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