Requirements for a Web and TV environment

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Overview

- Context
- Requirements for a Web and TV environment
- Current implementations
- Standards

Context: home around the TV

Connected picture frame

Connected TV

Mobile phone

Desktop computer

+ printer
+ new sensors
…

Laptop

Tablet

PDA

R1: Apps to run on all devices

Connected picture frame

Connected TV

Mobile phone

Desktop computer

Common ground: HTML + CSS + ES
« Very close » to W3C Widgets
➔ OK

Laptop

Tablet

PDA

R2: Apps to run on a dynamic network

Connected picture frame

Connected TV

Mobile phone

No complex network setup

Desktop computer

➔ Need a discovery and service protocol : UPnP/ DLNA – Bonjour – WS Discovery – SIP-based …
Ex: see mobile phone pictures on TV, then display on picture frame, then store on desktop.

Laptop

Tablet

PDA

R3: Services accessible from all devices

Connected picture frame

Connected TV

An EPG widget runs on TV only

Mobile phone

Desktop computer

Laptop

Tablet

PDA

R3: Services accessible from all devices

Connected picture frame

Connected TV

Mobile phone

An EPG widget runs on TV only
An EPG service, built on communicating widgets, runs on any device
➔ Distributed documents (pervasive, ubiquitous)
➔ Service adaptation by distribution

Desktop computer

Laptop

Tablet

PDA

R3: Services accessible from all devices

Connected picture frame

Connected TV

Mobile phone

An EPG widget runs on TV only
An EPG service, built on communicating widgets, runs on any device
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Desktop computer

Laptop

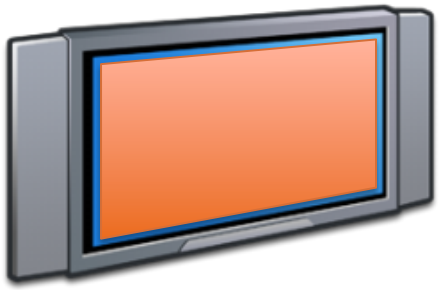
Tablet

PDA

R4: Services to move to best device at any time

Connected picture frame

Connected TV



Mobile phone

Service starts on TV

Desktop computer

Laptop

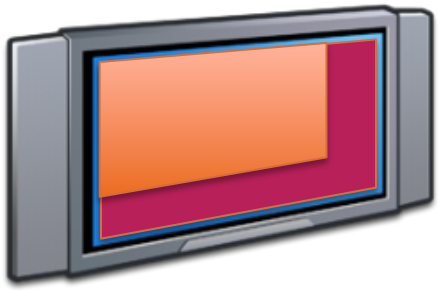
Tablet

PDA

R4: Services to move to best device at any time

Connected picture frame

Connected TV



Mobile phone

Desktop computer

Service starts on TV
Interactivity appears

Laptop

Tablet

PDA

R4: Services to move to best device at any time

Connected picture frame

Connected TV

Mobile phone

Desktop computer

Service starts on TV
Interactivity appears ➔ move to tablet

Laptop

Tablet

PDA

R4: Services to move to best device at any time

Connected picture frame

Connected TV

Mobile phone

Desktop computer

Service starts on TV
Interactivity appears ➔ move to tablet
Tablet gets preempted ➔ move to office
Keeping current service state

Laptop

Tablet

PDA

R5: Native/widget/HW: no difference

Connected picture frame

Connected TV

Mobile phone

Why should it make any difference that one part of a service is hardware, native code, or widget ?

Desktop computer

➔ Services as cooperation of any type of part

- Framework for native code behaving as a widget
- Compile widget to native code
- Native app « equivalent » of a widget

Laptop

Tablet

PDA

R6: No standard dependency

Connected picture frame

Connected TV

Mobile phone

Desktop computer

True for network and codecs, why not for other stds:

- Widgets in HTML or SVG or BIFS (for 3D)
- Discovery with UPnP or Bonjour or SIP or WS Discovery
- HTTP streaming or RTP

Laptop

Tablet

PDA

Implementation

Connected picture frame

Connected TV

Mobile phone

GPAC and WebKit players

HbbTV (xHTML+CSS+ES+huge OIPF API +DVB+MPEG TS+DSMCC+codecs), SVG, W3C Widgets (PC + Interface), UPnP/DLNA, MPEG-U, RTP/RTSP

Desktop computer

Laptop

Tablet

PDA

Standardization

Connected picture frame

Connected TV

Mobile phone

- « Smaller » profiles
- « Common » Device APIs, including capabilities
- Document discovery, communication and migration:
  - Declarative
  - Not just widgets

Desktop computer

Laptop

Tablet

PDA

Thank you for your attention

- Discussion…