

Second W3C Web & TV Workshop –

Nokia Position Paper

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Perspective

The ways to consume TV content is changing. Opportunities to get TV content are nowadays versatile beyond the pre-scheduled broadcasting. The TV/video services are available through different delivery channels (broadcast, managed IPTV networks, telecom networks, open Internet) and for various device types / screens (living room TV, PC, mobile devices, game consoles, etc.). A consumer wish is to have a seamless multiscreen TV/video experience, i.e., content consumption with device and delivery independent manner. In addition, TV/video services should be available alongside with other Web and telecom services.

The business models and consequently the solutions with related standardisation activities to tackle the convergence typically emphasize a domain specific needs of the respective industry players (Internet, IPTV / mobile telecom operators, broadcasters, ...). Creating an e2e convergence standard to meet all the needs of various domains is a challenge for the industry. This challenge may also lead to a rich set of proprietary approaches as a work-around. The e2e standards and even proprietary solutions are often using common standard enablers (codecs, protocols, etc.) as key components, but they may be used or have been profiled in such a manner that leads to incompatibilities. This leads to confusion in the market where the consumer does not have a smooth multiscreen TV/video experience across various devices, or consistency with other (Web) services.

The key challenge still ahead for the industry is how to improve the TV/video consumption experience. This includes multiple content types and consumption modes (live, catch-up, VoD, recorded; free, protected; streamed, downloaded), across the delivery platforms (broadcast, managed IPTV, open Internet) and for multiple screens (connected TV, PC, mobile device). One way to facilitate this could be the main stream industry support for a limited set of open and global **standard cornerstone enablers** that would simplify application development and lower implementations costs, and increase the freedom of choice for consumers.

Nokia activities

The mobile devices with advanced Web and video capabilities are key part of Nokia product portfolio. Nokia has also long experience with TV standards and products (beyond the TV sets and set-top box business in 1980's-90's) with devices for mobile broadcast TV and Web TV consumption.

Mobile broadcast TV standard solution is IP-based and deploys and adopts Internet/Web technologies (HTTP, XML, RTP, etc.). The Web TV service that is available in the latest Nokia smartphones provides mobile access to the Over-The-Internet catch-up TV content of global and local TV broadcasters via the Nokia Web TV widget.

Nokia contribution is known in the area of TV/video (and related services) for mobile devices in the standards organizations, such as Open Mobile Alliance, Digital Video Broadcasting, IETF, IEC, ITU, ATSC, bmcforum, etc. One of the latest industry collaboration interests has been to look at the opportunities for a common, standards based interface profile for mobile access to IPTV services offerings that are currently mainly available to living room TV (and PC) only.

Points of Interest / Suggestions

The key Nokia Points of Interest / Suggestions for the W3C Web and TV Interest Group discussions are:

- **Web technologies and IP** are having the best potential to become the **unified technology basis** for easy finding, access, consumption, and sharing of TV and video content, together with other (Web) services. The TV as a service should become a natural part of Web services offering.
- This asks for a deeper cooperation with Web and traditional TV domains, which seems to be a target in the W3C Web and TV Interest Group. A key activity could be to identify the requirements for **further development of common Web technologies (such as HTML5)** to better serve the TV –oriented use cases in various devices.
- The work should also **identify how the W3C technologies can integrate with the cornerstone technical enablers for TV/video usage developed in other industry organisations**. Examples of these are HTTP adaptive streaming by MPEG/3GPP, and interoperable DRM solution development for premium commercial content by DECE (Ultraviolet).
- **The specific focus of Nokia interest is the support for mobile use cases and mobile devices**. This focus acknowledges the more generic need to enable multiscreen TV/video experience across various devices.
- Mobile device is a key TV/video consumption node but that can also be seen as an intelligent remote and (social) hub for TV /video services. Thus, technology development should also enable content playback with other Web connected devices / screens, i.e., fluent communication between mobile device, connected TVs, PCs, and any other devices accessing TV/video content. The proposal in W3C (by CableLabs) for the HTML5 extension to support access to home network functions (UPnP) may be of interest in this context.