



AVIOS - Mobile Outbound Speech
Applications and Options
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Speech Understood

About LumenVox



Core Speech Recognition Technology

- ASR (Automated Speech Recognition)
- TTS (Text-to-Speech)
- AMD (Answering Machine Detection)
- Tuning Tool, Grammars, App Dev Tools

Speech Solution Development

Developed speech applications in 18 countries using VXML and application tools

Hosting Applications for 10 years

All VoIP network, industry-specific solutions

In the Shadow of the Next “Shiny New Thing”



New opportunities to do it right with speech technology:

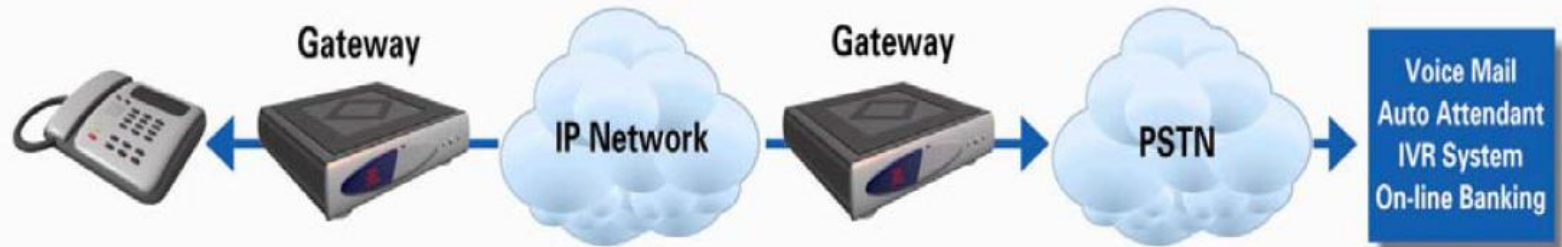
- Re-emergence of “Press or Say One”
- The case for high quality Call Progress Analysis
- Return to Mobile Workforce Automation

DTMF Tones over VoIP Problems Increasing

Scope: Any VoIP network, especially Asterisk PBXs

Summary of issue:

- VoIP device/media gateway must detect and recreate tones with same amplitude, frequency, length



- Need to identify and eradicate extra in-band tones
- BUT first 5ms of tone sent through before squelching
- Add tone recreated by PSTN
- App perceives duplicates (“11223344”)

DTMF Tones over VoIP Problems Increasing



Severity and Implications:

- VoIP was designed for speech, not tones
- Est. 0.5% of calls in US, 1-2% in Latin America affected by double digits and increasing
 - What is the tipping point of usability?
- Speech recognition of digits can resolve this issue

High Quality Call Progress Analysis



Scope: Automated outbound dialing in UK/Europe

Summary:

Ofcom – 3% “abandoned call” limit in 24 hr period

- Agent must be connected within 2 seconds
- AMD “false positives” included in “abandoned calls”
- AM numbers cannot be called back until next day
- Effectively killed use of AMD in the UK

Opportunity:

- Improved AMD using speech recognition technology

High Quality Call Progress Analysis



Scope: Automated outbound mobile notifications in US

Summary:

Telephone Consumer Protection Act - prevented all outbound calls to mobile phones

Mobile Informational Call Act of 2011

- Automated informational calls permitted to mobile devices where business has a relationship
- Includes collections

Opportunity:

- New opportunities for “update” apps
- Hybrid mobile applications

Mobile Workforce Automation – Take Two



Issue: Early WFA apps were difficult to justify

- Complex, low volume, unreliable

New: Convergence of holistic solutions across channels provide new WFA opportunities

- Cloud computing
 - Hub to communication gateway
 - Computational capacity at low cost
- Common web services infrastructure
 - Mobile apps to leverage (e.g., maps, geo)
- 4G connectivity (e.g., pass images, driving info)
- Low cost mobile platforms & peripherals (e.g. tablets)

MFA Can Now Tie to Customer



Example: Automated delivery management process

- Outbound call to schedule appointment
- Route scheduling and dynamic changes
- Automate contextually sensitive outbound notifications without driver/store involvement
 - Update customer real time on delivery window
 - Acknowledge changes
 - Let customer opt out late in the cycle
- Communicate with inventory systems

Mobile Opportunities



Sometimes the best opportunities are “Mulligans”

- Infrastructure and regulatory issues addressable with most basic products
- WFA impediments being solved quickly
 - Cost effective and practical