HTML5 & Future of Web Media

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Kaltura
open source video

streaming media west

Single Platform Provider

vs.

Multiple vendors

Why a single platform provider is nice

Worldwide Ubiquity of Adobe Flash Player by Version - June 2010

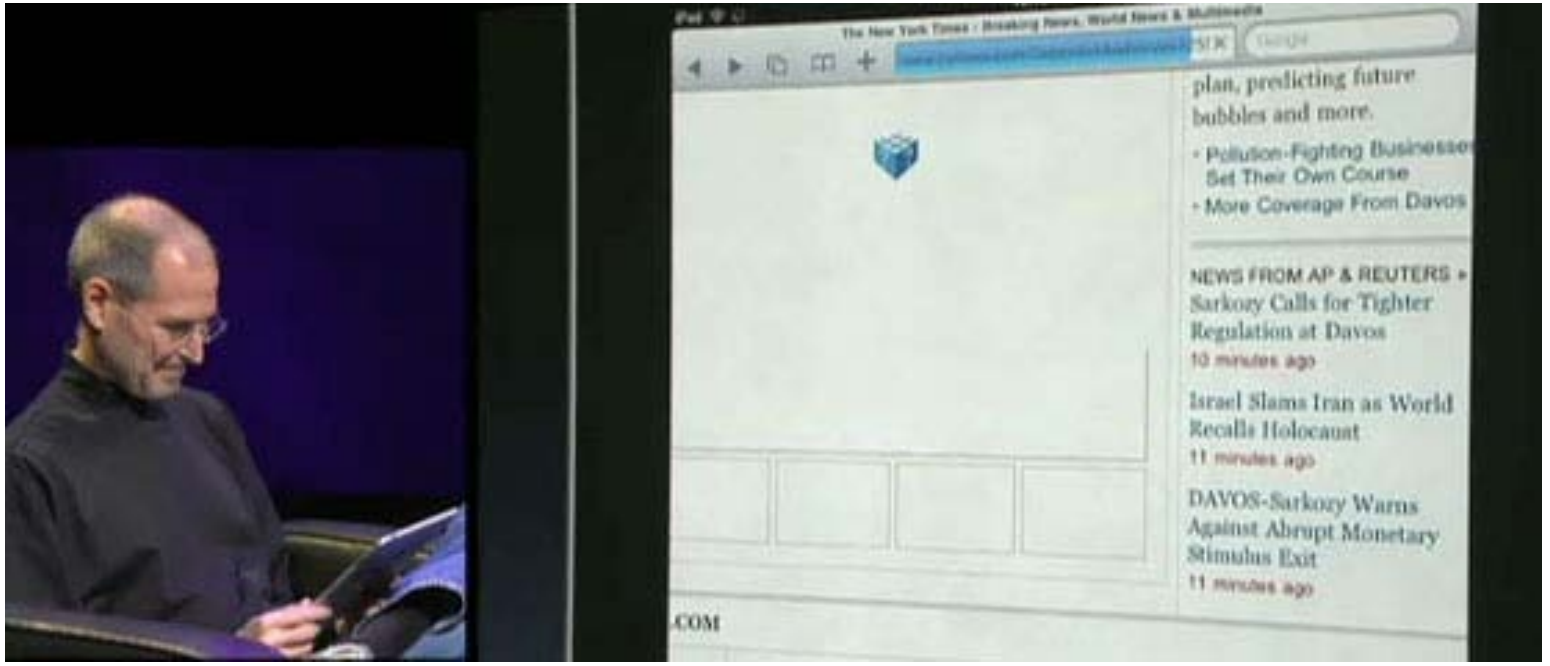
	Flash Player 8 & below	Flash Player 9	Flash Player 10
Mature Markets[1]	99.3%	99.2%	97.5%
US/Canada	99.1%	99.1%	97.5%
Europe[2]	99.3%	99.0%	97.9%
Japan	99.7%	99.7%	97.1%
Australia/New Zealand[4]	99.7%	99.7%	96.8%
Emerging Markets[3]	99.0%	98.9%	96.1%

Single target platform

Platform provider can direct complicated top down innovation on both “authoring tools” and “player”

{There is no GOOD alternative}

What happens when the market change?



#FAIL

Enter HTML5

A “single” platform with multiple “providers”

standards

Open standard process

Standard process: political, difficult and slow

{too} Many stake holders.

Different implementations

DRM, Media URL obfuscation, Device layer,

Codecs…

H.264
FIVE...
MILLION...
DOLLARS...
Apple, Mac, iPhone, iPad News
www.ObamaPacman.com

Firefox, Chrome and Opera will support the WebM
IE9 / Safari will support it if the user has the codec installed

Target Platform / Browser	Status	Notes	Fallback?
IE6-IE8	not supported	Supported through Chrome Frame	Flash
IE9	supported	H264 (WebM if codec is installed, only desktop)	
Minefield (Firefox Nightly)	supported	WebM, Theora	
Firefox WebM Build 4	supported	WebM, Theora	
Firefox 3.6	supported	Theora	
Firefox 3.5	supported	Theora	
Firefox 3	not supported	-	Flash
Opera 10	supported	WebM, Theora	
Chromium 6 (Chrome Nightly)	supported	WebM, H264	
Chrome 3+	supported	WebM, H264	
Safari 4, 5 (Mac)	supported	H264 (WebM if codec is installed, only desktop)	
Safari 3 (PC)	not supported		Flash
iPad (3.2)	supported	H264 full profile up to 720P	
iPhone OS 4.x	supported	H264 full profile on iPhone 4 devices (720P)	
iPhone OS 3.x	supported	H.264 base profile (480P) on any thing older than 3GS)	
iPhone OS 2	not supported		No
Android 2.2	supported	only plays in full-screen no overlays, canPlayType api not support (so we just low end h.264 video)	
Android 2.1	mostly supported	Same restrictions as above.	
Android < 2	not supported		No

No custom codecs in QuickTime

Ummm…. What about symbian, blackberry, palm…?

<video>

```
<video
   src=“”          The url to the video stream
   width=“”        The width of the video element
   height=“”       The height of the video element
   poster=“”       The url to the thumbnail of the video
   preload=“”      none, metadata, auto
   autoplay        Video should play immediately
   loop            Video should return to start and play
   controls        Will show controls (play, pause…)
>
…
</video>
```

<source>

```
<video width="320" height="240" controls>
  <source src="pr6.mp4"  type='video/mp4; codecs="avc1.42E01E, mp4a.40.2"'>
  <source src="pr6.webm" type='video/webm; codecs="vp8, vorbis"'>
  <source src="pr6.ogv"  type='video/ogg; codecs="theora, vorbis"'>
</video>
```

```
AddType video/ogg .ogv
AddType video/mp4 .mp4
AddType video/webm .webm
```

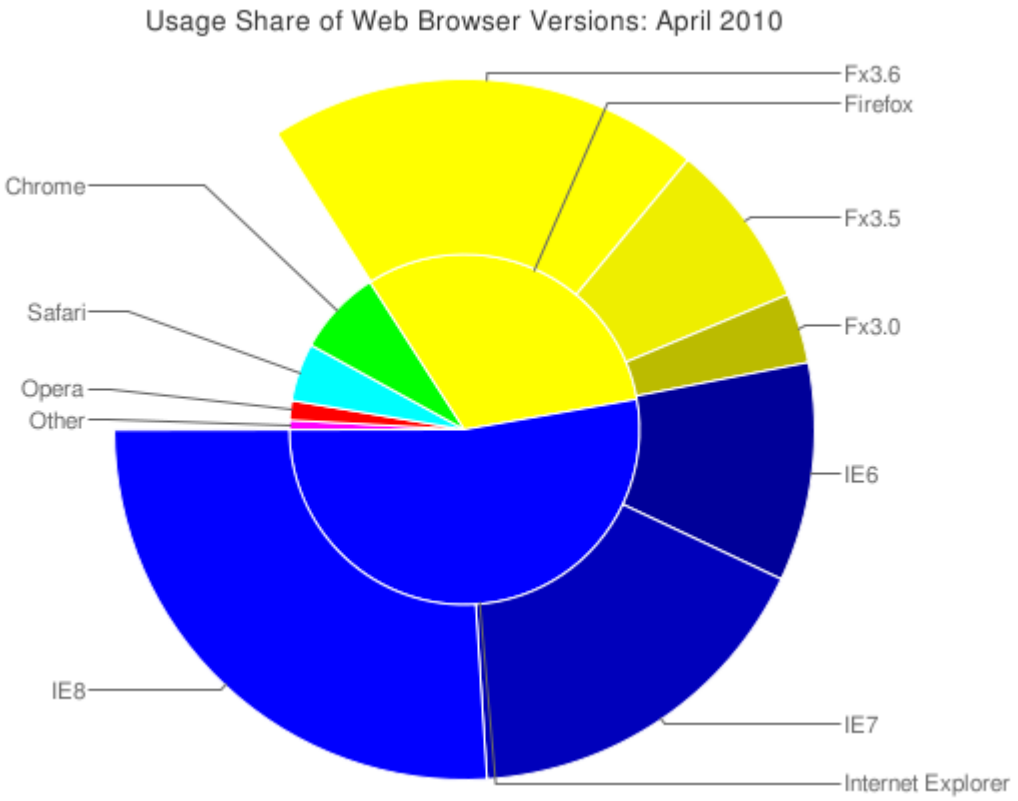
Due to bug in iPad, mp4 should always be first
Android doesn’t like type (remove it from the h264 source)

Challenges in consistent experience

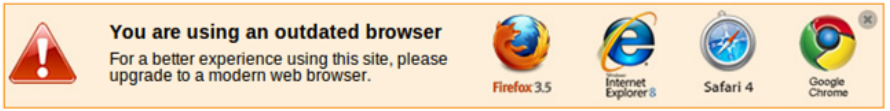
iPhone iOS 4 != iPhone iOS 3 != iPad iOS3 Android 2.x != Android 1.7 != Firefox 4 != firefox 3.6 != Chrome 7 != Desktop Safari Windows != Desktop safari mac != playback format: h.264 base profile != h.264 iTouch profiles != webM != ogg != apple http adaptive streaming != adobe adaptive != silverlight sooth stream.

… this situation is almost as ugly as this slide.

Extremely Slow upgrade path for IE

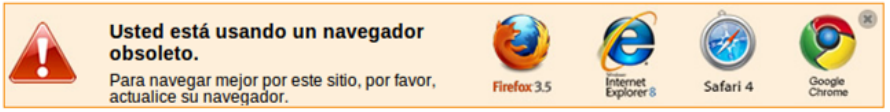


English




```
  <!--[if lt IE 7]>
  <div style='border: 1px solid #F7941D; background: #FEEFDA; text-align: center;
clear: both; height: 75px; position: relative;'>
```

Spanish




```
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```

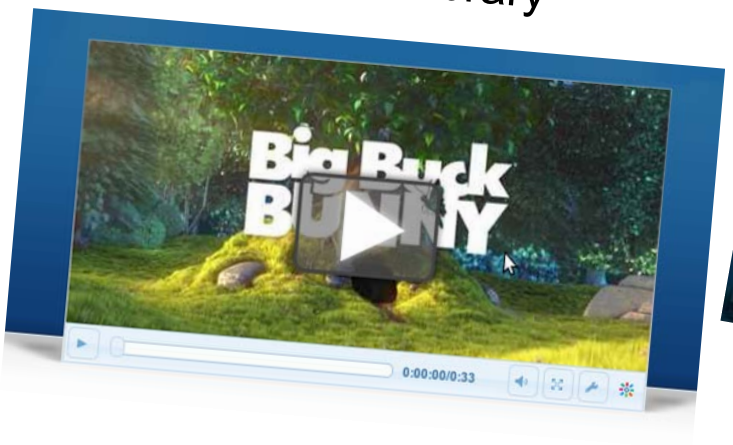
HTML5 and Flash hybrid:
Web multimedia
for the foreseeable future

Javascript libraries

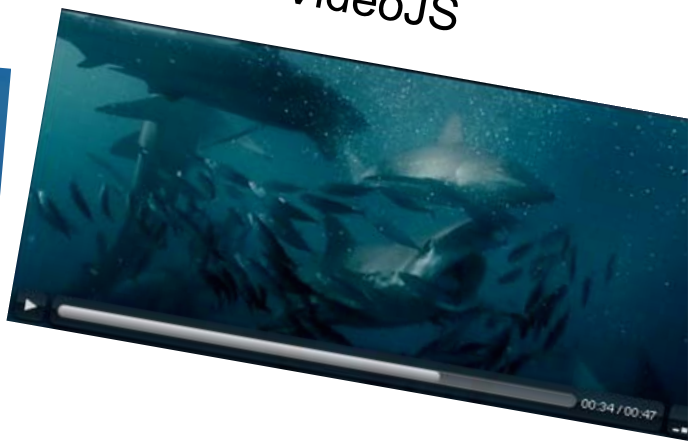
bridge this gap for robust web media

Oms media player

Kaltura html5 library



VideoJS



Sublime video

flarevideo

jme player

http://www.kaltura.org/project/HTML5_Video_Media_JavaScript_Library

“Adobe announces the HTML5 Video Player Widget”

Adobe Dreamweaver Team

“Adobe's New HTML5 Video Player Widget, It's Kind Of A Big Deal”

TechCrunch

The player is only as good as the video platform that serves it

Kaltura HTML5 Player Delivery Options

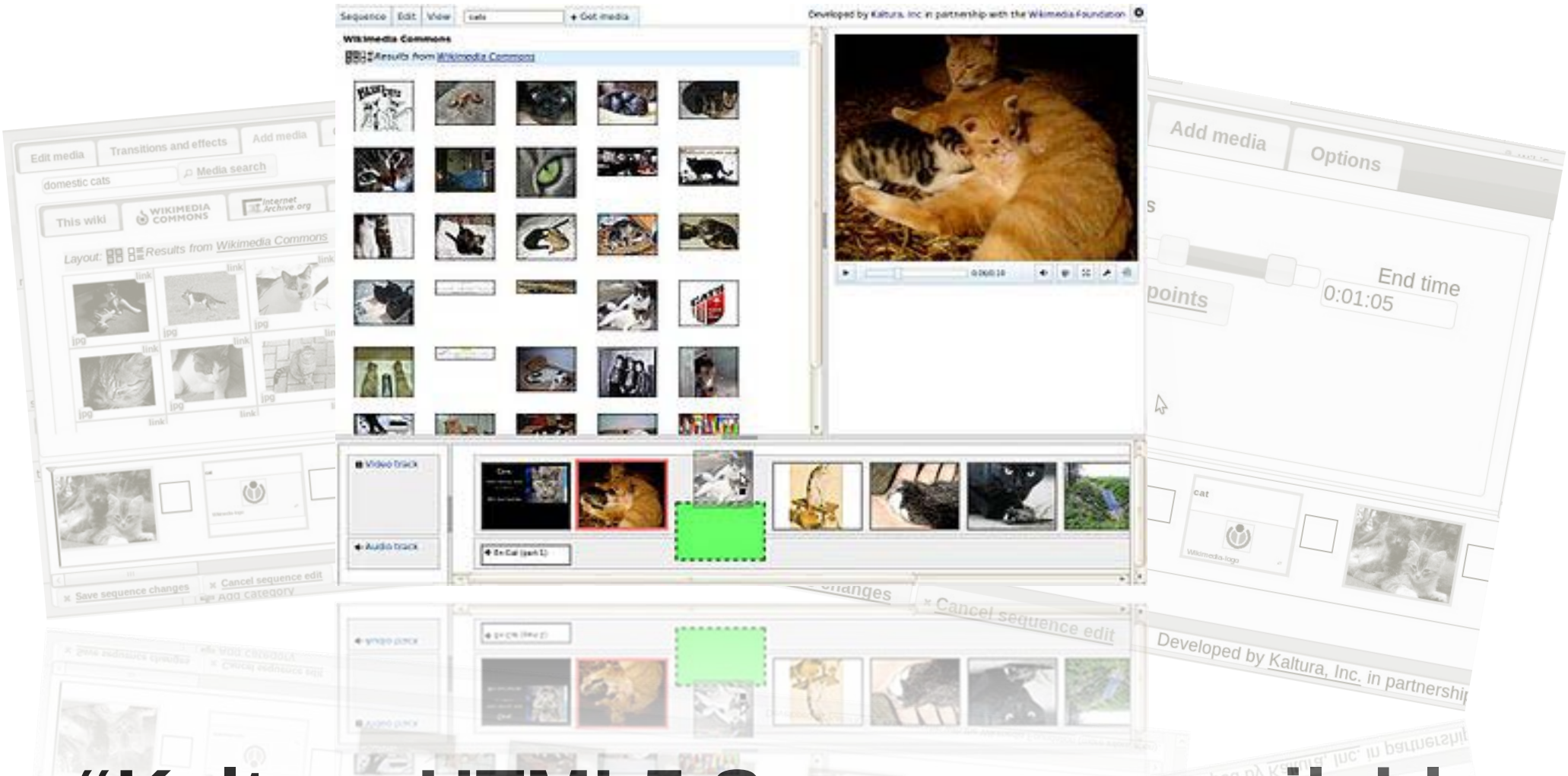
- **Fallforward (kaltura api)**
  - Flash if possible, fall forward to html5 for mobile
  - <embed data="kaltura.swf" />
  - Kaltura Flash javascript api mapped to html5
  - example
- **Fallback**
  - HTML5 if possible, flash fallback for IE / old browsers
  - <video />
  - Normal video tag api mapped to flash player
  - example

Kaltura HTML5 player theming

- Custom CSS, Class selection (samples)
- jQuery UI Themer (demo)
- HTML AutoThemer (demo)
- Kaltura KMC player studio (coming soon)

Kaltura HTML5 Playlist

- **Kaltura API**
  - Uses fall forward from Kaltura object
  - Adds scroll buttons for iOS
  - example playlist



“Kaltura HTML5 Sequencer available on Wikimedia Commons”

Kaltura HTML5 Wikimedia

Open source!

On wikipedia based the stand alone library:

- P2P swarm “easy as a CDN” (demo)
- W3C html5 'track' Timed Text (demo)
- HTML5 sequencer (demo)

Kaltura HTML5 coming soon

More Kaltura flash feature bridging

- Kaltura API ad server support - VAST compliant
- Kaltura JS support - mediaSpaces, custom JS applications

Improved device support beyond Android & iOS

What about?

- Web cam, camera capture support
- Streaming (Dynamic bitrate switch)
- Seek still suck
- No Full Screen, No GPU yet
- Older browsers & Mobile devices
- Player encapsulation, media rights management

- Authoring tools
- Existing flash apps

Accessibility

* Descriptive Video [Extended Audio Description]
* Transcripts
* Subtitles (SRT, Timed Tracks)

* Develop to the standard and readers will read your site

Graphics

* SVG - Scalable Vector Graphics. HTML for graphics.
* The Canvas - Bitmap graphics
* CSS – Layout & Style, Effects, Transitions

Video

* Client side transcoding (firefogg)

* Frame accurate seeking over http (no pricey specialized media server or complex CDN setup)

* P2P – P2P Next Community CDN for Video Distribution (Swarm)

Authoring Tools

* The Dreamweaver CS5 HTML5 Pack
* HTML5 Pack for Adobe Illustrator CS5
* Flash Export to HTML5 (?)
* http://smokescreen.us (Convert Flash to HTML5/JS)

Rights Management

* Legal system

This is still the domain of plugins due to:

Lack of agreement across the spec group members

Lack of free & open standard that make sense…

SEO

* The search spider: “Hey, that’s a video!”
* Use the Alternative content!
* http://www.google.com/webmasters/videositemaps/
* Descriptive Text (Transcripts, Subtitles)

What can we do with it today?

* Really cool interfaces!
* Playback video/audio across all browsers (using JS)
* Real-Time interactive layers on top of the video
* Syndicating
* Location aware video websites (auto translation, related videos, etc.)

Future of HTML 5

* Video in email
* Camera & devices integration, inside your webpage
* Write once, deploy anywhere
* Full accessibility elements
* Hardware acceleration makes smooth experience (WebGL?)
* Beyond the browser. Enter HTML5 Apps for mobile, TV…

Plugins like Flash/Silverlight/Unity will still co-exist and in fact stay ahead in technology and innovation.

Standards are a natural evolution.