



# HTML5 for Pay TV Opportunities & Challenges

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# Agenda

45 min

- Intro: learning from the past
  - A brief history and state of affairs of HTML5
  - HTML5 for Pay TV
  - Live from the lab
  - Conclusions
- 
- Q & A

15 min

# Introduction: HTML for TV, Learning from the Past



## 1998: ATVEF (Advanced Television Enhancement Forum)

- A standard initiated by Microsoft and Intel
- Based on HTML4.0, Javascript 1.1 and CSS interactive content over broadcast

## 2000: Liberate TV navigator

- A TV middleware based on HTML/Javascript

# Introduction: HTML, the Side Car Engine for STB

HTML4 has been deployed as a side car engine across all MediaHighway profiles since early 2000



Main application engine:

- Native
- Java
- Flash
- ...

# HTML5 Industry State of Affairs

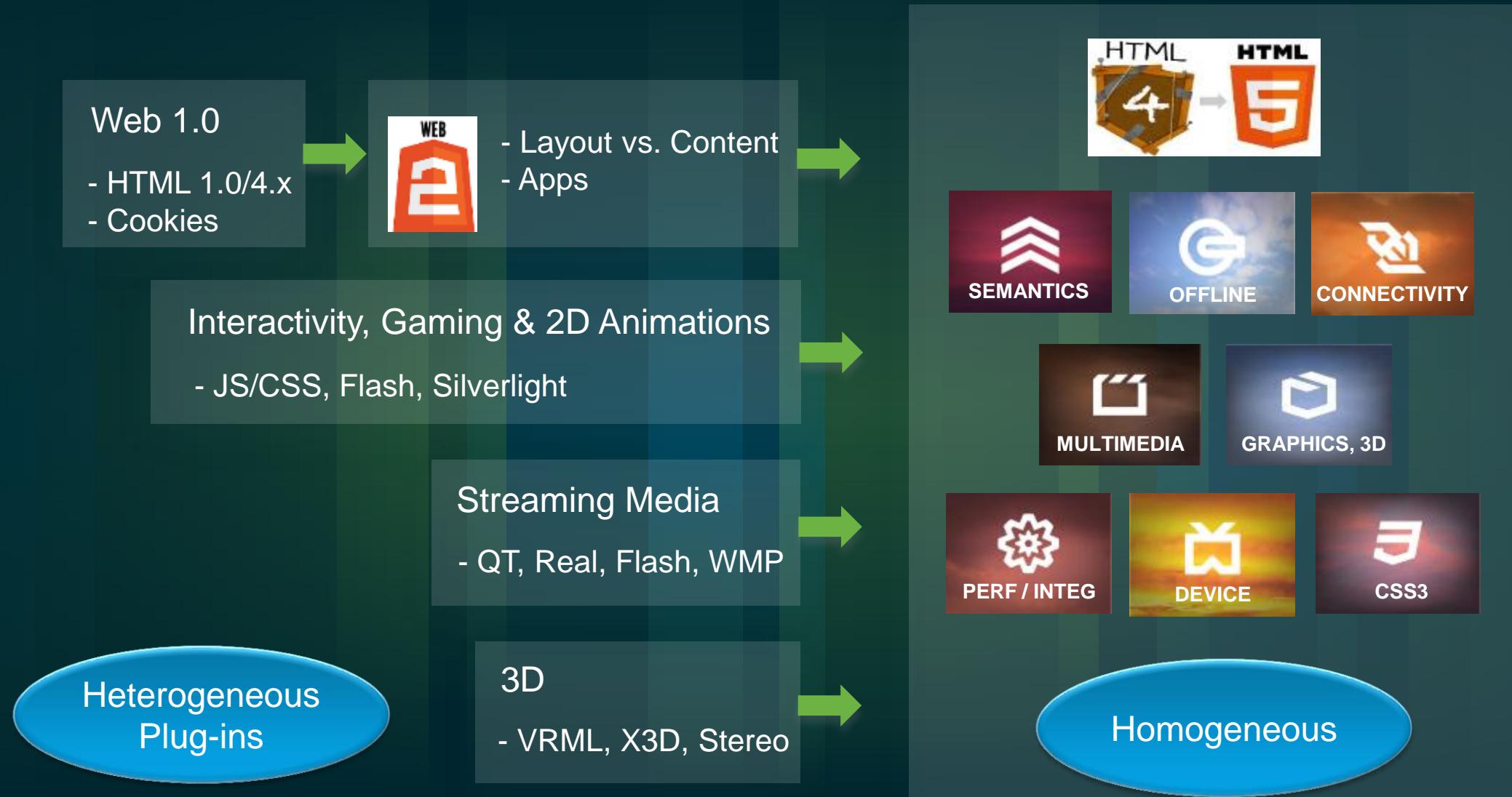
- HTML5 is being developed as the next major revision of HTML



# Since, It Has Taken Time and Standardization Efforts to Get to a Credible Proposition

- 
- A vertical timeline on the left side of the slide, indicated by a large green arrow pointing downwards, lists key milestones for the development of HTML5. The timeline is marked with dates: 2004, Oct. 2006, 2008, Apr. 2010, Nov. 2011, 2014, and 2016. To the right of each date, a bullet point describes a significant event or milestone in the development of HTML5.
- ‘WHAT’ (Web Hypertext Application Technology) Working Group
    - Founded in 2004, the WHATWG with members from Apple, Mozilla Foundation and Opera Software sets out to develop HTML5
  - World Wide Web Consortium (W3C) announces it will work with WHAT working group
    - W3C decides to stop working on XHTML and instead begins collaborating to evolve HTML5 as a technology
  - First draft version of HTML5 is published
  - Steve Jobs “trashes” Flash in an open letter
  - Adobe phase out Flash for mobile devices
  - HTML 5 is expected to be delivered during 2014 (W3C)
  - An updated version (HTML 5.1) is expected during 2016 (W3C)

# Stepping Stones to HTML5



# HTML5 & CSS3 Examples

<VIDEO> Tag examples

CSS 3D Examples ... with Pictures

Speech recognition

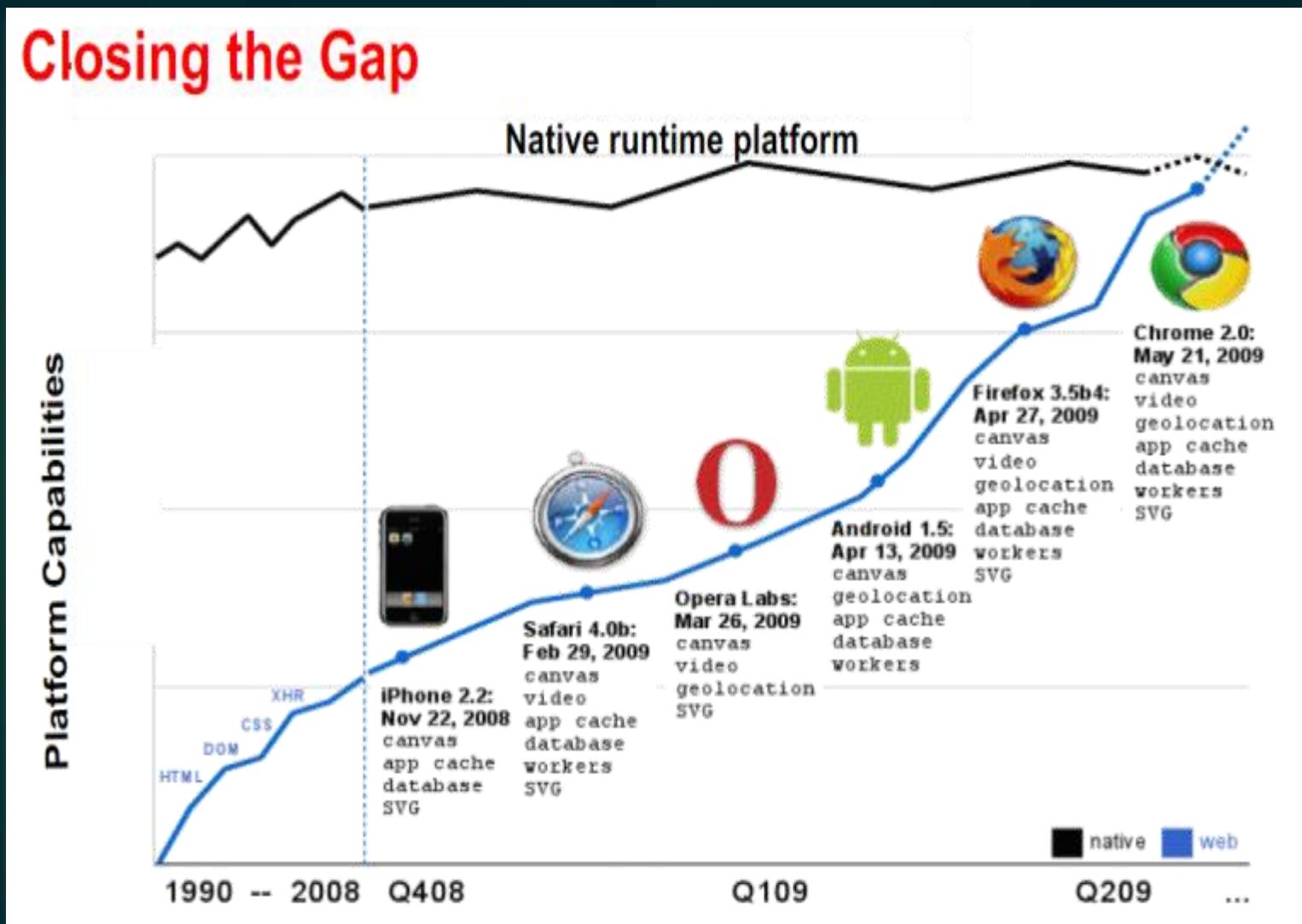
WebGL: Quake3

Twitter App

Diagrams App

# HTML5 technology sample

# HTML/Javascript Language Capabilities



# HTML5 Relevant for Many but Not Everyone

FINANCIAL TIMES

- In August 2011, **the Financial Times released its HTML5 app, abandoning its native apps**
- In April 2012, FT passes 2M users for its HTML5 web app
- No fees are redistributed to Apple and the customer relationship is kept by FT
- “It could be deployed in a range of contexts, both directly in the browser and wrapped as a native app for inclusion in app stores, if we choose to”

facebook

- In August 2012, **Facebook decided to abandon its HTML5 app to focus on native apps**
- “We realized that when it comes to platforms like iOS, people expect a fast, reliable experience and our iOS app was falling short ”
- “Building on native iOS gives us a major opportunity to keep making the app faster, more reliable and feature-rich”

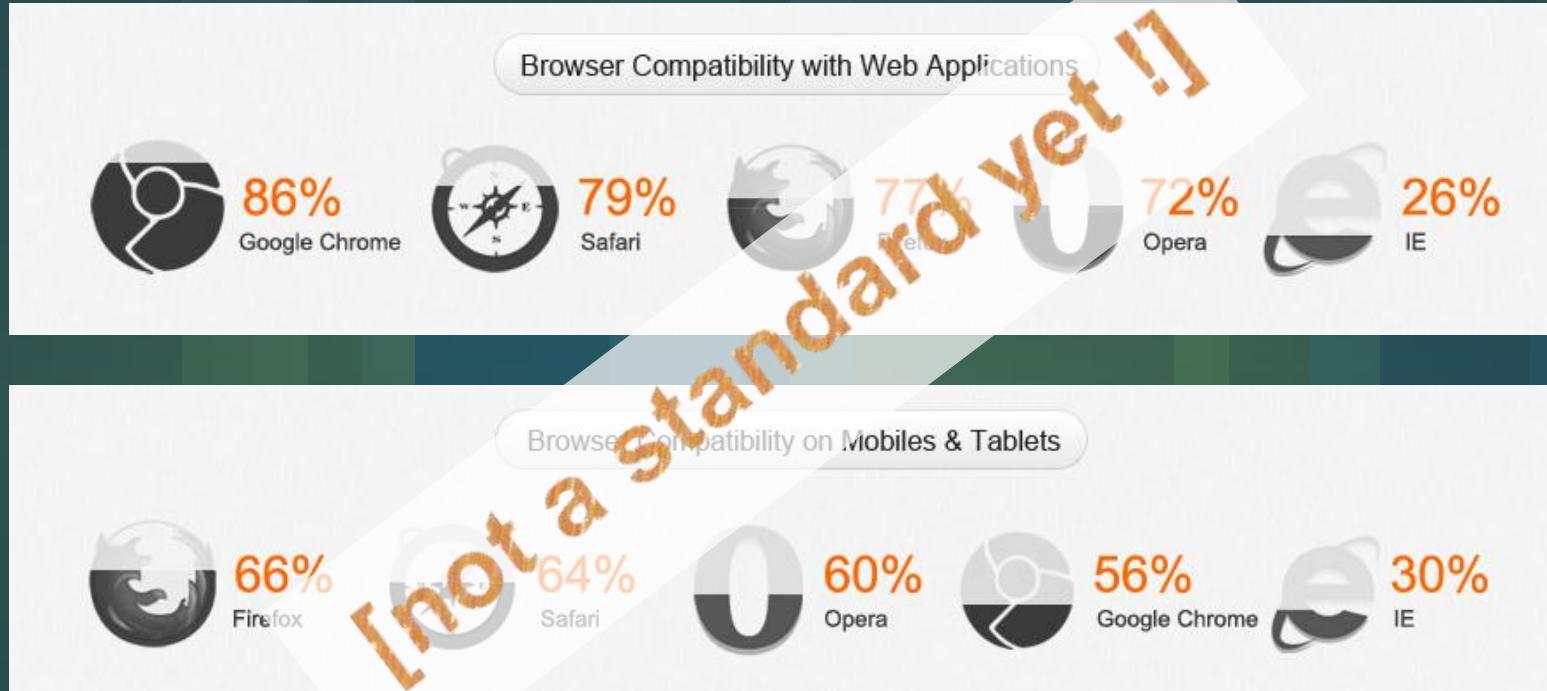


Financial Time Web App Video Link [here](#)

# HTML5 Browsers

	Proprietary	Open Source
Not Based on Webkit	Internet Explorer, Opera  	Firefox 
Based on Webkit	Safari, Chrome, Netfront NX, Espial, ...  	Chromium, QT - Webkit

# HTML5 Browsers Compatibility



\* Source : June 2012, Dotcom infoway infographics (*to be considered as indicative only*)

# HTML5 Highs and Lows

## Highs

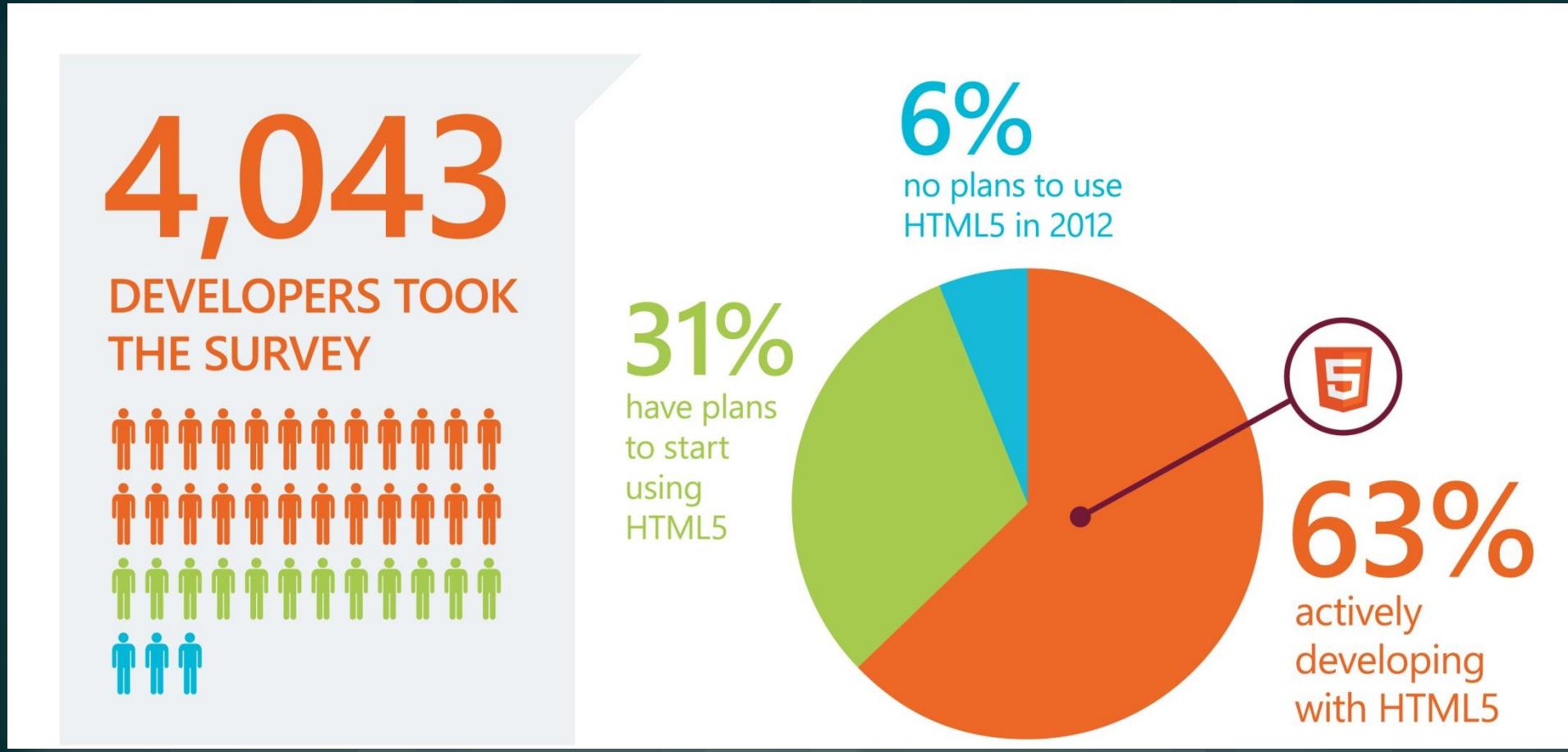
- Open “de-facto” Standard
- Converged multi-screen platform
  - Graceful degradation
- Unparalleled industry momentum
  - Tools & solutions
  - Developer Community
  - Professional Services
- Attractive development and support cost
- High velocity (update, A/B testing...)



## Lows

- Standard converging but not finalized yet
- Browser fragmentation
- Potential rendering performance
- Some feature limitation

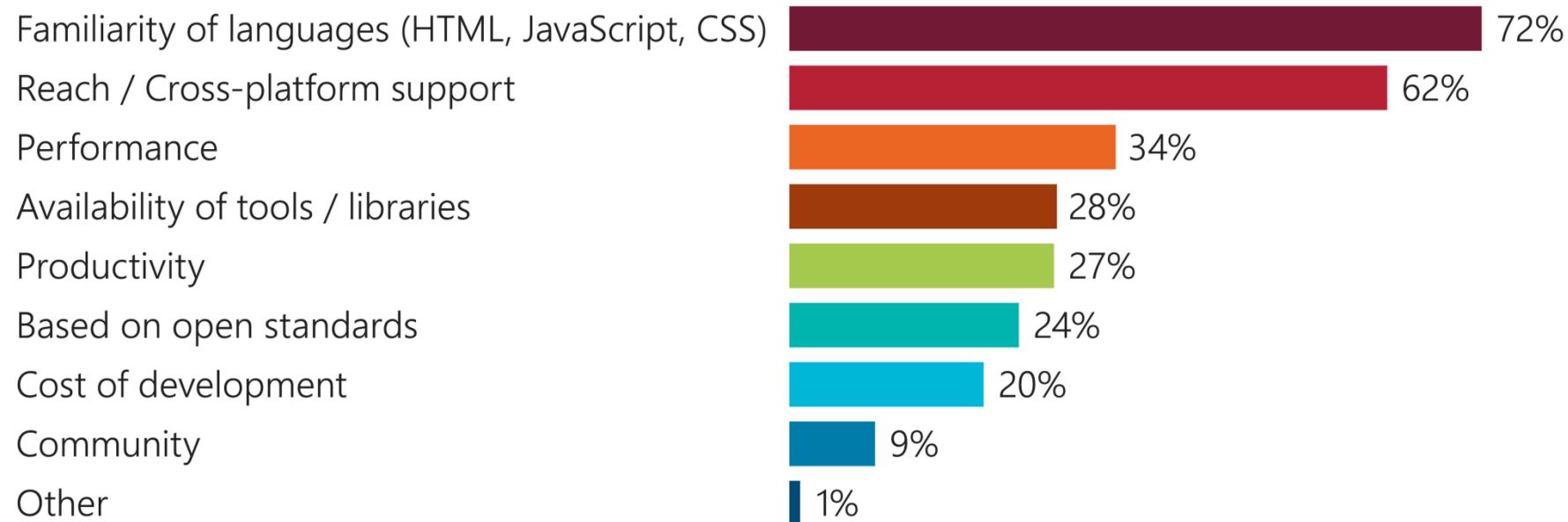
# Recent Developers Survey / Sept 5<sup>th</sup> – 26<sup>th</sup>\*



\* Source : Nov 2012, Kendo UI,

# Recent Developers Survey / Sept 5<sup>th</sup> – 26<sup>th</sup>\*

## What makes HTML5 development more appealing?



\* Source : Nov 2012, Kendo UI,

Not a magic solution, nor a formal standard yet!

but

Clear & unparalleled industry momentum

Key ingredient for cross-device media platforms

**HTML**



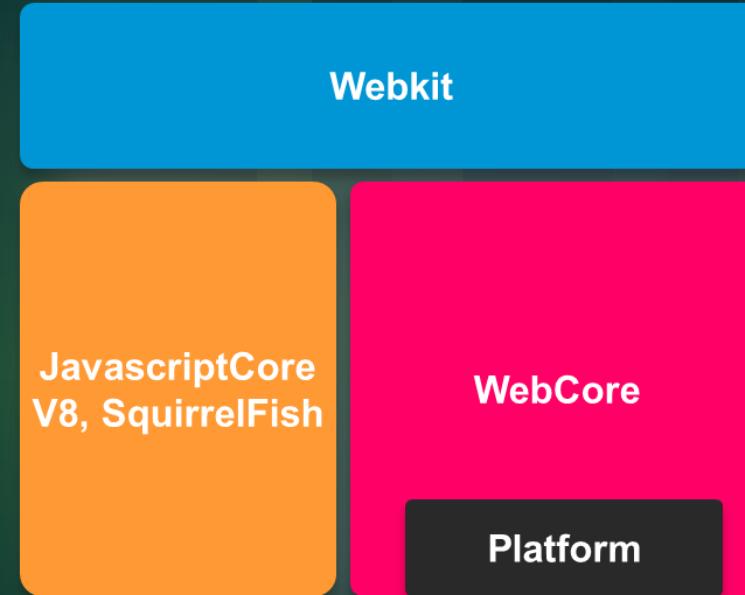
# HTML5 for PayTV



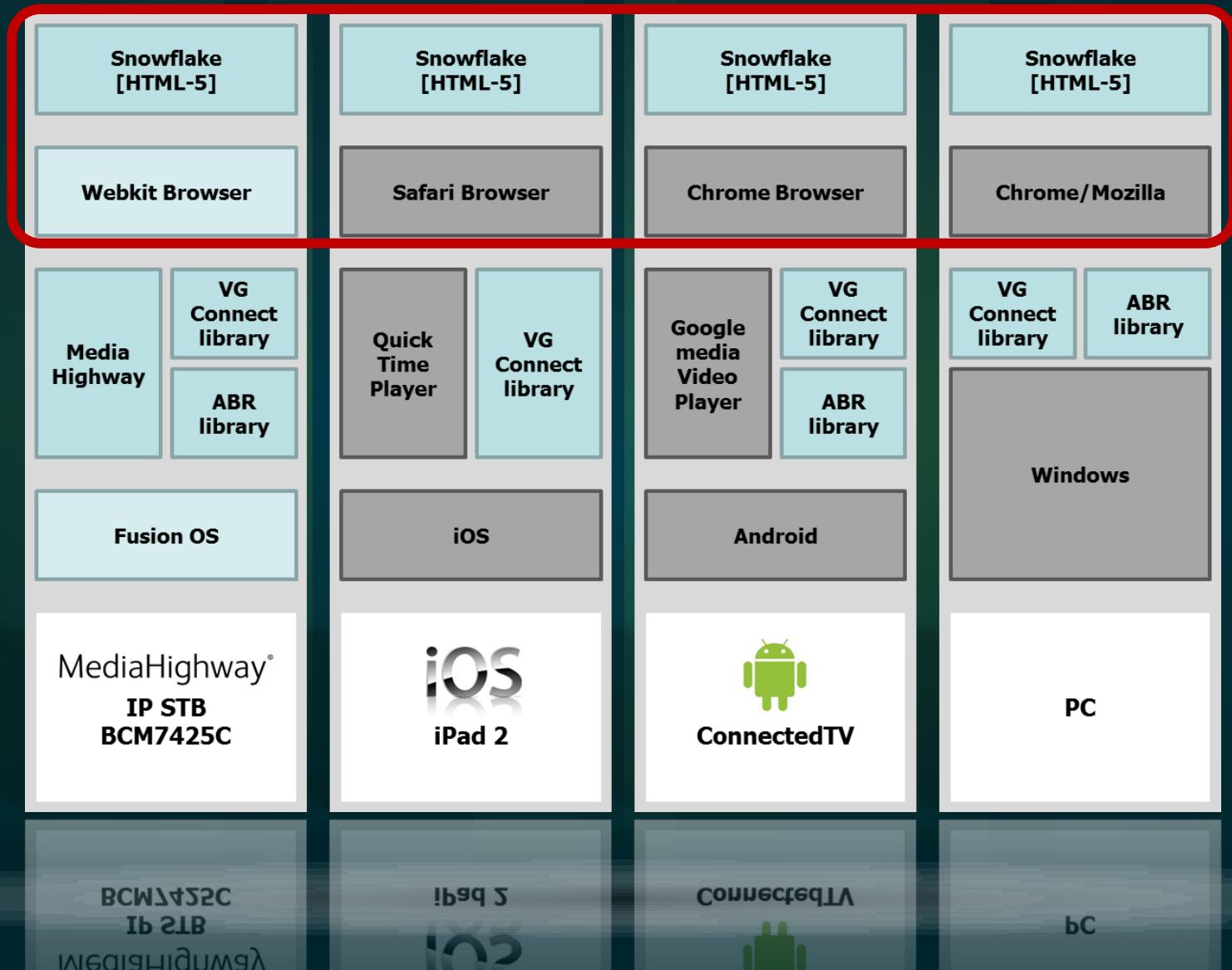
Opportunities  
& Challenges

# WebKit: the Leading HTML5 Engine Foundation

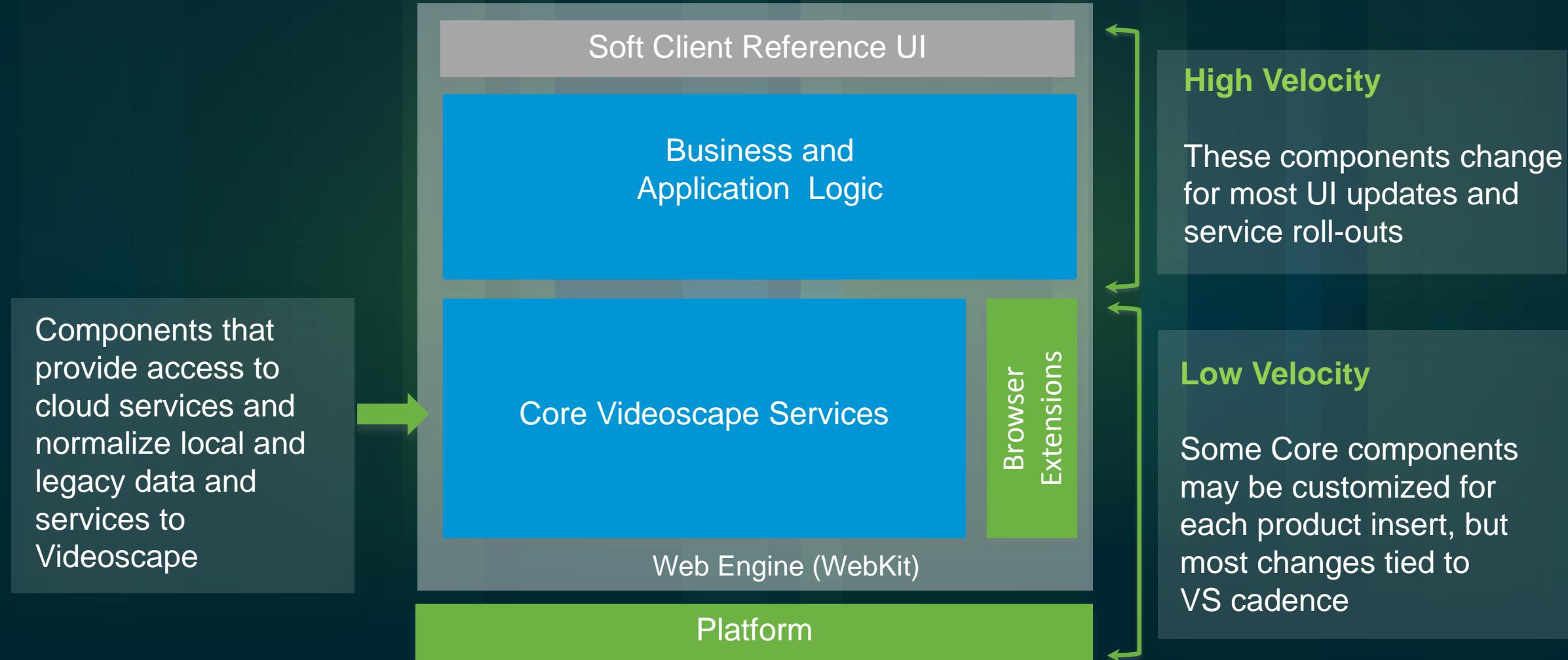
- CISCO SPVTG is committed to embrace, support and contribute to WebKit for PayTV platforms.



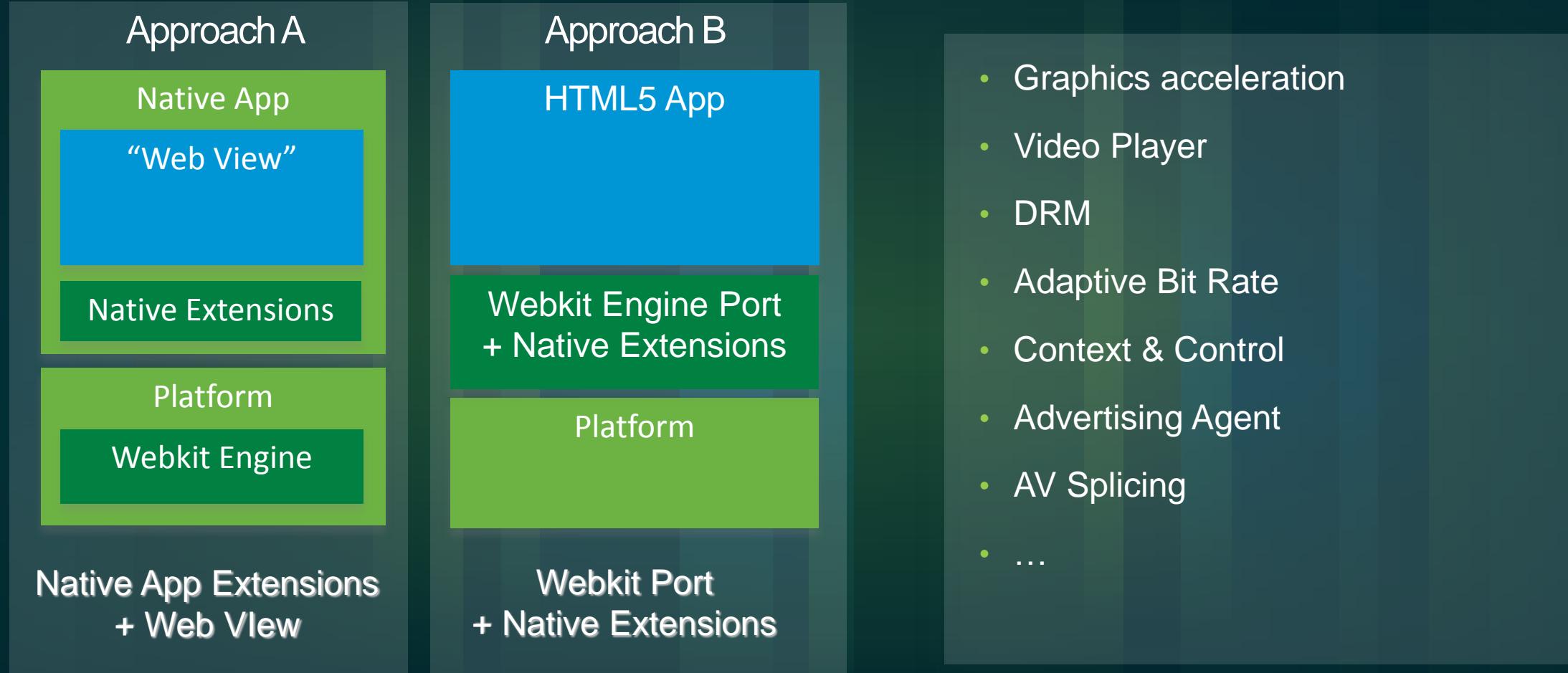
# Unmanaged Devices Are Critical



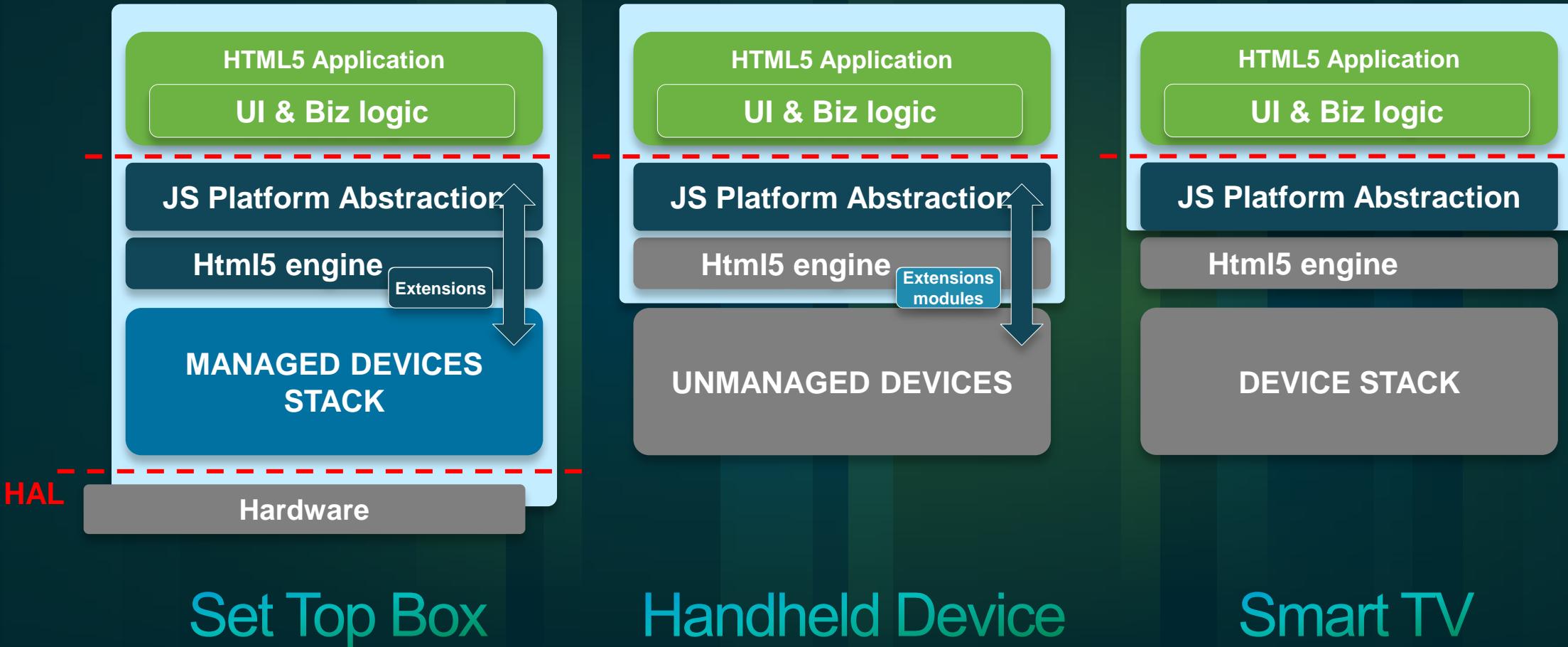
# Videoscape HTML5 Client Architecture



# Webkit Extensions Approach



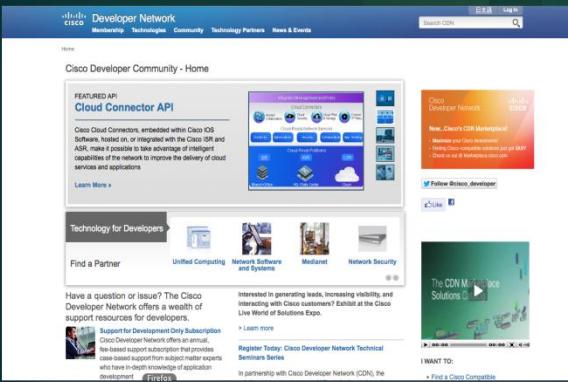
# Cross-Device Client Approach



# Videoscape HTML5 Soft Client

## HTML5 SDK

- PC Development Environment
- Register online via Cisco Developer Network
- API documentation
- Sample Apps
- Online tools



## VCAF UI Framework

- PC/Tablet/TV User Input
- Customizable Graphic Component Libraries
- Standard-based technologies



## Reference EPG Application

- White label UI
- Cross Device UX
- Based on UI framework
- Powered by Videoscape platform

# Example of Service Span



## Infinite TV

Multi Screen  
Premium Video  
Over the top



### Ipad

- Ios Native app + HTML5 webview



### Samsung Galaxy S3

- Android Native app + HTML5 webview



### Asus Transformer Prime

- Android Native app + HTML5 webview



### Awox IP-STB

- Mediahighway + webkit + HTML5 App



### Samsung smartTV 2012

- HTML5 App (webkit)



### PC

- PC Browser + Secure VS Player



### Xbox or PS3

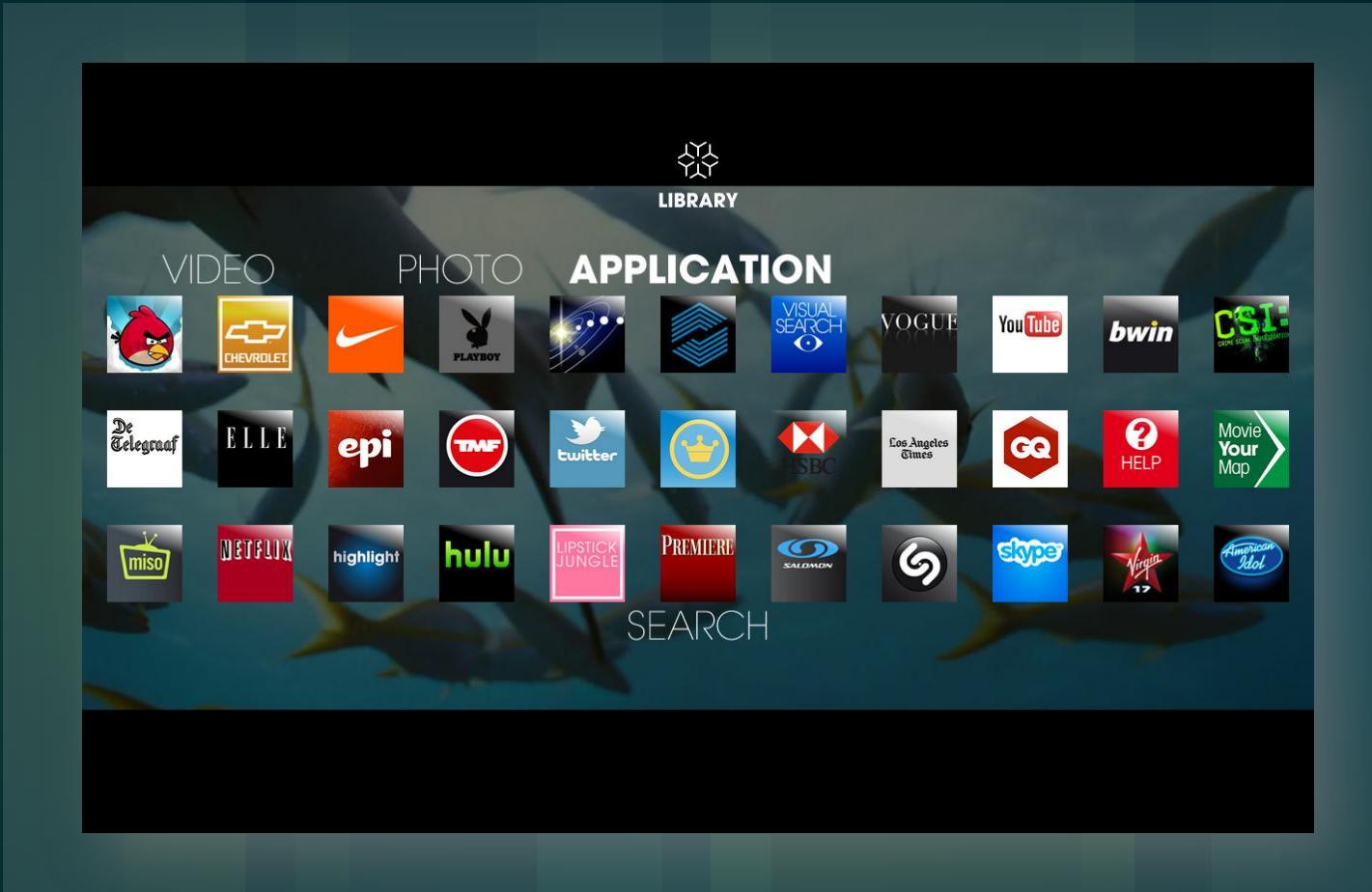
- Webkit port + Resident AV Player

Same HTML5 Navigator across all devices

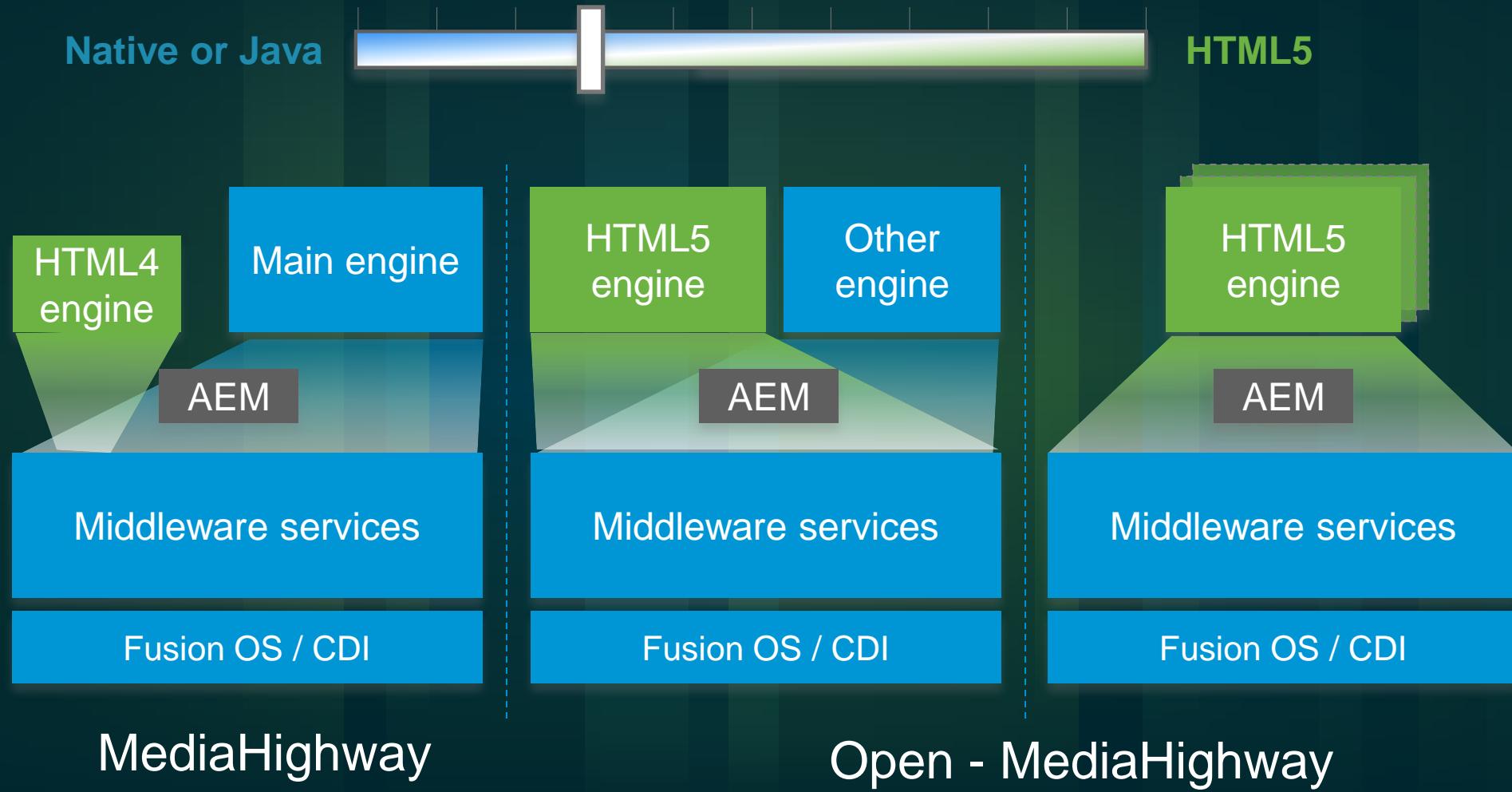
# Snowflake



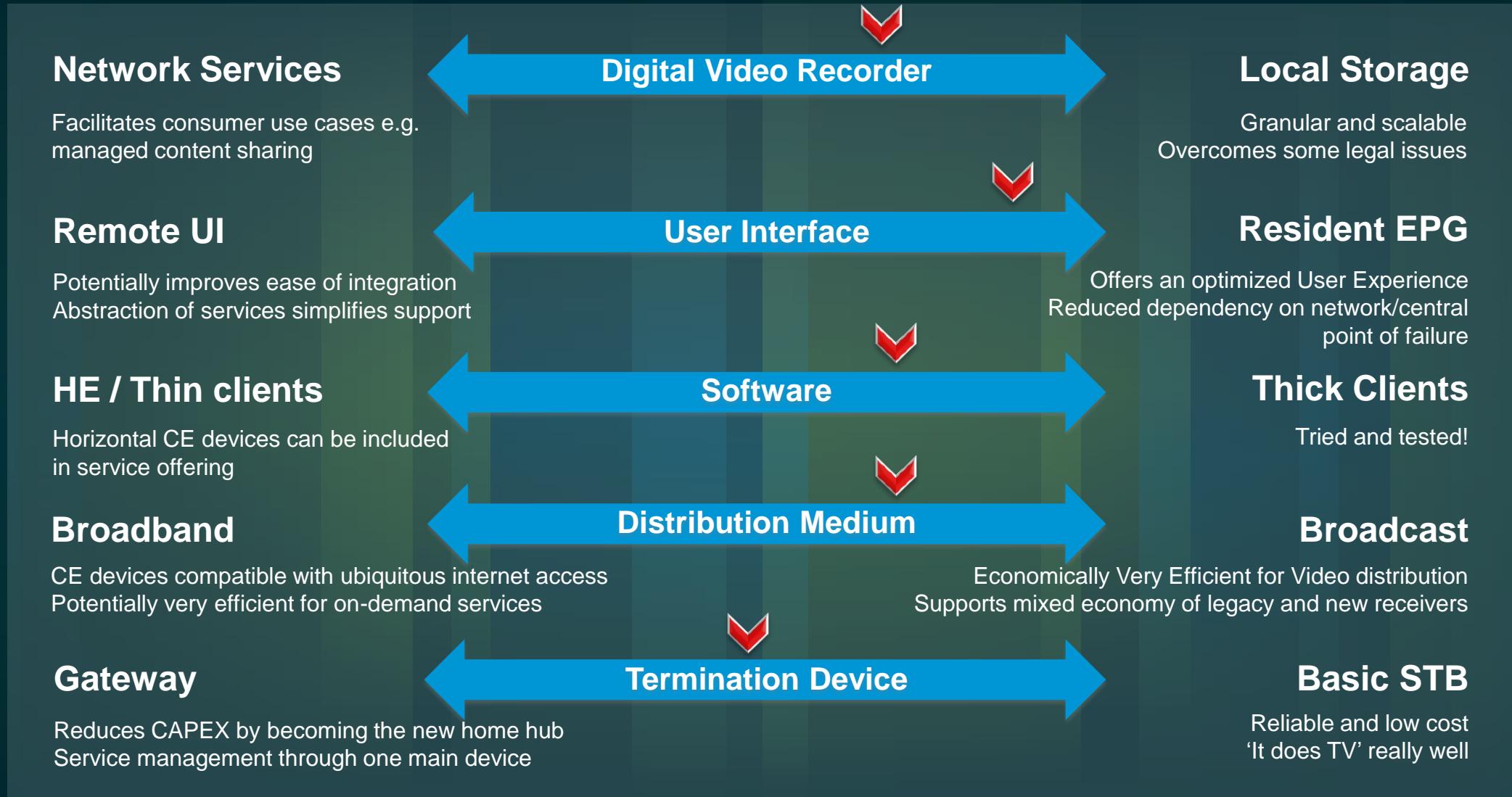
# TV Apps (Snowflake)



# Progressive Adoption & Migration Plans



# In the Network or in the Device?



# HTML5 Combines with Powerful Web Technologies

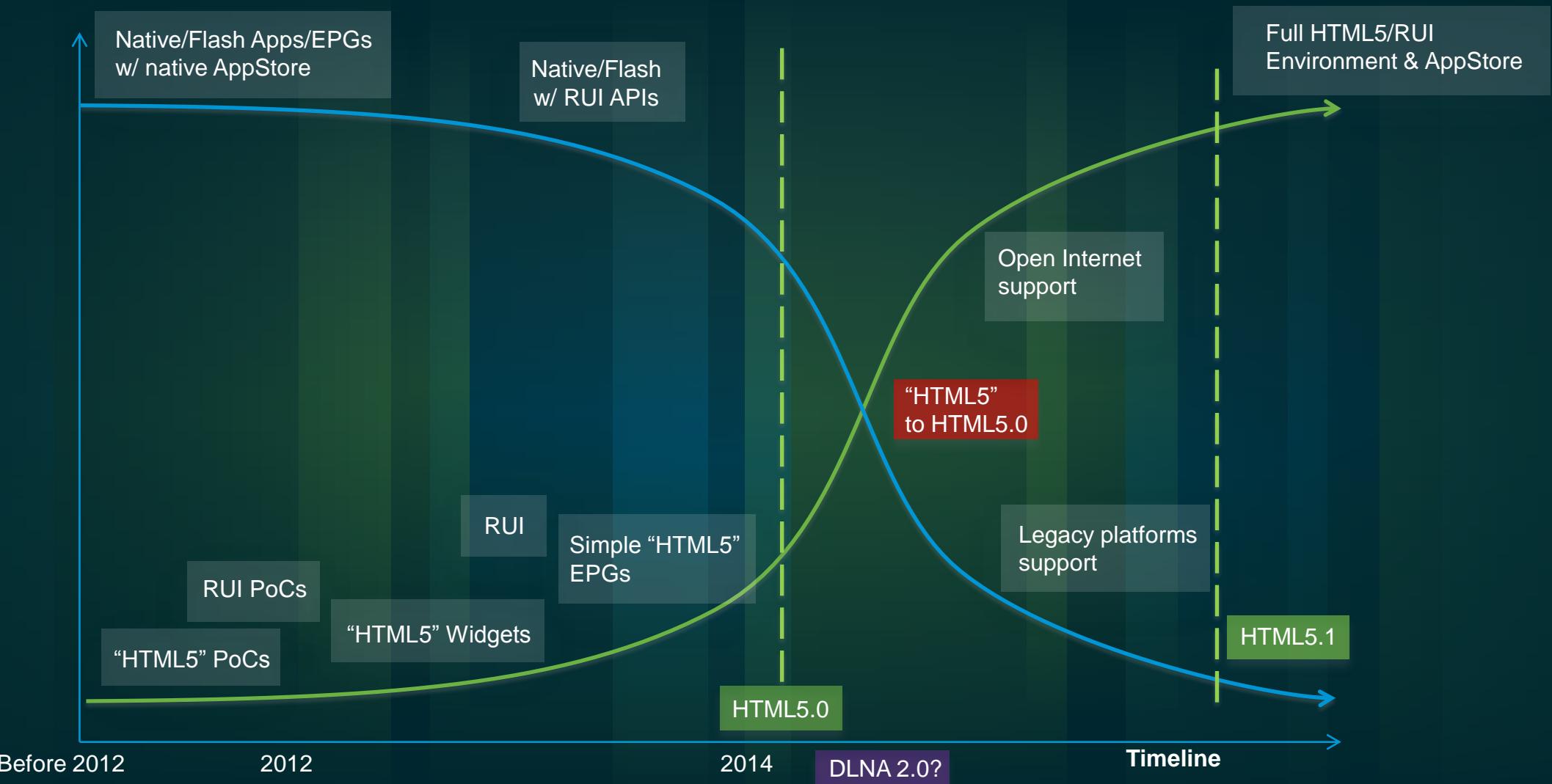


- Offline & Caching
- Apps & widgets
- Web APIs (REST) & connectors
- Messaging (XMPP, web sockets)
- Cloud based platform (SaaS)
- DevOps platform process
- A/B testing & Big Data Analytics
- Debug & test tools
- ...

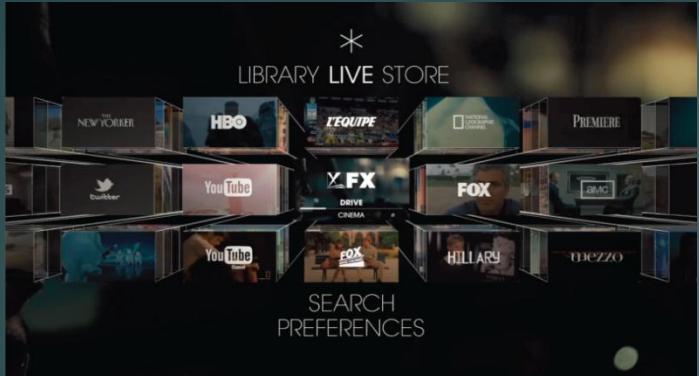
# HTML5 Open Issues & Challenges for PayTV

- Not a standard yet: Not foreseen before 2014+
- Lots of HTML5 Authoring Tools but many PayTV specificities requires suitable tools and workflow
- Heterogeneous Performance & features (e.g. 3D):
  - Browsers as such are not really optimized for embedded yet
  - Browser-specific code is still needed
  - 3D & animation intensive UI need acceleration/optimization
- Limited TV support:
  - No Codec defined, up to each browser
  - No Native Secure Player defined (No DRM, No DRM APIs). But ...
  - No Media synchronization
  - >> WebTV W3C group is trying to leverage on DLNA, DECE & MPEG-DASH

# HTML5 Migration



# Current Cross Platform HTML5 Capabilities



SNOWFLAKE - Converged Gateway RUI



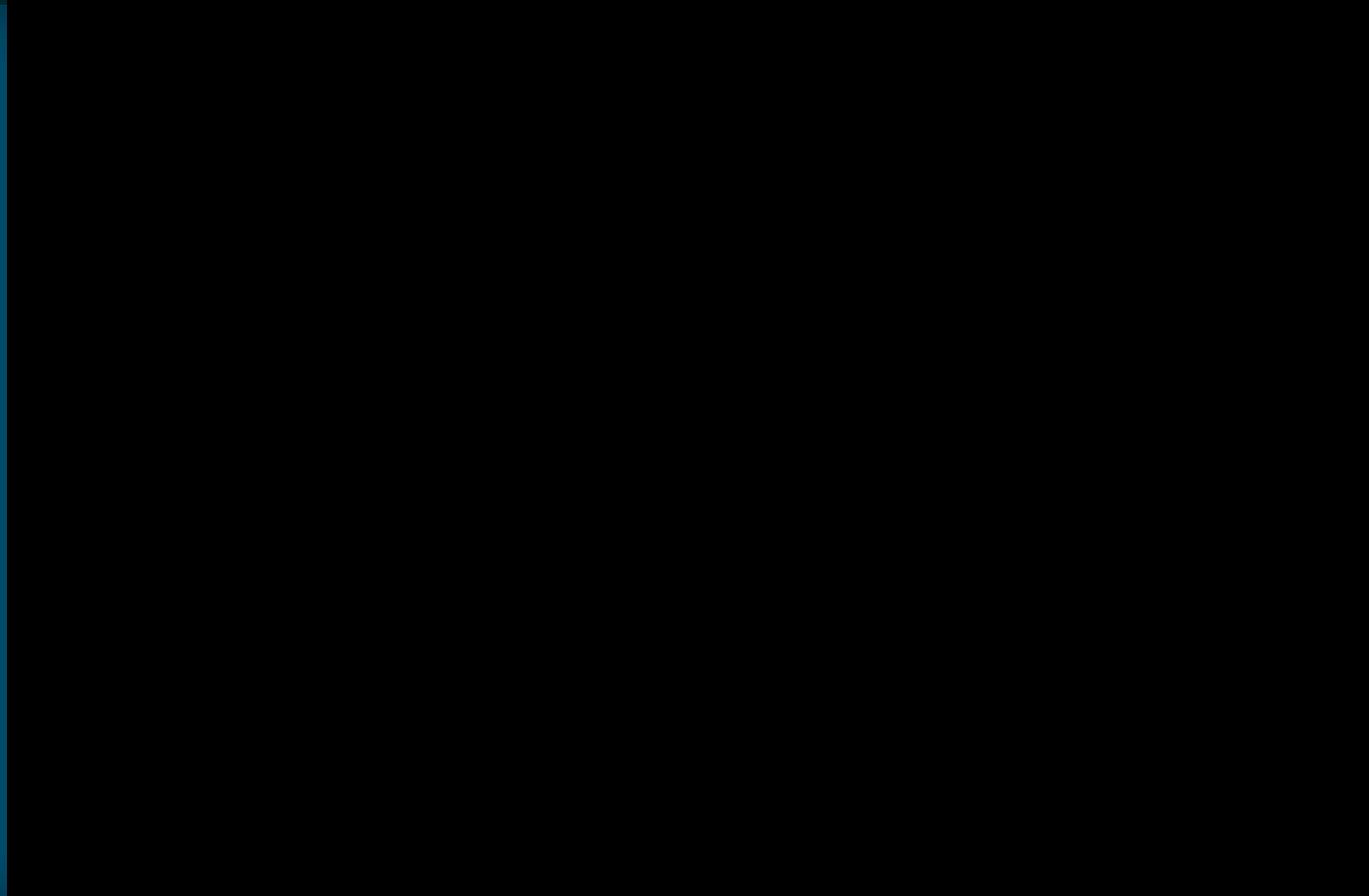
INFINITE TV - OTT platform



FRESCO, a vision for the Future of TV



Open MediaHighway EPG



# HTML5 lab tour

# Conclusions

- Huge industry momentum
- Promising technologies
  - Deep synergies across connected media platforms & devices
  - High velocity and agility at the application level
- Fragmented and not fully mature yet...
  - Not yet a standard (2014+), fragmented landscape
  - Top end UI will require optimization/acceleration
  - Pay TV STB will require specific extensions (Media Player, Content Security ...)
- ... but starting now!
  - In combination with cloud media platform adoption
  - Cisco SPVTG to deliver WebKit-based HTML5 soft client across managed and unmanaged devices



# HTML5, the Future of TV



Thank you

