

EVOLUTION OF VOICE ASSISTANT

Riya Maurya*¹, Priti Koutikkar*², Saaish Gulekar*³, Gyan Shetty*⁴

¹⁻⁴Student, Dept. Of Computer Engineering, Vivekanand Education Society's Polytechnic, Mumbai India

Abstract - We have forever had to learn the language of technology, be it keyboard, mouse, or touchscreen. Voice Assistants have turned this around. With voice, technology has got to learn to know us, understand our language. Voice control is a major growing feature that changes the way people can live. The voice assistant is commonly being used in smartphones and laptops. AI-based voice assistants are operating systems that can recognize the human voice and respond via integrated voices.

Key Words: Personal Assistant, Voice Assistant, Virtual Assistant, Artificial Intelligence, etc.

1. INTRODUCTION

We live in an era where every day there is a development under process to making our lives more comfortable. For most folks, the last word luxury would be an assistant who always listens for your call, anticipates your every need, and acts when necessary. That luxury is now available because of AI assistants, aka voice assistants. Voice assistants are available somewhat small packages and can perform a variety of actions after hearing a wake word or command. They can turn on lights, answer questions, play music, place online orders, etc. Many devices we use every day utilize voice assistants. They are on our smartphones and inside smart speakers in our homes. Many mobile apps and operating systems use them. Additionally, certain technology in cars, as well as in retail, education, healthcare, and telecommunications environments, can be operated by voices.

1.1 History of Voice Assistant

The very first voice-activated product was released in 1922 as Radio Rex. This toy was quite simple, wherein a toy dog would stay inside a doghouse until the user exclaimed its name, "Rex" at which point it would jump out of the house. This was all done by an electromagnet tuned to the frequency similar to the vowel found in the word Rex, and predated modern computers by over 20 years.



Fig-1: Radio Rex from the 1920s – The first speech recognition machine

The next decade led to amazing progress and research in the speech recognition field, leading most voice recognition devices from understanding a couple of hundred words to understanding thousands, and slowly making their way into consumers' homes.

1.2 Growth of Voice Assistants

Technology is consistently advancing and changing, and therefore the voice assistant market will progress along with it. In April 2015, the research firm Gartner predicted that by the end of 2018, 30 percent of interactions with technology would be through "conversations" with smart machines, many of them by voice.

According to Global Market Insights, Inc., between 2016 and 2024, the market share for the technology will grow at an annual rate of almost 35 percent. More and more sectors of the economy, like healthcare and the automotive industry, are finding uses for speech recognition technology in addition to those found in devices like smart speakers and phones.

2. Decades of Voice Assistants

Contrary to popular belief, voice assistants predate smartphones by several decades. Here's a short timeline of the voice assistant revolution through the past century.

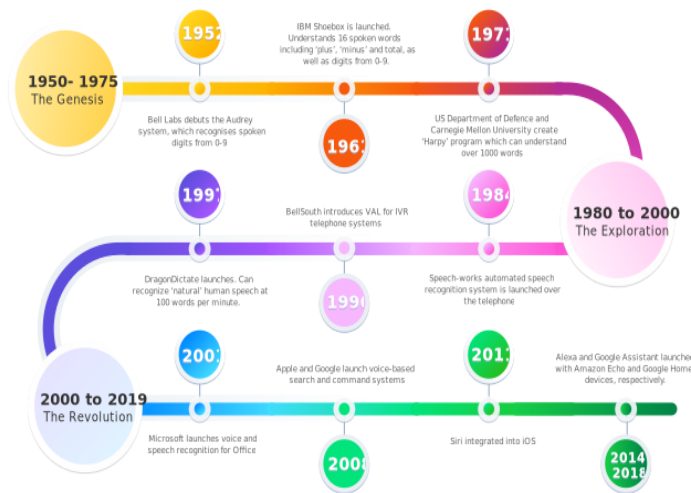


Fig-2: Decades of Voice Assistants

2.1 Popular Voice Assistants

Siri:

Siri is the most popular voice assistant today. Created in 2010 by SRI Inc, and purchased in 2011 by Apple, Siri has quickly become an integral part of the Apple ecosystem in bringing all the Apple devices and applications together to use in tandem with one another.

Alexa:

Created by Amazon in 2014, Alexa was named due to its similarity to the Library of Alexandria. Alexa was originally inspired by the conversational voice system found onboard the U.S. Enterprise in Star Trek. Alexa was released alongside The Amazon Echo, a smart speaker intended for consumers to dive into the world of home automation, uses the Alexa platform to allow users to interact with the Amazon ecosystem and allow for a plethora of smart devices to be connected.

Google Assistant:

Originally unveiled in 2016, Google Assistant was the spiritual successor of Google Now, with the main improvement being the addition of two-way conversations. Where Google now would return answers in the form of a search results page on Google, Google Assistant gives answers in the form of natural sentences and returns recommendations in the form of Feature cards.

Cortana:

Beginning in 2009, Cortana by Microsoft has had one of the longest visions of giving people access to voice assistants in their daily lives. Microsoft began shipping Cortana with all Windows 10 and Xbox devices, leading to a huge increase in the amount of registered Cortana users. In 2018 it was reported that Cortana had over 800 Million users.

Alan:

In 2017 Alan set out to take voice assistants to the next level, by enabling voice AI for all applications. Using domain-specific language models and contextual understanding, Alan is focused on creating a new generation of Enterprise Voice AI applications. By using the Alan Platform, developers can take control of voice, and create an effective workflow that best fits their users with the help of vocal commands.

2.2 Future of Voice Assistants

As AI becomes more advanced and voice technology becomes more accepted, not only will voice-controlled digital assistants become more natural, but they will also become more integrated into more daily devices. Also, conversations will become much more natural, emulating human conversations, which will begin to introduce more complex task flows. More and more people are using voice assistants too, as it was estimated in early 2019 that 111.8 million people in the US will use a voice assistant at least monthly, up 9.5% from last year.

In the future, devices will be more integrated with voice, and it will become easier and easier to search using voice. For example, Amazon has already released a wall clock that comes enabled with Amazon Alexa, so you can ask it to set a timer or tell you the time. While these devices are not full-blown voice-activated personal assistants, they still show a lot of promise in the coming years. Using vocal commands, we will be able to work with our devices just by talking.

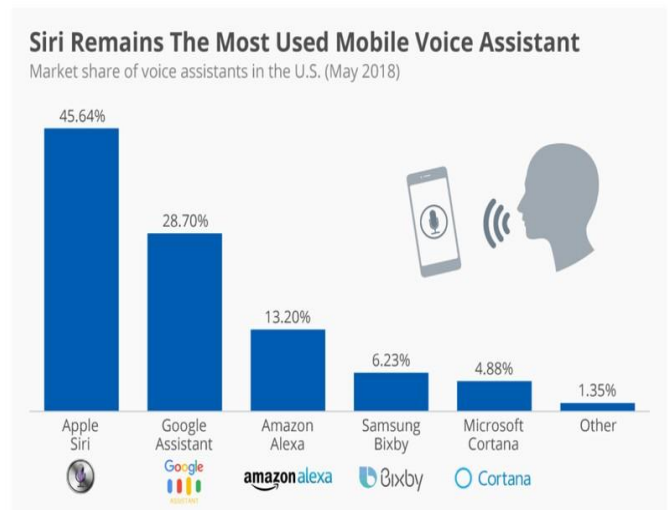


Chart-1: Mostly used Voice Assistant.

3. CONCLUSIONS

The understanding of the device means Artificial Intelligence needs to be integrated with the device so that the device can work smartly and can also control IoT applications and devices and can also respond to query which will search the web for results and process it.

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