Analytics for Insights
Understanding your Customer and your System

Mobile Voice Conference 2015

Jeh Daruvala - CEO
jeh@yactraq.com
The New - Voice of the Customer (VoC)

• With universal mobile connectivity, VoC gets louder than ever
• Consumers provide feedback via different channel types
  • Phone Calls, Tweets, YouTube, Facebook, Websites, Chat Logs
• Managing all these channels drives changes in your business DNA
• Knowing, understanding, responding – A must have

• Legacy VoC methods cannot keep pace
• All channels (Text, Audio, Video) are vital to overall VoC
Outdated VoC Infrastructure

• Interview based VoC market research – inefficient, limited

• Legacy systems don’t deliver competitive advantage
  • Text analytics – Call center agent notes
  • Phonetic speech systems
    • Small vocabularies
    • Custom vocabularies – Expensive, Time-consuming

• New solutions needed to scale VoC across traditional & new digital channels
A Traditional Channel With A Strong Signal

• Phone calls still provide a very strong and rich VoC signal

• But legacy systems underserve the channel:
  • Limited manual notes. Much VoC signal lost. Text analytics of limited value.
  • Phonetic speech - small vocabularies, cost prohibitive and slow customization
  • Keyword spotting – Limited grammars. No Natural Language Understanding (NLU)

• Current call center management methods - outdated and ineffective:
  • Call center managers randomly audit calls for service quality, resolution rates, compliance, etc.
  • Slow, expensive, unscalable
Phone Calls – The New VoC Frontier?

• The Yactraq approach

• Automatically meta-tagging every minute of every call

• Searchable calls reveal deeper VoC
  • Product defect or Agent performance?

• Automated VoC Reporting - Saves manager time on random call audits, thereby reducing costs
How Yactraq makes it happen

• Accurate B2B Speech Systems need to understand,
  • Product and Brand names
  • Industry and Company specific Business Terms

• Mass customized vocabularies (Unique to each customer)

• Speech based Semantics (Speech + Text Analytics)

• Language Model (LM) based Systems
  • Legacy Phonetic Vocabularies < 1000 words
  • Language Models can contain tens of millions of sentences
  • Yet LM based systems can save $ millions when building Custom Vocabularies!
Yactraq’s Comprehensive Analytics

• Analyze Multiple Channel Types
  • Phone Calls, Tweets, YouTube, Facebook, Websites, Chat Logs

• With a single pattern recognition engine

• Using a unified taxonomy and linguistic data

• Via the *Fusion* of – Speech Recognition <> Natural Language Understanding
  • *Patent Pending*
Yactraq’s AI focus – Game changing disruption

• Open source pattern recognition software:
  • Neural network based speech systems
  • Large vocabulary continuous speech recognizers (LVCSR – CMU Sphinx)
  • Natural Language Understanding (NLU)

• Machine Learning
  • Dynamic Language Models
  • Dynamic Pronunciation Dictionaries

• Technology Partnership with Global Speech / NLU Leader
Example Video
### Brazil's luxury market growing

<table>
<thead>
<tr>
<th>Summary</th>
<th>Minute By Minute</th>
<th>SEO</th>
<th>Transcript</th>
<th>JSON</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sentiment</td>
<td>Topics</td>
<td>Topic Confidence</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.58</td>
<td>brazil travel</td>
<td>1.23</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>brazil</td>
<td>0.98</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Regional/South America/Brazil/Real Estate</td>
<td>0.86</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>brazil vacation</td>
<td>0.84</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Regional/South America/Brazil/Transportation</td>
<td>0.81</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Regional/South America/Brazil/Travel and Tourism</td>
<td>0.67</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Acoustic Quality**
- Average Word Confidence: 59%
- Word Density: 130 words/min.
# Speech2Topics Example Output

## The "God particle" explained by Bill Nye the Science Guy

<table>
<thead>
<tr>
<th>Summary</th>
<th>Minute By Minute</th>
<th>SEO</th>
<th>Transcript</th>
<th>JSON</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sentiment</td>
<td>Topics</td>
<td>Topic Confidence</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-0.30</td>
<td>Science/Physics/Particle/Publications</td>
<td>2.21</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Science/Physics/Particle/Alternative</td>
<td>2.04</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Science/Physics/Particle/Standard Model</td>
<td>1.83</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Science/Physics/Particle/Experiments</td>
<td>1.27</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Science/Environment/Environmental Health/Health Physics and Radiological Health/Particle Physics</td>
<td>1.20</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Science/Physics/Electromagnetism/Software</td>
<td>1.01</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Acoustic Quality**

- Average Word Confidence: 70%
- Word Density: 153 words/min.
### Speech2Topics Example Output

**Three new species discovered in Australia**

<table>
<thead>
<tr>
<th>Summary</th>
<th>Minute By Minute</th>
<th>SEO</th>
<th>Transcript</th>
<th>JSON</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sentiment</strong></td>
<td>2.11</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Topics</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>species animals</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>find turtles</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regional/North America/Science and Environment/Biodiversity</td>
<td></td>
<td></td>
<td></td>
<td>0.99</td>
</tr>
<tr>
<td>Regional/South America/Science and Environment/Biodiversity</td>
<td></td>
<td></td>
<td></td>
<td>0.98</td>
</tr>
<tr>
<td>Regional/Central America/Science and Environment/Biodiversity</td>
<td></td>
<td></td>
<td></td>
<td>0.96</td>
</tr>
<tr>
<td>Science/Environment/Biodiversity/Invasive Species</td>
<td></td>
<td></td>
<td></td>
<td>0.92</td>
</tr>
</tbody>
</table>

**Acoustic Quality**

- Average Word Confidence: 43%
- Word Density: 127 words/min.
Analytics for Insights
Understanding your Customer and your System

Mobile Voice Conference 2015

Jeh Daruvala - CEO
jeh@yactraq.com