



Business challenge

Recognizing that shifting to a subscription business model requires real-time customer service and support, Autodesk sought to use cognitive technology to enhance its customer experience.

Transformation

Using the IBM® Watson® Assistant service, Autodesk developed a virtual agent that interacts with customers. The solution returns answers quickly by applying natural language processing (NLP) and deep learning techniques to recognize and extract the intent, context and meaning behind inquiries.



Gregg Spratto
Vice President of
Operations
Autodesk Inc.

Results

Supports 100,000 conversations

per month, easing the burden on call center staff

Recognizes 60 distinct use cases

to quickly resolve easy requests so that agents can focus on helping customers with complex issues

Cuts resolution time drastically

from 1.5 days to just 5.4 minutes for most inquiries

Autodesk Inc.

Speeding customer response times by 99 percent with IBM Watson

Founded in 1982 and headquartered in San Rafael, California, in the US, **Autodesk** is a global leader in 3D computer-aided design (CAD), engineering and entertainment software. Customers in the manufacturing, architecture, building, construction, and media and entertainment industries use Autodesk products to make the world around us. The company operates in 143 locations worldwide in addition to research and product development operations in the US, Canada, China and Singapore. Autodesk employs more than 8,500 people.

“We needed a very different way to service our customers than we had in the past.”

—Gregg Spratto, Vice President of Operations, Autodesk Inc.

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Fielding customer inquiries

For more than 34 years, software giant Autodesk sold its popular 3D design, engineering and entertainment software under perpetual desktop licensing agreements. However, the way customers want to buy and access products is changing—from working with desktop applications to using software hosted on cloud and mobile platforms.

Autodesk has been proactive about the shift. Gregg Spratto, the company's Vice President of Operations, elaborates: "Roughly four or five years ago, we started thinking through a more modern way of both selling and distributing our licenses and moving toward a subscription model."

Although the move makes sense for Autodesk—customers can save money, avoid long-term agreements and benefit more quickly from product updates—it also has a profound effect on customer service.

What's more, it raises the stakes for attracting and retaining new and would-be customers because the purchase experience often begins with a trial. "If a software trial doesn't work properly, they'll never become a customer," says Spratto.

Currently, Autodesk maintains a staff of about 350 internal and external customer support agents who handle roughly one million customer and partner contacts per year, half of which pertain to activation code requests, changes of address, contract problems and technical issues. "A lot of what my team does is just problem recognition, trying to identify what the person wants or is asking," explains Spratto, who manages both customer and partner service worldwide. Due to the heavy volume and complexity of the issues, the current resolution time for inquiries can be 1.5 days or more.

With the move to subscription underway, Autodesk needed to respond more quickly to customer inquiries and scale for future volume. In late 2015, after months of researching the use of intelligent customer engagement technologies in the service support space, Autodesk teamed with IBM to begin an innovative pilot program developing a virtual agent based on the Watson Assistant service.

Automating customer service

For Autodesk, the choice to work with IBM was clear. "We didn't try other competitors," says Spratto. "IBM was willing to sit down and talk with us, understand our problem, make us early adopters and give us some of its best resources."

The Watson Assistant service allows customers to enter questions in natural language, as they would with a human agent. Trained on the subtleties of language, such as idiom and syntax, and powered by natural language processing (NLP) and deep learning techniques, the solution understands the intent of customer questions and returns high-confidence answers quickly. It also recognizes keywords and phrases to understand the conversation's context and purpose.

To train and develop the technology for its needs, Autodesk feeds historical data from chat logs, use cases and forum posts into multiple open source machine learning programs, and has analyzed a total of 14 million sentences for keywords, entities, phrases, clusters, and other speech and language patterns. This information is the corpus of knowledge on which the conversational API is trained so that it understands the broadest array of customer inquiries and recognizes exactly what customers are asking. In the future, the company will add phone log data to the corpus.

Autodesk is also tapping the expertise of a large number of internal resources, who will impart their knowledge about a particular domain and supervise the solution's training. This helps the technology learn the nuances of customer vocabularies and the meanings and context so that it can deliver answers that are more relevant.

The Watson Assistant service will act as the front end for both web submissions and chat inquiries—which account for 80 percent of the support team's annual volume—to either resolve issues on its own or collect enough information for human agents to answer them. If the virtual agent cannot resolve a particular issue, a case is created and routed to the appropriate human agent based on the information gathered.

"The vision is to start every customer interaction with Watson," says Spratto. "If nothing else—if we can just understand what customers want—we can route more appropriately, collect more information and create a case so that when it gets to a human agent they're not having to do all that work. This ultimately leads to quicker resolution and a better customer experience."

Eventually, the technology will also support phone inquiries by directing customers with more complex questions to the appropriate service agents more rapidly.

Resolving inquiries quickly

Autodesk began piloting the Watson Assistant service in June 2016 on its website as a virtual agent called OTTO, which was later redesigned, enhanced, and renamed AVA (Autodesk Virtual Agent) in February 2017. In addition to resolving customer issues more quickly and around the clock, the cognitive technology gives the company a competitive advantage.

By tying the technology to various web services for common use cases, such as requests for authorization codes, the Watson Assistant service becomes even more intelligent over time and speeds inquiry resolution. For instance, during a chat, AVA can recognize that the customer needs an authorization code and communicate that to the web service, which returns the code in seconds. The customer service team supervises the chats and validates responses. “Recognition is absolutely the most important skill that Watson learns,” says Spratto.

“With Watson, we’re now resolving automated cases in 5–10 minutes as opposed to a day and a half. And the only reason it takes 5–10 minutes is because that’s how long a customer needs to type in or find specific information, such as matching a serial number to an entitlement or contract. The reality is that we answer the question as quickly as the customer can type it in,” explains Spratto.

As a result, agents are under less pressure and can focus on more complex issues, such as helping customers understand how to use some of the products’ more sophisticated features and functionalities.

While improving the customer experience is its primary objective, the solution also reduces the number of long-term cases and how many inquiries the service team ultimately handles. “Case prevention—reducing the number of inquiries coming to my team—is just as important,” says Spratto.

With the Watson Assistant service, Autodesk sees a future where it can scale its customer service in a way that will increase satisfaction and retention among its subscription customers because it can answer more inquiries faster. In fact, the intelligent technology, combined with a high-powered scripting tool previously in place, has already contributed to a 10-point increase in customer satisfaction levels because customers don’t have to wait as long to have their questions answered.

“The 24x7x365 aspect of a virtual agent is incredibly intriguing,” concludes Spratto. “It’s a way for us to scale our volume almost endlessly and, at the end of the day, it’s better for our customers.”

Solution components

- IBM® Watson® Assistant

Take the next step

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