Natural Language Applications with a Brain

Peter Voss
Founder, CEO
Smart Action Company, LLC
www.SmartAction.com
Agenda

- Natural vs. “Unnatural”
- Recognition vs. Understanding
- How to make sense of it...
- Script vs. Brain-Driven
- That’s why we’ll see more Brains...
Limited vs. Natural Language

Limited: Key words and phrases only

“Sales”, “Support”

“Open a new account”

“I want to create another account online”

Open: Any combination of words
Limited vs. Natural Language

Limited: Key words and phrases only

- Meaning is extracted automatically

Open: Any combination of words

- Sentences need to be interpreted

“I’ll meet him at the new bank, same as last time – got it?”
Speech Applications

Recognition

Understanding
“Understanding” means...

Extracting meaning, making sense of it...

Responding appropriately...
Really understanding...

“I’ll meet him at the new bank, same as last time – got it?”
Some **Features** of Brain-based Apps

**Knowledge Base**

- Language Knowledge: Large vocabulary of words and phrases.
- Plural, tenses, abbreviations, synonyms, homonyms, etc.
- Ontology: Entities/ attributes/ relationships, abstract/ concrete
- Common sense facts about customers, products, time, etc.
Some **Features** of Brain-based Apps

- Statistical parse & semantic parse
- Meaning extraction “...next Tuesday in the afternoon”
- Fuzzy grammatical parsing
- Using context, memory, and goals
Really understanding…

“I’ll meet him at the new bank, same as last time – got it?”
Conventional Apps

Static – Pre-Built

Apps with a Brain

Dynamic Evaluation & Flow

Intelligence Engine Core

Additional Knowledge
**Benefits of Brain-based Apps**

**Re-Use**
- Large pool of Knowledge & Skills
- High level of Functionality/Intelligence
- Add only Custom Requirements

**Better**
- Automate more Complex Interactions
- Easier Tuning & Improvements
- Superior Customer Experience

**Faster, Cheaper**
- Faster Implementation & Deployment
- Less Testing needed
- Overall Cost Savings

**Improves over time**
- Ongoing Learning & Personalization
- Pooling of New/Improved Skills
- Ongoing R&D of Brain

---

MobileVoice 2013 – Peter Voss
Thank You

Peter Voss

peter@SmartAction.com
www.SmartAction.com/demo