CONNECTED TV USER EXPERIENCE

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ABSTRACT

Connected media devices (TVs, Mobile Media Players) present both opportunities and challenges for consumer electronic device suppliers and content source provider to provide compelling and differentiated user experiences. The direct applications of web browser based paradigms to the consumer electronic marketplace do not necessarily guarantee a compelling user experience. This paper and presentation discuss various ecosystem and device considerations that result from the merger of the channel based TV and connected TV content delivery models.

WHAT DOES A CONNECTED TV CONNECT TO?

Critical to user's perception of consumer electronic products is their initial usage experience. In the majority of cases, multi-page / multi-language manuals are quickly tossed-aside along with the packing materials. The user expectation is that: "It just works". It is only when this expectation is left unmet, that operating manuals are retrieved, support lines are called and the realities of technology set in. Some technologies such as Wi-Fi provide assistance in the connection of the consumer device to the "cloud". However, once the home infrastructure connection issues are resolved, what does the TV initially connect to?

We can look at current product trends to consider some possible candidates:

MANUFACTURER SPECIFIC SITE

One possible end-point for initial connection is the device manufacturer's site. This is a reasonable choice to assist in the set-up of the connected TV device and to load additional applications but is a dubious choice to provide viewing content. Manufacturers may be able to negotiate agreements with content source providers, but uniform availability would not be assured and manufacturers may choose not to provide any manufacturer site support.

PRE-INSTALLED APPLICATIONS

Another approach would be to pre-install content source specific applications. Although this is current practice, it requires to users subscribe to multiple content source providers. Searching and aggregation across content source providers is problematic since media access is encapsulated within separate applications.

CONTENT SOURCE PROVIDER SITE

Another possible connected TV end-point is a content source provider site. Although a content source provider can provide a wide variety of content, it is far from an open ecosystem providing equal access to all potential sources. In addition, Remote UI Solutions provide little opportunity for device suppliers to add value or to reduce platform costs when platforms are required to provide standardized Remote UI solutions.

Content Sources

An ecosystem providing relatively open access to potential sources may offer far more channels and content than accessible on current systems TV systems. The purchasing of individual channels and on-demand content should be supported without requiring bundling or subscription models. Content may be of local interest such as a school channel, televised college courses, or neighborhood news. It is possible that a specific channel or content offering may be provided by multiple content source providers with competitive pricing.

Content Aggregators

With potentially large numbers of content channels Content Aggregators can serve as metadata clearing houses for available content. By supporting services for searchable content metadata, content previews and subscription and payment services, Content Aggregators can link small (and large) content source providers and individual end users. By providing metadata services rather than pre-packaged Remote UI Solutions, Content Aggregators allow CE device suppliers to provide TV platform specific solutions without requiring Remote UI support. These solutions may better exploit device supplier specific platform capabilities (multiple content decoders, enhanced 3D graphics, and animations) that would not be typically be offered by pre-packaged Remote UI Solutions. This would not preclude Content Aggregators from offering Remote UI Solutions for computer based platforms.

TV Platform Services

Metadata based TV platform services can allow platform providers to provide value-add functions provide such as Custom Channels (preference based content selection), advanced function electronic programming guides showing multiple live channels concurrently and more natural UI constructs such as *Cover Flow* and texture-mapped 3D animations. Many of these services would be difficult for Remote UI services to provide since web-pages are typically tailored to lower-function platforms.

Channel Surfing

A web-browser based experience fundamentally differs from the typical TV viewing experience. The main difference is that fact that TVs are always streaming something and provide near instant switching between channels. We feel the continuous streaming notion and the ability of receivers to quickly switch between streams are key features that the TV ecosystem should preserve. Web TV receivers should be able to transparently access channel streams across content source provider boundaries without requiring web site specific navigation. The creation of channel lists and managing channel switching is something best supported directly by the TV platform.

CONCLUSIONS

- Unified connected device content selection user-interfaces in conjunction with Content Aggregator search and metadata services can improve user experience and can encourage competitive content offerings.
- The channel (surfing) paradigm is still useful in the Web TV device ecosystem and should be preserved.
- The connected device ecosystem should support seamless transitions between content source providers without requiring site-specific navigation.
- User Interfaces directly provided by connected devices can better utilize TV platform specific features. Examples include: advanced electronic programming guides, custom channels (autonomous content selection) and enhanced user-interface constructs (3D, Cover Flow, etc.).