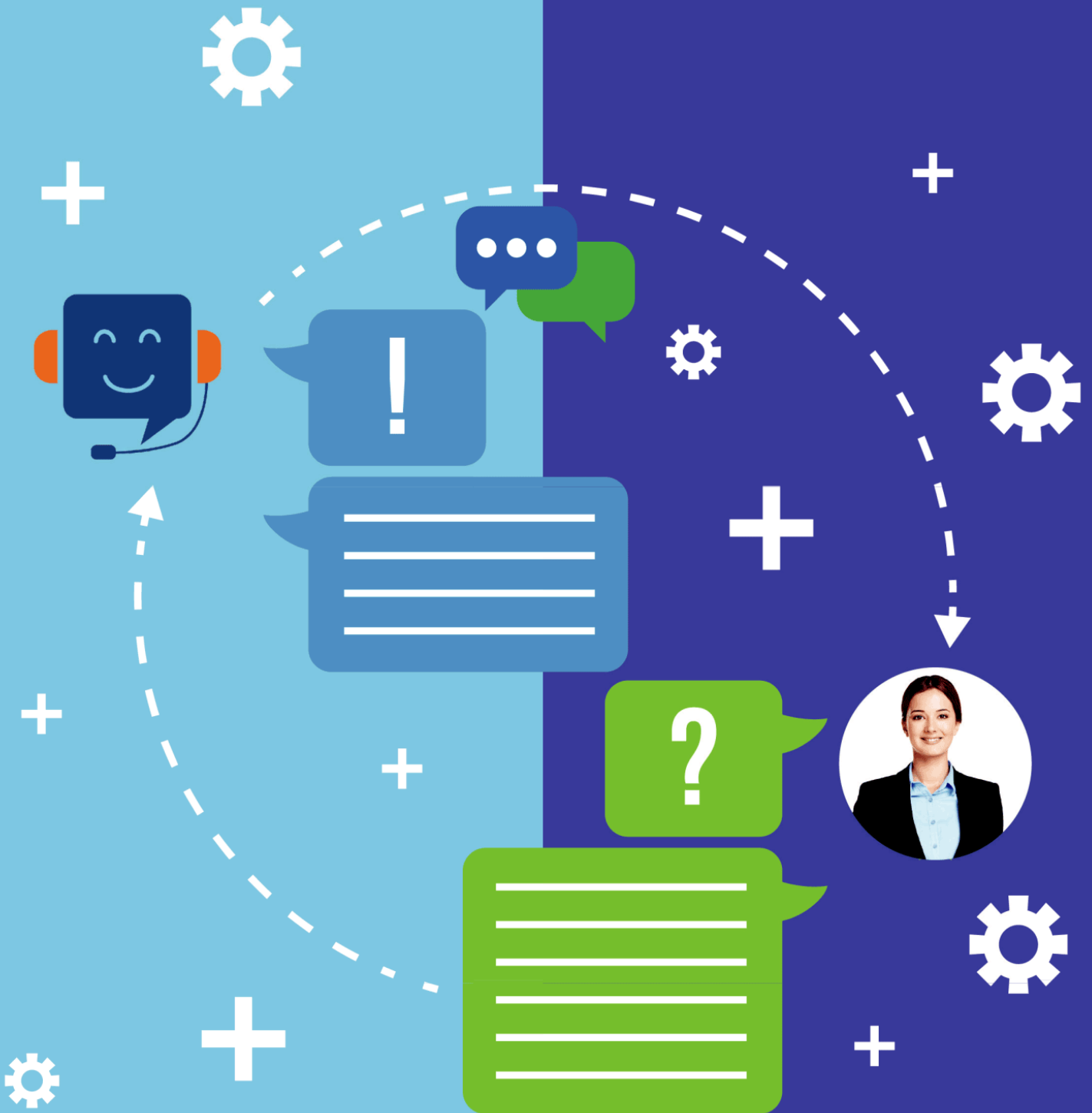


Voice Controls in Virtual Assistants



Emergence of Voicebots – The Future of Chatbots

Tech-savvy Customers Keep Organizations on Toes

Tech-savvy customers, especially those using social media, have emerged as a double-edged sword for businesses. While technologies empower organizations to effectively target and engage customers, they have also empowered customers to rapidly malign an organization in lieu of poor customer support – real or perceived. Customers are expecting and demanding higher levels of customer support with minimal delay. Organizations are struggling to meet the expectations of high-level support and exceptional customer service across all channels while maintaining a competitive edge and enhancing productivity. The market is witnessing a disruptive shift from traditional support channels to text- and voice-based chatbots, which are gaining exceptional traction across verticals for better customer engagement.

Conversational Platforms – Changing Ecosystem

Chatbots were simple digital tools created for handling FAQs 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. Conversational AI refers to the usage of AI, NLP, and 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 companies to automate internal business processes and boost revenue. Present-day chatbots are more conversational and act as digital assistants, 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.

Given the proliferation 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.

Voice-based virtual assistant: Key areas

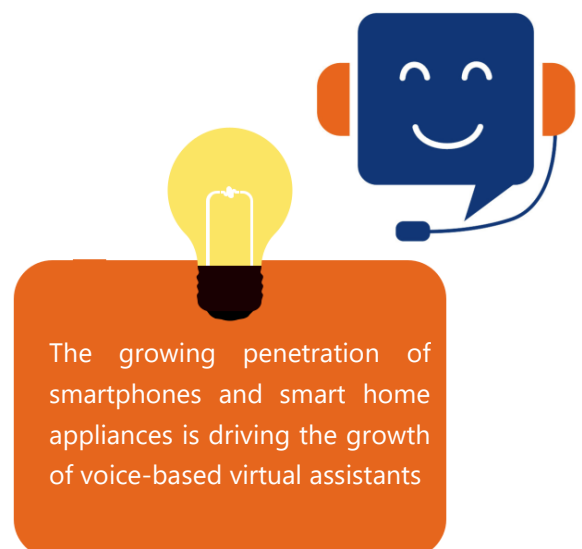
Voice-based personal assistants, including Amazon Alexa, Microsoft Cortana, Google Home, and others, are helping customers in executing their daily activities like connecting calls, sending messages, setting up reminders, checking flight details, and much more. Consumers are also using voice-based assistants for personal chores 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 is also on the rise. Following BYOD, virtual assistants have become the most touted trend in the long list of "consumerization of IT". Armed with this realization, enterprises are implementing chatbots that offer seamless integration with voice-based virtual assistant 'voicebots' for easy internal collaboration and content delivery for their business activities. Increasingly, organizations across industries are realizing the potential of voice-based virtual assistants for delivering personalized customer experience as well as for automating internal business processes.

Major uses of voice-based virtual assistants in the business environment

- Automate routine activities, including calendar management, reminders, and meeting appointments, among others
- Connecting with customers
- Enabling smart/connected offices
- Synchronization
- Streamline and orchestrate multiple business processes

Industry trends – Chatbot imperative

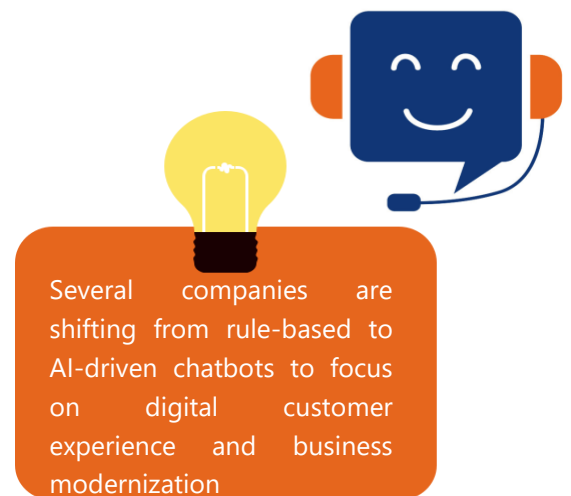
- By 2020, around 50% of the searches are expected to be voice-based, and companies need to match this pace to address rising customer demands. **[Infoholic Research]**
- By 2020, more than 25% of the customer support operations will integrate intelligent virtual assistants across engagement channels. – **Gartner Says 25 Percent of Customer Service Operations Will Use Virtual Customer Assistants by 2020, February 2019 [Gartner]**



- According to industry estimates, in 2018, around 43 million Americans own smart speakers. – **The Smart Audio Report, Smart speakers enter the mainstream, July 2018 [Edison Research]**
- 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. - **Global smart speaker shipments grew 187% year on year in Q2 2018, with China the fastest-growing market, August 2018 [Canalys]**
- In terms of penetration, Google’s Home has around 4% penetration in US homes, and Amazon’s Echo has nearly 10% of penetration. – **Voice Shopping Set to Jump to \$40 Billion By 2022, Rising From \$2 Billion Today, February 2018 [OC&C Strategy Consultants]**
- 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 Voice Technology Study, July 2019 [Adobe]**
- 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]**

Enterprise use-cases for adopting voice-based chatbots

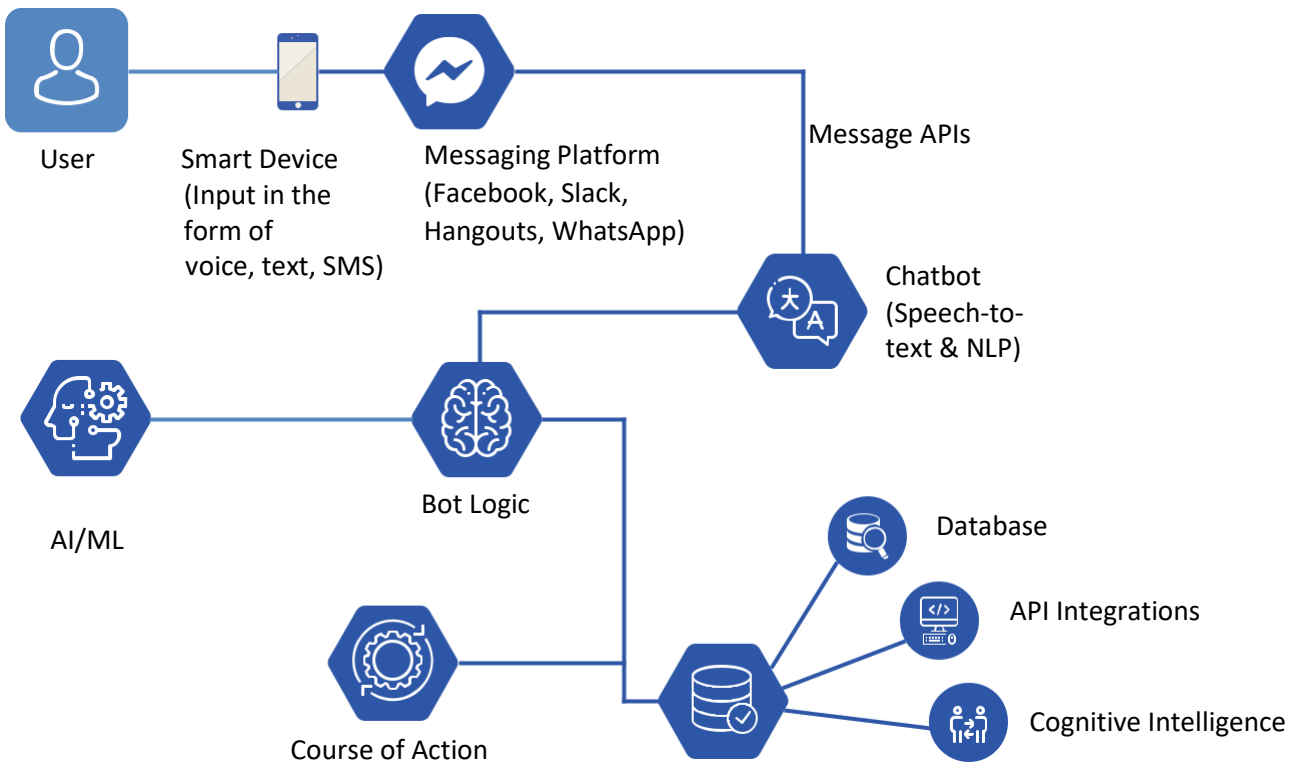
- **Overall Brand Experience:** Organizations are leveraging voice technology and launching virtual assistants for enhancing employees as well as customer experience. Starbucks’ voice-enabled virtual assistant can interface with their mobile app allowing users to order food and process payments. Customers can also modify their orders if needed. With the launch of virtual assistants in the mobile app, Starbucks expects to stay ahead of competition serving its more than 13 million customers in the US alone.
- **Easing and Addressing Customer Pain Points:** 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 the Messenger.
- **Understanding Customer Preferences:** Walmart has partnered with Google, allowing Google Assistant users to buy groceries using voice input. By linking previous purchases with Google Assistant, Walmart can understand and analyze customer preferences. Walmart continues to invest in such technologies and is looking to expand its voice shopping on other platforms as well.



- **Real-time Assist and Support:** 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

Fig1 – Chatbot Function Flow

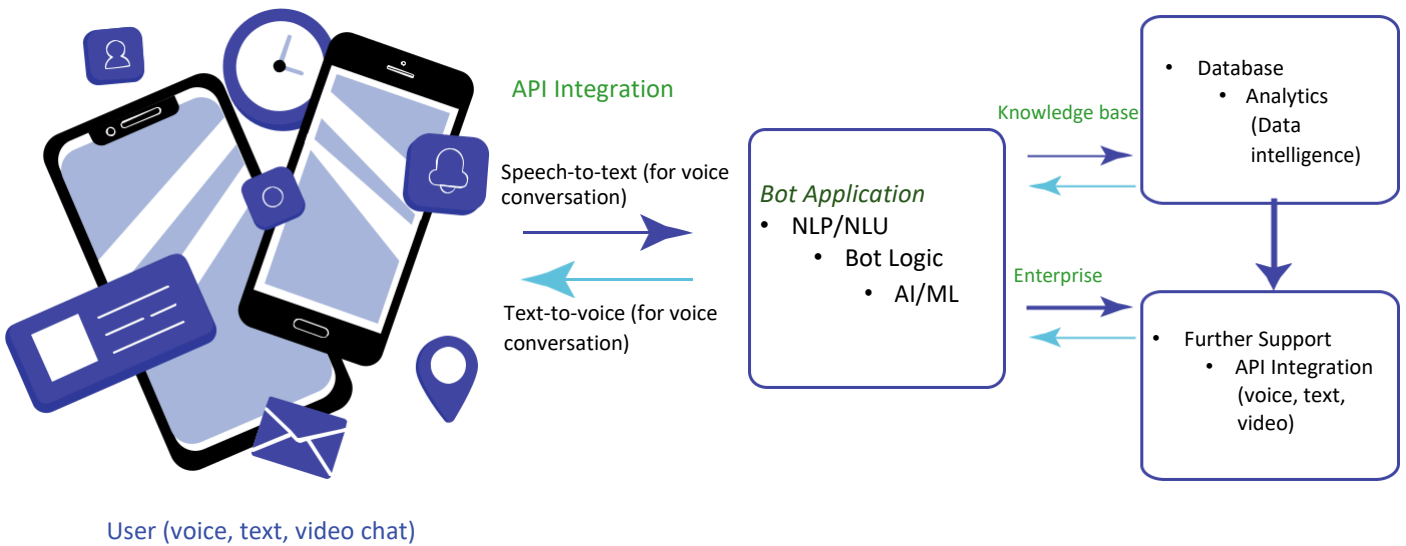


Conversational AI is being implemented in personal assistants and chatbots. The market has witnessed a tremendous amount of advancement in the way machine interactions are evolving. From an architectural perspective, the audio is captured via devices and is then analyzed by the language processing unit to understand the context of the spoken phrase or sentence. Firstly, the voice is converted to text form for further processing (NLU). A speech-to-text API is used for understanding the language. The critical component is understanding the language. Thereafter, the text form is analyzed using a script to provide an apt response (NLG). The conversational AI model is used to quickly identify the words and select keywords for its response instantaneously.



In the personal segment, Google, Amazon, and Apple are trying to capture the home appliance market, where consumers can set reminders, book tickets, set alarm, among others. Similarly, chatbots powered by voice control are used by enterprises to interact with customers as well as for internal collaborations. Presently, organizations such as Domino’s can take orders from customers via virtual assistants such as Alexa or Cortana, to ensure seamless delivery. The integration of personal assistants with enterprise apps is creating a new era where voice-powered personal assistants would control majority of conversations. Further, internal communications and collaborations are expected to shape up rapidly, where employees can directly interact with HR bots for their queries rather than follow the traditional path of emailing or calling.

Fig2 – Chatbot and Programmable API integration



KLoBot Approach

The future is ready for disruptive changes, and customers will soon expect that change!

KLoBot offers a chatbot building platform enabling developers to custom build text- and voice-based conversational chatbots that ease the internal and external communications of an enterprise. Given the proliferation of mobile devices and pervasive adoption of social media platforms, enterprises are challenged to deploy omnichannel platforms for delivering support services. KLoBot's offering focuses on enabling seamless enterprise communication and collaboration that supports popular communication channels, such as Slack, Facebook, Cortana, Sharepoint, Twilio, and others. KLoBot's integration with Twilio empowers customer-facing enterprises to engage and communicate directly with every consumer.

In an environment where customers have quick, easy access to the internet, and huge dependency on mobile applications, enterprises need to recognize the power of chatbots and "voice" becoming the preferred channel for communication. The surge in sales of smart home speakers and the use of personal assistants on mobile phones, such as Siri and Google Assistant, are testaments of consumer preference for voice-controlled devices. However, the success of voice-based interfaces would depend on the robustness of the system to respond to consumer queries and offer easy navigation with proper flow.

With KLoBot chatbot on the Twilio platform, enterprises can offer 24/7 support via chatbot response to queries arising out of voice or text. Among a flurry of competitors, KLoBot is well-positioned to deliver voice-based virtual assistants that simplify the internal as well as external communications of enterprises. Further, KLoBot embedded in any mobile app allows consumers to communicate with enterprise systems and smart appliances.

