A Year Using Voice Search

Gary Wright

Applied Speech Resources
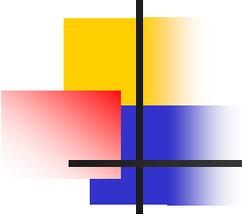
Voice Search Conference, 3/4/09
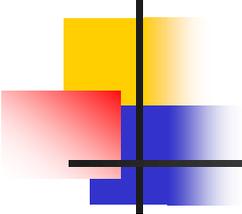
The Perspective

- Not engaged in any voice search projects.
- Speech recognition industry veteran.
- VUI designer.
- Consumer of voice search applications.
- Frequent traveler.
- All observations are based on actual calls for real purposes.

The Questions

- Do voice search applications live up to the hype from Voice Search 2008?
- For what tasks are they most useful?
- How well do the applications work?
- What is the user interface experience?
- How do phone-based voice search and multimodal voice search differ?
- Is the Smartphone a friend or a foe?
- What could viable consumer business models be?
- How could voice search provide more value?
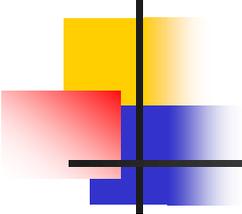
Phones & Apps

- Phones
  - Verizon – Samsung GSM-CDMA phone
  - AT&T – Apple iPhone 3G
- Phone-based Apps
  - 800-GOOG-411
  - 800-CALL-411
  - Brand X
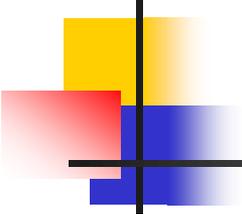- iPhone Multimodal Apps
  - Google
  - Vlingo
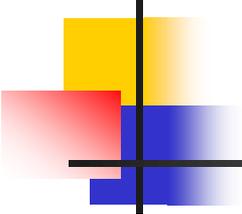
Real-life Questions

- Which towns in the middle of nowhere have decent hotels or motels?
- How much is a room across the street?
- What's the address of that restaurant where we're meeting?
- How late is the store open?
- Is my friend working there tonight?
- Is there a store near where I'm going?
- Is there a good BBQ restaurant nearby?
- Doesn't this hotel have another location nearby?
- What restaurants around here are open after 10?
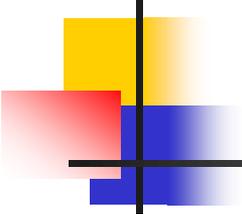
Observations

- Use Directory Assistance a lot more when it's free.

- Main benefits now are phone numbers, addresses, and maps.

- Don't always want to be connected to the number right away.

- A lot of the info desired could be gotten automatically, but isn't available yet.

- Used mostly on trips, while driving.

- Use phone-based apps more.

Phone vs. Multimodal

- Phone
  - Better while driving
  - Immediate information
  - Connects calls
  - Better recognition for business names
- Multimodal (iPhone apps)
  - Information persists
  - Search the web
  - Worse recognition for business names
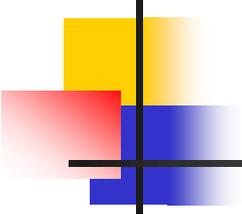 - How do you hold the phone?
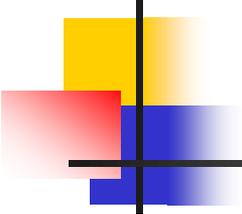
iPhone

- Pros
  - Link to maps
  - iPhone multimodal apps
 - Link to Internet search
- Cons
  - Modal dialog box from text message blocks the keypad.
  - Too many steps to retrieve text messages.
 - Screen blanking when orientation changes.

User Interface – The Good

- Business name, city and state in 1 utterance works well for large businesses.
- Set preferences for repeat callers.
- Automatically send text message with info.
- Longer lists are better.
- Link to maps.
- Phone-based apps work well while driving.
- Speech should eventually beat the iPhone keypad for search.
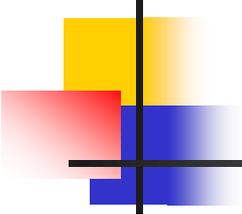
User Interface – The Bad

- Too quick to connect the call, misses commands.
- Limited to 2 choices and couldn't get the 3rd one.
- Same search, 2 calls - different result order.
- Repetition of chain names in listings.
- Changing command names.
- Push to stop talking.
- Disappointing multimodal integration.
- Inability to just use the current location.
- Recognition accuracy for smaller businesses.
- Recognition error rate for open search.
- TTS pronunciation of business names.
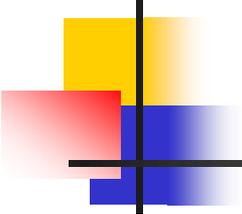
User Interface – The Ugly

- Heard an ad, then "All circuits are busy"
- No support for "Repeat" at the Main Menu.
- Recognition error at the Main Menu led to a state that couldn't be escaped. Nothing worked:
  - "Go Back"
  - "Main Menu"
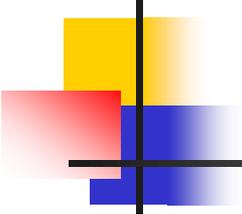 - "Cancel"
  - "Help"
  - Max errors
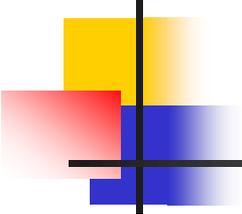
Smartphones – Friend or Foe?

- Friend
  - Links to maps and directions.
  - Connect to the wider internet.
 - Information persists on screen.
- Foe
  - Keypad entry of information is not bad.
  - User interface hurdles.
  - Sequential instead of simultaneous multimodal.
  - Competition from Smartphone apps.
 - Remember what web sites did to IVR usage.

Possible Business Models

- Ads on phone-only apps
  - Intrusive for business name searches.
  - Helpful for business category searches.
- Ads on multimodal apps
  - Ads alongside search results.
- Small monthly fee from carrier.
- Businesses pay, not consumers.
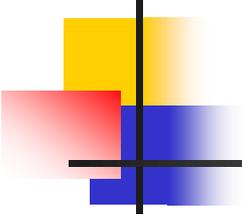
Improvements

- Recognition and TTS improvements.
- Better VUI design.
- Integrated maps and directions.
- Better use of current location.
- Better local search capabilities.
- Special handling for chains.
- Better support for the unplanned road trip.
- Targeted for caller goals.
- Better SmartPhone integration.
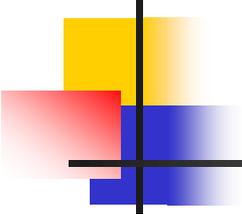
Contact Info

Gary Wright

President

Applied Speech Resources

gwright@airmail.net

972-820-9208

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