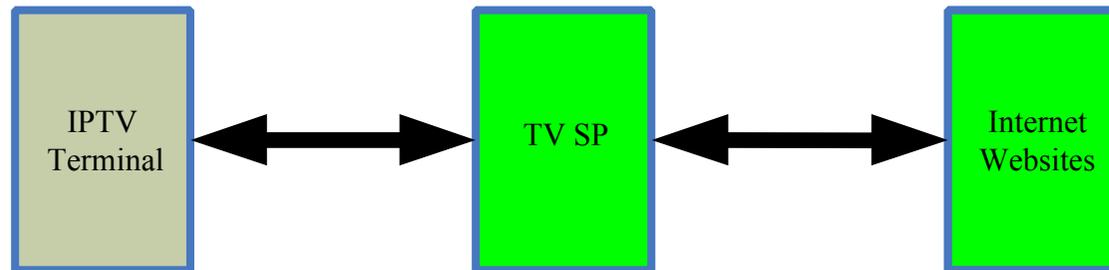
- **Compatible experience shall be provided.**
 - It shall be possible for the user to consume the contents and services on the web via TV in a way as easy as the user consumes that on IPTV/DTV server via TV.
 - Unified UI to access the contents and services from different websites shall be provided.
- **Convergence experience shall be provided.**
 - It shall be possible for the user to access information on the websites related to the context of viewing videos provided by DTV/IPTV server.
- **Nomadic experience shall be provided.**
 - It shall be possible for the user in front of PC to recommend a Video to whom in front of TV.
 - It shall be possible for the user to synchronize video bookmark from PC or mobile phone to TV.

Possible architectures

- **There may be many ways to implement the use cases mentioned.**
- **Among them whether a traditional TV SP is directly involved makes essential difference.**
- **Two possible architectures:**
 - Unmanaged Architecture: TV set (STB) directly connects to Internet, where the TV can be deemed as a PC with a very large screen.
 - Managed Architecture: TV set (STB) gets all data provided by websites via TV SP, where TV SP acts like a Proxy between TV and Internet.

Probable architectures

Managed architecture:



Unmanaged architecture:



Concerns

- **For different Archs, there are different concerns.**
- **User Account**
 - Unmanaged Architecture: Linda can use the same account in both screens.
 - Managed Architecture: It depends. If both website and TV SP comply with OpenId then Linda can use the same account.
- **AD Insertion Policy**
 - Unmanaged Architecture: The same policy can be applied for both screens.
 - Managed Architecture: Depends on the agreement between website and TV SP
- **UI**
 - Unmanaged Architecture: Website provides different UIs for different screens.
 - Managed Architecture: UIs can be adapted by the TV SP.
- **QoE**
 - Unmanaged Architecture: The QoE is not easy to be guaranteed.
 - Managed Architecture: The QoE is easy to be guaranteed with Walled-Garden.

Main problems

- **QoE problem.**
 - The bandwidth between website server and TV is not as broad and stable as that between IPTV/DTV server and TV, and hence results in difference QoE.
 - With low QoE, web on TV may be abandoned ultimately by the TV user.
- **UI problem**
 - The UI for PC may not be appropriate for TV. The later needs a UI with sparse focuses.

Thank you
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