

## Information on Apar's inteli-Art Chat bots

### Chat bots

A chatbot is an artificial intelligence (AI) software that can simulate a conversation (or a chat) with a user in natural language through messaging applications, websites, mobile apps or through the telephone. Why are chatbots important? A chatbot is often described as one of the most advanced and promising expressions of interaction between humans and machines. However, from a technological point of view, a chatbot only represents the natural evolution of a Question Answering system leveraging Natural Language Processing (NLP). Formulating responses to questions in natural language processing applied in various enterprise' end-use application.

The ability to identify the user's intent and extract data and relevant entities contained in the user's request is the first condition and the most relevant step at the core of a chatbot: If you are not able to correctly understand the user's request, you won't be able to provide the correct answer. Returning the response: once the user's intent has been identified, the chatbot must provide the most appropriate response for the user's request. The answer may be:

- A generic and predefined text
- A text retrieved from a knowledge base that contains different answers
- A contextualized piece of information based on data the user has provided
- Data stored in enterprise systems
- The result of an action that the chatbot performed by interacting with one or more backend application
- A disambiguating question that helps the chatbot to correctly understand the user's request

### Why chatbots are important

Chatbot applications streamline interactions between people and services, enhancing customer experience. At the same time, they offer companies new opportunities to improve the customers engagement process and operational efficiency by reducing the typical cost of customer service.

To be successful, a chatbot solution should be able to effectively perform both of these tasks. Human support plays a key role here: Regardless of the kind of approach and the platform, human intervention is crucial in configuring, training and optimizing the chatbot system.

### Current Scenario

Chatbots are almost in all the sectors and are proved useful in each one. All industries are benefited by the use of chatbots, and we already know that people love to interact with chatbots, they not only reply

in seconds but also give accurate answers with the help of machine learning. Private sectors have swiftly adopted chatbots, while in public sectors the adoption rate is slower.

With the aggressive use of chatbots for business, businesses have started automation for customer support, services, etc. which have saved a lot of bucks so far. Use in E-commerce sector is maximum compared to other sectors. Chatbot market growth has increased rapidly since the last few years and is still growing at fast pace.

Chatbots are also implemented in the government sector for citizens' quick access to public data and reporting complaints. Despite just complaint registration and data access, there are also many ways chatbots are beneficial, which I will be talking about later in the article.

Implementation of chatbots in various government agencies will totally transform the communication between citizens and government. Currently, there are citizen issues that are unaddressed in every country. If using chatbots, these "unaddressed" issues can be sorted then it will surely be a victory for chatbots.

### **Benefits to Citizens**

Chatbot use varies depending on the function of a government body. Here are just some general benefits to citizens:

- Citizens can get a quick access to public data.
- They can submit complaint request online.
- Form submission can be done through the bot.
- Citizens can pay tax and bills online.
- It will also help people save time.
- People can get assistance in their native language.
- Helps people to get rid of a traditional way of communication through phone calls and emails.

### **Benefits to Government Agencies**

- Addressing citizen issues made easy.
- Delivering public services made easy
- The Government can provide 24/7 availability and high accessibility to citizens.

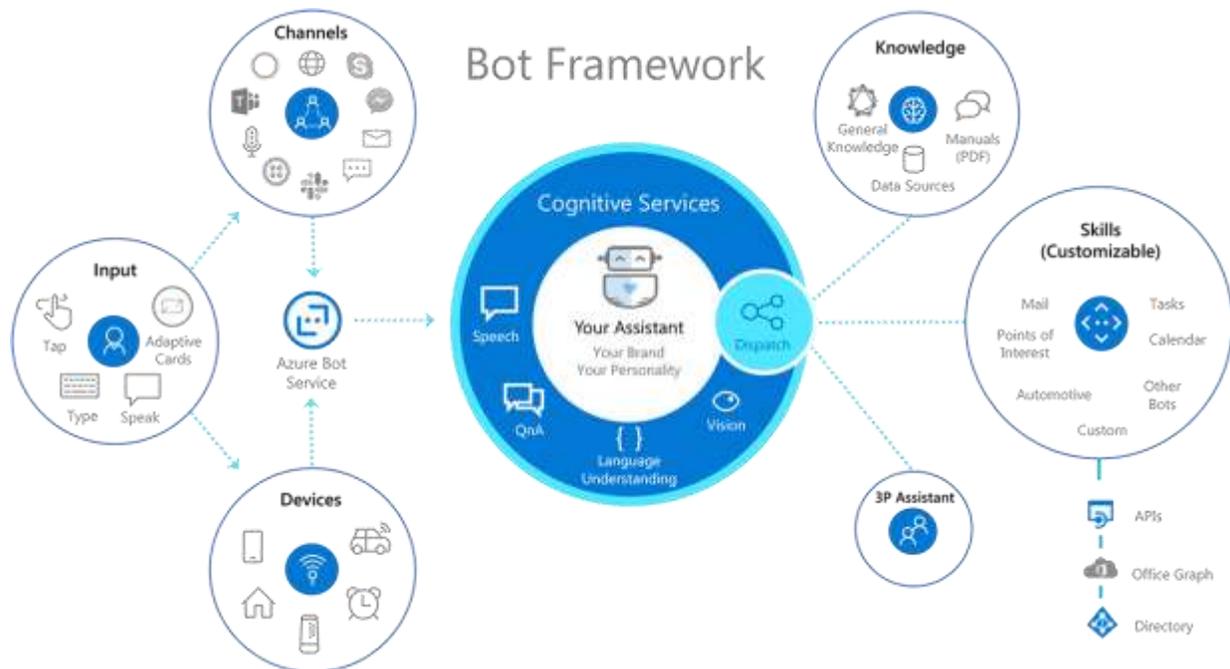
- They can decrease dedicated workload and time for responses.
- Easy integration and management, hence inexpensive.
- Government can provide multilingual support.
- Chatbots are omni-channel. Hence people can get support on multiple platforms.

## Azure Chat Bots

Azure Bot Service is a managed bot development service that helps you easily connect to your users via popular channels. Azure Bot Service is Microsoft's artificial intelligence (AI) chatbot offered as a service on the Azure cloud service marketplace. Azure Bot Service offers the ability to add intelligent agents that are capable of conversation without having to commit the resources to develop one's own AI.

Azure Bot Service enables you to build intelligent, enterprise-grade bots with ownership and control of your data. Begin with a simple Q&A bot or build a sophisticated virtual assistant. Use comprehensive open source SDK and tools to easily connect your bot to popular channels and devices. Give your bot the ability to speak, listen, and understand your users with native integration to Azure Cognitive Services.

## Azure Bot Framework



**Citizen Interface** – The Citizens commonly use their mobile or computers to surf through the internet. hence, the chatbot feature will be accessible through either mobile app or when surfed through browser.

**Azure Active Directory** – Azure Active Directory (Azure AD) is Microsoft’s cloud-based identity and access management service, which helps your employees sign in and access resources in:

- External resources, such as Microsoft Office 365, the Azure portal, and thousands of other SaaS applications.
- Internal resources, such as apps on your corporate network and intranet, along with any cloud apps developed by your own organization

Azure Active Directory (aka Azure AD) is a fully managed multi-tenant service from Microsoft that offers identity and access capabilities for applications running in Microsoft Azure and for applications running in an environment.

**Azure bot Service** – Azure Bot Service is Microsoft's artificial intelligence (AI) chatbot offered as a service on the Azure cloud service marketplace. Azure Bot Service offers the ability to add intelligent agents that are capable of conversation without having to commit the resources to develop one's own AI.

**Azure-Insights** – Azure Monitor is a platform capability for monitoring your Azure resources. Azure Monitor allows you to collect granular performance and utilisation data, activity and diagnostics logs, and notifications from your Azure resources in a consistent manner.

**NLP** – Natural language processing (NLP) is used for tasks such as sentiment analysis, topic detection, language detection, key phrase extraction, and document categorization.

**Integration with Existing System** – An API will be called for limited transaction with backend data base and other existing systems, to ensure security and only relevant data is being accessed by the chat bot by limited transaction with the database.

#### Information to be uploaded on marketplace

Sr. No.	Solution and Partner	status
1	Applicable End Customer Segments (EC, SMC, SMB)	All Segements
2	Partner Sales, Partner Marketing Contacts	Pranjali Khare (SPOC for all)
3	Platforms Involved	Microsoft Azure
4	Architecture	As mentioned below
5	BOM - For an average deal, what is 12 months' worth of Azure consumption	INR 10,00,000
6	Customer Presentation	
7	Cloud Customer Case Study	NA
8	3 Verifiable Wins (if available)	NA

Point 4 Architecture:

### Azure chatbot Architecture

