

# FROM THE PAPERCLIP TO CONVERSATIONAL AI: **THE EVOLUTION OF THE CHATBOT**



# Introduction

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Elegantly described as aiding ‘Conversational Commerce,’ chatterbots—or chatbots—made a somewhat inelegant entry into the world of commerce in 1997. Bundled with Microsoft Office that year was a user interface agent that remains simultaneously well-known and universally annoying: Clippy. An animated paper clip tapped the screen when activated and asked users if they needed help learning the software suite. It also predicted the user’s next actions—asking if they needed help typing a letter or creating a document, for example.

Clippy wasn’t, however, the first chatbot; that distinction belongs to ELIZA.

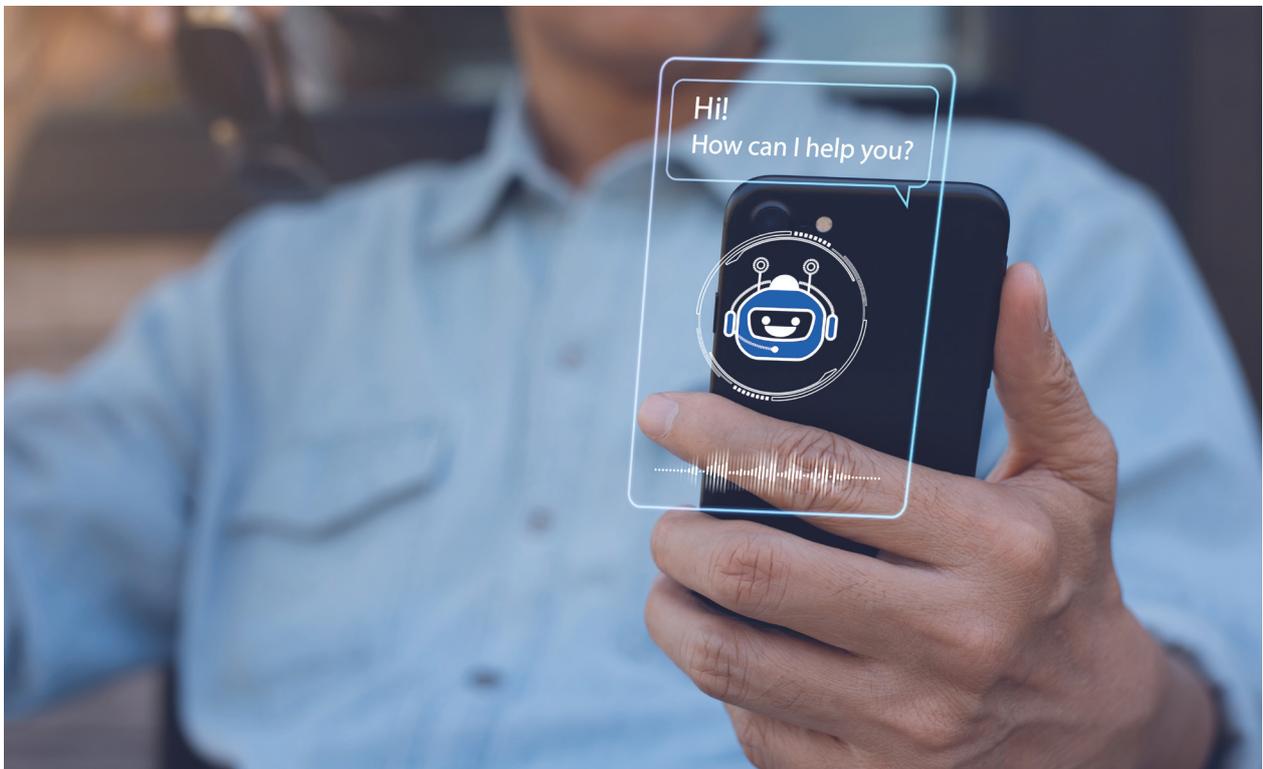
Developed by Joseph Weizenbaum at the MIT AI Lab in the mid-the 1960s, ELIZA would identify keywords in text typed by the users and select the appropriate response from a set of pre-programmed answers. You could type, for example, about someone in your family, and she would

respond and ask you to tell her about your family while remembering the input. ELIZA followed in the footsteps of mathematician Alan Turing, who pioneered intelligent machines: the idea that machines could convincingly impersonate human behaviors, leading users to believe they were interacting with another human, rather than the cold steel of a machine.

Despite being decades apart, both ELIZA and Clippy were early generation artificial intelligence; their development, however, would influence the way we interact with chatbots across a variety of platforms today. This is particularly true as we increasingly interact with brands digitally while following a uniquely human trait: the need to connect and engage before and after a purchase. Chatbots make that process much easier—reducing the number of steps a customer needs to get quick answers to their questions and smoothing out the path to purchase.

## Scaling up with Conversational AI

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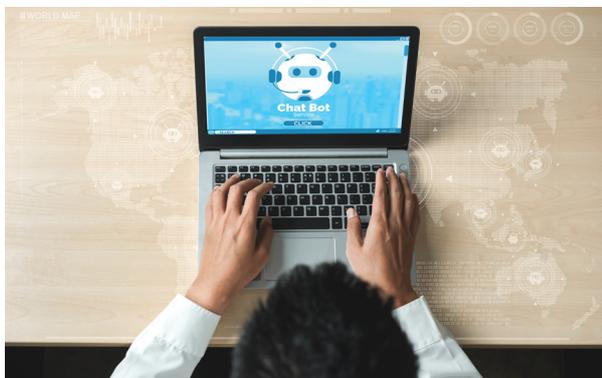


There is a general consensus that we are in the ‘Golden Age’ of conversational artificial intelligence (AI). It is also a market that is expected to grow to \$15.7 billion by 2024

Rule-based chatbots—following the classic if/then format—are relatively simple to build, but in that simplicity lies a problem: the inability to quickly scale as the business grows. Conversational AI-powered virtual agents are the answer. They learn from a vast pool of contextual (source) data, essentially, previously recorded transactions that imitate human interactions or even recognize speech inputs (advanced). The net result is a steady enhancement in the chatbot’s response to increasingly complex scenarios, along with the potential to rapidly scale up the interactions in a partnership between technology and agent personnel.

In a far cry from the paperclip, today’s AI applications serve multiple purposes, from customer-facing AI assistants, support chatbots, skill chatbots, assistant bots, and transactional bots. All of these leverage AI through text to improve a customer’s experience and are key to the digital transformation of businesses.

Essentially, chatbots present the potential to assist customers in the quickest possible time. The better the source data, the more meaningfully responsive the bot, and consequently better is the ability to serve the customer. As with commodities, there is a wide range of bots available today; their quality depends on a brand’s willingness and ability to invest in the technologies that drive the bot. The perception that the credibility of the source data limits response quality is also changing. The current availability of tools and expertise also enables chatbot frameworks to draw quality insights from fragmented transaction/interaction data. All you need is conviction in the AI to solve customer problems. AI-enabled chatbots also enable businesses to manage a fast-paced landscape that, for better efficiency, calls for scalability, flexibility, and intelligence.



## There are four ways that chatbots can help improve the customer experience.

1. They are proactive and automated.
2. They are reactive and automated, responding directly to customer queries on products and services.
3. They are manual and have high concurrency. For example, they can use data to identify targeted groups of customers for retail promotion.
4. They can provide individual attention to the customer, sending, for example, a coupon to a customer who has just posted a review online.

There are key points to consider here.

First, that chatbots are now an intrinsic part of our lives; many of us have already, without realizing it, been using them online on a variety of platforms from retail to telecommunications to medical and banking. We also use chatbots like Alexa, Siri, or any of the voice-activated gadgets in our home.

Second, for the businesses involved—a chatbot’s ability to integrate data and AI and seamlessly reach customers in multiple ways is a huge step forward in their ability to increase engagement and retention levels.

Third, we may not always see the connection between AI, facial recognition, and chatbots. Or if we do, we limit our view to what we see in use at airports or other security terminals. Among other uses, facial recognition integrated with chatbots now unlocks our phones, identifies people on social media platforms such as Facebook, assists with diagnosing diseases, and helps validate identities.

# The Role of the Pandemic

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In the midst of the increasing growth and sophistication of chatbots came the Covid-19 pandemic, the next pivot of businesses to a work-from-home model and an active search for newer platforms and solutions. It paralleled an unprecedented surge in calls to contact centers worldwide; the numbers tell the story of increasing demand; Microsoft's healthcare bot alone, for example, fields one million Covid-19 questions per day across the United States.

Four main reasons make conversational chatbots the smarter tool of choice during uncertain times

and a larger work-from-home environment. They provide uninterrupted consistency across customer interactions; they are not tied to a particular time zone or hours of operation; they enable instant scalability when demands spike; and those spikes are handled in a timely and consistent fashion—especially critical in times of crises.

Conversational chatbots also play an increasingly important role within organizations, providing services especially useful in a virtual world—ranging from resolving IT helpdesk issues to booking meetings.

## Meeting the Challenge

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Conversational chatbots are necessarily bespoke and BPOs are meeting the challenge of managing complex transactions by using multiple APIs and back-end systems to handle variations in customer intent, at scale.

The best chatbots use a three-pronged approach to conversational AI knowledge, including general knowledge (e.g., “hi,” “how are you?,” “thank you,” etc.); industry-specific knowledge (e.g., banking, telcom, insurance, public sector, etc.); and specific

company knowledge (e.g., brand-specific products and services). To make them even more effective, they use neuro-linguistic programming and deep learning algorithms, along with multi-lingual support, the ability to recognize slang and dialects, and contextual awareness that keeps pace with changing conversations. Security and privacy in an AI world are critical, and BPOs emphasize user authentication, allowing transactions to be completed on behalf of customers.

## Human-assisted and digital powered

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None of this deemphasizes the role of the human specialist. If anything, it complements their service; when a chatbot doesn't have an answer to a client's question, the query is seamlessly handed over to a live operator within seconds—a partnership that perhaps neither Clippy nor ELIZA might have envisioned. In that context, it's important to note that chatbots needn't carry on the conversation end-to-end. Intelligent hand-off points are key to a meaningful human-tech partnership, where the interaction itself is platform/technology agnostic, but the objective is to industrialize and enhance the quality of business response to consumer queries/problems. The recognition that smarter CX depends on this human-technology partnership is a paramount success factor in leveraging conversational AI within your CX transformation. Future developments will, in all likelihood, see increasing integration of voice, text, and data—exponentially increasing engagement levels.

Indeed, the realm of the possible is infinite with conversational AI that trained CX specialists duly support. While widespread deployment of intelligent chatbots indicates a net-positive move along the AI maturity curve, we believe there's more this digital-powered and human-assisted technology has to offer.

The pandemic has certainly accelerated the shift from the proof-of-concept to enterprise-wide adoption of conversational AI-driven chatbots. However, our learning from engagements across industries suggests that the initial efforts in building business cases, optimizing build-deploy-maintain cycles, platform selection, and efficiency and effectiveness metrics could do with external help from mature technology and process engineering partners with relevant CX experience.