



***Voice Search 2008:
Human Voice Automation***



- **Human voice automation (*aka* the “hidden operator”) can provide DA the opportunity to:**
 - 1. Flexibly introduce new services**
 - 2. Build user confidence in IVR**
 - 3. Learn & tune in real time**



Human Voice Automation

1. FLEXIBLY INTRODUCE NEW SERVICES

- **The killer application for directory assistance is *information services***
 - **Its not about free vs. paid**
 - **Its not just about automation**
 - **Its about content; better content, new content, more content**



New Content Coming to DA

- **Movies times**
- **Weather**
- **Horoscopes**
- **Driving directions**
- **Stock quotes**

- **Adding new content services to US/CDN directory assistance in a cost effective manner takes too long**
 - **Changes to IVR/call flow**
 - **Building of new grammars**
 - **Tuning/testing cycle**

- **And even if we invested... we don't know if anyone would ever use it**
- **Can't predict caller behavior**
- **Some content solution may have a short lifespan**

- Provide caller with more open-ended “what” question
- Use human voice automation to *understand* and *route* request to general search engine accessing standard data feeds

- **Sourcing and automating the presentment and delivery of data feeds is simpler than understanding the request**
 - **Example: primary, caucus & election voting locations**
 - **Flu shots**



Human Voice Automation

2. BUILD USER CONFIDENCE IN IVR TECHNOLOGY

- Majority of people have a *bad* IVR story; few have a *good* one
- The *bad* story is the one that users remember and share with friends
- Breeds distrust & dislike of IVR

- **Create *good* user impression through a pseudo-IVR experience**
- **Users don't know that human voice automation is not real automation**

- **Once the user acceptance is in place real automation can be introduced**



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3. LEARN AND TUNE IN REAL TIME

- **Building grammars takes time**
 - **Knowing what to build grammars for takes even longer**
 - **Building synonyms is key to building understanding**
- **Tuning is an iterative process**
- **Transcription takes time**

- **ASR may not be available or mature enough in language and/or dialect required**

- **Human voice automation creates direct linkage between caller utterance and caller intent – in real time**
- **Creates a tagged library of caller utterances that future system can learn from**

- **Support for new languages requires that the hidden operator understand that language**
 - **Easier to come by people who understand languages than ASR**
 - **Don't need to buy/invest in ASR**



Spoken Communication & Call Genie Partnership

REAL LIFE CASE STUDY

- **Middle Eastern DA service**
- **Business name & category
local, mobile search service**
- **Enhanced service objectives**
- **Multiple languages which have
little or immature ASR support**

- **Human voice automation on the frontend**
- **Flexible search engine and rich data feeds support local search**
- **Simple grammar and/or DTMF backend**
- **Multimodal delivery mechanism**

- **Anticipated 4:1 caller to hidden operator ratio at start**
- **Over time system will learn, ASR will improve & non-human automation will increase**
- **Caller to hidden operator ratio to grow towards 8:1 and higher**



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CONCLUSION

- **Human voice automation can provide DA (1) with the flexibility to introduce new services, quickly, and cost effectively**
 - **Better content, new content, more content = more callers!**

- **Human voice automation can provide DA (2) with opportunity to build user confidence in IVR**
 - **Get rid of the *bad* experience stories and create *good* ones**
 - **If people believe that IVR understands them then they will not resist it**

- **Human voice automation can provide DA (3) with ability to learn and tune in real time**
 - **Eliminate the technology constraint when deploying new services or new languages**
 - **Create niche solutions**



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THANK YOU ;-)