Is Your Speech Recognition IVR Working For You Or Against You?

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As the entry point into many organizations, the speech recognition IVR is a critical link in ensuring that callers and their requests are recognized and processed efficiently. Unfortunately, many contact center managers have no idea that their IVR systems are failing them through suboptimal speech recognition.

When the speech recognition IVR is not operating at full potential, self-service capabilities are compromised and satisfaction scores suffer as customers rapidly become frustrated. Operating performance metrics deteriorate as task completion rates decrease and average handling time (AHT) increases. Costs climb as call volumes into the contact center increase–the result of poor call containment– and additional agents are assigned to respond.

MANY SYSTEMS ARE DEPLOYED WITHOUT ADEQUATE TUNING OR NONE AT ALL

The success of a speech recognition system depends on having speech grammars, pronunciation lexicons, and confidence thresholds that have been expertly tuned with real calls from real users. In some cases, the speech recognition system was never appropriately tuned in the first place, often deployed "as is" as long as it met acceptance-testing criteria, and thus never achieved its full potential to begin with.

In other cases, the system simply became less effective over time. New products and services, as well as new promotions, mean new terms for the IVR to recognize and act on, while new markets mean customers who often think, speak, and sound differently from the ones used to design and calibrate the original system.

Finally, there are cases involving systems that were migrated to a new speech recognition engine without receiving adequate tuning.

LIKE A FINE INSTRUMENT, SPEECH RECOGNITION SYSTEMS CAN BE TUNED

Unfortunately, because many organizations don't understand the benefit of tuning their speech recognition systems, they have no choice but to increase agent coverage to maintain operating metrics or they yearn to replace their systems. Those organizations that suspect that there might be a problem often have no idea that it can be solved relatively quickly and painlessly through speech application tuning.

Tuning a speech recognition system is accomplished by using logs from the production speech recognition engine. Caller utterances–the actual words and phrases spoken by callers–obtained from system logs provide the basic material required for performing the repeated speech recognition tests that are required in a tuning cycle. Analyses of test results with sophisticated tools suggest the necessary optimizations (grammar coverage, phonetic pronunciations, grammar weights, etc.). These are then applied and validated with further tests, suggesting additional tuning until performance targets are attained. This tuning work is performed entirely offline, with zero impact on the production system.

Within as little as a few weeks, tuned grammars and pronunciation lexicons are returned along with recommendations on adjustments to confidence scores. Depending upon the complexity of the underlying speech application, changes can be integrated into test or production systems in as little as a day. Demonstrable improvements in IVR efficiency and effectiveness are immediately apparent. In fact, it's not unusual to achieve reductions of 50% or more in speech recognition error rates.

TUNING, WHILE LOW-RISK AND COST-EFFECTIVE, REQUIRES EXPERTISE AND EXPERIENCE

Not only is tuning both low risk and highly cost-effective—significant improvements at a small fraction of the original system's purchase price—it preserves the organization's investment in technology, processes, and personnel. Consequently, there is no reason to accept suboptimal performance from the IVR and its speech recognition engine.

However, while every organization can benefit from tuning its speech recognition system, very few vendors can perform such tuning work efficiently or effectively. Tuning speech applications requires technical expertise, the proper tools, and first-hand experience with production systems.

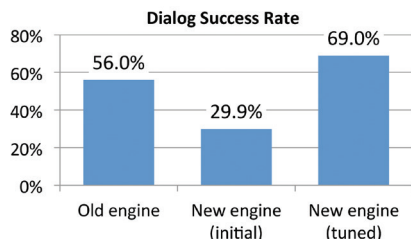## NU ECHO CAN UNLOCK THE POTENTIAL OF YOUR SPEECH RECOGNITION IVR

Nu Echo has the technical expertise, the most advanced speech tuning tools, and a proven methodology—tightly integrated with those tools—for significantly improving speech recognition performance and the user experience with limited disruption. Nu Echo has experience with a broad variety of speech recognition engines and has developed proprietary tools that enable it to cost-effectively achieve unbeatable results. ■
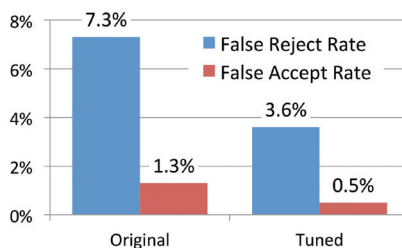
More information

Building upon two decades of experience in speech application development and offering a full suite of tuning and testing tools, Nu Echo is uniquely equipped to deliver speech applications that simply work better. If you have concerns about the performance of your speech recognition IVR and don't know where to start, contact Nu Echo today toll free at (866) 861-3246 (ask for "speech science" at the prompt) or email us at info@nuecho.com.

Learn more at about Nu Echo's speech application tuning offerings and expertise at **http://www.nuecho.com/speechtechmag**

Real-world tuning results

Dialog Success Rate — bars: Old engine 56.0%, New engine (initial) 29.9%, New engine (tuned) 69.0%

Impact of tuning on the recognition of a 6-character airline passenger name record

False Reject Rate / False Accept Rate — Original: 7.3% / 1.3%, Tuned: 3.6% / 0.5%

False Reject and False Accept rates after tuning courier company's pickup scheduling application