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# Emergence of Voice Controls in Virtual Assistants



Infoholic Research and KLoBot

# Emergence of Voicebots – The Future of Chatbots

## Introduction

Customers today, are more demanding and have high expectations than ever before, due to the rise of social media and technological advancements. The expectation of high-level support and exceptional customer service across all channels must be met by an organization to gain competitive edge and enhance productivity. Text and voice-based chatbots are gaining popularity across verticals for better customer engagement to understand and solve their queries.

## Conversational Platforms – Changing ecosystem

Earlier, Chatbots were simple digital tools created for handling FAQ by recognizing specific keywords in queries. IVR systems were used to enhance customer services and eliminate repetitive tasks. Technological advancements have made chatbots more interactive, which allows customers to communicate in natural language and quickly resolve their queries. Chatbots, now, are more conversational and act as a digital assistant which recognize text as well as voice commands. Digital virtual assistant is one of the most frequent applications of AI bots, utilized to execute basic tasks.

With the rising trend of cloud services, the demand for cloud communication platforms is also increasing. Twilio provides a cloud-based communication platform that can be programmed by software developers to make/receive phone calls, send/receive text messages, and complete other communication functions with its web service APIs. Twilio is one such company which is leveraging the power of automation and cloud, to route service and provider outages before impacting customers.

Twilio's integration with the chatbot platform 'KLoBot' is helping enterprises to enhance business communications and customer engagement by streamlining interactions and offering 24/7 support to their customers using text message (SMS) or voice call.

Conversational AI refers to the usage of AI, NLP, ML, which allows people to interact with devices, applications and websites in a more human-like way via text or voice. Conversational AI platforms i.e. chatbots and virtual assistants are helping the companies to automate the internal business processes, and boost revenue.

## Voice-based virtual assistant: Key areas

Voice-based personal assistants such as Amazon Alexa, Microsoft Cortana, Google Home, and others are helping customers in performing their daily activities like connecting calls, sending messages, setting up reminders, checking flight details and many more. Currently, almost every industry is realizing the potential of voice-based virtual assistants for delivering personalized customer experience. For automating internal business processes, organizations are focusing to adopt voice-based virtual

*Voice-based chatbots are leveraging ML capabilities to improve response time, learning from its past conversations*

*The growing penetration of smartphones and smart home appliances is driving the growth of voice-based virtual assistants*

assistants. Even consumers are using voice based personal assistants to perform various personal tasks and completing tasks via bot-to-bot communication. The adoption of virtual assistants among consumers to communicate via other mobile app or enterprise through chatbots are also on the rise. Hence, enterprises are expected to implement voicebots that have seamless integration with voice-based virtual assistant 'voicebots' for easy internal collaboration and content delivery for its business activities.

### **Major Uses of voice-based virtual assistants in the business environment**

- Automate routine activities including calendar management, reminders, meeting appointments, among others
- Connecting with customers
- Enabling smart or connected offices
- Synchronization
- Streamlines and orchestrates several business processes

### **Industry trends – Chatbot imperative**

- By 2020, around 50% of the searches are expected to be voice-based and companies need to match the pace to address rising customer demands. **[Infoholic Research, 2019]**
- By 2020, more than 25% of the customer support operations will integrate intelligent virtual assistants across engagement channels. - **[Gartner, 2019]**
- According to industry estimates in 2018, around 43 million Americans own smart speakers. - **[Edison Research, 2018]**
- Voice search device manufacturers including Amazon, Google, Apple, Xiaomi and others during the 1st quarter of 2018 have collectively shipped around 16.8 million units. - **[Canalys, 2018]**
- In terms of penetration, Google's Home has around 4% penetration in US homes, and Amazon's Echo has nearly 10% of penetration. - **[OC&C Strategy Consultants, 2018]**
- In a survey conducted by Adobe in the US, among 1000 voice technology users, around 90% of the users believe voice technology saves time and improves the quality of their life. – **[Adobe, 2019]**
- Research by Mastercard in 2018 indicated that around 20% of the EU customers, shopped using a voice assistant such as chatbot or Amazon Alexa. **[Mastercard Study, 2018]**

### **How organizations are adopting voice-based chatbots?**

- Starbucks is leveraging voice technology and has launched virtual assistants in its app for enhancing employees as well as customer experience. This new feature interfaced with the Starbucks mobile app allows users to order food and process payments by just speaking. Customers can also modify their orders if needed. With the launch of virtual assistants in mobile app, Starbucks has stood out in the competition, and in US, it has around 13 million Starbucks Rewards members.

- KLM Royal Dutch Airlines uses the chatbot on Facebook Messenger which allows customers to check boarding pass and flight status, booking confirmation, and check-in notifications, all through one single conversation thread. KLM deployment with messenger focuses on reducing the pain points of customers by offering them a single app to view all their travel details. To increase the adoption KLM offered free tickets to those customers who used messenger.
- Walmart partnered with Google allowing Google Assistant users to buy groceries using their voices. By linking previous purchases with Google Assistant, customer preferences can become known to Walmart. Walmart continues to invest in technologies and is looking to expand its voice shopping on other platforms as well.
- Disney is using an iOS and Android virtual assistant to help theme park guests to assist them in rides, navigation, and other functions.
- Telefonica, uses a digital assistant for getting real-time support, managing accounts, checking data usage, reviewing billing information through voice interaction in several languages.

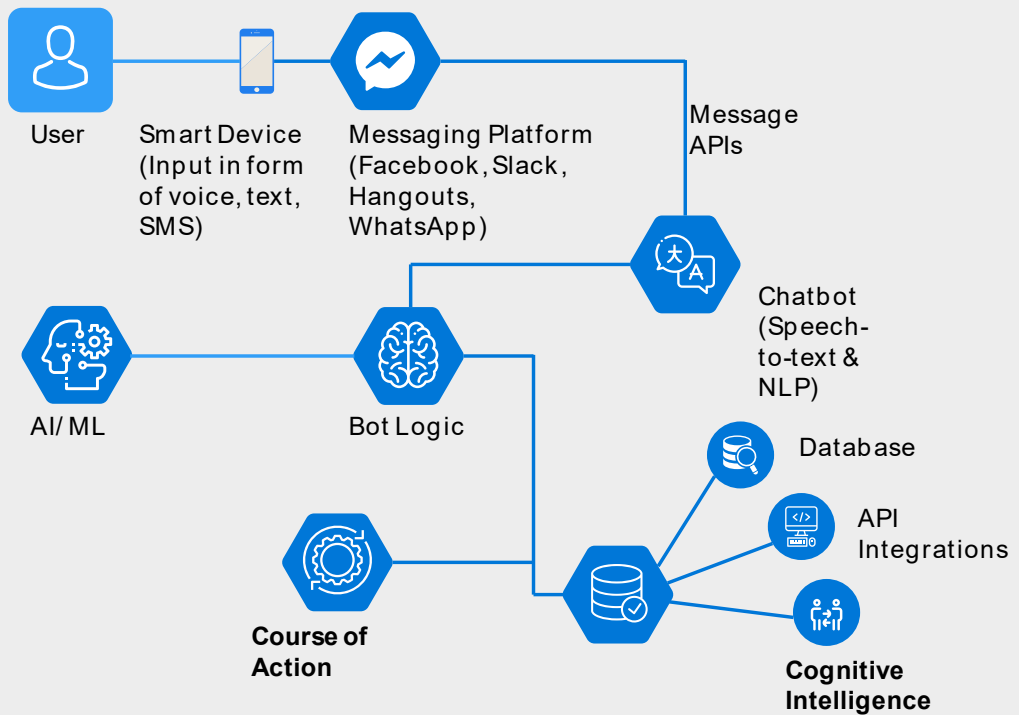
### **Voice-based Virtual Assistant – Architectural Overview**

Conversational AI has its implementation in personal assistant and chatbots. We have witnessed a tremendous amount of advancement in the way interactions with machines are evolving. The speech-to-text API is used for understanding the language. In the personal segment, companies like Google, Amazon, and Apple are trying to capture the home appliance market, where consumers can set reminders, book tickets, set alarm, among others. The critical component is understanding the language. The audio capture is then analyzed by the language processing unit to understand the context of the spoken phrase or sentence. Firstly, the voice is converted to text form for further processing (NLU). Thereafter, the text form is analyzed using a script to provide an apt response (NLG). Thus, the voice-based personal assistant system performs the following tasks:

- Data collection
- Voice analysis and speech-to-text conversion
- Processing of data to find suitable response
- Text-to-speech for response

Similarly, chatbots powered by voice control are used by enterprises to interact with customers as well as for internal collaborations. The conversational AI model is used to quickly identify the words and select keywords for its response instantaneously. Nowadays, organizations such as Domino's can take orders from customers via virtual assistants such as Alexa or Cortona, to ensure seamless delivery. Now, the integration of personal assistants with enterprise apps is creating a new path where the voice-powered personal assistant would control more than 50% of all conversations. Even internal communication and collaboration are expected to shape up rapidly, where employees can directly ask their HR bots regarding their queries rather than the traditional emailing or calling.

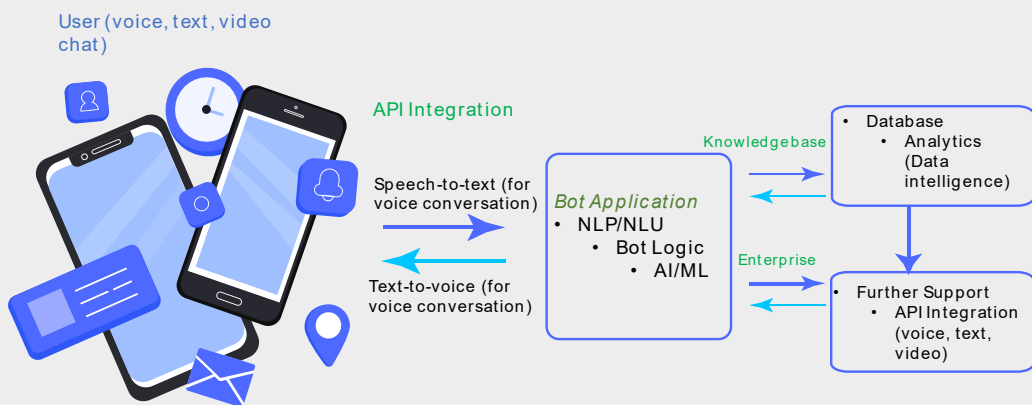
**Fig1 – Chatbot Function Flow**



**KLoBot Approach**

We are witnessing a tremendous shift from using web browsers to mobile devices. Factors such as quick and easy access to internet through mobile applications are leveraging the growth chatbots. The future of chatbots would be voice as many people are comfortable speaking rather than typing. The increasing sales of smart home speakers and the use of personal assistants via mobile phones, such as Siri, Google Assistant are proof of consumer preference in voice-controlled devices. The success of the voice-based interface would depend on the robustness of the system to respond to consumer queries and offer easy navigation with proper flow.

**Fig2 – Chatbot and Programmable API integration**



KLoBot focuses on smooth enterprise communication and collaboration that supports popular communication channels, such as Slack, Facebook, Teams, Sharepoint, Twilio, and other popular channels. KLoBot offers a chatbot building platform

Several companies are shifting from rule-based chatbots to AI-driven chatbots to focus on digital customer experience and business modernization

enabling developers to custom build chatbots that ease the internal and external communication of an enterprise. KLoBot's integration with Twilio empowers its chatbot for customer-facing enterprises to engage and communicate directly with each and every consumer. With the KLoBot chatbot on the Twilio platform, enterprises can offer 24/7 support through simple voice calls or SMS and offer chatbot response to their queries. Hence, KLoBot is well positioned to deliver voice-based virtual assistants' teams that simplify the internal as well as external communications. Further, KLoBot embedded in any mobile app allows consumers to communicate with enterprise systems and smart appliances.