

Using Statistical Language Model Speech Recognition to improve Call Automation

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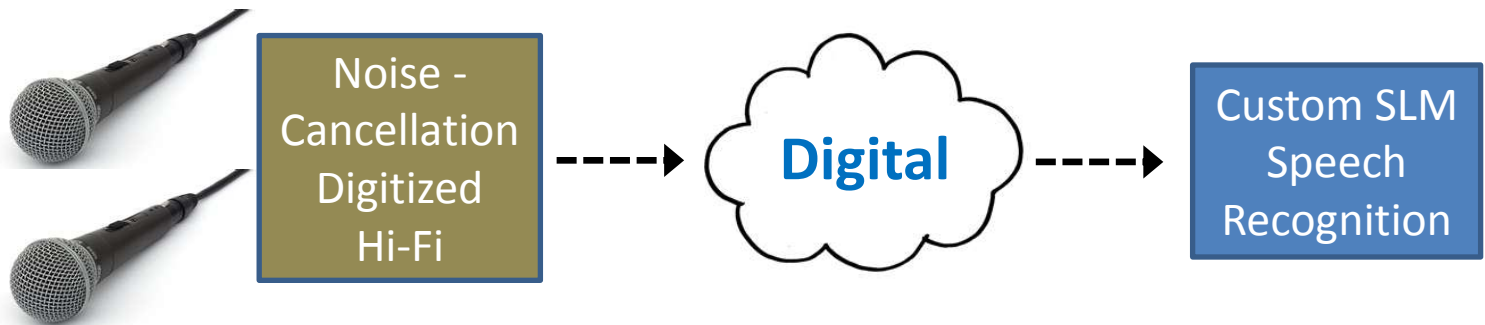
Smart Action Company, LLC

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SLM – Statistical Language Model

- **Smart Phone Apps versus IVR**
- **Dictation versus Phone Systems**

IVR versus Smart Phone Apps



Dictation versus Phone SR

- ✓ **High Fidelity**
- ✓ **Noise Cancellation**
- ✓ **Digital Transmission**
- ✓ **Trainable**
- ✓ **SLM**

Levels of Speech Recognition

- Tier 2 – **Keyword** Recognition Only
- Tier 3 – **Key Phrase** Recognition Only
- Tier 4 – SLM
 - **Natural Language**
 - **Open Grammar**
 - **Dictionary**

There's a Problem with SLMs

Understanding!

- Word/ Phrase Spotting
- Categorizers
- Natural Language Processing
- Brain (A.I.)

When Do We Need SLM?

- **“Personal Assistant”**
- **How can I help you ?**
- **Complex Responses**
- **Re-direction**
- **Open Conversation**

Cost - Benefit

Completion Rate/ ROI

	Touch-Tone	Tier 3	SLM
Self-Service Rate	15%	30%	45%
Cost per Minute	7 cents	12 cents	17 cents
Monthly IVR cost	\$1,575	\$5,400	\$ 11,475
Month Savings	\$18,000	\$36,000	\$54,000
Net Annual Savings	\$197,100	\$367,200	\$510,300

Assumptions: 50,000 calls per month. Average call length is 3 minutes. Fully loaded operator cost is \$0.80 per active phone minute (from research showing an average per call cost in the United States of \$4.80 for a 6 minute call).

<http://www.ivrsolutions.net/?p=98>

SLM Case Studies

Application	Touch-Tone	SLM	Comments
Scheduling	< 4 %	> 40 %	Older demographic happy to use system
Returns	~ 5 %	~ 34 %	3 minutes versus 6 for operators Ratings above live operators
Order Changes	N/A	38 %	Save-the-sale & Up-sell pay for system

Benefits of SLMs

- ✓ **Better recognition**
- ✓ **More complex transactions**
- ✓ **More conversational/ natural**
- ✓ **Higher Completion Rate**
- ✓ **Superior Customer Experience**
- ✓ **Improved ROI**

Thank You

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