

Artificial Intelligence in Customer Relations

Myths and realities

“*Through recognizing certain patterns of interaction, machine learning can identify a customer’s needs and can deliver results similar to those gained through human interaction.*”

A revolution in experience and productivity

After transforming games such as chess, Jeopardy!® and Go, artificial intelligence (AI) is set to radically transform customer services. This major upheaval will take the shape of smart conversational interfaces known as chatbots that answer client requests through highly developed conversations, via text (on digital channels such as social networks, mobile apps and websites) and speech (on the traditional phone channel).

Fast in exchanges and self-learning, providing precise answers to customer requests and offering a personalized business transaction service (purchases, bookings, etc.), chatbots are set to replace contact center agents (who will be left to handle the most complex requests) and mobile apps and websites (the interfaces of which will never be as intuitive as the natural language we all learn from birth). Representing a revolution in customer experience and productivity, chatbots are on the verge of an unprecedented disruption to customer relations.





A chatbot is a virtual robot that uses artificial intelligence to interact with people.

It understands human language and can answer questions directly

It learns from the interactions it has with people.

It can carry out tasks.



Through recognizing certain patterns of interaction, machine learning can identify a customer's needs and can deliver results similar to those gained through human interaction.

Machine learning changes everything

Paradoxically, conversational interfaces in customer relations have existed for quite some time. The avatars found on websites are functional text-based chatbots that offer services via chat windows. Similarly, natural language interactive voice response (IVR) services, which have existed for more than 10 years, are able to understand a user's sentence and deliver adapted self-service (for example, bank balance) or connect the user with an agent able to answer his or her request.

Although these interfaces have limited Natural Language Understanding (NLU) capabilities (avatars only detect key words), machine learning changes everything. Put simply, machine learning recognizes a pattern after first learning it. Specifically in customer relations, machine learning can identify a customer's intent—in other words, his or her need.

Learning consists of giving examples of sentences to the learning machine and detailing the corresponding intention. To be efficient, this learning has to happen before a chatbot is launched and continue throughout the first few weeks after launch. If the chatbot doesn't recognize the intention with enough reliability, human intervention becomes necessary.

A well-trained intelligence chatbot can deliver truly impressive results that can be compared to those gained through human intelligence. However, learning has to be supervised by a reliable operator or the chatbot's effectiveness risks being corrupted. This is exactly the problem Microsoft encountered in 2016 with its Tay chatbot, which experienced drifts that led to the project being abandoned.

Machine learning algorithms aren't new, and are easily accessible through efficient open source software or ready-to-use APIs (for example, Google, Amazon, Microsoft and IBM).

Beyond machine learning, there is now an ensemble of mature and accessible technologies that are enabling the construction of chatbots—speech to text, text to speech and API management. Last but not least, social networks have paved the way for mainstream use of written conversations as a method of expression and communication.

Text-based chatbots for customer relations—a recent reality

There are now dozens of chatbot engines on social networks, such as Facebook Messenger and Baidu, which enable organizations to use simple interfaces to program dialogues in text mode. Paradoxically, the overwhelming majority of these systems don't use AI, but only refer to closed questions to feed dialogues. When open questions are formulated, the answers are analyzed either by simple key word research or by an actual person hiding behind a chat interface.

A chatbot's ability to automatize customer service is therefore restricted to very simple requests. To broaden chatbots' area of action, more sophistication is needed, which typically includes:

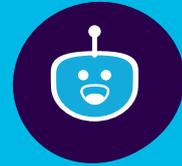
- Engaging the customer in conversation via the digital channel of their choice—social network, mobile app, website or intranet.
- Securing user identification and authentication through data from the customer database.
- Analyzing the customer's request via machine learning to detect the client's intention and spot complementary information—for example, a date, place or model.
- Leveraging an efficient dialogue engine to ask a series of open or closed questions that identify the customer's request, using already available information.
- Providing the customer with the adapted information (text, link, PDF, video, etc.) or service (reservation, purchase, etc.) through connections with other IT/IS.

In addition, to deliver a complete end-to-end service, a provider must:

- Supply the AI engine with collections of relevant intentions for initial learning.
- Implement operator assistants to secure supervised chatbot learning.
- Describe the most relevant and strongest dialogue for each intention, predicting all possibilities, including when the user changes their options or wants to go back.
- Enable a connection between the user and a real agent if the chatbot can't handle the customer's request, and ensure transmission of information collected by the chatbot during the conversation.
- Ensure security of the overall service, both through the cloud and on-premises.

However, building this kind of sophistication isn't easy, and providers offering the full set of functionalities in an integrated way include IBM's Watson Conversation and Microsoft's Bot Framework. Capgemini's new Concierge service also intends to compete in this space.

These features will enable chatbots to fulfill their promise of striking up an anytime, anywhere, any device conversation; understanding the customer's need; chatting "just like a real person;" providing an appropriate answer to both simple and complex requests; and forwarding the request to a real agent if appropriate—all of which enhances customer experience to the latest digital standards and delivers a rapid return on investment, including an increase in the self-service utilization rate and increased customer satisfaction.



The application of chatbots within an organization is huge—both in external customer relations such as retail, banking and insurance, and internal relations such as IT service desk and procedure assistance.



Chatbots are able to automate **10–40%** of interactions, reducing the processing time of real agents by **10–30%**.



Voice-based chatbots—an emerging offer

With the phone still the most important channel for customer service, and because call center costs remain high, voice-based chatbots are considered the holy grail of customer service automation. At first glance, the principle behind voice-based chatbots is simple—it transcribes speech into text, uses a text-based chatbot with adapted dialogue and then vocalizes the answer. However, effective realization is much more complex, as most chatbot solutions only offer API toolboxes without securing the recognition rate of speech-to-text or the latency time from beginning to end. In fact, the objective is to get close to what natural language IVR can offer, but with a much broader dialogue capacity.

Voice-based chatbots also offer advanced functionalities, including vocal biometrics that provide seamless customer authentication, emotion analysis to monitor the conversation and synthetic voice adapted to the customer’s profile.

Chatbots represent the holy grail of customer service automation. They can automate 10–40% of interactions, lower average call duration by up to 10–30%, and deliver an appealing customer experience to, although not exclusively, millennials.

Organizations should adopt AI now!

Far from being a myth, AI within customer relations is a reality, and organizations need to be ready. But just like every new digital technology, implementation of a minimum valuable product (MVP) on a limited perimeter is recommended.

Capgemini helps organizations take action with its end-to-end Odigo cloud-based contact center solution, combining both a multichannel chatbot solution and the service to implement it.

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