IBM

soul machines

Business challenge

AI-powered chatbots are already transforming customer service, but customers still value the emotional connection of interacting with human agents. Soul Machines saw an opportunity to give AI a human face.

Transformation

Soul Machines is working with IBM Watson technologies to create "artificial humans" — realistic computer-generated characters that can react intelligently, empathetically and efficiently to customer needs.

Greg Cross
Chief Business Officer
Soul Machines

Business benefits:

Over 40%
of customer inquiries can be answered with zero human intervention

Continuous
learning means that results will improve over time

8-12 weeks
to create and roll out a customized artificial human for new clients

Soul Machines
Bringing a human face to customer-facing AI with IBM Watson

Soul Machines is a ground-breaking high-tech company of AI researchers, neuroscientists, psychologists, artists and innovative thinkers; re-imagining how we connect with machines. It brings technology to life by creating lifelike, emotionally responsive artificial humans with personality and character that allow machines to talk to humans literally face-to-face. The company's vision is to humanize artificial intelligence to better humanity.

"The ease of integration with Watson Assistant means that the time to market for our clients is very short. We can get an artificial human up and running in just eight to 12 weeks."

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Chief Business Officer
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Empathetic AI

As artificial intelligence (AI) continues its move into the mainstream, many businesses are looking for areas of their business where techniques such as machine learning and deep learning can provide a competitive advantage.

One of the most promising use cases is customer service automation; over the past few years, hundreds of companies have built chatbots that can help them reduce the pressure on their customer service teams and communicate with customers at scale.

However, many people are wary of AI, and it can often be difficult to get users comfortable with the idea of connecting with new technologies—especially if they feel like they are being pushed to interact with an impersonal application interface, when they would prefer to speak directly to a human being.

But what if your interface had a human face? Soul Machines, a tech startup based in New Zealand, specializes in creating "artificial humans"—lifelike computer-generated characters with natural voices and realistic facial expressions, which can communicate and interact with users just like real people.

The company arose from a research team at the University of Auckland, led by Dr. Mark Sagar, the Oscar-winning animation specialist behind computer-generated faces in Avatar and King Kong. Today, it works with some of the world's largest banks and software companies to create artificial human avatars that not only possess deep domain knowledge, but also embody the values and personalities of their brands.

The realism of these avatars relies on a virtual nervous system, a core technology modeled on the human brain and central nervous system. Greg Cross, Chief Business Officer for Soul Machines, explains: "What's unique about our artificial humans is that they are created using brain models that are similar to human brain chemistry.

"For example, imagine you are interacting with one of our artificial humans online, and you smile into your webcam. Our system uses visual recognition technology to recognize that this is an image of someone smiling. The virtual nervous system then interprets this as a positive situation, and creates the virtual equivalent of dopamine and serotonin. This in turn triggers the artificial human to "feel happy" and smile back at you."

Soul Machines supplies the interactive, AI-powered face and voice simulation that registers emotional cues from the customer and modulates voice and expression in response. This helps customers feel much more comfortable interacting with an AI-powered customer service system.

However, while Soul Machines' technology makes these interactions feel natural, the other half of the problem is to ensure that the artificial humans can answer customer questions correctly and accurately, with a deep understanding of the company's business domain. That's where IBM Watson™ Assistant comes in.

Getting to the right answer

Watson Assistant is an enterprise-level AI assistant, customizable to any business, that delivers proactive, personalized services. It interprets natural language (in multiple languages) and can be continuously trained on domain-specific data to deliver appropriate responses to clients' queries.

As the number of channels which customers use to communicate with companies continues to increase, Watson Assistant offers a much more scalable alternative to human customer service agents. Companies can deploy Watson to handle thousands of everyday queries automatically, leaving human agents to focus their expertise on addressing more specific and complex issues.

"Many of our clients were already working with IBM, using Watson-based chatbots to answer customer questions through text-based interfaces," Greg Cross says. "We just needed to integrate our artificial humans with Watson Assistant to provide a new user experience layer that would deliver Watson's answers in a more natural, intuitive way."

The integration between the Soul Machines platform and IBM Watson Assistant is relatively straightforward. Watson Assistant runs in the IBM Cloud™, so there is no infrastructure to manage, and it provides a simple API that makes it easy to connect with other applications.

As a customer speaks to an artificial human, Soul Machines sends the audio stream of the customer's voice to the Watson Assistant API. Watson converts the audio into text, then searches the company's corpus of knowledge for relevant answers to the customer's question, ranks the results, and returns the top-ranked answer to the Soul Machines solution.

Meanwhile, the Soul Machines platform is analyzing the audiovisual input for emotional cues from the customer's tone of voice and their facial micro-expressions. It then converts the answer into modulated, emotionally inflected speech for the artificial human to deliver, matched with appropriately generated facial expressions.

"The ease of integration with Watson Assistant means that the time to market for our clients is very short," says Greg Cross. "If a company has a Watson chatbot set up already, we can get an artificial human up and running in just eight to 12 weeks."

Winning trust

"We've had great experiences working with the IBM team, both technically and commercially," comments Greg Cross. "As a technology company, partnering with IBM gives us a much greater reach because of the scale of their global consulting services team. IBM

consultants can help clients implement our solutions, and the deep relationships that IBM has with its customers give us a strong foundation to build upon."

"For a greenfield customer that has not yet started on its AI journey, we would recommend IBM for their strong track record. We have had a lot of success working with Watson Assistant and that persuaded us to introduce IBM technology to several of our other clients."

As more businesses make the move from simple chatbots to Soul Machines' more sophisticated customer service solutions, the number of API calls to Watson Assistant is increasing substantially.

Greg Cross remarks: "So far, our clients' customers are very happy using the technology. They love the immediacy of the customer experience interacting with our avatars. As the Watson solution keeps learning every day, it can answer more and more customer questions, and the answers get better over time.

"One of our banking clients has found that it can already satisfy 40 percent of queries without any kind of human intervention, and we expect that number to climb even higher as the solution continues to learn."

As the world moves into the AI era, the pressing question is: how can businesses reinvent customer experience to retain and add value to customer relationships? As more and more companies take up AI solutions, the race will be on to add value in a way that keeps customers away from competitors.

Greg Cross concludes: "AI solutions keep learning and developing from the day they are implemented, so anyone late to the game will find it very difficult to catch up with the continued advances made by early adopters. With IBM's help, Soul Machines is proud to be helping clients take an early lead in the AI race — potentially giving them an insuperable advantage in the years to come."