HTML5 for Automotive Infotainment: What, Why, and How?
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What is HTML5?

- Shorthand for mix of web technologies
  - HTML5 + CSS3 + JavaScript
  - Also AJAX + JSON + XML + XHTML

- Goal is to improve semantics, efficiency, usability and interoperability of web development
  - Specify enough implementation to ensure compatibility

- [http://www.html5rocks.com](http://www.html5rocks.com)
HTML5 trend

• Installed base for mobile devices with HTML5 forecast to exceed 500 million before 2012, more than 2.1 billion in 2016

• “HTML5 features will enable the web to challenge native applications in terms of rich user experiences.”
  — HTML5 for Mobile Devices and Tablets, ABIResearch, June 2011

• “Growing support is rapidly establishing HTML5 as the dominant cross-platform runtime.”
  • HTML5 threatens to Disrupt the Disruptors, CCS Insight, July 2011

• “Something in the last 18 months kicked the HTML5 adoption machine into overdrive.”
  • Why companies are flocking to HTML5, CNN Money, August 2011

• What’s happening day-to-day? www.html5trends.com
Is an HTML5 app limited?

Not really! Here’s some examples of what you can do...

Games
• chrome.angrybirds.com, resortico.com, Torus
• Certain classes of games can easily be handled

3D + Graphical effects
• SoundManager2
• WebGL for OpenGL/3D apps
• Direct canvas manipulation

Rich apps
• HootSuite, Google (Gmail, calendar, docs), Facebook, LinkedIn, Kindle Cloud Reader, Box.net, Pandora...

Also see
• CreativeFan, HongKiat
New CSS3 features

• Hardware acceleration (certain implementations)
• Transitions, transforms, animations
  – Ease in/out, linear, or custom applied to position, colors, fonts, boxes, sizing, alpha, strokes, shadows, borders & margins, etc.
  – Scale, shear, rotate, translate, 3D
• Text control
  – selection, wrapping, font options, alpha
• Stylistic elements
  – gradients, rounded corners, shadows, reflections, borders
Web GL

- JavaScript interface to 3D graphics
- WebGL based on OpenGL ES 2.0
- Renders to HTML Canvas, uses DOM
- Managed by Khronos group

- [http://www.chromeexperiments.com/webgl](http://www.chromeexperiments.com/webgl)
- [http://www.ibiblio.org/e-notes/webgl/webgl.htm](http://www.ibiblio.org/e-notes/webgl/webgl.htm)
Dispelling the myths

• “HTML5 apps require an Internet connection”
  – False—you can build unconnected embedded systems using HTML5; even browser has offline apps

• “HTML5 is very far way”
  – False – ratification has been estimated 2020, however W3C recommendation status is expected in 2014. HTML5 is here now.

• “HTML5 needs a browser”
  – No; you need a chromeless browser or HTML5 engine
Why HTML5 for auto?

Build on something bigger than automotive

- Ecosystem – developers, tools, companies
- Standards – no vendor lock-in
- Flexibility – fluid deployment and architectures
- Branding – brand same app on different cars with CSS
- Lifespan – will be supported for long time
- Time to market – easy to use and leverage
- Powerful – rich application environment
- Cross-platform – deploy apps on phones and car
Example HTML5 integration