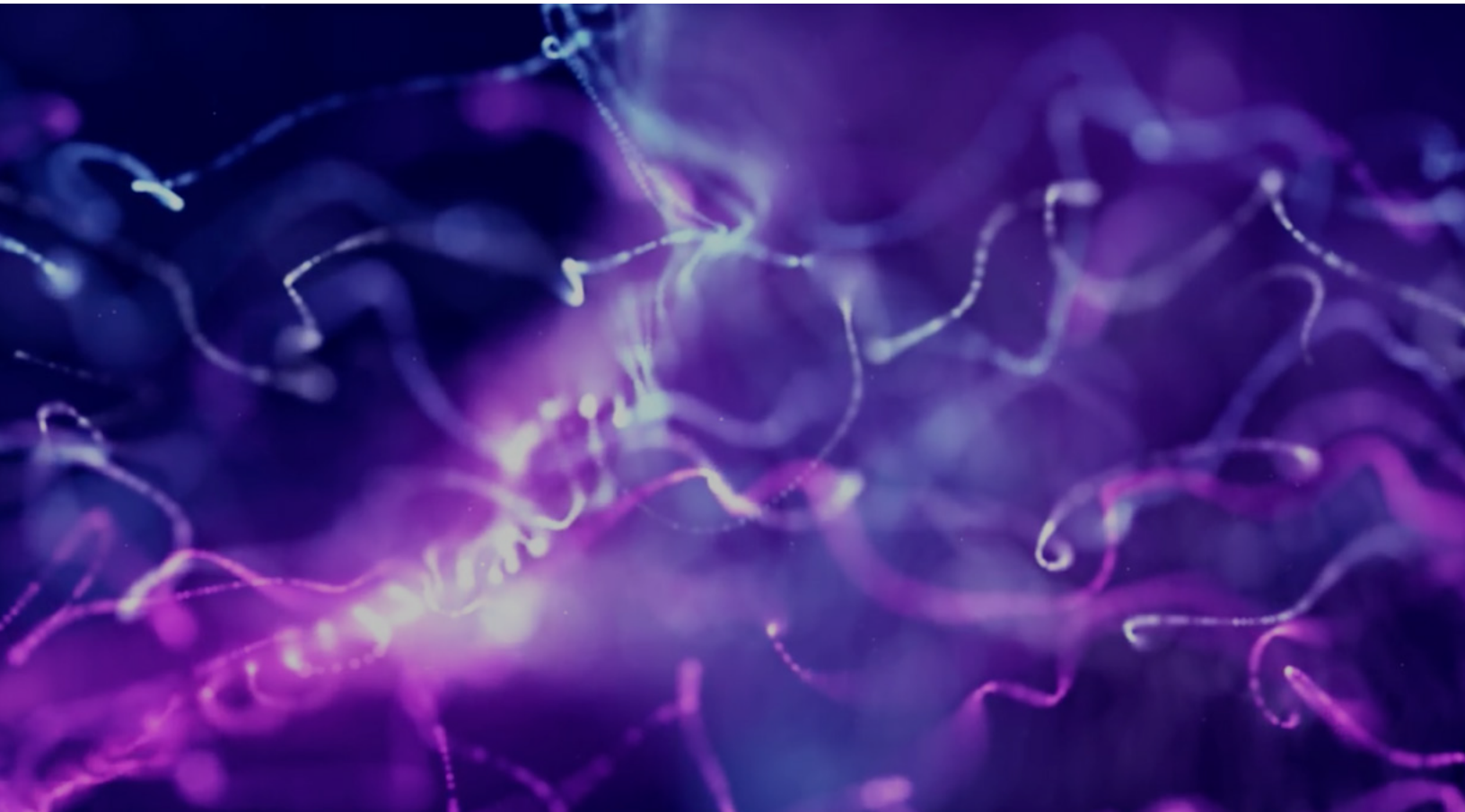
Artificial Intelligence and customer conversations

Experiments in delivering amazing customer experiences

WORLDWIDE CUSTOMER EXPERIENCE

Table of Contents



Company Description

Electronic Arts Inc. is a leading global interactive entertainment software company. EA delivers games, content and online services for Internet-connected consoles, personal computers, mobile phones, and tablets. In fiscal year 2017, EA posted GAAP net revenue of $4.8 billion. Headquartered in Redwood City, California, EA is recognized for a portfolio of critically acclaimed, high-quality blockbuster brands such as The Sims™, Madden NFL, EA SPORTS™ FIFA, Battlefield™, Dragon Age™ and Plants vs. Zombies™.

Worldwide Customer Experience Description

The Worldwide Customer Experience (WWCE) team, or EA Help as we're known externally, strives to make Electronic Arts known for taking care of players by helping them have great experiences with EA.

Location

Austin, Texas and Galway, Ireland

Contact Types

Account, billing, sales, and technical issue support

Advisor Headcount

~1500

Contact Volume

This year, we expect to help:

- 88M players who visit our websites EA Help and Answers HQ
- 8M issues handled by a live advisor (email, phone, chat, TOS, and in-game channels)

Contact Channels

We take care of EA players in 8 support channels – in-game, EA Help, Answers HQ, phone, live chat, email, Facebook, and Twitter.

The Beginning of XLabs

In late 2015, WWCE created XLabs, a customer experience (CX) focused lab to pioneer innovations in artificial intelligence (AI), technology infrastructure, and new player experiences. XLabs focuses on helping players get the most from their games by creating frictionless player experiences.

Tackling a Common Problem

Protecting our players' account security is a priority for us. It helps us keep our games safe and secure. If a player contacts us about forgetting their login information, we work to ensure we're really talking to the owner of the account and not a phisher trying to gain access to their account. We want the verification process to be frictionless and efficient. So our goal was to improve the experience for our players, advisors, and the business when dealing with account security issues.

Last summer, we conducted a study about player contact preferences. We know how players like to contact EA Help, depending on their issue. If they have questions about managing their account or an order, they most prefer to chat with us. As many as one third (33%) of players expressed interest in using a cognitive agent to help answer questions before talking with a human. Although some were skeptical of automated solutions due to past experiences, many were willing to try automation for quick fixes and while "waiting in line" for live support as long as it did not add another barrier or time to resolution.

By automating account verification, we expected to see fraudulent contacts decrease. This would help lessen contact volume and shorten wait times for players. Then our advisors could spend their time on players who need our help.

Chatbots v. AI Virtual Customer Assistants

When talking with people about our efforts to automate some parts of customer service, there is often confusion around the concept of virtual customer assistants and how they compare to ChatBots or other self-service tools.

We look at support as a spectrum. On the left, we have players who want to entirely self-serve. On the right, we have live support agents. In-between is a spectrum of ability, where ChatBots can handle very simple use-cases like FAQs and cognitive virtual agents can handle more complex use-cases like working with a player to diagnose connectivity problems.

Most ChatBot technologies we've researched and tested internally break AI into two components: input and response. They focus on trying to understand the customer's intent and apply basic logic to give a canned response.

EA is testing a cognitive conversational AI as a virtual customer assistant because we believe the interaction is more complex with three distinct components: input, logic, and output.

1. **Input** - Computers are not very good at unstructured inputs. Natural Language Processing and understanding intent can be challenging, but they have been an area of great innovation in the past few years.
2. **Logic** - Computers are amazing at logic. It's not always easy to program them, but ultimately logic can be encoded into a system and executed each and every time.
3. **Output** - Natural Language Generation and "sounding human" is the hardest thing for any automated system to do. It's where most simplistic ChatBot styled systems fail and more advanced cognitive systems excel.

We have spent a lot of time customizing our initial greeting for our AI Virtual Agent. Recently we have been using: "Hi there, and welcome to EA Help! My name is Amelia, I'm EA's Automated Game Advisor. I've been designed and trained to help players like you with answers to some of the questions and problems we get asked about the most. If I can't help, I'll put you through to an EA Advisor. I'm still kind of new at this, so please be patient with me if I don't understand what you need right away."

While the name of the virtual assistant is "Amelia" we let the player know that this is an "Automated Game Advisor."

Testing Amelia

We have implemented many technology systems and have a very routine process we follow. We write business requirements, technical requirements, use-cases, and test plans. Our engineering team then writes the code, executes the tests, and hands the system over to our user-acceptance testing (UAT) group for validation.

Since this is our first foray into AI, we budgeted twice as much time as we had originally planned for requirements and development. For the UAT process, we had planned to do about 30 hours of testing, but we decided to expose the system to as many of our internal advisors as possible to get lots of people looking at the system. After 300+ hours of testing, we decided the system was ready to launch.

We had a war room setup for our launch and the very first player the system interacted with said the phrase, “Hi Amelia.” We were all stunned: dozens of people had spent hundreds of hours of testing and that phrase had never been tested. Everyone involved in testing had known they were talking to a computer, so they had not thought of testing the phrases “hi” “hey” “yo” “hello” - all of which are common player greetings.

We immediately realized two things:

1. Our players were not reading our carefully crafted introduction, or they were reading it without understanding what automated meant.
2. We drastically underestimated how we should test AI.

The more we thought about it the more we realized we had approached testing with some false assumptions. We were thinking of the system like any other piece of technology we’ve built or implemented in the past - a set of parameters goes in and a set out outputs comes out. Artificial Intelligence is an entirely novel concept and does not work that way. Similar to how humans learn, we have to vary how we test knowledge versus memorization.

For example, if you give the same math equations (1+1=2, 2+2=4, and so on) to AI or a human, you test their ability to memorize the answers. If you want to test AI or a human to see if they know how to add (1+2=?) then you need to give them a variety of different math problems to reinforce the knowledge of how addition works.

Our automated game advisor system came back with a clever response to “Hi Amelia.” It replied, “Oh, hello… how can I help you?” We had never seen this response before

and we all breathed a sigh of relief as the interaction proceeded successfully.

Our main takeaway is that we cannot predict how our players will talk with us. We can analyze historical conversations and try to vary our internal test process as much as possible, but nothing substitutes for actual real-world conversations.

We did not have a lot of time to recover because we were still piloting the system. Over the next few conversations we continued to observe and learn the new ways our players talk with us that we had not thought of before. The next unexpected phrase that a player used was, “wait a sec.” We had not tested this phrase either and unlike “hi” the system did not have a native way to respond. Our AI did ask for clarification and the conversation proceeded, but we knew that we had to do some work to improve the system.

Teaching AI about time is challenging because the ways humans interact with the phrases “wait a sec”, “one moment”, “hold on”, “one min”, and “let me check”, all indicate that the other person needs to do something before the conversation can continue. Teaching the system how to understand these intents and be polite about the response was crucial.

We spent an afternoon brainstorming ideas of how to address this and the next morning training the system in what we thought might be a good approach. By the following afternoon, we already had a new version of the system taking live contacts so we could continue to learn and refine our approach.

We shifted our mindset away from a very traditional Waterfall model to a more Agile approach. Instead of spending hours in requirements, development, and testing we shortened all of that and got the system working quickly and into the hands or our players. This way we could learn and improve as fast as possible.

How Amelia Helped Improve Player, Advisor, and Business Outcomes

Most of our players responded well to Amelia and viewed it as a tool that helped advisors focus on and more efficiently resolve their actual issue. They appreciated the system collecting their information and routing them to the best support channel.

One player said:

> "It did feel like she already knew what issues I had, so it was basically like the bot was preparing me for the human, so the human takes less time for me to talk, so it's a quicker and faster response. And, the faster we get to the issue that I have, so we can resolve it and continue, so she can continue her work."

We heard similar themes throughout our interviews with players - they liked how fast Amelia communicated, that it gathered their information before passing them to a human for support, and the efficiency of the interaction.

It takes Amelia three minutes to verify a player before passing them along to an advisor versus the five to ten minutes it takes a human to verify a player before getting to their issue. Advisors liked the handoff with Amelia too, because they got to help players better. With Amelia, advisors knew they were talking to prescreened players, did less repetitive work, and connected with players in a more human, personal, and helpful way.

Conclusion

We have big plans for AI in our never-ending quest to become known for taking care of our customers. We don't envision AI replacing the frontline employee. Instead, the AI cognitive virtual agent will augment and complement the frontline employee's tasks. By doing so, it ensures the work of machines is effective and the best customer experience.

Artificial Intelligence and customer conversations

Experiments in delivering amazing customer experiences

WORLDWIDE CUSTOMER EXPERIENCE