



Speech Recognition and Speech-to-Text Telecommunications Opportunities for American Family Insurance

Project Sponsor

American Family Insurance

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EXECUTIVE SUMMARY

American Family Insurance (AmFam) is a Fortune 500 company headquartered in Madison, WI. They offer insurance to customers in nineteen different states and employ 9,000-10,000 agents and 500 adjusters, primarily in the Midwest. In the past, AmFam relied solely on independently contracted agents to sell insurance and provide customer service needs. With advances in technology, the insurance market has recently become more challenging. Customers have increasingly transferred to mobile and online insurance services. Because of this situation, AmFam is seeking ways to increase its competitiveness in this changing market through enhanced customer service and claims reporting processes.

To enhance customer service, AmFam is considering the use of an IVR system that utilizes speech recognition technology. This would improve customer satisfaction by decreasing the time spent navigating through the IVR system, and by efficiency increases to direct the caller to the correct destination with fewer errors. It would also decrease the number of calls that are forwarded to the call center representatives due to confusion of the IVR flow.

The Student Team first performed a competitive analysis to determine insurance market utilization of speech recognition technology in IVR systems. With the help of AmFam, the team created a list of direct competitors to analyze. This list included Allstate, Farmers, Geico, Nationwide, Progressive, and State Farm insurance companies. Information was gathered about the IVR system technologies utilized at each company from research using Gartner, and also directly by the team members by interacting with the companies IVR systems. This research was performed by each team member calling the designated insurance company and navigating their IVR system, while documenting the process.

After compiling research, the team set out to rank each company's IVR technology usage based on four criterion categories: system capabilities and functionality, customer relation (satisfaction), usability, and efficiency. Each factor within these four categories was rated on a 0-9 scale with 0 being 'not present' and 9 being 'highest performance'. Each criterion category had its own leader, but the overall leader in IVR flow operations was Farmers Insurance. The highest ratings were given to Farmers Insurance for the following reasons: they provide speech recognition in their IVR tree for all options, they have a keypad entry backup, they have six different language options, and they have a simple and concise IVR tree with an average of only three levels to reach a live agent.

To enhance their claims reporting processes, AmFam suggested the use of a speech-to-text technology system for claims adjusters to input notes about a claim into its specified report while in the field. This would improve claims reporting processes by decreasing the time from when the adjuster arrives at the site to the beginning of the processing phase of the claim. This in turn would increase customer satisfaction by decreasing the time it takes for customers to receive feedback on their claim.

Just like for the IVR system, the team first performed a competitive analysis to determine the insurance market utilization of speech-to-text technology in claims reporting processes. The Student Team used the same list of direct competitors that was utilized previously to compare

with AmFam. Information about the claims reporting processes at each company was gathered from research through company websites, personal claims agents, and Gartner.

After compiling research, the team set out to rank each company's claims reporting process based on four criterion categories: system capabilities and functionality, agent relation (satisfaction), usability, and efficiency. Each factor within these four categories was rated on a 0-9 scale with 0 being 'not present' and 9 being 'highest performance'. Each criterion category had its own leader, but the overall leader in claims reporting operations was Progressive. The highest ratings were given to Progressive for the following reasons: their service agents are effective in many different types of the insurance business, they have a high flexibility within their claims reporting system that allows them to recover from errors easily, they have a claims reporting application available for the iPhone that allows customers to send photos and text about a reported claim, and their online submission system utilized by claims adjustors is very easy to navigate and utilize.

The Student Team's next step was to complete a vendor analysis on the market leaders for speech technologies; concentrating on the offerings of both IVR and speech-to-text systems. The team began by completing some preliminary research utilizing technology reviews, white papers, insurance industry publications and news, and AmFam recommendations. The team noted seven leaders within the speech technology industry: Nuance, Google Voice, Avtex, Pronexus, IntelliSPEECH, Loquendo, and Microsoft TellMe. Upon further investigation, the team decided to remove some of these vendors from the investigation as they were unreliable, did not have enough information available, or were available through another system (for example, Microsoft TellMe is a technology that is available through Avtex). This left the team with three vendors to focus on for further analysis: Avtex, Pronexus, and Nuance.

After determining the vendors that deemed to be viable for further analysis, the team wanted to submit a Request for Information (RFI) to each company to see what solutions they could offer for AmFam. The team used an RFI template provided by AmFam, but added details and asked questions that were specific to the needs of AmFam and this project. Throughout the course of this project, Pronexus' RFI was forwarded to Vocantas, which is a partner of Pronexus in speech technologies. The team received responses to the RFIs from Vocantas and Avtex, which were analyzed for the types of solutions that were provided and the content of RFI itself.

Vocantas has extensive experience deploying IVR solutions in multiple industries. The IVR solution they proposed can either be hosted or premise-based, depending on the preferences of AmFam. Their speech-enabled directory would allow customer calling for policy information, making payments, etc; which would reduce customer service representative questions about these topics. The user-friendly and efficient IVR navigation reduces call transfer errors, both user and machine induced. The system also offers simple tools to monitor all IVR activity and track information obtained from the caller while they are navigating the IVR tree.

Avtex has a long-standing partnership with AmFam by providing them with solutions for their IVR system in the past utilizing the Interactive Intelligence/CIC software package they developed. They also have extensive experience in developing IVR solutions for many different types of companies. Avtex proposed two different solutions, either the Avtex Speech Enabled

Directory (SED) or Microsoft TellMe. SED would route callers to their destination based on spoken commands and is easy to integrate with AmFam's current system provided by Avtex. The Microsoft TellMe hosted solution gives AmFam a solution option that is cloud-based and upgrade-free.

For the claims solution, Vocantas does not recommend a speech-to-text technology due to its lack of reliability. Instead they offered a solution that would allow the claims adjusters to record WAV files containing the information about the claim that needed to be inputted into the report with their AmFam issued BlackBerrys, while utilizing the current AmFam IVR. These files would be automatically uploaded to a secure Vocantas site for transcription. Transcription services, powered by Nuance software, would transcribe the files into text and then they would automatically be downloaded and stored in AmFam's servers. These text files would then wait for adjuster review, and ultimately integration into reports.

As a solution for the claims reporting process, Avtex recommended the use of an in-house developed custom mobile speech-to-text application that would run on Windows Slate devices. Speech regarding information on the claim would be translated to text immediately on these Slate devices and be available for editing. Once this process is complete, the devices would connect to the network and transfer the text data to AmFam's servers. This data would be connected to its designated claims report, and would be automatically entered into the appropriate fields. The claims report would then be ready and able to begin the processing phase.

After compiling the RFIs, the team began analyzing the responses and ranking each solution based on eighty different factors in ten different factor categories. Each factor within the factor categories was rated on a 0-9 scale with 0 being 'not present' and 9 being 'highest performance'. Overall, Avtex received the highest score between the two options. This is due to many different factors including the current partnership between AmFam and Avtex, the current usage of Avtex solutions for the IVR infrastructure at AmFam, easy integration of speech into current solution, training programs are provided for both the IVR and claims solutions, and a support agent will be on-site for AmFam to troubleshoot problems.

The team favored the claims reporting transcription solution that Vocantas proposed because there would be fewer errors induced due to verification by the claims adjusters before being added to the claims reports. The only problem with this solution was its high cost from transcription fees, so the team decided to contact Avtex to see if a similar solution could be feasibly provided. Avtex returned with a solution utilizing Nuance Dragon software that would transcribe the WAV files on-site with this software rather than through a file transfer. This reduces the cost of the solution because there would be no transcription fees due to the Nuance Dragon software being purchased by AmFam for a onetime cost.

To develop a business case for AmFam to consider in moving forward with this project, the team did a cost/benefit analysis on the two vendors' solutions. For the IVR system solutions it was determined that the cost of the two Vocantas solutions (hosted vs. premise-based) would be \$194,930 and \$195,930, respectively; and the two Avtex solutions (Interactive Intelligence/CIC vs. TellMe) would be \$96,838 and \$300,862, respectively. The benefits for each of these

solutions were determined by making assumptions about the decrease in time spent by customer service representatives. Based on the costs and benefits determined, the breakeven points for both the Vocantas solutions would be 0.50 years, and 0.25 years and 0.77 years respectively for the Avtex solutions.

For the claims reporting process solutions it was determined that the cost of the Vocantas solution would be \$208,000; and the costs of the two Avtex solutions (custom speech-to-text and Nuance transcription) would be \$736,057 and \$93,565, respectively. The benefits for each of these solutions were determined through the time savings for claims adjusters to input their notes into the claim report. These time savings would be 10 minutes for the Vocantas solution, and 20 minutes and 25 minutes, respectively for the Avtex solutions. Based on the costs and benefits determined, the breakeven points for the Avtex solutions would be 9.74 and 0.845 years, respectively. The Vocantas solution would never breakeven due to the continual transcription fees that would be charged for their service.

After analyzing the solutions proposed by Vocantas and Avtex, the team recommends that AmFam proceeds with this project by looking closer at the Avtex Interactive Intelligence/CIC solution for their IVR solution. This solution will integrate easily with the current AmFam system provided by Avtex, and also has the lowest implementation costs because of this feature. For the claims reporting solution, the team recommends that AmFam proceeds by looking closer at the Avtex/Nuance transcription solution. This solution will allow AmFam claims adjusters to continue to utilize their company-issued BlackBerrys, prevent many errors with transcription and transferring of files, and also alleviate the transcription costs associated with the other solutions.

Going forward, the team suggests that AmFam work with the Avtex correspondent, Beth Meisel, to get a Request for Quote on the two solutions listed above. This would allow AmFam to get more in depth details of the IVR and claims reporting solutions offered, as well as receiving complete costs and implementation plans for each of the solutions.

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