Mobile Personal Assistants: Today and Tomorrow

By Sensory
There are MANY
- Siri and Siri like
- Diet
- Finance
- Automotive
- Travel
- Malls
- Cleaning
- Fitness
- Etc. etc. etc. etc....
• Most are Very Similar
  – Similar uses:
    • Navigation
    • Weather
    • General information

• Nearly ALL Require a Button Press, Why?
Question:

If it has speech recognition, why do we have to use our fingers?
For VERY GOOD REASONS there has been a commonly held perception...

- “Voice triggers always false fire”
- “They are unreliable”
- “Don’t work in noise”
- “Require close talking microphones”
In 2010 Sensory had a BREAKTHROUGH which resulted in:

- Very Low Equal Error Rate
- Ultra Small Footprint - Less MIPS - Less Memory
- 100% Embedded No Cloud Connection Required
- MOST Noise Robust Solution Available

We think this technology is by far the best in its class!
Q: Where’s the Recognizer?

A: The recognizer should be in both local device and the cloud.
Phone vs The Cloud

• Cloud provides more MIPS & Memory
  – Great for navigation, internet searches, dictation

• Phone provides access regardless of connection or connection strength
  – Great for name dialing, calendaring, POI’s, music selection, etc.
Lowest Power is Key

- **Users Don’t Want to Manage**
  - Must be always on, always listening

- **Running at the DSP/Codec provides an AWALYS on, ALWAYS listening feature**
  - Sensory has ported to several DSP/Codecs
  - Running less than 2mA’s
    - If the phone was not used at all, this translates into a 20 minute reduction in battery life.
    - With normal phone usage, the user would not see a difference!
Key Technologies
Tomorrow’s PA

• **Bye Bye Button!**
  – TrulyHandsfree™ Voice Control
    • Allow customers the feature and power of hands free control that actually works.
      – Ideal for in use in car, home, office, etc.
      – Ideal for areas where customers wear gloves
    • Better access to apps
      – Calendar, texting, navigation, contacts, etc.
Key Technologies
Tomorrow’s PA

• **Trigger to Search**
  – We have already removed the need to press a button or touch the phone
  – Next is to remove the need for the user to look at the phone and wait for responses
  – Trigger to search provides the MOST natural user interface available
  – Sensory runs a circular buffer between the trigger and what we pass to the cloud recognizer – result:
    • “Hello smart phone navigate to the home depot in Tigard Oregon”
Key Technologies
Tomorrow’s PA

- **User Defined Passphrase**
  - More than 50% of users DON’T lock their smart phones....why?
    - Hassle!
    - Unsafe while driving
  - Most natural means of security
    - Fast and accurate
    - Hands Free
    - Ease of use
  - Quick enrolment
  - Accurate: 1% EER in quite and 8% EER in noise
**Key Technologies**
*Tomorrow’s PA*

- **Speaker Identification**
  - Ideal for smartphone/tablets/TV’s that are shared in the home
  - One simple step (trigger and ID) with one phrase
    - Most natural
    - GREAT for home screen settings
      - Show only those applications that I want to see, not that the kids use
    - GREAT for favorite URL’s, etc.
Key Technologies
Tomorrow’s PA

• **Smart Triggers**
  – Based on TrulyHandsfree™ Voice Control and running on the app processor
  – Smart use of voice triggers at specific times to get around issue of battery life
    • “Call that number/person” - when user receives an email/SMS with a phone number
    • “Book that appointment/meeting” - when someone receives a calendar invite or date “Take me there” follows link in text message
    • “I want that song” – when listening to Pandora or similar the phone could listen for this phrase and allow the user to easily and safely purchase songs
What is the Ultimate PA?

• The PA of the future will learn about the user and not only know them by name as is the case today, but also:
  – Voice – voice password, user define triggers, etc.
  – By sight
  – By description
  – Their likes/dislikes
  – Habits
  – Kind of like a mom!
Sensory Customers

19 years experience, more than 200M products
Thanks!

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