

Mobile Voice Search Expands Telematics Opportunities

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Dial Directions



Dial Directions Snapshot

- Team of speech recognition experts (co-founded Voxify)



- Dial Directions in the news



- Industry recognition

- (Overall Winner) **“Under the Radar” Mobility Conference 2007**
- (Winner, Consumer) **SiRF Location 2.0 Conference**
- (Runner-Up) **TeleAtlas LBS Innovators**

- Business development (announced)



Potential for New Speech Services

Advances in Speech performance

- Accuracy (domain-specific & general voice search)
- Speed

+ Connected devices

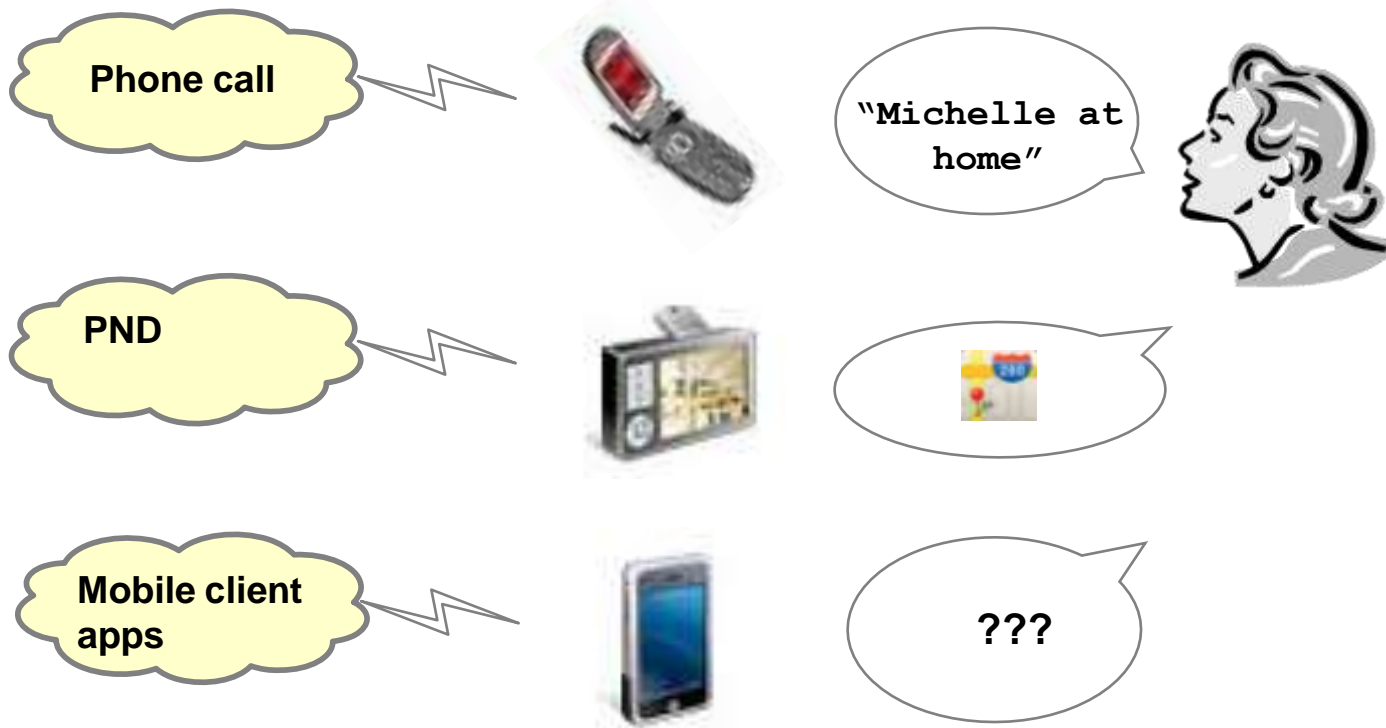
- Mobile phones
- Personal navigation devices or “PNDs” (e.g. Dash)

+ Better device UI (touch, visual)

- Touch
- Visual

**= Innovative Consumer Services in Telematics
& more**

Multiple Speech Solution Models



Phone Call

Case Study:

1-DIRECTIONS
(1-347-328-4667)

1-DIRECTIONS, a nationwide service for driving directions. (Voice in, SMS out)

1. Dial



2. Speak



3. Receive SMS



100% voice-automated

SMS Output



- MapQuest directions
- SMS “lowest common denominator”
- Optimized for 160 characters
- Clear & concise

THE WALL STREET JOURNAL.

September 19, 2007

Directions Are a Cellphone Call Away Free Service Uses Voice Recognition and Text Messages

by
The Mossberg
Solution

What's News—

San Francisco Chronicle

abc NEWS

The Boston Globe

CBS



WIRED

THE DENVER POST

YAHOO! TECH

Chicago Tribune



KQED

CNN Money



Newsday
LONG ISLAND

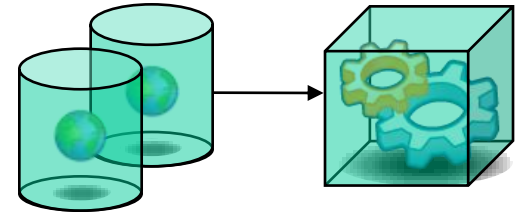
DENVERPOST



Higher accuracy: Speech is a GEO problem, not just Text

For breakthrough accuracy, we regard locations as Geo content with lots of context rather than strings of letters.

- Data
 - Disparate data types & sources
 - Distilling relevant elements into algorithms
- Region Sizing
 - Border expansion, overlap, optimization, multi-pass
- Biasing / weighting
 - Address density, business ratings, city size, web query volumes
- Proximity
 - Starting location, personalization
- Multiple Domains
 - Addresses, businesses, neighborhoods, events
 - Multi-pass



PND + Phone Call

Case Study:

1-DIRECTIONS + DASH Navigation (PND)



Phone call as “remote control” for connected PND

1. Map your phone number to your Dash ID



-
2. Call 1-DIRECTIONS and say Destination



“Delfina
Restaurant”

3. Destination received by Dash



Delfina
Resturant

“Remote Control” as Consumer Solution

- Ordinary phone call
- Zero learning curve
- Remote
- Hands-free in car
- “Shared” usage

- Hardware independent
- Time to market
- Server-side updates

Mobile (client) application

Case Study:

iPhone +
“Say Who”

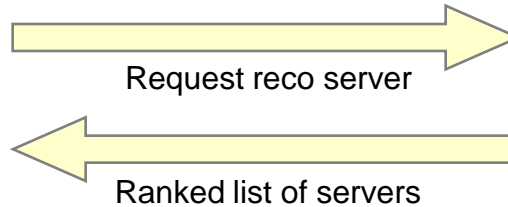
Mobile Client Application Architecture

Mobile Client Library

- Record utterance
- Compress by 5-10x
- Compile metadata
 - Type of reco (city, POI, etc.)
 - Context data (city, lat-long, etc.)

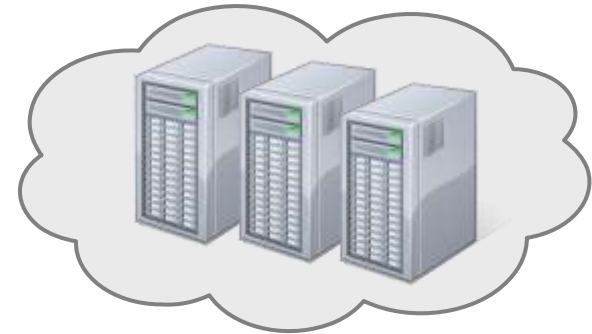


WiFi / Edge / 3G network



Service Lookup (DNS)

- Send recording & metadata to server
- Metadata determines reco strategy
 - Language model (city, lat-long, etc.)
 - Multipass
- Server stores data for personalization and product optimization



SAY WHO on the iPhone App Store

Most Popular Voice Dialer Application



1 million+ downloads
Top 5 Most Popular Free Applications
Free & paid versions

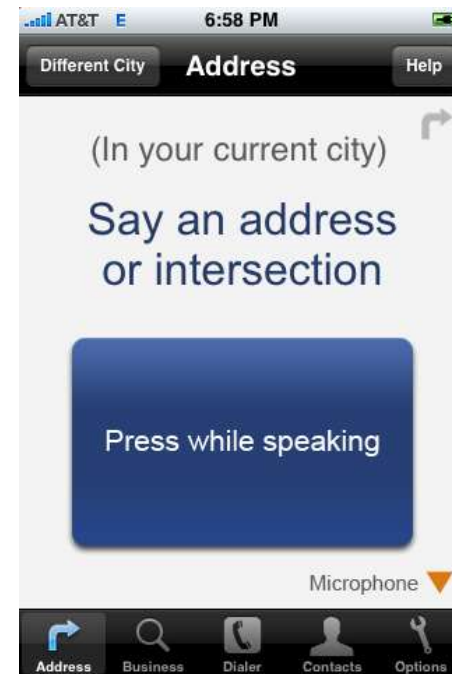
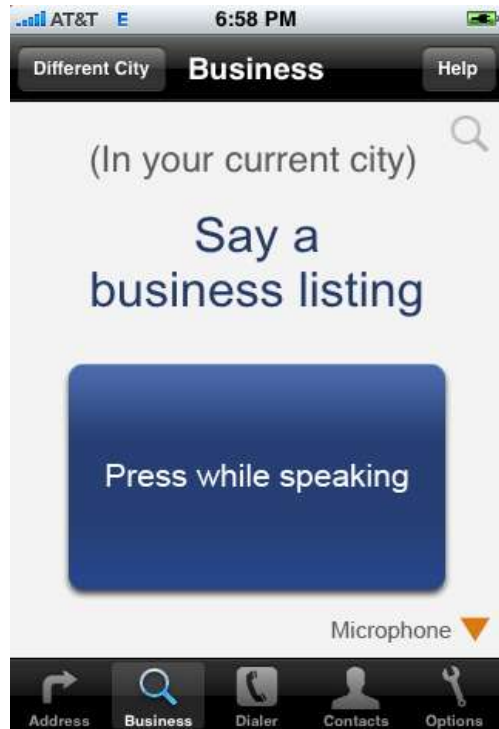


#1 Voice Dialer on iPhone

- Voice Dial Contact or #
- Audio Playback
- International Dialing
- User Options



Talk to Google Maps: Business & Address Search



Portal: "Talk to..." Yelp, YellowPages, Traffic.com





www.DialDirections.com



1-DIRECTIONS is nationwide service for driving directions: voice in, SMS out

Dial



Speak



Receive SMS



100% automated



“If you want to hear just how good speech recognition has become, dial Dir-ect-ions (347-328-4667) and ask for turn-by-turn directions.... **an impressive service and the voice recognition is the best I have ever used.**”

Andrew Seybold

“First off, Dial Directions is hands down **the best voice recognition system I have ever used.**”

Associated Content

“The demo I heard on the phone and in my subsequent several tests were **impressive.** The voice recognition and call flow was **easy to use and accurate.**” **Local Mobile Search**

OVERALL WINNER of Under the Radar / Mobility Conference 2007



PND's & Telematics: Call your PND

1. Map your phone number to your PND



2. Call 1-DIRECTIONS and say destination



3. Destination received by PND



Business Benefits to PND Providers:

- Superior usability (hands-free, remote)
- Wider consumer base & usage
- Differentiation
- Fast time to market
- Dynamic updates

Vision: Voice-entry is the ultimate interface



Carrier Services: Providing 411 with Directions

- 6B calls to 411 per year (\$7B)
- Mobile 411 growing rapidly
- Mobile 411 consumer surveys rank Driving Directions as **the #1 requested feature**

What is your most frequent intention in calling 411 from your mobile phone?
(Select top two choices)



Source: Opus Research (12/07), n=556

411

City & state please?

What listing?

I've found that listing.

Say "phone number", "text me" or "driving directions"

What city & state are you starting from?

Say your address or intersection?

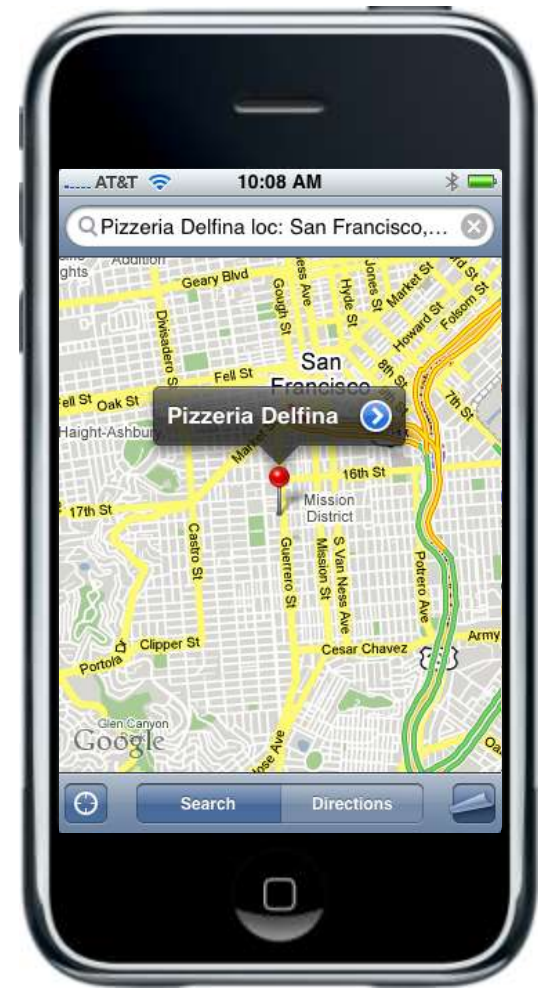
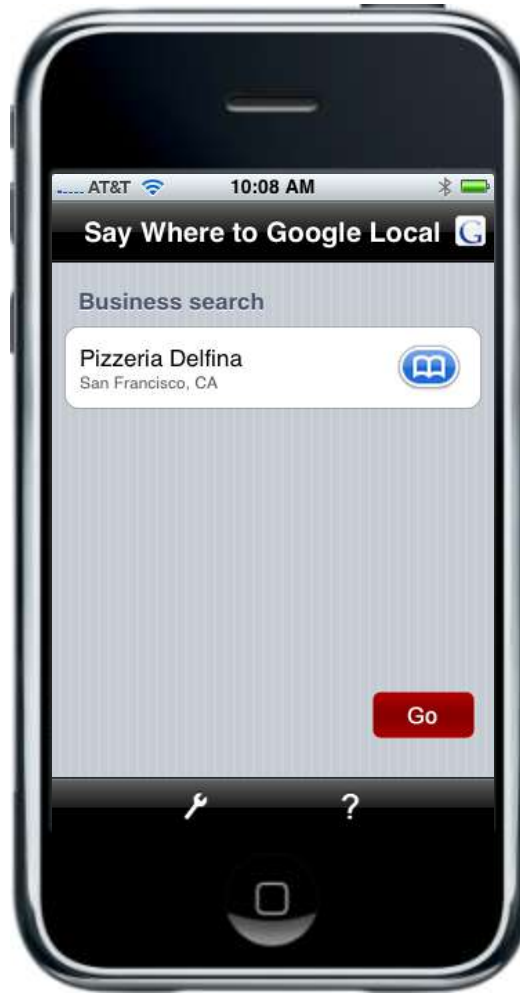
Directions are on their way by text message.
Goodbye!

Dial

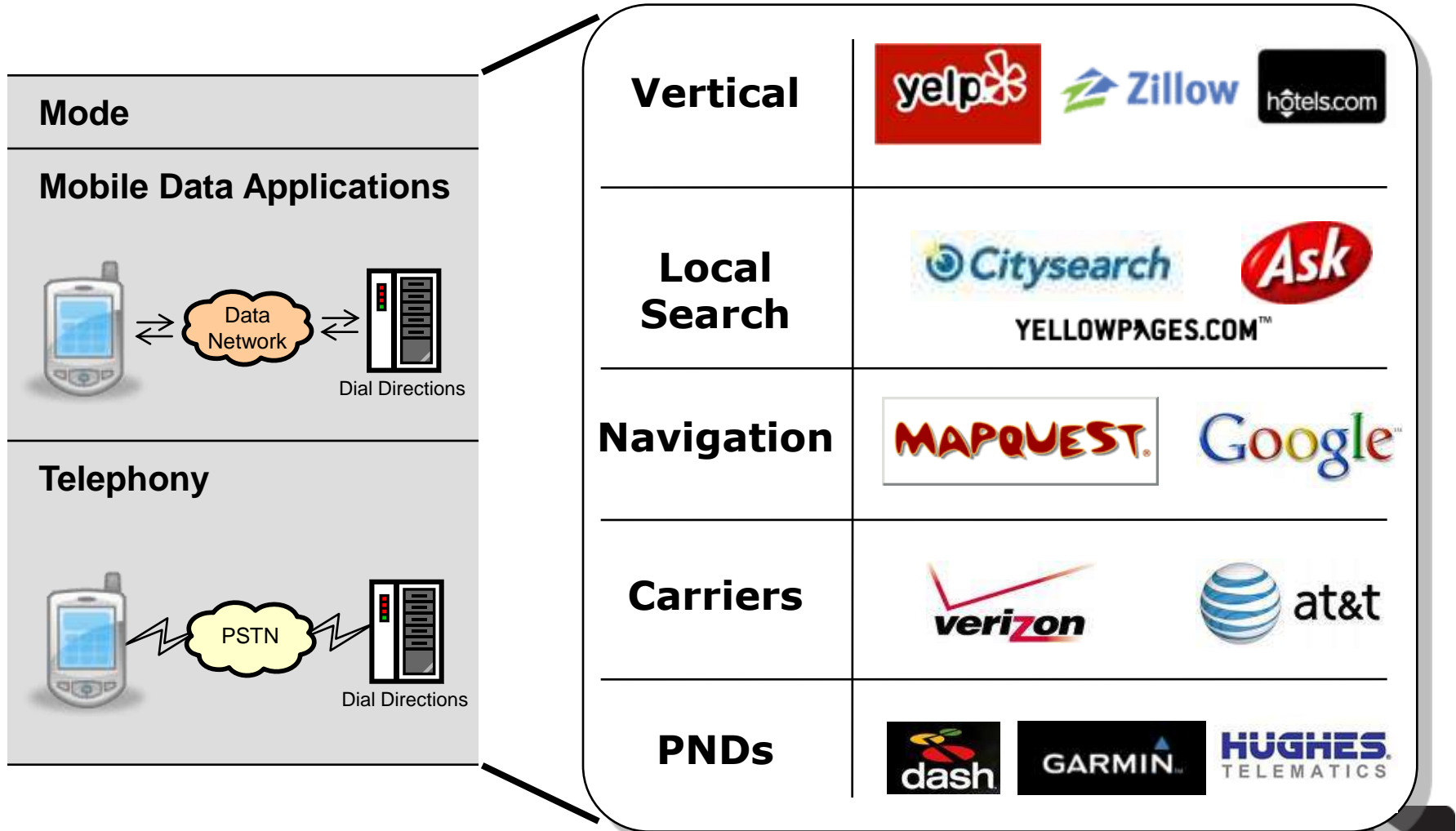
DIR-ECT-IONS

347-328-4667

“Say Where” – Voice Location Entry application



Mobile Services by Mobile App or Phone Call



Cracking the location entry problem

Speech has not been accurate or easy enough

- Our research began on Addresses: difficult problem
 - Most trying basic business listings, easier
 - Addresses complex, low accuracy
 - Others had failed
- “Ah ha” moment: new paradigm
- New approach got unprecedented quality
 - “the voice recognition is the best I have ever used” (Andrew Seybold)
 - “voice-recognition system that worked flawlessly.” (Yahoo Tech)
 - “impressive...easy to use and accurate” (Local Mobile Search)
 - “the best voice recognition system I have ever used” (Associated Content)
 - “never missed a step interpreting” (GPS Review)
- New paradigm applies to all location domains