

# A Beginner's Guide to **Conversational AI**

AMELIA<sup>®</sup>  
AN IPSOFT COMPANY

# A Beginner's Guide to Conversational AI

Much has been written about the potential of AI to redefine business processes through the automation of physical, transactional and increasingly cognitive tasks. Specifically, AI is enabling a new type of user interface (UI) which allows humans to interact with digital systems through the medium most natural to them – conversation, either through the spoken word or interactive, unscripted text chats. While humans have long “conversed” with computers, those interactions had to follow strict structured rules that computers were pre-programmed to anticipate.

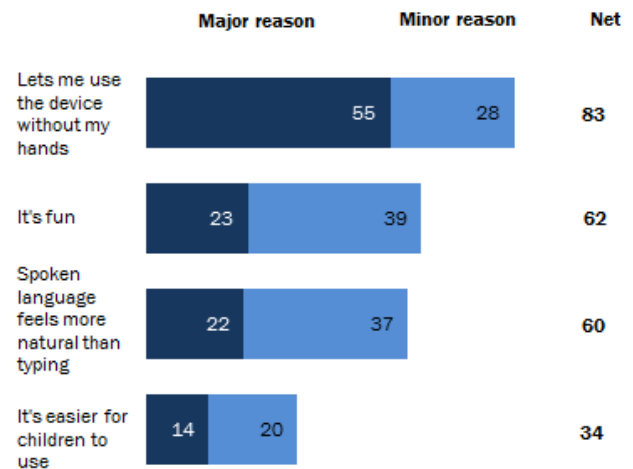
An ascendant generation of Conversational AI solutions are able to discern a wide spectrum of user inputs, including ones they are not specifically trained to anticipate. These systems translate user requests into specific actions. These engagements are particularly powerful when paired with autonomic back-ends, which allow users to access processes and automations just by requesting them. This opens up a number of exciting possibilities that will impact businesses, employees and customers in years to come.

In recent years, Conversational AI technology has matured into various all-purpose “digital assistants” aimed at the general public (e.g. Siri, Alexa, the Google Assistant), as well as enterprise-focused “digital colleagues.” A [survey from Pew](#) found that 46% of all Americans regularly use these digital assistants, with the most popular reason (83%) being the ability to “use a device without my hands.”

However, the bridge between a conversational digital assistant, and Conversational AI agents that are enterprise-grade, is quite extensive.

## Most digital voice assistant users cite freeing up their hands as a major reason for adoption

*% of digital voice assistant users who say the following are major/minor reasons for using them*



Note: Respondents who chose “not a reason” or did not give an answer for each option are not shown. Figures may add to more than 100% because multiple responses were allowed. Source: Survey conducted May 1-15, 2017.

**PEW RESEARCH CENTER**

**FIGURE 1: USE OF DIGITAL ASSISTANTS**

Businesses require high levels of intent recognition, Natural Language Understanding, and self-directed transactional capabilities that many pure-play digital assistants often lack. In addition, scripted chatbots (available on many enterprise web sites) mostly lack these abilities, and certainly cannot complete transactions and tasks without some level of human intervention.

Crossing this bridge between digital assistants or chatbots requires, at the very least, a fuller understanding of Conversational AI, how it works and differs from other technology types, and its potential business value. In this white paper, we’ll explore these subjects as a way to provide points of consideration for companies pursuing a near- or long-term technology strategy that includes the use of Conversational AI solutions.

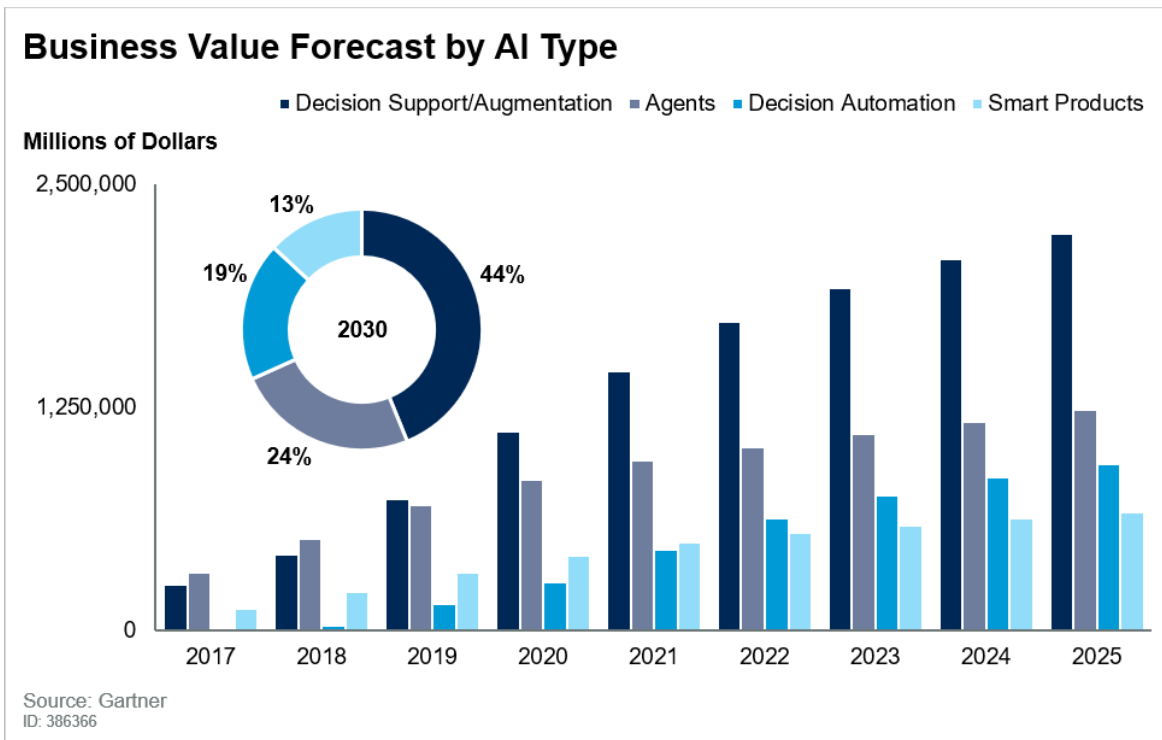


FIGURE 2: BUSINESS VALUE FORECAST BY AI TYPE

## Separating True Conversational AI from Other Solutions

Let's begin by briefly acknowledging what many already consider a truism: AI technologies' potential impact on the current and future business world will be profound. For example, AI technologies could deliver as much as \$2.9 trillion in business value through 2025, according to [Gartner](#), with AI usage for decision support and augmentation in customer experiences providing the greatest potential value.

With those kinds of forecasts, it's easy to see why many companies are looking at ways to add AI, and Conversational AI in particular, for the delivery of products and services – and why it's equally important to delineate true Conversational AI from alternatives.

Let's consider what it means for a technology to be “conversational.” Unless you're a human being, understanding natural language and holding a conversation is

considerably difficult. This is one reason why lower-level chatbots, which are bi-directional and scripted, often fail to handle tasks easily completed by Conversational AI. Chatbots, while being able to engage with users, do not understand them to any great extent, cannot engage in free-flowing and multi-turn dialogue and ultimately are not able to lead a conversation to a resolution point.

True Conversational AI is far more versatile than rudimentary chatbots that have been available in the market for years. Low-level conversational solutions react to simple keywords or specific phrasing, while advanced Conversational AI agents are capable of discerning user intent from a wide spectrum of human utterances. This flexibility is particularly important when engaging with a large and varied customer base which unsurprisingly will have multiple ways of communicating the same idea.

Conversational AI is through what is called a user utterance. That user utterance can be delivered via a chat box on a website, a voice call either through a mobile or a home assistant such as Amazon Echo, within a chat app such as Facebook Messenger, or wherever a company would like customers to interact with AI.

Before Conversational AI ever speaks to a customer, Business Process Modeling and Notation tools model a company's business processes to ensure that Conversational AI does exactly what the company wants it to do in any given customer-facing situation. So, if for example a credit card is lost, if an account is being closed, or if a customer wants to open a new account, Conversational AI will have learned and mastered the company's business processes before ever fielding a customer query.

True Conversational AI uses Natural Language Processing (NLP) to understand and speak in coherent and human-like sentences. This allows it to sort through someone's sentence to find meaningful terms and phrases that it will use to prepare its response. If one were to say, "I bought a car yesterday," Conversational AI would sort out that "car" is the noun, and "bought" is the verb, and it quickly gets more complicated after that.

One key difference between Conversational AI and chatbots is in complex intent recognition capabilities. Conversational AI uses neural network algorithms to detect intent. If a customer says, "I lost my credit card yesterday," Conversational AI will remember its training as a credit card replacement agent. It will know that in the case of a lost credit card, the customer's intent is typically to deactivate the missing card, get a new card issued and resolve any disputed charges. It takes basic data

(who, what and when) and determines that the customer lost their Gold Card in New York City last night. It will see that a charge was processed this morning in Connecticut and immediately recognize this charge as suspicious.

But what happens when someone enters an interaction with multiple intentions?

For a typical chatbot that isn't armed with cognitive intelligence, multiple intentions cause confusion. Conversational AI can not only register multiple intentions, it can also triage them to ensure the most important processes are handled first.

---

### **One key difference between Conversational AI and chatbots is in complex intent recognition capabilities.**

---

For example: If someone calls a bank and says, "I would like to go paperless, but I lost my credit card yesterday in New Jersey, and I think there might be fraudulent charges on my account," Conversational AI will not handle those requests in order. It will triage and determine that fraudulent charges are the most important element of the conversation, reissuing a new card is the second-most important element, and going paperless is the least important element.

There is no limit to the number of tasks Conversational AI can triage. It is able to track and remain aware of context. It can also switch context with a person and be aware of the previous context for later in the conversation, or for future conversations. A chatbot might be equipped to handle one of the customer's issues, but not all of them in the most important sequence; more than likely a chatbot would need to transfer the multi-part request to a human agent immediately.

Additionally, unlike simple chatbots that are trained to speak off of a script, Conversational AI is able to handle variance in dialogue. For example: If a chatbot is handling a credit card replacement, and in the middle of the conversation the customer realizes he was discussing the wrong credit card, a chatbot would get confused and need to go back to the beginning of the script to restart the process, or escalate the call to a human worker – an inefficient process that wastes a customer's time.

Conversational AI can handle dialogue variance with no issues; it will only need to go back to the point in the conversation at which it confirmed which card was being used, redo that interaction, and continue service, and inform the customer the

process without having lost any of the information it retrieved during the tangent.

Remember Business Process Modeling? With this capability, Conversational AI is also trained to handle a process while accounting for human variance. If the customer goes off script, and asks a question that has nothing to do with business processes, Conversational AI can adapt.

So for example, if a Conversational AI agent asks, "Would you like me to mail you a new credit card?" and a customer responds, "Is it going to cost me anything?" then Conversational AI is able to take into account the context of the interaction, determine that "it" is shipping a new card, know that no cost is associated with that service, and inform the customer accordingly.

## Conversational AI and Business Value

When choosing an AI system, one should investigate solutions that are skilled enough to execute tasks based on expert, data-based decision-making. Target the most frequently occurring or repeated customer or employee issues, ones for which an advanced AI solution can deliver results beyond scripted answers. For example: Customers who ask questions such as, "Should I apply for the loyalty program?" or "Which product will look better above my fireplace?" are not looking for a generic scripted answer via a simple chatbot.

With a Conversational AI system in place, your AI can provide informed opinions about customers' questions and concerns based on how they have interacted with the system in the past. The system can research consumers' history, access market data, and, most importantly, inquire about the customers' own preferences and needs in order to render educated recommendations.

Chatbots can only usher users through highly templated interactions. A chatbot will probably be able to handle some of your basic customer questions, but it will still require constant human employee support due to the technology's inability to decipher idiomatic questions, quickly learn new products or handle multi-context requests.

If a customer asks for feedback or help making a decision, a chatbot will escalate the request to a human worker unless that exact question has been programmed for a response. This is an extremely inefficient result for both the company and its customers. When a customer asks the chatbot a simple question, such as, "Should I apply for the loyalty program?" the chatbot will send that person right back to where the customer would have gone before the chatbot was deployed – a human customer service agent. This is not exactly an ideal scenario for ROI for a chatbot investment.



Here's a prime example: Customers do not speak in precise banking terminology, which makes Conversational AI even more valuable in end-user interactions. If a customer says, "Can I lump my loans together?" or "I have too many loans and I hate paying them off separately is there any way I can make one single payment?" a chatbot would be unable to discern that the customer wants to consolidate loans.

A Conversational AI solution can use its customer knowledge (the customer makes loan payments on time every month) and sophisticated dialogue comprehension ("lump loans together" means "consolidate") to at the very least ask the customer, "Are you referring to student loan consolidation?" Conversational AI can distill customers' words and intents for actionable results. This allows the customer to resolve a transaction or reach a resolution more quickly with desired results – resulting in higher customer satisfaction and, in the long run, greater customer loyalty.

## No-Code Conversational AI

Unfortunately, not every business has the technical resources to create Digital Employees using traditional implementation models. In fact, 47% of businesses say that difficulty integrating cognitive AI projects with existing systems and processes is their biggest hurdle to AI initiatives, according to the [Harvard Business Review](#). Companies also cannot seem to find the talent required to integrate and deploy AI systems on their own. The same report revealed that fewer than half of businesses (45%) have a high level of skill around integrating AI technology into their existing IT environment. The talent shortage isn't going to end anytime soon—the 2019 Global AI Talent Report estimated there are only [36,524 global AI experts](#) capable of handling this work.

No-code AI systems are designed to help companies with moderate or novice technology skills develop their own customizable Digital Employees. These new systems incorporate APIs, RPAs and visual components via conversational wizard-assisted design processes. In these scenarios, less technical users can build sophisticated and advanced Digital Employees by responding to the AI system's

---

**No-code AI systems are designed to help companies with moderate or novice technology skills develop their own customizable Digital Employees.**

---

suggestions and guidance either through chat or voice-based conversations.

No-code Conversational AI also benefits more advanced technical companies by delivering accelerated time-to-value due to simple and fast onboarding. With the AI system leading the implementation process, the resources needed to develop and improve a Digital Employee are dramatically reduced compared to traditional deployments. Fewer AI experts will be focused on a single project, less user error will occur, and testing periods can be dramatically shortened — all of which leads to faster ROI.

The flexibility of no-code systems allows businesses to experiment with use cases that they may not have been able to

deploy and adapt quickly enough using traditional implementation processes. This allows for a higher number of proof-of-concepts to drive increased adoption. Successful use case processes can be replicated for additional use cases. Those that require adjustments or even wholesale changes can be adapted without many expended resources, and the information learned from these projects can be used to optimize future use cases.

## Not an Average Build-a-Bot

No-code AI systems should not be compared to the drag-and-drop chatbots that have been around for the past several years. While decision-tree based rudimentary chatbots are easy to build, they do not allow the same level of human-like interactions as their Conversational AI counterparts. With true Conversational AI, users benefit from advanced capabilities, such as context switching, multi-intent recognition, interruptions, digressions and more.

Additionally, no-code systems learn and improve over time. The systems feature embedded analytics engines that drive improvements for intent recognition rates, lower abandonment rates and reduced escalation rates.

Based on this information, the Digital Employee will make recommendations and suggestions to improve the user experience, and it will dictate to a human employee the processes needed to adopt these changes on the back end.

With no-code systems in place, organizations benefit from accelerated time-to-value, simple AI onboarding, reduced operating costs than traditional systems, as well as improved customer and employee experiences. These benefits are not delivered at the expense of functionality or usability, but combine the best possible features with the smoothest possible user experience, for more engaging and valuable Digital Employees.

## Choosing a Conversational AI Use Case

Any Conversational AI implementation should be focused on helping customers accomplish their goals when interacting with a business. Every bank, for example, wants to save money by automating basic customer-employee interactions, and that in and of itself is a worthy aim.

No executive wants their contact center fielding thousands of calls on ATM locations. Conversely, if your main goal is to use AI solely to automate FAQs, you could ultimately end up with an unsophisticated product that no one wants to use.

Here's why: Your customers are not aware, or frankly don't care, how inquiries and requests are being addressed, so long as they are done quickly and correctly. If they receive an answer to their initial question, they will likely ask a more complicated follow-up or ask if they can make a transaction.

A basic chatbot will field those follow-up questions in the only way it knows how – by escalating them to human operators. In the end, users have poor experiences, human

intervention is still required and customers are likely to turn back to human contact methods in the future, rather than rely on an ineffective bot. When selecting use cases, focus on how to improve customer service more than solely reducing cost. Both are important, but by focusing on improving customer service in your initial use cases, they will be future-proof while simultaneously reducing overall costs in the long-term.

By investing in chatbots versus Conversational AI, human agents are stuck addressing rote and repeatable tasks, when they could be focused on providing one-on-one customer service or engage in higher-value projects. In essence, you've invested in a project that drives customers toward the experience you were trying to avoid.

## Conversational AI Success Stories

Many global companies across various industries already have invested in Conversational AI and are seeing results that deliver operational efficiencies and greater business value. In some cases, these investments side-stepped ones in non-Conversational AI technology, or replaced them altogether.

### Conversational AI as a Whisper Agent

A major insurance company deployed Conversational AI as a whisper agent at their call center to reduce call times while increasing customer satisfaction. While on the phone with customers, human agents interact with Conversational AI through a chat interface, which leads them step-by-step through a variety of procedures such as coverage changes, proof-of-insurance and reinstatement requests.

The company's Conversational AI was trained on more than 50 unique industry-specific topics, which allowed it to quickly answer customer questions and provide personalized policy information via secure integrations with back-end systems.

Following deployment, average call duration was reduced from 4.6 to 4.2 minutes — and that translated into a substantial increase in total productivity when you consider the thousands of calls agents handled each day, and that Conversational AI was handling an average of 250,000 interactions per month.

#### Whisper Agent

**250,000**

Conversational AI averages 250,000+ conversations **monthly**

**75%**

75% of inquiries are handled **on the first call**, compared with 67% previously

**4.2 minutes**

Average call duration has been reduced from **4.6 minutes to 4.2 minutes**



## Conversational AI as a Call Center Agent

A major regional bank in Europe has an international footprint covering 35 countries. The bank boasts 68 million customers around the globe, which translates to millions of customer interactions every year. The bank began its AI journey with Conversational AI by hiring it to handle voice calls for customers in Mexico, where the company fielded 100 million calls per year.

Conversational AI was deployed at the bank after proving its ability to manage conversations and queries successfully during training, achieving a 98% accuracy rate. Conversational AI now handles 32% of calls to the bank's retail call center in Mexico without any human intermediation. by a factor of four in just a few months.

### Call Center Agent

**98%**

Conversational AI achieved **98% accuracy rate** in queries and conversations

**32%**

**32% of calls** handled without human intervention

Conversational AI can also automatically refund a disputed charge itself (up to \$50 USD) in less than 24 hours.

## Conversational AI as an IT Operations Professional

Conversational AI is successfully helping employees at a Fortune 500 global supply manufacturer with an array of IT requests such as gaining access to Wi-Fi networks, providing access to computer USB ports, and troubleshooting high-volume IT issues related to common things like Outlook, Skype, printers and ticket status. As a result of implementing Conversational AI, incident resolution times fell significantly. For example, for more than 6,500 company visitors per month, Conversational AI is granting guest Wi-Fi access with a 97.5% success rate. Previously, this process took up to three minutes, but can now be executed in less than 30 seconds.

### IT Operations Professional

**6,500**

Conversational AI granted guest Wi-Fi access to **6,500 visitors**

**97.5%**

**97.5% success rate** in granting Wi-Fi access

**<30 seconds**

Previously this process took up to three minutes; now it can take **less than 30 seconds**

## Conversational AI as an IT Support and Customer Service Representative

A leading Nordic retail bank with more than 15,000 employees and more than 4 million customers initially implemented Conversational AI for its internal IT helpdesk, handling password resets, network connectivity and firewall support, supplies, meeting reservations and troubleshooting business applications such as Skype.

Following success of the initial internal deployment, the bank also introduced AI as a Swedish-speaking, external-facing chat agent to deliver scalable 24/7 customer support. It facilitated a variety of customer service requests, including guiding customers through ordering replacement credit cards, booking meetings with branch staff, and providing general account and branch office information.

Conversational AI's accuracy in recognizing intent with the bank's customers is far superior to that of a static chatbot. The solution is capable of properly determining intent during 93% of its conversations; if it cannot determine intent, it seamlessly escalates the conversation to a human employee. 91% of users who interacted with the Conversational AI solution rated their experience as good or very good.

### *IT Support and Customer Service Representative*

**24/7**

Conversational AI delivers **24/7 customer support**

**93%**

**93% intent recognition** of its conversations

**91%**

**91% of users** rated their experience as good or very good

## Conversational AI as a Voice-Based Service

Telefónica is a Spanish multinational telecommunications company headquartered in Madrid, with a presence in 15 countries across Europe and Latin America. The company implemented Conversational AI as a voice-based customer service agent for its Peruvian contact centers to handle all calls received to the hotlines, which fielded roughly 72 million calls, (38 million handled by humans) in 2018. This was due, in part, to the failure of its IVR system in keeping up with customer inquiries. As a result, the company developed 28 specific skills it wanted Conversational

AI to master, including 18 end-to-end automated skills, and 10 skills that would require Conversational AI to route a call to an appropriate human agent.

After a four-month ramp up, Conversational AI now handles 100% of mobile call volume, replacing the IVR system. The solution recognizes customer intent correctly on 90.2% of calls, and customer abandonment rates on Conversational AI-led calls decreased 24% from the initial week of deployment. In addition, customer satisfaction in calls managed by Conversational AI are at the same level as those handled by human representatives.

### Voice-Based Service

**72 million**

72 million calls fielded by hotlines

**90.2%**

90.2% intent recognition on calls

**24%**

Customer abandonment on Conversational AI-led calls decreased 24%

## Believe in the Power of Conversation

Conversation, while a uniquely human ability, is being transferred to the digital realm as AI technologies continue their expansion into the lives of consumers and business users.

On the enterprise front, Conversational AI does more than sound human when it interacts with end users; it uses conversation as an essential element in proving its value to individual customers and companies overall. Companies should consider the implementation of Conversational AI as a critical function to any future investment roadmap – not only because of the potential business gains, but in order to maintain and exceed customers' evolving expectations for how they should be able to engage with their favorite brands through interactive technology.

*Author: Juan Martinez*

*Editor: John Madden*

**Amelia, an IPsoft Company** is the world leader in Enterprise AI and the home of Amelia, the industry's most-human digital AI colleague. Amelia's ability to learn, interact and improve over time makes her the market's only AI that can fully understand user needs and intentions.

**Contact us at** [Amelia.com/contact](https://amelia.com/contact).

**AMELIA**<sup>®</sup>  
AN IPSOFT COMPANY