Applications Everywhere: Getting to Application Portability on Multiple Platforms

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Intro

- Why portability matters
- Top issues affecting app portability
- Strategies for mitigating platform differences
Types of Portability

- VoiceXML browser vendors
- Browser and ASR engine combinations
- Browser platform and ASR engine releases
- TTS - voices, pronunciation and SSML support
Why Portability?

• Better economics
• Avoid vendor lock-in
• Hosted failover
• Platform upgrades
• Platform end of life

Standards are necessary, but not sufficient
Naysayers

• “Portability is for canoes”
  • Jim McCarthy
  • Microsoft 1995
  • Dynamics of Software Development

• Can be hard and costly for small teams

But:

• Third party solutions can help

• Differences that matter might not be so bad

http://www.flickr.com/photos/mcdett/30679109/
Where Standards Leave Off

- Behavioral/Rendering differences
- Feature differences
- Web apps have similar HTML browser portability issues, especially with standards compliance

Images from http://en.wikipedia.org/wiki/Acid3
Caching and Rendering

- Audio file caching affects rendering
- Understand web/app server caching headers
- Browsers don’t always respect HTTP caching headers
- Ambiguity in HTTP spec regarding caching
  - URL request parameters
- Some browser platforms include a caching server that needs to be configured
Grammar Fetching & Caching

• Grammar caching for same ASR can vary per VXML platform
• Some browsers fetch grammar and forward to ASR
• If ASR does fetch, it needs a route back to app server
• No cookie returned when fetching

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Feature Differences

• CTI
• Full call recording
• DTMF handling by browser
• Failover, e.g., secondary and tertiary URLs
• Voice authentication (VXML 3)
• Log correlation
ASR Differences

• Interpretation of confidence level values
• Precompiled grammars
• Hotword bargein type
• incompletetimeout and completetimeout
• Treatment of semantic ambiguity
• Support for grammar weights and probabilities
• GARBAGE grammar implementation (must be accepted, but can be ignored)
Portability Strategies

• Build an abstraction layer
• Runtime platform detection
• Runtime configuration properties
Detection Details

• Browser User Agent
• But what about ASR?
• Not updated for every version
• Can use URL path
  • http://example.com/my_app/browser_asr.vxml
• Control via DNIS-URL mapping on browser
Runtime Configuration Properties

• Define property values for each variant
  • engine.browser_asr.fetch_audio_delay
  • engine.browser_asr.incomplete_timeout
• Include defaults
Other Platforms

- Twilio, Tropo, Ribbit, Jaduka, ifByPhone, etc.
- Richer telephony features
- Speech support can vary
- Built-in API bindings for multiple languages
- Some built on a VXML/CCXML platform
- No portability
Thank you

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