How Human Should an IVR Be?

Evaluating the Human Touch in Automated Self-Service Systems

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Overview

People like to personify inanimate objects. We've done it for years, from a very young age typically starting with teddy bears. Even as adults, we do it with cars, boats, computers, musical instruments, and anything of sentimental value. The ironic part is that when computers and machines actually start acting like humans, our response is not always as positive. In fact, studies show that there is a point when a computer can be too human, and we respond negatively.

So, how do these factors impact our acceptance of automated service systems that act like humans? Researchers at eLoyalty, a TeleTech company, investigated just how human automated service systems should sound, and whether they cause negative responses to Interactive Voice Response (IVR) systems. This white paper summarizes our research and reveals our conclusions about IVR technology. It also:

- Evaluates the expense of adding personas to today's automated self-service systems
- Reveals whether or not personas deliver benefit or cause negative reactions
- Answers the question: Is the added cost of persona development worth it?

Researching the Human Touch in Automated Self-Service Technologies

Self-service kiosks are welcomed tools in our daily life that help us obtain important information. For example, ATM machines are well-accepted in our society. Yet, besides the dentist drill, IVR technology remains one of the most disliked service technologies. So, why do customers hate these automated phone systems? Researchers at eLoyalty have spent the last several years studying this issue and have identified several key factors that drive these negative perceptions. One key element of IVR system design is the artificial human persona that engineers build into the technology. This got us wondering… Does the persona create a better or worse customer experience? Is it good practice for the IVR computer to apologize? Should an IVR system refer to itself in the first person and use "I"? And, is the IVR persona a worthwhile investment?

Persona Defined

For the purposes of this paper, persona is defined as the human characteristics built into IVR systems, such as when the IVR system comments, "hmmm," "got it," "I'm sorry," or "almost there."

While other white papers may extend the definition of persona to also include a fully developed character, complete with a name, demographic background, talents, and a family history, this paper uses the word persona to describe only the spoken utterances, pleasantries, and extraneous words commonly used in casual service conversations.

Our research efforts aimed to determine exactly how much the human persona contributes toward people's aversion to IVR systems. Our research theory was shaped after reading Masahiro Mori's research from a 1970 study called the *Uncanny Valley*, which evaluated human reactions to robots as they became progressively more and more human-like. Our team examined the findings to decide if the results were still valid today and, specifically, if they hold true for IVR systems. The *Uncanny Valley* study found that the more human-like the robot became, the more violently opposed the human response was. Basically, humans went from a positive

reaction when the robot took on non-human forms, to repulsion when the robot took on a very human look and feel.

The published results from the *Uncanny Valley* state:

> The uncanny valley may be symptomatic of entities that elicit a model of a human other but do not measure up to it. If an entity looks sufficiently nonhuman, its human characteristics will be noticeable, generating empathy. However, if the entity looks almost human, it will elicit our model of a human other and its detailed normative expectations. The nonhuman characteristics will be noticeable, giving the human viewer a sense of strangeness. In other words, **a robot** stuck inside the uncanny valley **is no longer being judged by the standards of a robot doing a passable job at pretending to be human, but is instead *being judged by the standards of a human doing a terrible job at acting like a normal person*[1].**

Studies show IVR systems that are too human-like can spoil the customer experience.

This last statement is key to the customers' negative reaction toward the IVR. Although the IVR sounds like a human, what it understands is very limited—hence, it does a terrible job of responding like a normal person. We found that this study still holds true today, because too much of the human element can quickly create a negative IVR experience that can slow service and taint an otherwise strong company or brand.

IVR System Apologies and Using the First-Person "I"

In reviewing a significant number of studies available on the IVR persona, our researchers concluded that there was some truth in all. However, the team wanted to take the research one step further; we wanted to determine what value (if any) would come from using the apologetic, first person "I" that so many IVR systems use today. In order to determine if these human characteristics are really worth the extra cost and to identify the ROI, we evaluated the full cost of the IVR persona development.

IVR systems refer to themselves in first person when giving instructions or correcting an error. They typically make apologetic statements such as, "I'm sorry. I didn't understand that." Or, "I'm sorry. I'm having problems understanding you. Let me transfer you to someone who can better assist you." Our researchers identified these instances in IVR systems, determined the extended service time that these persona phrases added, and then evaluated the cost of these features.

Personas Add Service Time

Verbiage	Time Taken
"This is a new system, where you can speak your answers. So, let's begin."	4.2 seconds per utterance
"I'm sorry, I didn't understand that."	2.2 seconds per utterance
"I'm sorry. I'm having problems understanding you. Let me transfer you to someone who can better assist you."	5.5 seconds per utterance

We found that 800-number services alone could result in significant costs to the company. For example, the following is an estimate for a contact center that handles 600,000 calls per day and has a telecom cost of $0.03 per minute:

- If 20 percent (a very conservative number) of the callers experienced speech recognition errors and heard the three error phrases (see box above) only once, then the telecom cost alone would roughly equal $181,770 per year.

- In reality though, speech recognition systems typically produce more errors than just 20 percent. If 70 percent of the callers experienced speech recognition errors and heard only one error phrase (see box on previous page), then the telecom cost alone could be as high as $700,000 per year.

  Note: These estimates do not take into account the initial cost of creating these persona messages.

To reach these cost estimates, we intentionally used a wide-range sample with conservative estimates of the number of errors and repeated persona phrases. Twenty percent is a very small number of errors for an IVR system, and 70 percent is a high number of errors. So, this sample represents (on average) what most companies would experience using a quality IVR system that repeated persona phrases only a few times in each call. In summary, the study showed that, for larger contact centers handling 600,000 calls a day, human-like IVR systems can increase operating costs by an estimated $181,000 to $700,000 per year.

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What is the Benefit of the IVR Persona?

With the added operating costs of the IVR persona, what's the benefit? To date, our team has not found any studies or statistics that demonstrate an efficiency or cost savings benefit. In fact, we found quite the opposite: IVR systems that remove the persona pleasantries and apologies have higher resolution rates, because they provide more immediate error correction and faster service.

We reviewed many studies and the evidence shows that not only is there no added benefit to the persona; the results indicate that the persona actually has a negative effect on the overall user interface. In reality, after an apology message is spoken, the caller has still not been provided any true error correction. The computer's apology slows down the overall progression of service and it can be annoying (in that callers know that computers are not really sorry). So, when we try to make the IVR more human, we gain nothing. The persona not only increases costs, it also stymies service.

Our own first-hand experience further supports this evidence. We have designed hundreds of IVR systems for billion-dollar brands around the world and found that IVR systems without the human persona increase customer adoption and usage. We used this industry experience and our research to develop our own IVR best practices:

- When IVR systems avoid the human persona utterances, the resolution rate increases because the user interaction is faster and more direct.
- Removing the persona eliminates any potential confusion from the customer interaction and simplifies service, thus increasing customer satisfaction.

When an IVR system is used more frequently, its effects (both good and bad) are multiplied exponentially. We found that resolution rate increases are even more evident in IVR systems that are frequently or consistently used by customers. So, if your customers consistently return to the IVR for regular service and are very familiar with the system, it's critical that you remove the added persona phrases and get straight to service.

Is there a Benefit to Investing in a Fully Developed Persona Character?

Although the IVR persona trend is slowing, company leaders still like to personify their IVR technologies and even take them to the next level with names, fully developed characters and even complex personalities with personal histories. Amtrak is one of the most famous examples in the U.S. The introduction to the IVR system says, "Hi, I'm Julie, Amtrak's automated agent." Bell Canada also had an IVR system named Emily. However, Emily's name and introduction are no longer a prompt on the IVR system.

At eLoyalty, we believe this full-blown IVR character trend is also dying, because not only can it cost $25,000-$100,000 to develop, there are also no published or proven benefits from complex IVR characters. According to Bell Canada, there was no change in the amount of time it took to serve a call when the IVR no longer introduced itself as Emily, and the company saved money by removing the few seconds that it took to recite the personal introduction. When asked about the value of the IVR character, a representative from Bell Canada stated that the company "noticed an increase in the number of customers willing to interact with the [IVR system] versus the touch-tone system," but it attributed the company's increases in customer satisfaction to the speech recognition technology rather than the IVR character itself[3].

If customers use the IVR system frequently, it's even more important to NOT use an IVR persona.

Bruce Balentine of EIG stated that IVR personas "are a fad that will disappear by itself as more money is diverted to usability,"[4] and our researchers agree. With the economic downturn, funding for IVR projects and personas can be limited. Today, companies feel that money is better spent on usability testing and fine-tuning the speech recognition technology to solve more business needs—rather than on developing an IVR name and personality.

It should be noted that IVR systems are commonly engineered to follow a natural human-like conversation flow and typically mimic the customer service associate conversation script. But, conversational flow is considered a basic function of any well-designed IVR and is not considered an additional persona feature or added personality development. While an IVR system should mimic the standard customer service script, our research didn't find any argument for IVRs to become so human that they should apologize, refer to themselves as 'I', or have names and personalities. Case in point, when evaluating the usability of a personified IVR system, one of our testers commented, "I enjoy the human interactions more, but they almost always get in the way of trying to do something[5]." This is the key lesson and takeaway that all of our research supports. The bottom line is that people can appreciate the persona and its friendly apologies, but the reality is that today's customers are busy. They simply want fast, adequate service.

Conclusion

Our researchers concluded that the human persona is a contributing factor and a significant reason why customers dislike IVRs. When computers act human, customers expect them to be human, and really they are far from it. So, the more human an IVR system is, the less it is accepted. To quote Bruce Balentine, the more human an IVR becomes, the more contemptuous it becomes. While

our human instinct may be to personify IVR technologies with names and personalities, companies should instead work to remove any and all extraneous verbiage within their IVR systems. And, here are some tips to do just that.

In order to be an asset to both companies and customers, IVR systems and their teams need to stay focused on improving speech recognition error recovery, providing the most accurate service, increasing resolution rates, and reducing costs. Business leaders who are evaluating their current IVR technology, or considering a new system, should dedicate their dollars to IVR improvements that have been proven to directly impact the customer experience such as:

- Reducing lengthy upfront messages including marketing messages or website addresses
- Decreasing the number of menu prompts before callers get frustrated or forget the options
- Investing in superior speech technology with advanced grammar development and a next-generation automated speech recognition engine

The aversion to IVR systems is an issue that eLoyalty continues to investigate. You can find other white papers on this topic at www.teletech.com.

Instead of personifying IVR systems, companies should instead work to remove any and all extraneous verbiage within their IVR systems.

About the Authors

Vicki Broman is the Manager of the Voice User Interface Designer team at eLoyalty. She has over 22 years experience as a designer and Project Manager. She has designed applications for numerous companies in industries that include financial (securities, credit card, banking), government, utilities, insurance companies and prescription services, airlines, travel agencies and cosmetics corporations. Vicki has been a presenter at conferences for SpeechTek, Nuance, Sterling Audits, Rockwell, and AT&T. She developed classes in VUI Best Practices that have been presented to customers worldwide. With close to 20 years working with speech technology, she has integrated proven Best Practices to enhance end to end customer service for her customers. Vicki has a degree in Electrical Engineering and a Masters degree in Management Information Systems from Stevens Institute of Technology. She was awarded a patent for a Speech Recognition Fraud application Design on Nov. 20, 2007.

Mark Eichten is the Director of the eLoyalty Speech Solutions team. His responsibilities include analytics, developing tuning tools and reports, creating and maintaining internal methodologies, product development, voice user interface (VUI) design, managing implementation projects, and designing and developing integrated applications that incorporate speech, touch-tone and live operator support. Mark has over 10 years of speech application experience along with 8 years of grammar experience in GSL, GRXML and NLU. Mark holds a Bachelor of Science degree in Management Information Systems from Creighton University.

About eLoyalty

eLoyalty, a TeleTech company, provides customer technology solutions that simplify service and deliver exceptional customer experiences at a lower cost. Using today's most advanced cloud, on-premise, and hybrid technologies, eLoyalty helps companies harness their existing technology investments and integrate legacy systems into a central customer collaboration hub that enables seamless service across all communication channels. Superior customer experiences start with an integrated approach, and eLoyalty unites all the capabilities businesses need to engage customers and build loyalty with every interaction.

For more information, visit www.teletech.com/solutions/technology-innovation.

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