

# Alexa -New voice of world

Alexa is Amazon's voice-based digital assistant. Digital assistant is advanced Artificial intelligence (AI) based technology. Uses of this technology are expanded from personal to the professional level like ordering food, playing music, searching maps, in education, healthcare, etc. There are various examples of applications based on digital assistants like Siri, Google Assistant, Amazon Alexa, Cortana, etc. Among all Amazon Alexa is a widely used device .it is largely based on a speech synthesizer developed by Amazon, which was first used in Amazon Echo smart speakers and and Echo Dots. Alexa was released on 6th Nov 2014 .The Idea of Alexa

computer voice and conversational system onboard the Starship Enterprise in science fiction TV series and movies, beginning with Star Trek: The Original Series and Trek: The new generation. The computer voice and conversational system are shown in that show was the main inspiration behind the invention of Alexa. The system uses input such as the user's voice or images and contextual

information to assist users by answering their questions in language suitable for the user. Alexa uses platforms like Amazon Echo, Fire OS, iOS Android, Linux, windows for working with perfection.

## How does Alexa work?

The main technology used in Alexa is "Natural Language Processing (NLP)". NLP helps machines by converting text into structured data that computers will understand.

Suppose we asked Alexa to turn on a light, then Amazon Echo will record that voice, and then the recorded voice will be sent to Alexa Voice Service (AVS). After that, AVS will convert that recording into commands. There are many more technologies used in Alexa for perfection like

- **Signal Processing:** -

it enhances input signal by minimizing background noise. It focuses on analyzing, modifying, and synthesizing signals.

- **Wake Word Detection:** -

wake is a word to activate Alexa as soon as we say wake it gets activated, and the signal is sent to Amazon Voice Service which converts audio into text format by converting it into binary data.



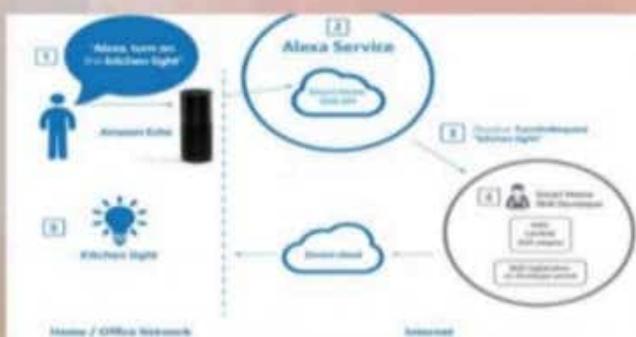
- **Natural Language Understanding (NLU): -**

NLU converts the text into meaningful representation by rearranging words properly.

- **Natural Language Generation (NLG): -**

NLG will convert structure data back into text so that we can understand it.

Today, many industries are using Alexa to increase the efficiency of business processes. Alexa has experienced tremendous growth while riding the wave of IoT. It is used in various sectors.



- **E-commerce**

Alexa has become the new consumer channel with customers conducting their sales through voice-assistant devices like Alexa.

- **Public Transportation: -**

Alexa is available in automobiles with voice command technology. We can ask for directions, the nearest gas stations, or nearby landmarks by voice command.

- **Healthcare: -**

With the help of Alexa, doctors can communicate with patients, which can provide better medication and immediate care even if doctors are not available. It can also be used for administrative areas like scheduling appointments, ordering supplies, booking rooms, etc.

- **Hospitality Industry: -**

The voice assistance of Alexa can prove to be quite more convenient for the guests as they can request room services as per their needs such as housekeeping, control TV, room lights, thermostats, and even playing music and various other features can be accessed. By using Alexa, guests can establish better communication with management and staff can be more responsive towards the guests as routine tasks will be appropriately routed.

- **Higher education: -**

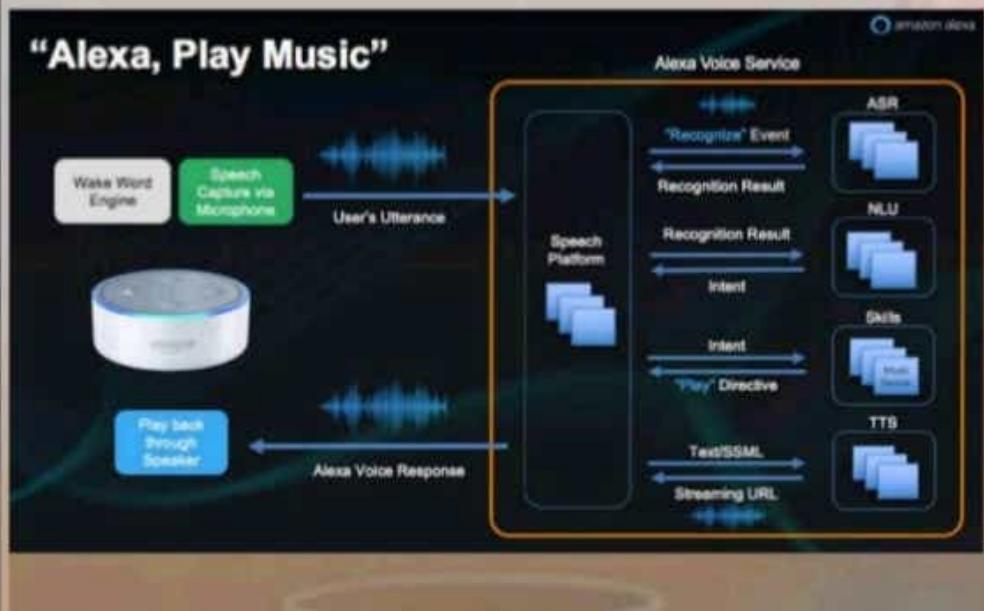
At present, the use of Alexa might be limited to providing calendars and schedules for the next lectures or during menus in the cafeteria, however, soon higher education institutes will leverage Alexa skills. So, this will allow students to playback lectures that they have missed. Alexa is also useful in searching library books without using traditional methods.

- **Culture and Entertainment: -**

Voice assistance have been very useful in helping in venues like a museum, theatres, art galleries, and so on. In museums, it will be beneficial for visitors to know about the display anytime.

- **Daily life:** -

The use of Alexa is not limited to this, nowadays Alexa has become a part of our life we use it for performing simple functions like ordering food, playing music, getting daily news, and knowing about the weather. We can also listen to our favourite books or stories on Alexa.



Alexa and Google Assistant were able to help their users apply to jobs at McDonald's using voice recognition services. It is the world's first employment service using voice command service.

Alexa is used all over the world in various sectors by now, recently it was launched in Brazil in 2019. It allows various languages like English, French, German, Japanese, Korean, Italian, Gujrati, Marathi, Hindi, Tamil, Kanda, Malayalam, Spanish, Portuguese, Chines, etc. In today's era, Alexa is the Fastest developing technology, it is improving itself with new technologies. Amazon announced on September 25, 2019, that Alexa will soon be able to mimic celebrities' voices including Samuel L. Jackson. Almost a year later on September 15, 2020, Amazon announced Amitabh Bachchan as the new voice of Alexa in India and we are eagerly waiting to experience new features.