Applying Natural Language Across Multiple Communication Channels

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In every phenomenon the beginning remains always the most notable moment

- Thomas Carlyle
Call Centers

Integral part of any business
Provides value added services primarily via single channel - telephone
Call Center Automation

Automation techniques were introduced to decrease personnel costs

IVR is seen as the most prevalent technology in a call center
How can I help you?

The usability of IVR systems is dismal
   Difficult to navigate menu structure
Natural Language Interface can alleviate the problems inherent to IVR
However, it is a complex undertaking
Steps

1. Data Collection
   • Application to capture caller utterances

2. Transcribe Data Accurately

3. Utterance Concept Segmentation
   • First analyze data for high-level concepts, subsequent iteration to identify sub-level

4. Tag Utterances
   • Determine caller intent

5. Deploy
   • Controlled roll-out and metrics

6. Tune
   • Iterative for continuous improvements
We are in an era of
“Consumer Driven Care”
Contact Centers

Response to the demand for more convenience in a world that moves faster
From single communication channel to multiple communication channels
From Call Center to Contact Center
Contact Center Automation

Challenge: Overwhelming amount of data generated by multiple communication channels

Use “Semantic Parsing” to integrate customer communication channels
Semantic Parsing

Technique commonly used in natural language speech recognition

Semantic parsing enables you to derive a meaning or multiple meanings from text strings

Perfect candidates - Text messages (SMS), social media, blog

Mine this treasure trove of data to identify your customers requests and respond accordingly
And the users exclaimed with a laugh and a taunt: "It's just what we asked for but not what we want."

- Anonymous
Context

Just applying Natural Language understanding in an application is not enough

Your application has to be “context-aware” not across one but all communication channels
Unified Contact Platform (UCP)

Set of technologies and core services built within a Service Oriented Architecture (SOA) framework

Helps understand consumers’ needs and preferences and provides them with personalized consistent interactions
Make Payment Use Case - Web

User Info: <Account #>
Channel: Web
Context Category: Billing
Context Specifics: Make Payment
Trans Status: Error CC Trans

Solutions that Transform
When new call arrives we authenticate user and search for Context data (Account #)
Make Payment Use Case - Mobile

When Mobile Transaction arrives we Authenticate user and search for Context data (Account #)

User ID: <Account #>
Channel: Voice
Context Category: Billing
Context Specifics: Make Payment
Trans Status: Success TID A234D23

User Info: <Account #>
Channel: Web
Context Category: Billing
Context Specifics: Make Payment
Trans Status: Error CC Trans
Make Payment Use Case - Mobile

User ID: <Account #>  
Channel: Mobile  
Context Category: Billing  
Context Specifics: Payment Status  
Trans Status: Received

User ID: <Account #>  
Channel: Voice  
Context Category: Billing  
Context Specifics: Make Payment  
Trans Status: Success TID A234D23

User Info: <Account #>  
Channel: Web  
Context Category: Billing  
Context Specifics: Make Payment  
Trans Status: Error CC Trans

During Customer Engagement Context
Data being stored

Solutions that Transform
It is not my aim to surprise or shock you--but the simplest way I can summarize is to say that there are now in the world machines that can think, that can learn and that can create. Moreover, their ability to do these things is going to increase rapidly until--in a visible future--the range of problems they can handle will be coextensive with the range to which the human mind has been applied.

-Herbert Simon