

Increasing customer service by adding Speech Recognition

IVR Call Completion with Advanced Speech Recognition

Computer Telephony Integration (CTI) technology that blends telephone and computer interactions has been around since the 1970s. While CTI offers a business many benefits, the major users of CTI technology are call centers that utilize CTI to reduce call handling time and improve their efficiency.

Today's self-service solutions are complex systems that combine integrated hardware and software telephony components with IT infrastructure. Call processing can now include database integration with customer relationship management (CRM), order processing, billing, and scheduling applications. Needless to say, no two systems are exactly alike.

IVR systems provide customers with a 24/7 self-service solution for their basic service needs, freeing up the CSR team to attend to those customers who have special needs not addressed by the automated system. The net result is increased productivity, greater profitability and improved customer satisfaction.

The Challenge

Feeling the competitive pressures of the financial industry, a global financial company implemented an IVR system to provide self-service functionality to its customers. The goal was to improve customer service and increase customer satisfaction while reducing costs by offloading calls from CSRs to the new automated system. Based on established touchtone technology, the automated system would allow customers access to personal accounts for information and transactions. The estimated cost comparison of the IVR automated system was placed at \$0.45 per call versus \$5.50 per call handled by the CSRs at the customer call center.

While the system gained user acceptance and accommodated call volumes approaching 1000 calls per day, call completion rates within the IVR were very low. This resulted in an increased demand on costly CSR resources as the customer base grew and more calls opted for human interaction.

The client set aggressive cost saving goals to contain and reduce customer service costs. The company did not want to replace CSRs as they left through attrition or retirement. While the system was a technical success, the business goals for IVR-completed transactions and cost savings were not being met.

Problem Analysis

In order to better understand the dynamics of the customer interaction with the IVR system, LBi proposed a usability study based on customer feedback culled from the daily call volumes as customers completed their transactions. The information collected from a brief survey at the end of the customers' call was entered into a database by the CSRs and then compiled into a statistical analysis for further review.

The study indicated that a significant number of customers found the menu transactions took too long to complete, as well as being confusing and difficult to navigate over the telephone. Customer feedback focused on the following complaints:

- Transaction took too long to perform
- Confusing menu choices
- Too many menus to easily navigate
- Desired options not available or unclear

The Solution

LBi determined that the system would greatly benefit from an upgrade to increase flexibility and reduce the complexity of the customer menus. Concurrent with this upgrade, LBi recommended adding Speech Recognition to the existing touchtone based system.

Additional speech hardware was added to the system and the application script was rewritten for Speech Recognition. The call flow was scripted as a 'directed dialogue' where the IVR and caller would take turns speaking. Numbers could be entered using either speech or touchtone.

The speech implementation made interacting with the IVR simpler and more natural for callers. Menu hierarchies were flattened or eliminated wherever possible. Menu option numbers were replaced with natural requests like "Account Balance" and prompts for "Press 1 for yes or 2 for no" were replaced with a simple "Is that correct?" voice prompt.

A concerted effort was made to identify the different ways callers might phrase their requests. These "synonyms" were programmed into grammars that allowed the script to be developed as a streamlined dialogue with minimal directions.

Standard menu options were replaced with easy-to-remember commands such as "Operator", "Repeat", "Start Over" and "Help." These commands were made available to callers at any point in their call, eliminating the need to wait until they were given the option.

Through the use of Speech Recognition, the complexities of the IVR application became transparent to the caller, allowing for greater ease of use and making the prospect of completing the transaction within the IVR more attainable.

The Benefits

Within three months of introducing the Speech application, completion rates within the IVR system grew by more than 30%. Customer feedback through voluntary surveys found that most callers experienced greater satisfaction with the updated system, as the new interface was more user-friendly and intuitive. Additional improvements would be achieved through a future fine-tuning exercise.

Another benefit of adding Speech Recognition to the IVR system was the ability to add new self-service functions without lengthening the call or adding complexities. Existing functions that referred to Stock and Fund names were simplified, as callers could now identify the investment option by its name, rather than using a printed list of fund code numbers.

In summary, the increased capabilities of the upgraded system could now handle greater daily call volumes and do it at a much higher call completion rate. The ROI for this project, based on run rate statistics, was estimated to be 20 months, which met the client's two-year requirement set at the beginning of the project.