



Bluetooth Headsets as Client for Voice Search and Other Voice Functions

Voice Search March 2009

Sensory is the Leader in Speech Technologies for Consumer Products

- **Founded in 1994, VC backed, private company**
- **Fabless IC & SW licensing biz models**
 - #1 market share in speech recognition chips
 - #1 market share in voice biometric chips
 - #1 speech recognition market share in Bluetooth ICs
- **Expertise in small footprint embedded speech**
- **Strong patent and IP position**
- **Highly experienced in speech application design**
 - Focused on consumer electronics, toys, and Bluetooth headsets/HFKs

Improving the User Experience for over 15 years!

Sensory has Hundreds of Customers and Partners with >50,000,000 products shipped

Telephony	Automotive	Home Electronics	Toy & Learning	Bluetooth
      	     	       	        	       

More Customers, More Products, More Experience

Why are Bluetooth Headsets Important?

- **Wide spread acceptance of BT in Wireless Handsets**
 - >800 Million handsets to ship with Bluetooth in 2009
 - 2/3 of handsets sold include Bluetooth
- **BT Headsets - Large volume/wide usage product**
 - Over 80M units sold in 2008
 - Double digit growth forecasts
- **First major VUI based consumer electronic product**
 - No keyboard, no display, no room to add anything
 - Mic & speaker embedded into product
- **Increasing power and memory**
- **Optimal environment for capturing voice**
 - Great S/N ratio – could make automotive recognizers work!
 - Beamforming, echo cancellers, noise reduction already deployed
- **Headset is first stage of entry for voice search**
 - Great for reinforcing keyword commands
 - “Call ATT”, “Purchase Music”, “Dictate Message”, etc.

Why a VUI for Headsets?

- **Form factor**
 - Lightweight and compact size desired
 - No room for a display
 - No room for a keyboard
- **Driving safety**
 - Hands on the wheel
 - Eyes on the road
- **Convenient feature & information access**
 - Buttons too few and difficult
 - Access to phone based VR
 - Access to server based VR
- **Ease of use**
 - The most natural way to communicate
 - No manual necessary

Bluetooth Headset & HFK Value Added Features through Voice I/O

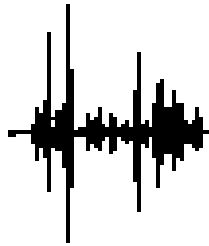
- **Basic access to information**
 - Press button & make requests
 - One button many functions
 - Example: “What can I say?”, “Am I connected”, “Check battery level”
- **Handsfree control**
 - Respond to voice-prompts to create action
 - Example: Incoming call from 408-625-3325, would you like to accept?
- **Voice Dialing**
 - Favorites
 - Preset names
 - Last number redial
 - Call back last incoming call
 - Continuous digit dialing (feasibility confirmed)
 - Examples: “call back”, “call home”, “call voicemail”
- **Voice setting of controls – great for music**
 - Volume, tone, song, etc.
- **Voice prompting instead of “beeps”**
 - Confirmation of incoming and outgoing phone numbers
 - Natural sounding voices available in any language
 - Easier to interpret than beeps and flashes
- **Incoming CallerID by NAME or NUMBER**
- **FUN – apps HUGE on cellphone...voice apps on headsets?**

The Headset/Client/Server chain -each with speech recognition



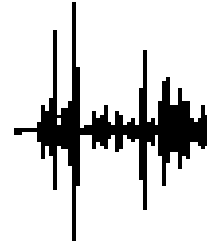
Headset

- Local control
- Simple dialing
- Voice search client



Handset or PND

- Client Name dialing
- Handset/PND controls
- Visual Display



Server

- Voice Search
- Purchasing
- TTS & Dictation

The Headset is the key point of entry

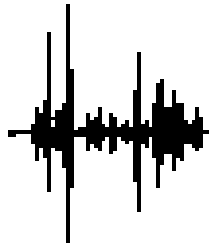
- *Increasing MIPS and memory*
- *Growing functionality and shrinking size*
- **REQUIRES VUI**

A Hybrid Client/Server solution

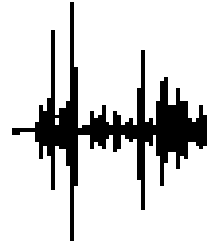


Headset

- Category Triggers
 - Search
 - Dictate
 - Read emails
 - Mapping
 - Social Networking
 - Other headset functions



Handset or Navigation Device



Server

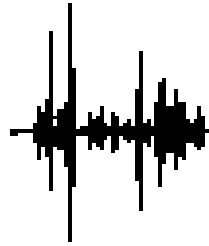
Hybrid Client/Server Provides

- Internet Search & info access
- Dictation & TTS technologies
- Phone dialing functions

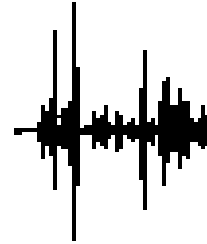
Headset Initiated Recognition



Headset



Handset or
Navigation Device



Server

- **Seamless voice user interface**
 - Safer
 - Easier
- **Better S/N gives better accuracy results**
- **Reinforced voice usage models**
 - “you can say...”
- **Best of all paradigms recognizers**

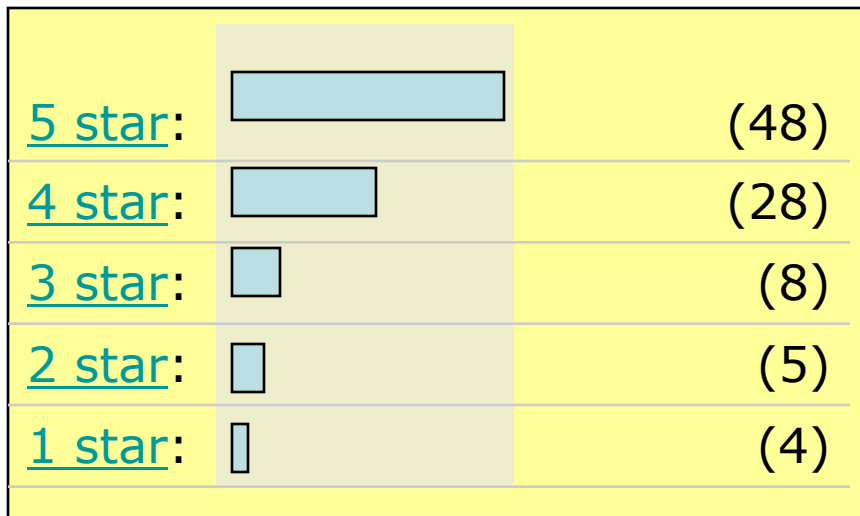
Where are we?

Editorial Reviews of the First BlueGenie on BlueAnt V1

- **CNET EDITORS CHOICE AWARD** *"an incredibly intuitive 'voice user interface' that is a snap to use"* –
 - CNET Editorial Review, Sept/2008
- **WINNER – BEST FEATURES over Jawbone 2 in CNET Prizefight**
 - CNET Prizefight, Oct/2008
- **What's revolutionary about the BlueAnt V1 is the BlueGenie voice control engine. Nothing else on the market can come close to it."**
 - SlashGear.Com Review Aug/2008
- **"..in terms of user-friendliness and intuitive control, the V1 beats the Jawbone to a bloody pulp..."**
 - PhoneDog.Com review Nov/2008
- **"Functionality-wise, the V1 is spot on and offers a fantastic voice interface system that never revealed any hiccups during our testing"**
 - MobileBurn.com Review Aug/2008
- **The V1 with BlueGenie is "...a useful advance for an industry that's been focused on everything except ease of use."**
 - Peter Svennson, Associated Press August 26, 2008
- **"What sets this headset apart is the BlueGenie Voice Interface...I'm surprised no body else thought of this..it just makes sense... the best Bluetooth headset available today."**
 - TreoCentral.Com review Nov/2008
- **"The voice-response system, called BlueGenie and made by a company called Sensory, is surprisingly accurate for such a small device. It's better than the voice system in my Blackberry phone."**
 - U.S. News & World Report Aug/2008
- **"The voice commands are nothing short of fantastic..... they have left much of the field far Behind**
 - Just another mobile Monday.com Nov 2008

Consumer's Agree BlueGenie is AWESOME

- Highest rated headset on Amazon, CNET, Crackberry.com and more



93 Amazon Reviews



20 Crackberry Reviews

Sensory forming Partnerships to make this a reality...

- **Sensory and #1 headset ODM Foxlink partner on BlueGenie implementations**
- **Sensory integrates BlueGenie with noise vendors STEP, Dynamic Hearing and Acoustic Technologies**
- **Partnerships formed with server based search/recognition companies**
 - Google, Jingle, Microsoft, Vlingo
- **Catching on with headsets and carkits**
 - 3 headsets and 2 carkits announced at CES

***Give Bluetooth Headsets
the Recognition they
Deserve!!!***

Thanks!

