

## Using Virtual Agents to Create High-Touch Customer Service for Health Plans



### Transforming customer service to meet new demands for speed, accuracy and choice

As health plans continue to face pressure to cut costs and “do more with less,” the pressure to offer more innovative services at lower costs has also increased for business process outsourcing (BPO) contact center providers. Many contact center providers have lowered costs by operating at lower margins, increasing span of control, and cutting compensation and benefits for live operators. This has resulted in higher industry attrition and static, if not reduced, service expectations and innovation.

In reality BPO providers should be embracing the higher cost of live operators as a premium channel in a multi-channel customer service solution. There will always be a need for premium live operator customer service, however the future of the contact center lies largely in eliminating the traditional contact center. While customer self-service rates have been abysmally low in healthcare, recent advancements in intelligent assistants and robotic automation are beginning to show great promise for healthcare customer service. Providers need to be thinking about the next generation of customer service for health plans,

in which artificially intelligent (virtual) assistants handle routine calls and live, expert agents handle the difficult calls. The savings potential is significant. For example, if you add up all the costs of running a captive contact center for a health plan, the unit cost for a minute of productivity with a live operator would be around \$1.00 (and generally costs even more). If you were simply to outsource the live operator the unit cost might be \$0.85 in the U.S. and \$0.70 in, say, the Philippines. This was our “old” value proposition, but that doesn’t yield enough savings. Through automation, you compound the savings due to labor arbitrage. While platform costs vary greatly, a conservative unit cost average is about \$0.20 per minute.

That’s a transactional savings of 80%. Considering the savings potential, even a modest gain in alternative customer service channels would offset the increased cost of live operators. And this combination of automation and live agents will also give health plan members what they want: fast service for routine requests and the human touch when they need it.

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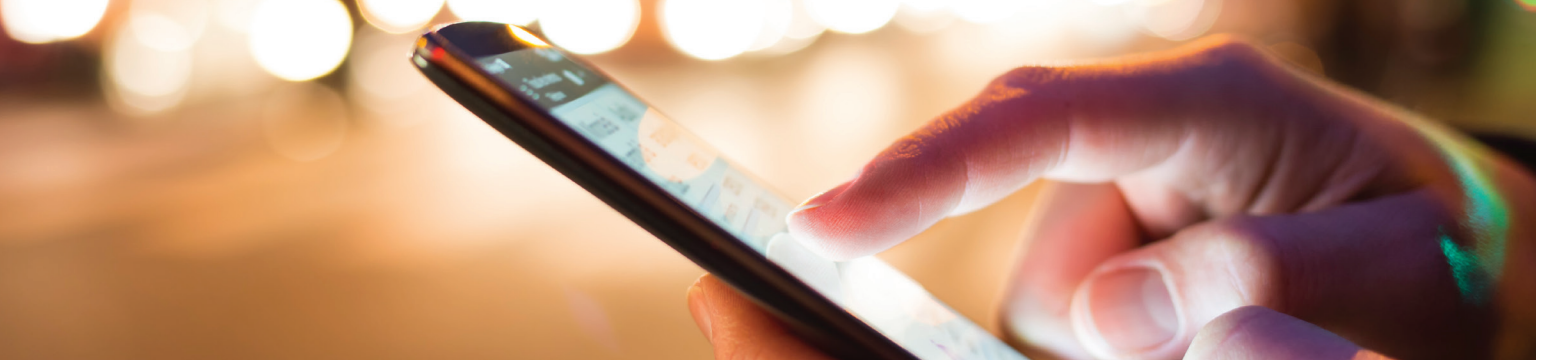
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Prior to that, as a management consultant, Dr. Klein provided strategic guidance around contact center outsourcing, efficiency and automation to several health plans and BPO service providers. He also consulted on major systems initiatives for Lucent Technologies, Dun & Bradstreet and several Wall Street clients.

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## Rise of the machines ... with a human touch

In a recent study at Boston University on “Human Touch and the Customer Service Experience,” 100% of the respondents surveyed indicated that they initiate the customer service journey by first visiting the company’s website. Why is it, then, that roughly 90% still call to speak to a live operator?<sup>1</sup> Perhaps because, in an age where you can engage Amazon’s Alexa in a conversation around a couple thousand learned “skills,” searching FAQs and summary benefits documents is no longer acceptable.

Most baby boomers can remember when voice was the dominant form of communication. Email evolved as the dominant form of communication for Generation X and most non-typists became skilled with a dominant index finger. For millennials, thumbs are dominant. After years of doing grunt work on keyboards, the thumb is suddenly flying all over the place on cell phones, as texting and chatting became the dominant form of communication. It is expected that voice will once again become the dominant

form of communication for Generation Z (post-millennials), however, the interaction will be with an intelligent virtual assistant, not a human. The artificially intelligent virtual assistant, supported by state-of-the-art natural language understanding, can be a huge value add for healthcare customer service. Within controlled domains, the intelligent assistant can authenticate faster and easier, interpret spoken language and access multiple knowledge bases at the speed of thought. According to at least one vendor of virtual-assistant technology, this system can reply with accuracy as high as 95%, all at a small fraction of the cost of live operator assistance.<sup>2</sup> Research in dynamic learning will also enable personalized voice and avatar representations in the not too distant future.

### First-contact resolution is the new expectation

First-call resolution can be a somewhat misleading measure of success because a customer may have already initiated several channel contacts before reaching

a live operator. The Boston University study found that a customer will typically reach a live agent after failing to achieve resolution through a portal and/or in an interactive voice response (IVR) platform.<sup>1</sup>

Regardless of whether the portal is a website or mobile app, accessed via laptop, tablet or smartphone, the use of intelligent assistants can decrease contact center volume significantly. At the Intelligent Assistants Conference in September 2016, some presenters found that figure to be as high as 45% within controlled domains.<sup>3</sup>

A chatbot service, powered by rules and artificial intelligence, allows the customer to interact via a chat interface with no human intervention. The backend analytics, flow optimization, error checking, integrations to APIs, natural language processing and routing and escalation to live human support will determine the success or failure.

<sup>1</sup> Human Touch And The Customer Service Experience: Consumer Uses and Attitudes Toward IVRs and Automated Customer Service Interfaces

Presented at the Interactions Customer Care Leadership Forum, Wednesday, September 21, 2016. The study was a partnership between the Center for Research on the Information Society at Boston University and Interactions and was conducted by James E. Katz, Ph.D., Jacob Groshek, Ph.D. and Jill Walsh, Ph.D. Reprints are available at: <http://www.interactions.com/library/human-touch-customer-service-experience/>

<sup>2</sup> The Adaptive Understanding™ model used by Interactions LLC that integrates automated speech recognition and natural language understanding with human assisted understanding claims 95% accuracy for open-ended questions and 99.5+% accuracy for closed prompts. <http://www.interactions.com/product/adaptive-understanding/>

<sup>3</sup> Intelligent Assistants Conference hosted by Opus Research, September 2016.



IVR platforms were originally designed as a “gate” to simply route and queue calls. Despite major advances in natural language understanding and computer telephony integration (CTI), they remain little more than that for most health plan customer service applications.

In the aforementioned study from Boston University, an overwhelming majority of people will often circumvent the IVR to reach a live agent. For most, the personalization and human touch that come from interacting with a live agent are still key factors in delivering a satisfactory customer service experience.<sup>1</sup>

Artificially intelligent conversational IVR can easily address some of the more common call drivers we see while providing personalization and that human touch customers seek. These systems can even be trained to “know” callers, which is a human expectation, and offer proactive responses once identity is validated, potentially through passive biometric voice print. For example, if a customer calls every month to see if their premium has been received, the system can prompt with, “Hi Mr. Smith – our records indicate your last premium was received on June 15, 2016, and your account is up to date. Is there anything else I can help you with today?” As you can see, today’s intelligent IVR platforms have advanced natural language

understanding, can interpret replies to open ended questions and do not need to offer a menu of choices.

### Next-generation technology is already in use

The traditional chatbot has been taken to another level by using avatars, combined with artificially intelligent conversational IVR via a mobile app or portal site.

A pilot project at a major university health system used a human avatar via a mobile app as a health coach who interacts conversationally with patients — just like a person — to answer questions, send medication and appointment reminders, monitor vital stats and help coordinate a patient’s entire care team, all while gathering and reporting data to continually improve care.<sup>4</sup> The pilot project saw a 50% reduction in 30-day hospital readmissions, a 39% improvement in patient satisfaction and a 10-point improvement in medication compliance.

Perhaps the most unique application of combining artificial intelligence and machine learning into speech recognition, while maintaining the personalization and human touch that come from interacting with a live agent, is through the use of human-assisted understanding in an IVR platform. This approach combines state-of-the-art natural language understanding supported by human-

assisted understanding via back-office utterance support, which assists the system in understanding unclear human speech. The approach creates a truly conversational IVR that exceeds 95% accuracy on every interaction. Analysts can monitor ambiguous utterances at the rate of about 1,000 per hour and direct the IVR response, in a machine learning environment, in real time and transparent to the end user.<sup>2</sup>

A major health plan used this platform and implemented a fully conversational Medicare enrollment solution that delivers a completed application, is compliant with requirements of the Center for Medicare & Medicaid Services, and answers Medicare program questions. As a result, 70% of callers who attempt self-service are able to complete their application with the virtual assistant, providing a 30% savings per enrollment.<sup>5</sup>

Speed, accuracy and choice of communication channel are what matters most to customers in their service journey. To meet customer expectations, a health plan needs to provide an omnichannel customer service ecosystem that optimizes fast, accurate handling of customer issues. It must understand human interactions and deflect calls to automated services channels that do not require live agent support.

<sup>4</sup> Human Avatar Health Coach engages patients in their own care, improves satisfaction, and reduces heart failure readmissions. <http://trueimageinteractive.com/project/human-avatar-health-coach-heart-disease/>

<sup>5</sup> Data provided by Interactions LLC <http://www.interactions.com/healthcare/>





# Using real-time speech and behavioral analytics to improve customer satisfaction

In healthcare, every call matters and can impact reimbursement rates through Star Ratings and other value-based care programs.

That's why it is important that we accurately identify the complex or difficult calls and route them to live agents.

In order to meet required standards of quality and compliance, human quality analysts subjectively review portions of a statistically significant call sampling (generally 2% - 4%). Because most of the content analysts review meets standards, the analyst becomes desensitized by the repetition and has a low probability of identifying quality issues in a timely manner — or at all.

Virtual quality analysts, however, don't become desensitized by repetition and are better suited to large-scale quality review.

Best-in-class, near real-time speech analytics products use artificial Intelligence and machine learning to listen to call recordings, producing a

result that is similar to having thousands of individuals listen to your calls, only better, because pattern analysis produces more accurate results. And the cost is far lower, only pennies per call. These automated analytics programs identify specific calls for human quality analyst review and coaching, with zero waste of human effort on calls that meet quality and compliance standards.

Alex "Sandy" Pentland, who leads the Human Dynamics research group at the MIT Media Lab, has researched the presence and power of social signals in human communication and the ability of machines to detect and interpret those signals.<sup>6</sup> That research has led to platforms that deliver in-call behavioral guidance to agents and real-time measures of customer perception. This allows for the ability to alter the outcome of a call in progress — far more desirable than a future coaching opportunity.

According to a variety of speech and behavioral analytics vendors, real-word data from major health plans indicate that both speech and behavioral analytics result in better quality reviews and agent

coaching, ultimately increasing customer satisfaction through increased first-call resolution and decreased handle time. Also, some insurers are using these analytics in real-time coaching for clinicians who call members as part of a care management program.<sup>7</sup> While the clinician is on the phone, the system provides real-time feedback about the member's reactions to the coaching, allowing the clinician to adjust his or her approach. This has improved member participation in the care management program. Studies are underway that will likely show improved Star Ratings, also.

## Conclusion

In the next few years, we will most certainly see a shift from dependence on live operator call centers to centers that offer both self-service channels and live agents. By routing specific types of calls to virtual agents, call volume for live operators will decrease; and analytics-driven live operator support will become the norm as the speed, quality and cost of customer service interactions becomes more of a factor in value-based care and reimbursement.

<sup>6</sup> MIT Media Lab — Publications, Alex 'Sandy' Pentland.  
<https://www.media.mit.edu/people/sandy/publications/>

<sup>7</sup> Case Study: Improving Care Management with Real-time Emotional Intelligence.  
<http://www.cogitocorp.com/wp-content/uploads/2017/01/Improving-Care-Management-With-Cogito.pdf>

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