The Importance of Integrated Dialog Analysis

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8/9/2006

VoiceObjects
What do you know about your Speech Application?

Do you know the success rate of your recognizer per input state?
Where do people ask for help?
Where do most no-inputs or no-matches occur?
Where and how (and why) do people leave your application?
Which part of your application was visited most often?
How many of the callers to your application are repeat callers?
How often do they call?
What is the outcome of the call?
How do customers interact with you – using the web, the speech system, or operators?
Is there a pattern that people after they went to the web call the speech system? Or vice versa?
ASR / IVR / Media Platform logging

Mostly focused to answer the questions

Do you know the success rate of your recognizer per input state?
Where do people ask for help?
Where do most no-inputs or no-matches occur?

⇒ Focused around recognizer and utterances
⇒ Might give answers to recognition rates, no-input, no-match, and help events
⇒ Used to improve recognition results by tuning grammars and acoustic models
⇒ Low level analysis, usually not incorporating application or customer information
Application based logging

How many of the callers to your application are repeat callers?
How often do they call?
What is the outcome of the calls?

⇒ Custom logging, hand coded in application
⇒ Most of the time based on final outcome of the call
⇒ No intermediate information on caller behavior (or problems)
⇒ Little information on caller’s path through the application

⇒ (Positive) call result logging and analysis, no integration with recognition events or customer information
Application server logging

Where and how (and why) do people leave your application?
Which part of your application was visited most often?

How many of the callers to your application are repeat callers?
How often do they call?

⇒ Several levels of call data logging are required to provide a complete picture about your callers / customers and your system.

⇒ This includes logging of application usage and dialog navigation patterns.
Application server logging

- **Call Volume Statistics**
  - Number of calls, system usage

- **Call Information (CDR)**
  - Call time&duration, called service, call exit type

- **Caller Navigation**
  - Module Sequences

- **Caller Utterances**
  - Interpretation & confidence, number of NoMatch/NoInput events, …
Sample Reports

- For Business and Marketing
  - Early drop-off analysis
  - Caller frequency & loyalty
  - Call details
  - Input state frequency
  - ...

- For Service Developers
  - Call duration benchmark
  - Exit type distribution
  - Average number of calls
  - Caller exits
  - Usage patterns
  - ASR recognition performance

- For Administrators
  - Number of calls by month / day / hour of day / weekday
  - This month vs. last month
  - Cluster efficiency
  - Call statistics per Service
  - ...

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Open Questions

How do customers interact with you – using the web, the speech system, or operators?
Is there a pattern that people after they went to the web call the speech system? Or vice versa?

⇒ Business success depends on the answers to these questions
⇒ Integration with customer (CRM) and other company relevant data required to get full picture
Integrated logging

Service specific logging of caller input

Application Specific (Custom) Logging

DialogID

CRM Database

CRMID

IVR Logging

SPSessionID

CTI or Call Control

GCID

Follow calls through their phases in the environment

Learn more about your customers from their service usage

Extend application tuning capabilities

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Thank You