Web API Deep Dive: Multimedia Playback, Streaming and Camera

JAM834

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Remember Shockwave?

What do you use it for?

Remember Shockwave?

Good. Now forget about it.

BlackBerry Jam Asia

… makes the **Web Flashy**

… has **audio** and **video** support

… has **streaming** and **recording** support

… has fancy **animations** with CSS3

… allows crazy **2D graphics** with canvas

… handles **3D graphics** with WebGL

HTML 5

BlackBerry 10 Loves HTML5

- Support for open web standards like **Canvas** and **WebGL**

- **Open source**, even WebWorks layer itself

- Full access to our **Camera API**

Agenda

- **Audio** Playback and Streaming

- **Video** Playback and Streaming

- Using the **Camera** API

Audio Playback and Streaming

The band plays on (and on, and on)

- Audio tag
- JavaScript

Audio Tag

```
<!- So Easy -->
<audio src="myfile.mp3">
```

```html
<audio controls="controls">
  <source src="horse.ogg" type="audio/ogg" />
  <source src="horse.mp3" type="audio/mp3" />
  Your browser does not support the audio tag.
</audio>

<audio controls>
  <source src="horse.ogg" type="audio/ogg" />
  <source src="horse.mp3" type="audio/mp3" />
  Your browser does not support the audio tag.
</audio>
```

Audio Tag with JavaScript

```javascript
// JavaScript
var audio = document.createElement("audio");
audio.src = "yourfile.wav";
audio.load();
audio.play();
audio.pause();
```

Little pain, lots of gain

- Better control of when a resource loads
- Error handling; allows fallback strategy
- Customized UI for user playback

- Streaming based audio
- Great for long playing files
- Not so good for sound effects
- Some performance gains by using audio sprites

- Web Audio API
  - ▸ Processing and synthesizing audio
  - ▸ Great for games and interactive applications
  - ▸ Using this? Email me - juslee@rim.com

- In the meantime, fall back to Flash for audio
  - ▸ HTML5 version of Angry Birds from Google does it

Cross Platform

- SoundJS - manages playback, falls back to Flash
  - ▸ http://soundjs.com

Video Playback and Streaming

Row, row, row your phone gently down the (video) stream. Merrily, if possible.

Couple ways to go
Dirt simple audio playback (Deja`Vu?)

BlackBerry Jam Asia

- Video tag
- JavaScript

Video Tag

```
<!- Almost if not equally easy as Audio -->
<video src="myfile.mpeg">
```

```
<video width="320" height="240" controls="controls">
  <source src="movie.mp4" type="video/mp4">
  <source src="movie.ogg" type="video/ogg">
Your browser does not support the video tag.
</video>
```

Video Tag with JavaScript

```javascript
// JavaScript
var video = document.createElement("video");
video.src = "yourfile.mpeg";
video.load();
video.play();
video.pause();
```

- Better control of when a resource loads
- Error handling; allows fallback strategy
- Customized UI for user playback
- Clap if you recognize these benefits from another slide!

Cross Platform

- You may still have to support Flash (as a fallback)
- Lots of libraries out there that do it smartly
  - http://VideoJS.com/
  - http://FlareVideo.com/
  - http://mediafront.org/OSMPlayer (as a jQuery plugin)

Even crazier things…

- JavaScript-based video decoding!!!

  ▸ http://www.cringely.com/2012/08/22/javascript-video-17-years-in-the-making/

- Apple's strange experiment

  ▸ https://docs.google.com/document/pub?id=1GWTMLjqQsQS45FWwqNG9ztQTdGF48hQYpjQHR_d1WsI

Using the Camera

HTML5 Style!

Now HTML5 Standards Based
...And working

- W3C's navigator.getUserMedia
- Capture audio, video, stills
- Ultra cool

The New Camera Hotness

```
// what the code looks like
navigator.getUserMedia(
    {audio: true, video: true},
    function(stream) {
        video.src = ('webkitURL' in window)?
                window.webkitURL.createObjectURL(stream):stream;
    },
    function() { console.log("Fail."); }
);
```

Promising Direction
Because we love HTML5, did I mention?

- No vendor-specific mumbo-jumbo

- Adoption of still evolving standard (still mumbo-jumbo, but at least standard mumbo-jumbo)

- Roadmap also has available in the browser app with permission model

For More Information…

- Check out:
  - ▸ http://www.html5rocks.com/en/tutorials/getusermedia/intro/
  - ▸ http://dev.w3.org/2011/webrtc/editor/getusermedia.html

- Demos
  - ▸ http://shinydemos.com/getusermedia/

Q&A

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THANK YOU

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