



Voice User Interface for Smartphones

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Mobile Speech Interface – Why?



- Compelling user need
- Technology now capable
- Large number of users

Voice Applications

- ▶ Start with a few applications
 - ▶ Voice Dialing
 - ▶ Voice Search
 - ▶ Voice Maps
- ▶ Provide APIs/SDKs
- ▶ Create more voice apps
- ▶ Create even more voice app
- ▶ Voice enable all apps

Voice UI on Device

- ▶ Start with a few applications
 - ▶ Voice Dialing
 - ▶ Voice Search
 - ▶ Voice Maps
- ▶ Build broad interface as download
- ▶ Include broad interface in phone
- ▶ Design phone around voice UI
- ▶ Design apps assuming voice UI

- Broad interface across applications
- Allow users to say anything – system tries to do the right thing
- To be broad, we need to be shallow:
 - Fill in text fields
 - Direct users to appropriate application
 - Let the application figure out what to do

BlackBerry Implementation

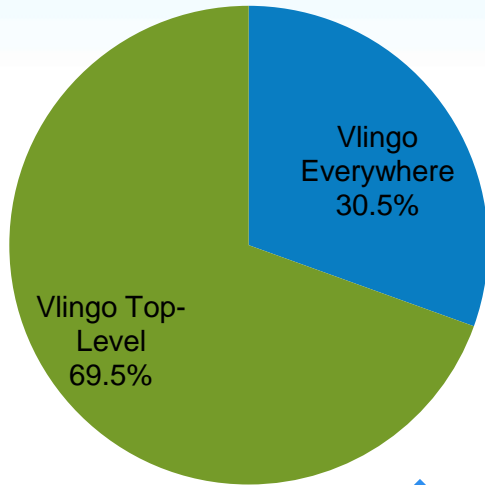


- Attach to side key
- Top-level control
 - Voice Dialing
 - Email
 - SMS
 - Web search
 - Etc
- “Vlingo Everywhere”
 - Fill any text field

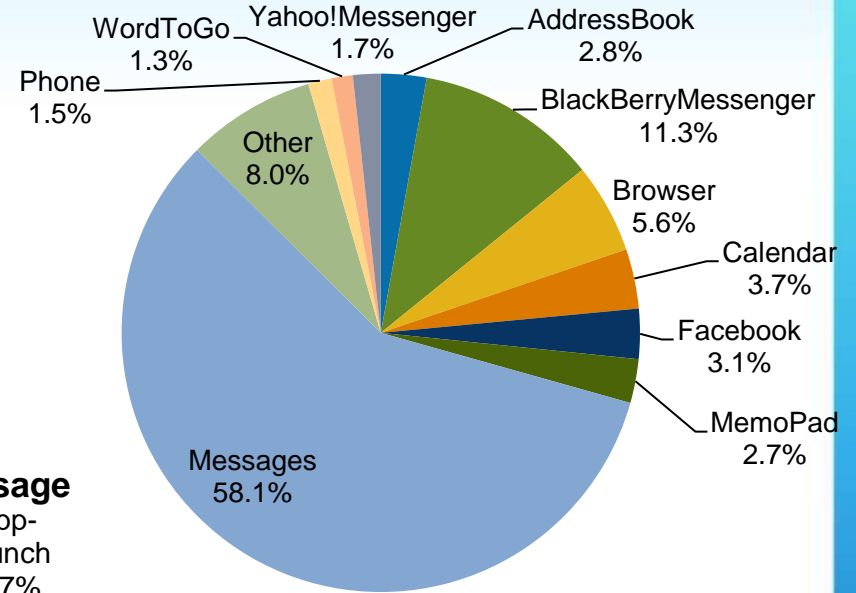
Vlingo Blackberry Usage by Task



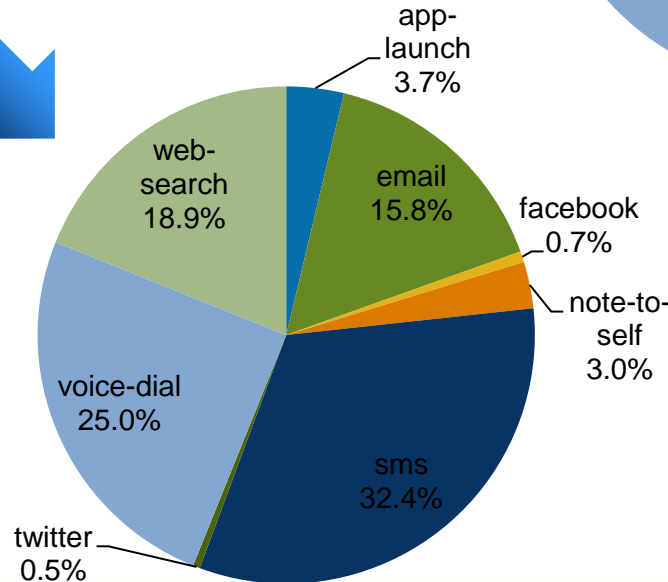
Vlingo Overall Usage



Vlingo Everywhere Usage



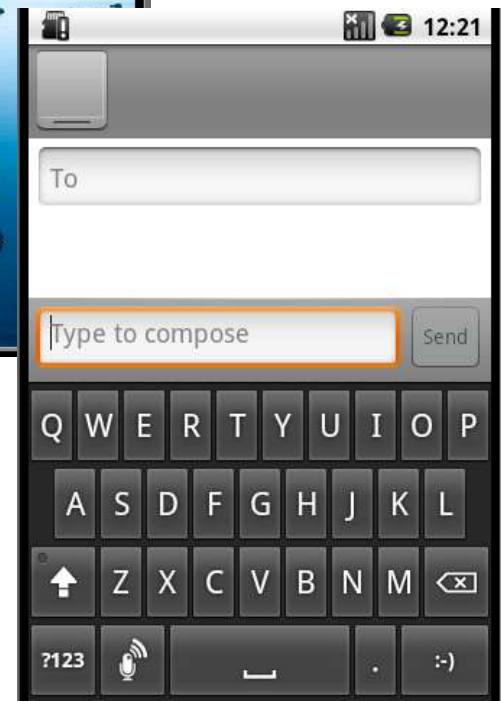
Vlingo Top-Level Usage



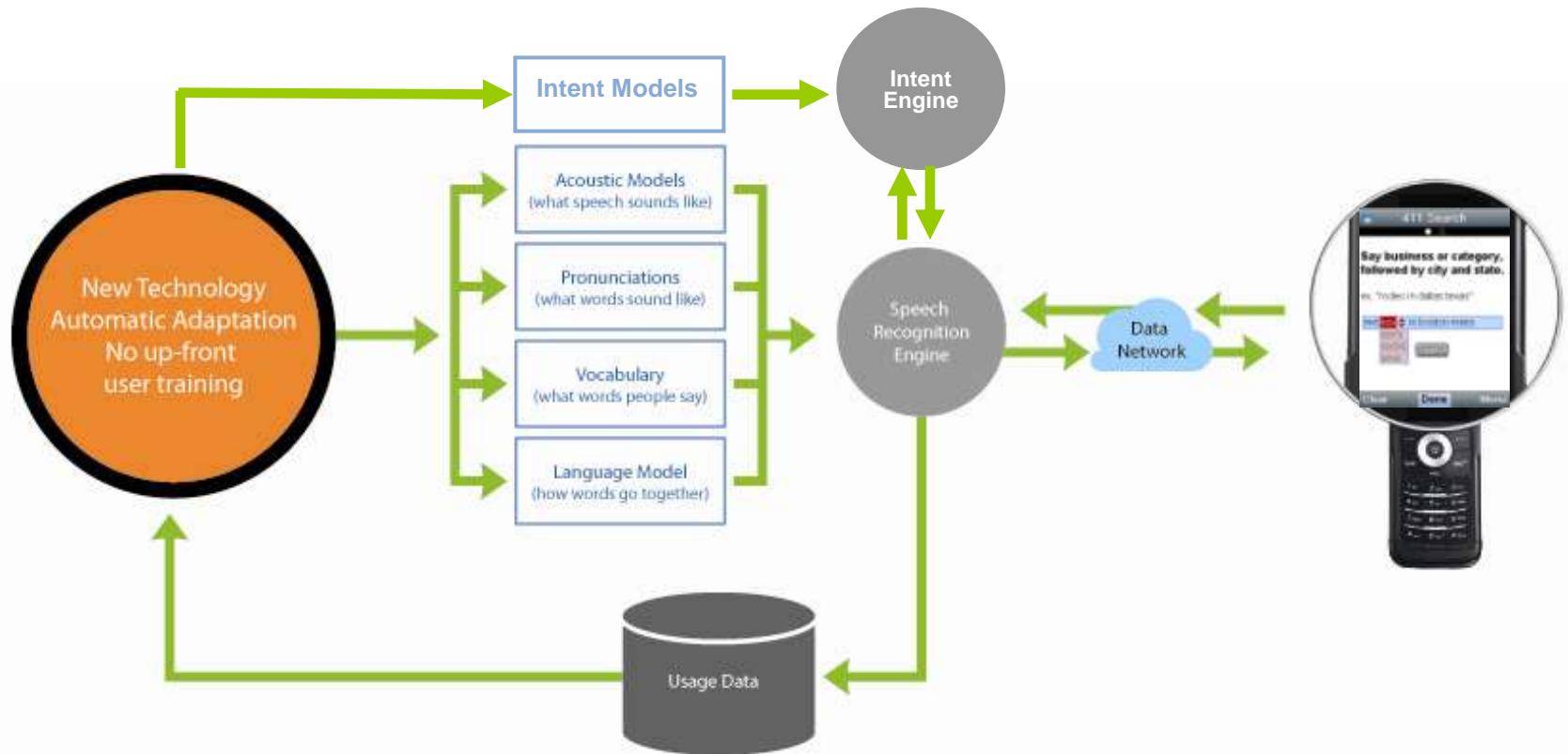
Vlingo on Android



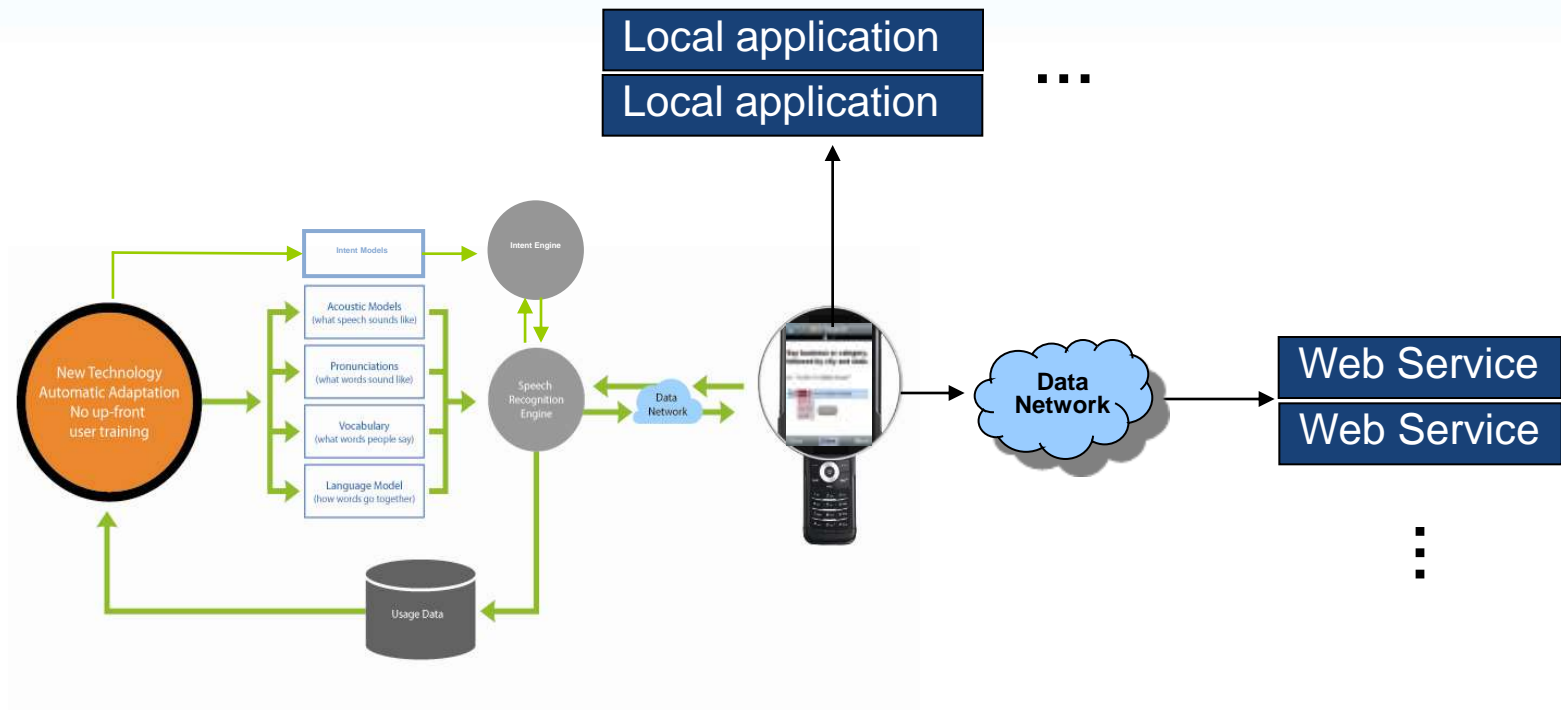
- Top Level Voice UI
 - Widget on home screen
 - Search button
 - Broader interface to local applications through Android Intents
- Voice Button on keyboard
 - More complete integration than Blackberry
 - Clarity on user intention



Application Routing



Technology for Actions



- Initial implementations assumed full multi-modal
- 50% of usage in-car
- Adding better support for driving use-case
 - Verbal commands
 - TTS feedback of what was understood
 - TTS readback on incoming messages
 - Support for Bluetooth devices
- Concentrating on key applications
 - Messaging
 - Dialing
 - Navigation/local search

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Designing Applications Assuming Voice UI



- Allow text entry
- Bias towards single text field vs form
- Expose functionality to top-level voice UI
 - Accept broad range of text input
 - Useful beyond speech input
- Provide audio feedback for driving use-case

- Increasing number of phones to ship with broad voice UI
- Applications can start to assume speech input
- “voice applications” only make sense when deeper integration required
- First “voice centric” devices within the next few years

Vlingo

The logo for Vlingo features the word "Vlingo" in a blue, sans-serif font. The letter "o" at the end of the word is stylized with a small orange dot in its center. To the right of the "o" is a signal icon consisting of four concentric orange arcs of increasing size, radiating outwards.