



The Power of We™

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## HTML5, WebRTC, and Evolving Impact to Contact Centers

**Dr. Valentine C Matula, Senior Director**  
Multimedia Technologies – Avaya Labs  
[vmatula@avaya.com](mailto:vmatula@avaya.com) / +1 614 825 6415

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HTML5 & WebRTC have the potential to change the landscape of both **technology-based customer service** and **agent-based customer service**

## **Strategic Planning Assumption:**

By 2015, mobile Web technologies will have advanced sufficiently so that half of the applications that today would be written as native apps instead will be delivered as Web apps.  
– *Gene Phifer, Gartner, 2012*

# HTML5

- ▶ Extends the role of a browser from...
  - ▶ A visual markup language interpreter
- ... to ...





An extended programmable platform for:

- Responsive visual client services
- Core-provided voice & video services
- Expanded programming capabilities



# Evolving Status of HTML5



- ▶ Industry Momentum: Major browsers support it:  
 Safari,  Firefox,  Chrome,  Explorer 9
- ▶ HTML5 definition is not final, but is closed to new issues.
  - As of December 2012, is a [W3C Candidate Recommendation](#)
- ▶ Three areas with different maturity:
  - Visual Interaction facilities, programming and control (near maturity -- several browser implementations)
  - Video and audio output (near maturity – but several codecs instead of original one)
  - Video and audio capture/encoding (Browsers now introducing support – zero to 12 months out)

## Current Status Link

- ▶ <http://html5test.com>
- ▶ Chrome for PC now has full Voice & Video support
- ▶ Chrome Beta for Android now has Voice – (6-Mar-13)

desktop browsers

tablets

mobiles

gaming

television



first place

476

Maxthon 4.0

runner up

468

Chrome 26

upcoming

468

Chrome Canary

## current

	Score	Bonus	
Maxthon 4.0 »	476	15	
Chrome 26 »	468	13	
Opera 12.10 »	419	9	
Firefox 20 »	394	10	
Safari 6.0 »	378	8	
Internet Explorer 10 »	<i>Microsoft Surface and others</i>	320	6



**first place**  
**417**  
Chrome 25

**runner up**  
**411**  
RIM Tablet OS 2.1

**upcoming**  
**485**  
BlackBerry 10

## current

		Score	Bonus
Chrome 25 »	<i>All Android 4 devices</i>	417	11
RIM Tablet OS 2.1 »	<i>BlackBerry PlayBook</i>	411	9
Opera Mobile 12.10 »	<i>Multiple platforms</i>	406	12
Firefox Mobile 19 »	<i>Multiple platforms</i>	399	14
iOS 6.0 »	<i>Apple iPhone, iPad and iPod Touch</i>	386	9
Silk 2.2 »	<i>Amazon Kindle Fire</i>	358	13
Internet Explorer 10 »	<i>Microsoft Surface and others</i>	320	6
Android 4.0 »	<i>Asus Transformer Prime and others</i>	297	3
webOS 3.0 »	<i>HP TouchPad</i>	224	7



# WebRTC



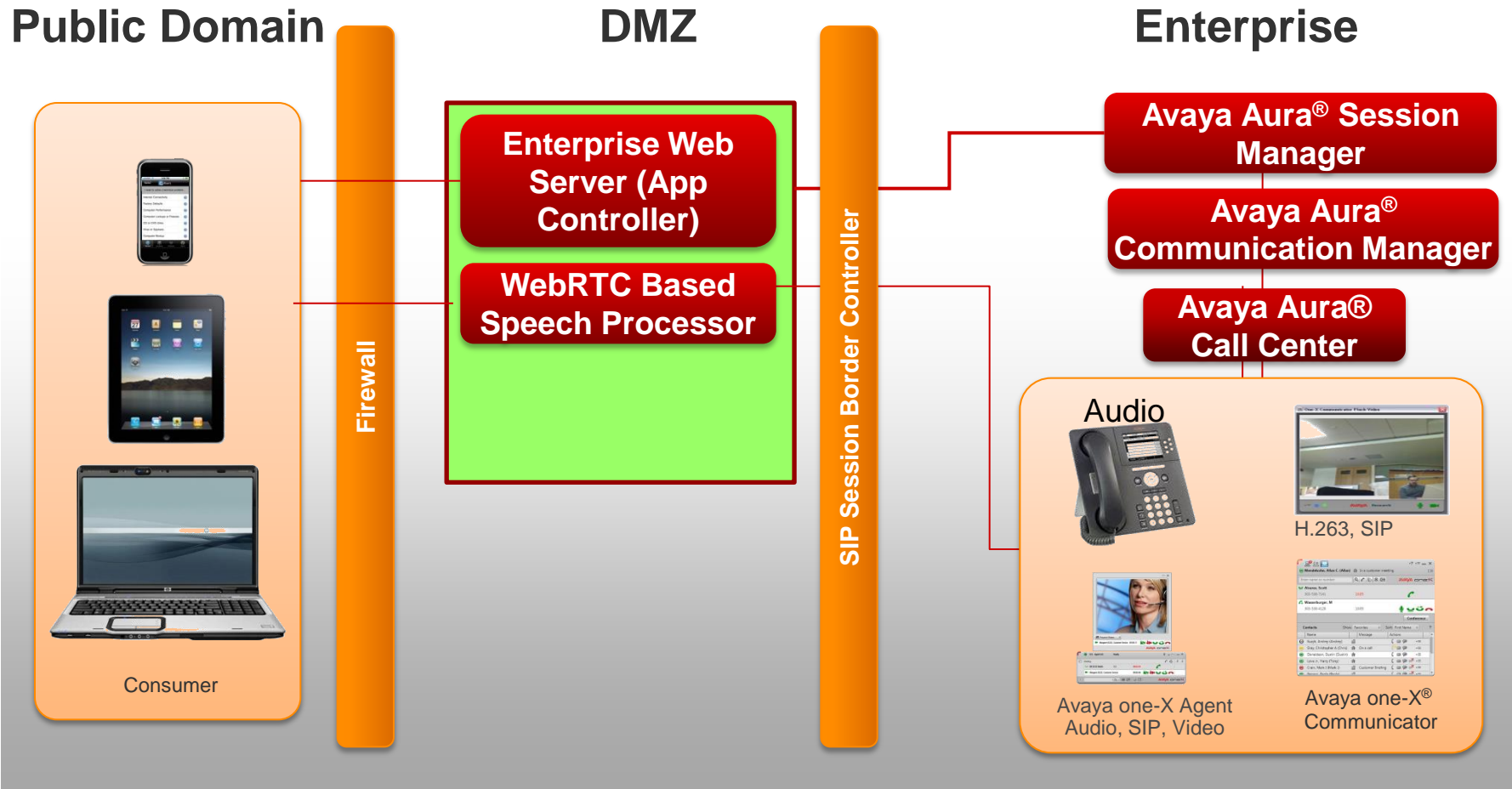
- ▶ WebRTC is a “partner” to HTML5
  - Provides a container for media signaling and codecs
    - Signaling: Web sockets only
    - Codecs: Common (G.711) and internet-optimized (iBLC, OPUS)  
Common (H.264 AVC), and alternatives (VP8)
  
- ▶ Google Media Engine (GME) has been called “WebRTC” – they’re not the same
  - GME is the basis of the Google media contributions to the Chrome WebRTC module, derived from GIPS

# WebRTC Audio

Adopters of the Internet-optimized codec OPUS will enjoy a superior audio experience

- ▶ WebRTC requires two audio codecs: G.711 and OPUS
- ▶ What is OPUS?
  - Open source codec, standardized in IETF RFC 6176
  - Best of internet and telephony characteristics
  - Two codecs in one package: SILK and CELT
  - Good music on hold (Contact Center)
  - Good packet loss concealment (Internet)
  - Good transcoding (conferencing and warm transfers)
  - Spans the range from standard voice to HD quality

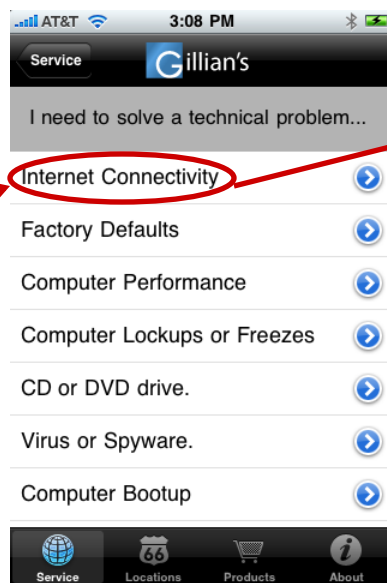
# Potential HTML5/WebRTC-Based Application Architecture



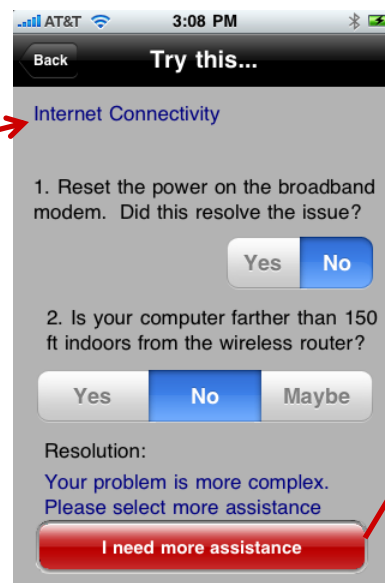
# Dynamic Applications via HTML5, Quick Server-based Speech Apps Using WebRTC Transport



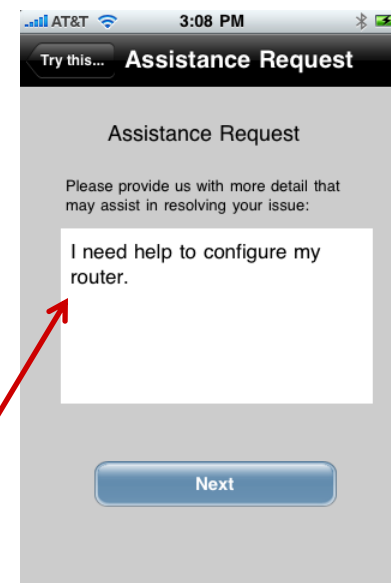
Technical Support



Type of issue



Basic Troubleshooting



Description of Problem

## HTML5 Plus and Minus

- + Web application control using HTML5—responsive, but thin client
- + Speech resources in enterprise using standard access via WebRTC and browser—no need for downloaded app
- + Complete understanding of application context

...but...

- Must be connected to Internet
- No additional optimization for device
- Simple apps can be done quickly—  
sophisticated ones not so easy

# The Future of Customer Service

1. Often starts with Web or Mobile Application
2. Issue or question encountered
3. (Text chat from PC user)
4. Add voice (and video, if you want) to talk about issue
  - Today a callback
  - Soon, HTML5/WebRTC transport
5. Cobrowsing / remote control if needed
6. Resolution

# Live Agent Contact Center Changes

- ▶ No need for IVR—
  - If you are just starting, visual choices are fast
  - If you are in an app, we already know where you are in your interaction with the company
- ▶ Move from “PBX ACD” to Work Assignment—the first work assigned might be that text chat !
- ▶ Likely codec is not G.711 / G.729—it’s OPUS, affecting:
  - Contact center endpoints
  - PBX systems  
(conferenced transfers, escalations, offsite agents)
  - Recording and review systems
  - Speech Analytics (post-call and real-time)

# Summary

- ▶ HTML5 / WebRTC is nearly here
- ▶ OPUS is the new change in audio
- ▶ Server-based applications can be made thin client now
- ▶ Contact centers will embrace 'Escalating Customer Service'
  - Adding voice is a natural step
  - Codec change will affect every component
  - The change in efficiency will be huge



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