VOICE ASSISTANT CONSUMER ADOPTION REPORT

NOVEMBER 2018

voicebot.ai™
GIVING VOICE TO A REVOLUTION

PullString

RAIN

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About Voicebot

Voicebot produces the leading online publication, newsletter and podcast focused on the voice and AI industries. Thousands of entrepreneurs, developers, investors, analysts and other industry leaders look to Voicebot each week for the latest news, data, analysis and insights defining the trajectory of the next great computing platform. At Voicebot, we give voice to a revolution.

METHODOLOGY

The survey was conducted online during the first week of September 2018 and was completed by 1,040 U.S. adults age 18 or older that were representative of U.S. Census demographic averages. Because we reached only online adults which represent 89% of the population according to Pew Research Center, some totals are adjusted downward to provide device and usage numbers relevant to the entire adult population. Other findings are relative to device ownership and do not require adjustment.

About PullString

At PullString, we strive to help people talk effortlessly with the technology that surrounds us. Working at the intersection of creative expression and artificial intelligence, PullString Converse empowers brands and agencies with the leading solution for designing, prototyping, and publishing highly engaging voice applications for Amazon Alexa, Google Assistant, and IoT devices.

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About RAIN

RAIN is a pioneer in voice and conversational AI. Equal parts creative, strategy, and engineering, our firm’s eclectic talent is united by one mission: to help clients win in the emerging conversational economy. From defining voice strategies and roadmaps to designing and deploying premium conversational experiences, we’ve worked with 23 of the FORTUNE 100 across finance, consumer products, hospitality, healthcare, entertainment, education and more.

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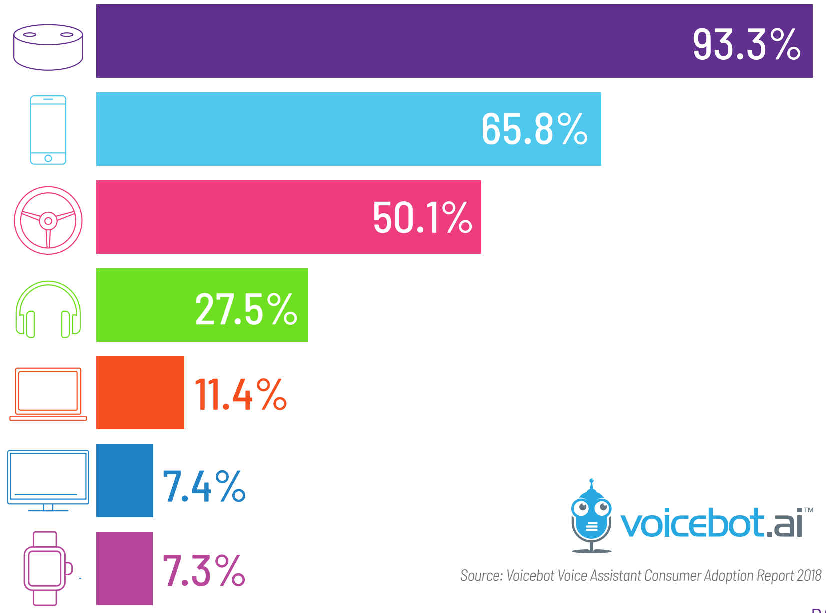
Voice Adoption Is Profilerating Across Devices

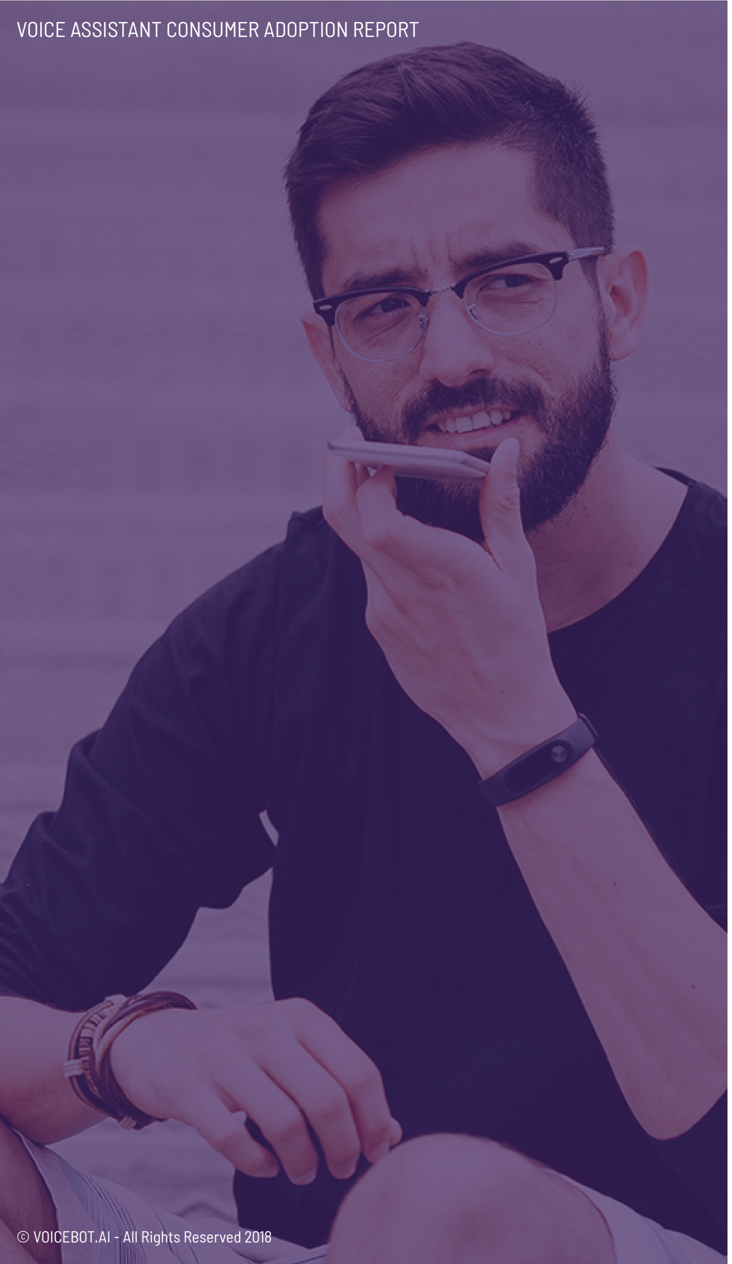
Smart speaker adoption is moving fast. In just four years, smart speakers have gained an installed user base of nearly 1 in 4 U.S. adults. That number is sure to rise and approach 30% market penetration before the year is out. While smart speakers have been a catalyst for voice adoption, they are not the only game in town. There are far more U.S. consumers with voice assistant-enabled smartphones than smart speakers. We also have voice interaction in cars, watches, headphones, televisions, appliances and a myriad of other devices.

This expansion of voice access is drawing more attention beyond the speaker and that is the intent of this report. We are looking at voice as a category distinct from programmatic visual interfaces on smartphones, smart watches and televisions. This report reflects the first comprehensive assessment of voice adoption across surfaces and includes findings for smartphones, wireless headphones (hearables), smart speakers, cars, and appliances. We assess the varying levels of adoption, product maturity and consumer perception of performance improvements for a variety of use cases.

Own Device and Have Used Voice Assistant



Source: Voicebot Voice Assistant Consumer Adoption Report 2018

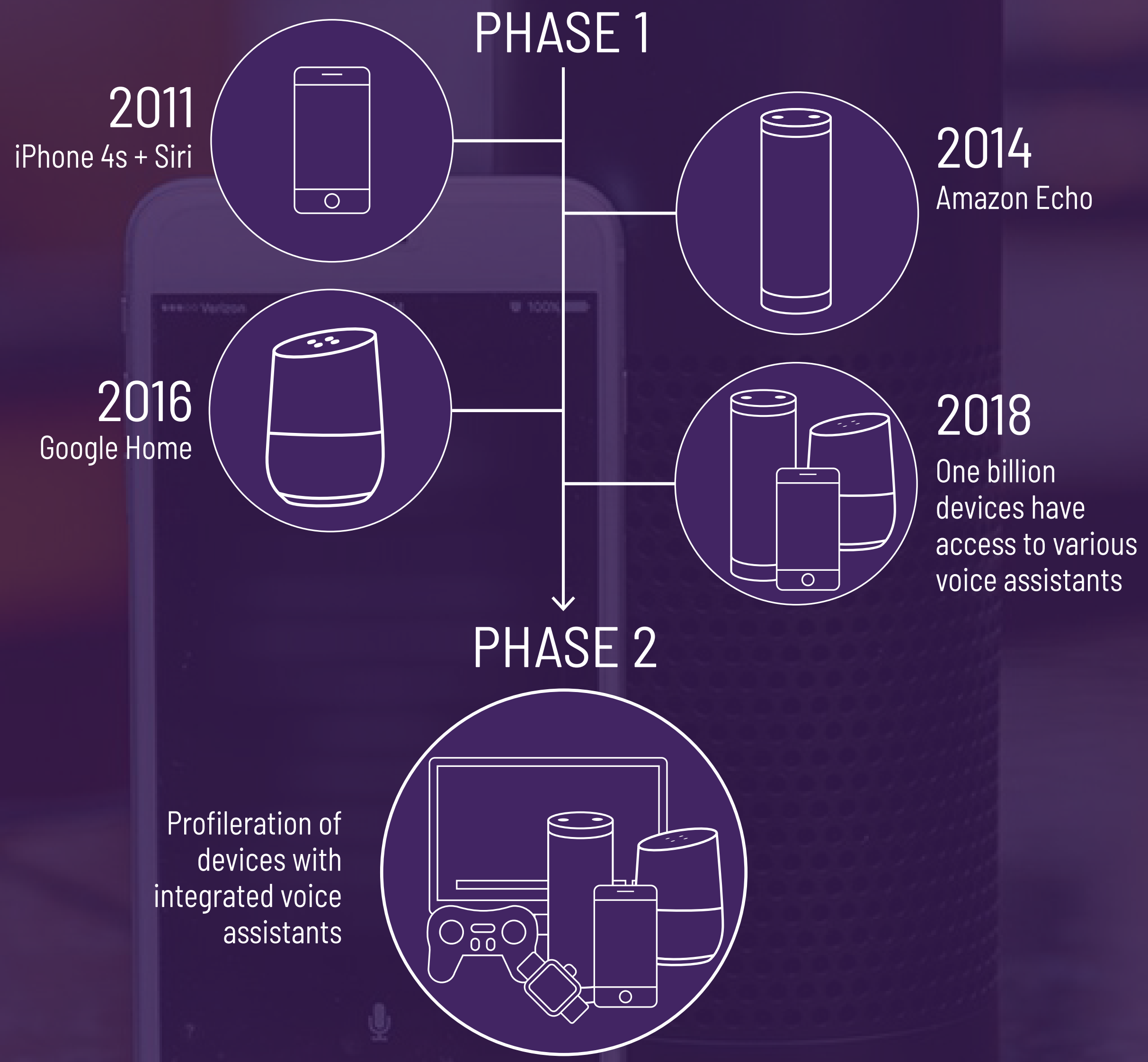


The modern era of voice assistants started with Apple Siri. Advertisements for the iPhone 4s in 2011 depicted a world where voice would be a useful and ascendant user interface. Siri struggled initially because its performance didn't match the commercials and the systems weren't ready to scale so quickly to meeting voracious consumer demand. Eventually Siri stabilized and people began using it - 375 million each month at last count. But, it didn't progress. The functionality stagnated.

Amazon Alexa was first introduced with the Echo smart speaker in 2014. It wasn't for an individual. It was for the home and Alexa's capabilities quickly expanded beyond what Siri could do. When Google entered the market as a fast follower in 2016, it was Alexa's functionality that it sought to emulate more so than Siri's. In the U.S., Google is closing the gap with Siri on smartphones much faster than catching up to Alexa on smart speakers. But, the first movers in each category are also stubbornly holding onto their market share leads, at least for now.

Use Voice Monthly on Devices by Type

Source: Voicebot Voice Assistant Consumer Adoption Report 2018



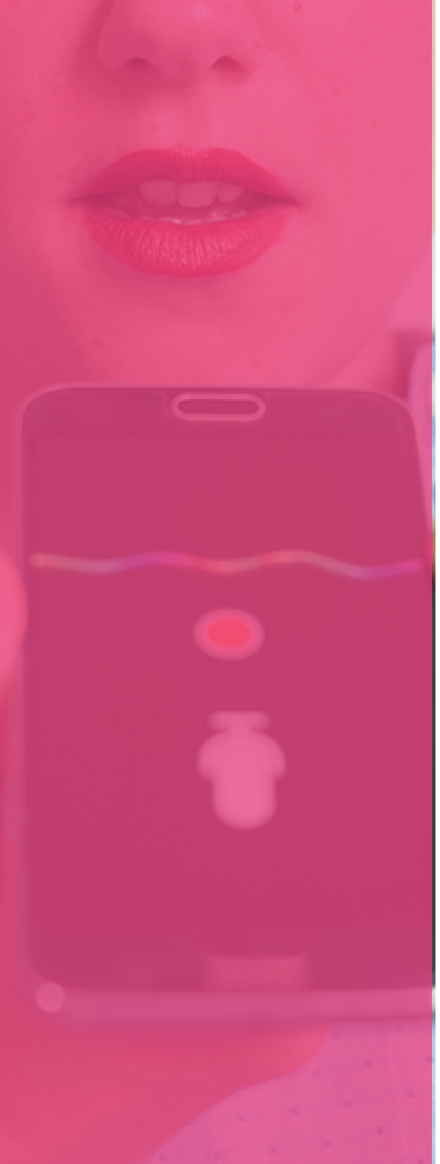
Phase 1 of the Modern Voice Assistant Era is Over

Voicebot.ai concluded recently that phase 1 of the modern voice assistant era is over. Voice assistant adoption has taken two paths, one on smartphones and another on smart speakers. Phase 1 was characterized by availability across surfaces and languages and core features. Apple initially focused on making Siri use cases available in many languages worldwide. The same was true of Alexa and later Google Assistant. With the latter two, there was also the quick move to offer a variety of device form factors to appeal to different user preferences and contexts. While initial features focused on basic information, that was soon followed by communication, entertainment services and tools.

Welcome to Phase 2

The emergence of phase 2 is being driven by lower-level features such as Alexa's whisper, brief and follow-up modes and is characterized by voice moving into devices well beyond smart speakers. Smart watches, smart glasses, IoT devices, DVRs and many more examples show the determination of manufacturers to bring voice interactivity to their devices as well. Phase 1 introduced consumers to the idea of using voice to perform tasks. Phase 2 is about voice becoming a pervasive interaction mode that has more capabilities and is used more frequently across more devices and contexts.

SMARTPHONES

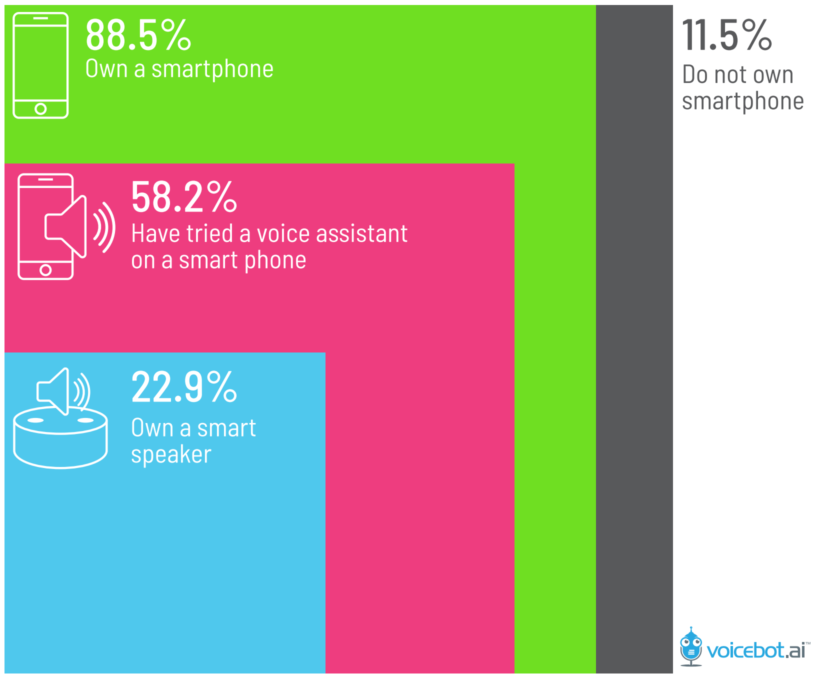


Voice is More Prevalent on Smartphones Than Any Other Surface

Smart speakers may have led the recent popularization of voice, but two-and-a-half times more people have tried voice assistants on smartphones. The number of adults that have tried voice assistants on smartphones is 146.6 million compared to more than 50 million for smart speakers.

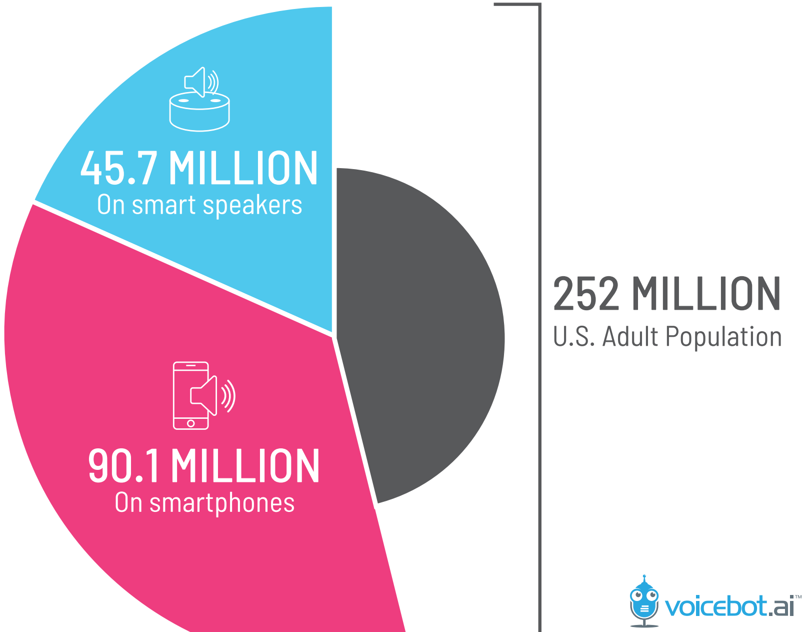
There are also more monthly active users of smartphone-based voice assistants. Monthly voice assistant users on smartphones number 90.1 million compared to 45.7 million on smart speakers. However, the data also confirm that smart speaker owners are far more likely to be monthly active users than smartphone owners.

Voice Assistants are More Prevalent on Smartphones



Source: Voicebot Voice Assistant Consumer Adoption Report 2018

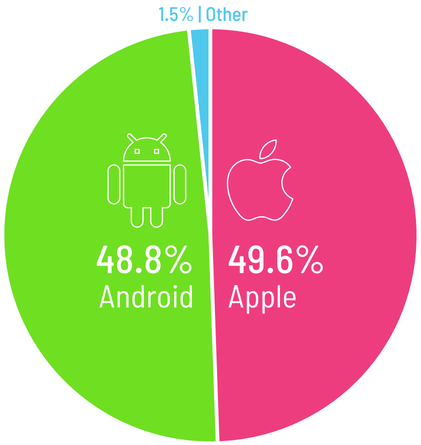
Monthly Active Voice Assistant U.S. Adult Users



Source: Voicebot Voice Assistant Consumer Adoption Report 2018

Siri Leads in Voice Adoption on Smartphones

Apple iOS and Android have comparable market share in the U.S. and in our survey. This may surprise some foreign observers given Android's more than 85% market share worldwide. However, Apple has always been strong in the U.S. despite (or maybe because of) its tight control over the product and high price point.

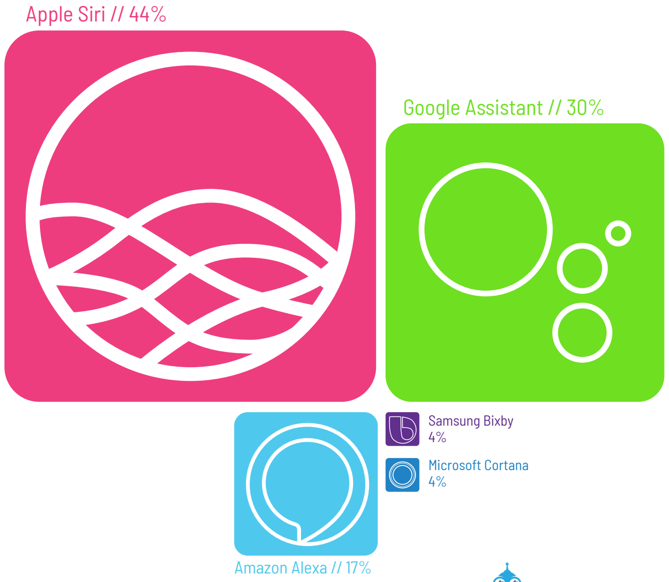


Smart Phone OS Ownership

When it comes to voice on smartphones, Apple Siri punches above its weight class in terms of relative usage. You will find few objective observers that believe Siri's performance is superior to Google Assistant, but we have consistently seen the Apple voice assistant with a larger user base. Both Apple and Google claim their voice assistants are available on over 500 million devices which are mostly smartphones. But, Apple says 500 million devices have used Siri while Google focuses on the term "available."

The advantage of having a smartphone platform doesn't automatically transform into users. In the U.S., Samsung typically commands between 20-30% of all smartphone sales. That hasn't translated into meaningful market share for the company's Bixby voice assistant. Only 4% of U.S. adults claim they have tried Bixby. Compare that to 4% for Microsoft Cortana and 17% for Amazon Alexa, neither of which has a smartphone device in market.

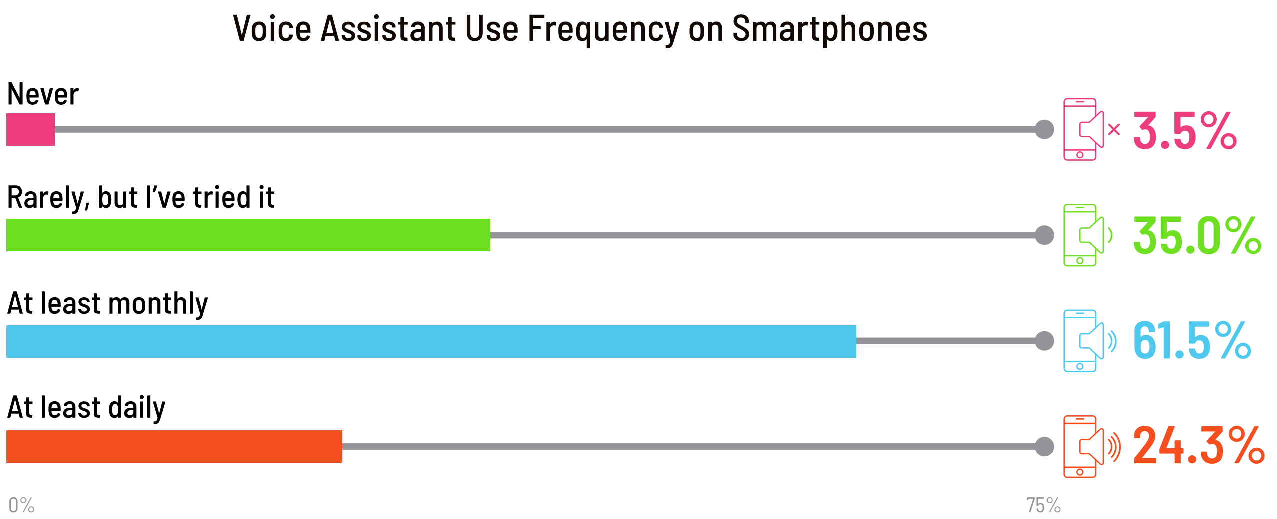
Voice Assistants Used on Smartphones



Source: Voicebot Voice Assistant Consumer Adoption Report 2018

3 in 5 Consumers Use Voice Assistants on Smartphones at Least Monthly

Nearly all smartphone owners, 96.5%, report having at least tried a voice assistant on mobile devices. More notable is that 61.5% have made voice assistant use on smartphones a monthly habit. Nearly one in four consumers reports using a voice assistant on their smartphone daily. Given the numbers, it is hard to view voice interaction as predominantly a smart speaker phenomenon. Widespread consumer use of voice started on smartphones and the majority use it on regular basis today.



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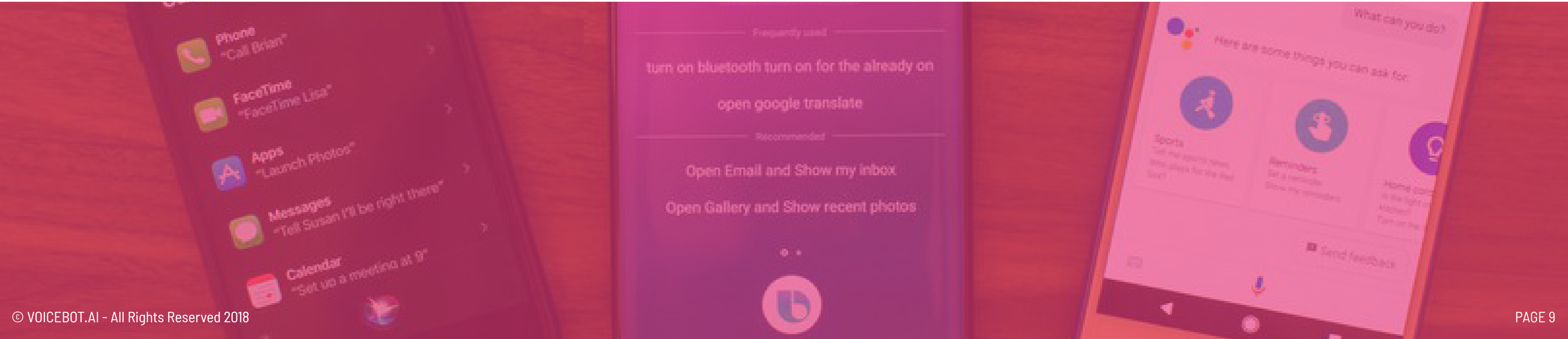


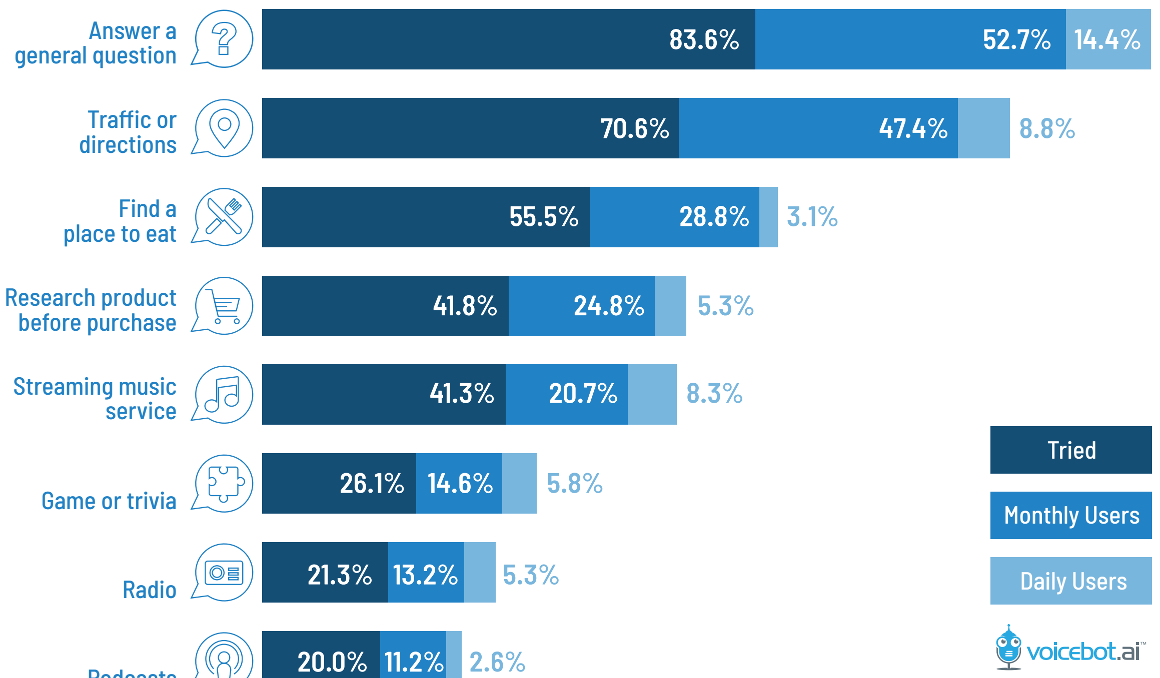
General Information Tasks Rank Ahead of Entertainment in Voice Use Cases on Smartphones

Consumers report that general information search tasks rank well ahead of entertainment when it comes to voice assistant use on smartphones. The top use case on an "ever tried," monthly, and daily basis is asking questions. More than 50% take advantage of voice search features each month.

The next two most common monthly habits involve search by location for either directions or locating a restaurant which is not surprising for on-the-go consumers. However, it may be a surprise to some industry observers that using voice to search for products was more popular than any of the four entertainment options.

Of the eight informational and entertainment categories in this question, the sorting was clear. Consumers expectations of voice on smartphones is information first. Accessing a streaming music service led the entertainment category and was well ahead of radio, podcast listening and games.

Smartphone Voice Assistant Information and Entertainment Use Cases



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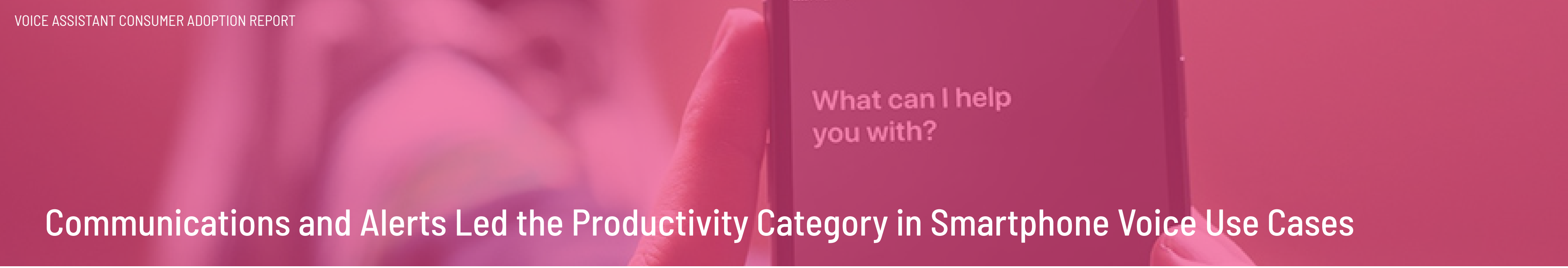
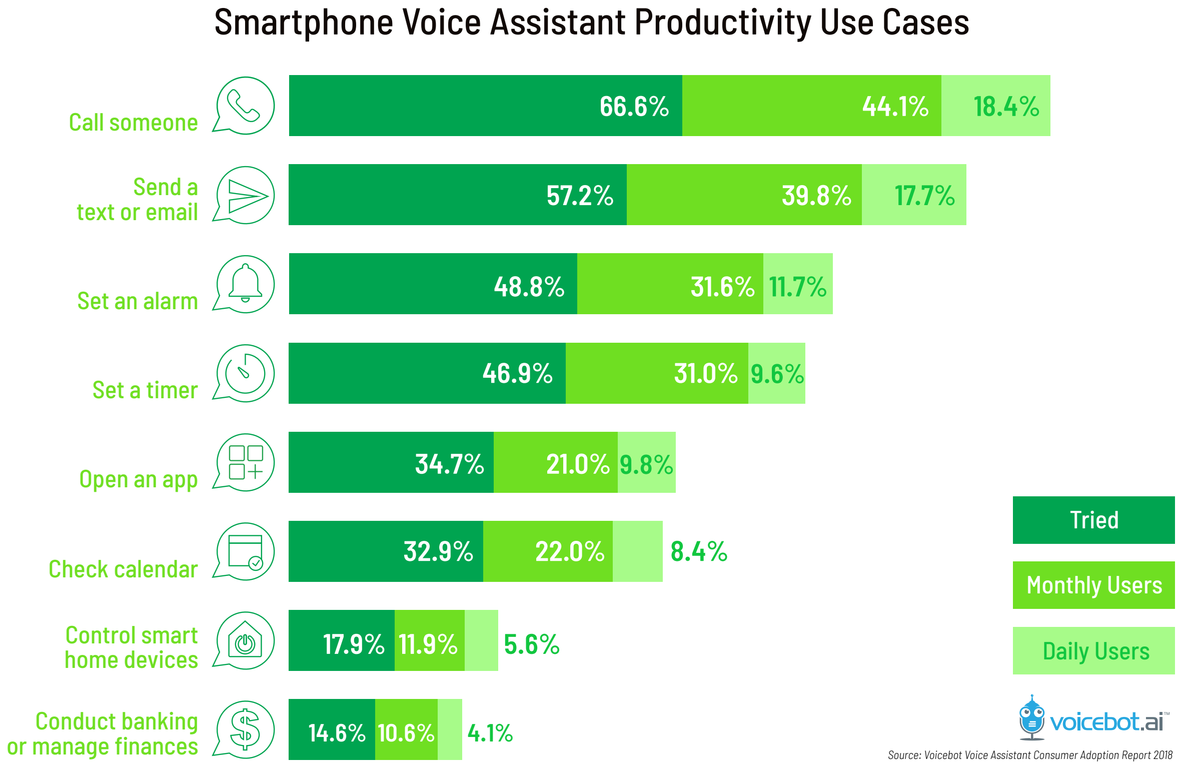


Communications and Alerts Led the Productivity Category in Smartphone Voice Use Cases

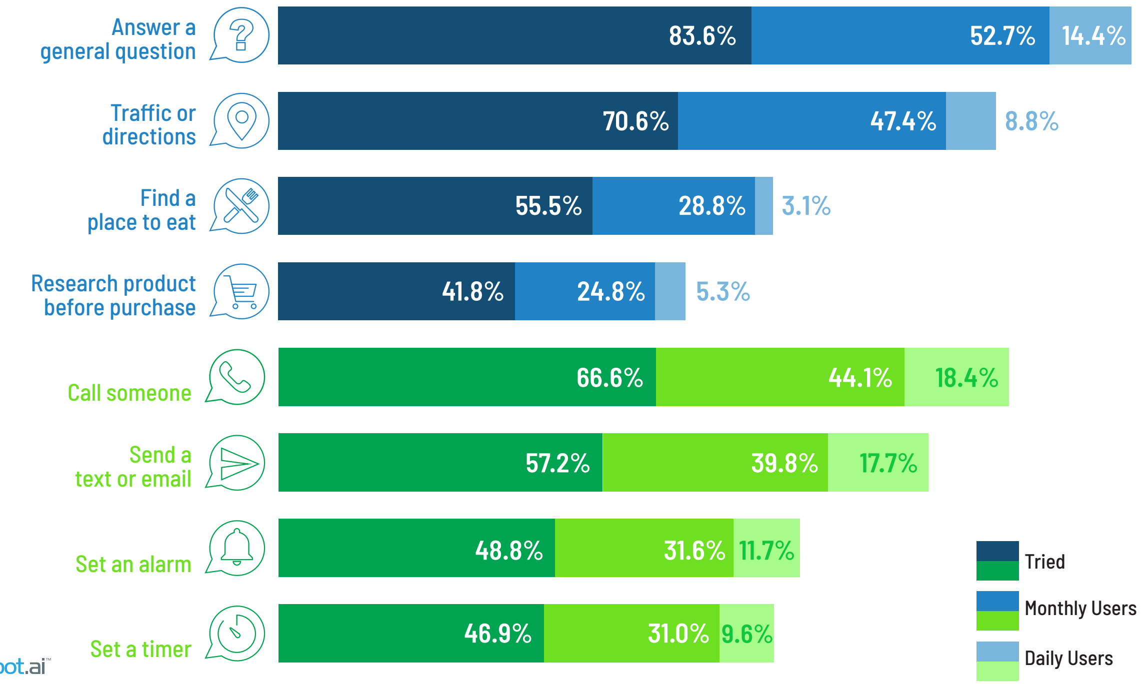
When it comes to productivity tasks, using the voice assistant to initiate communications is most common. Two-thirds of consumers have used a voice assistant to initiate a phone call and 44% do so on a monthly basis. Not far behind at nearly 40% is sending a text by voice.

Next in line is what we refer to as the alert category. About 31% of consumers reported using voice to set both alarms and timers. The next two use cases in the ranking involve device navigation. Just over 20% of consumers use voice monthly to open an app or check their calendar.

Finally we have the transactional control categories. About 12% use their mobile device to regularly control smart home devices and nearly 11% to conduct banking. It is interesting that the four categories of activity types all clustered. Communication, alerts, device navigation and transactional controls each had two options and they clustered in descending rank order of activity types.



Top Voice Assistant Information and Productivity Uses Cases on Smartphones



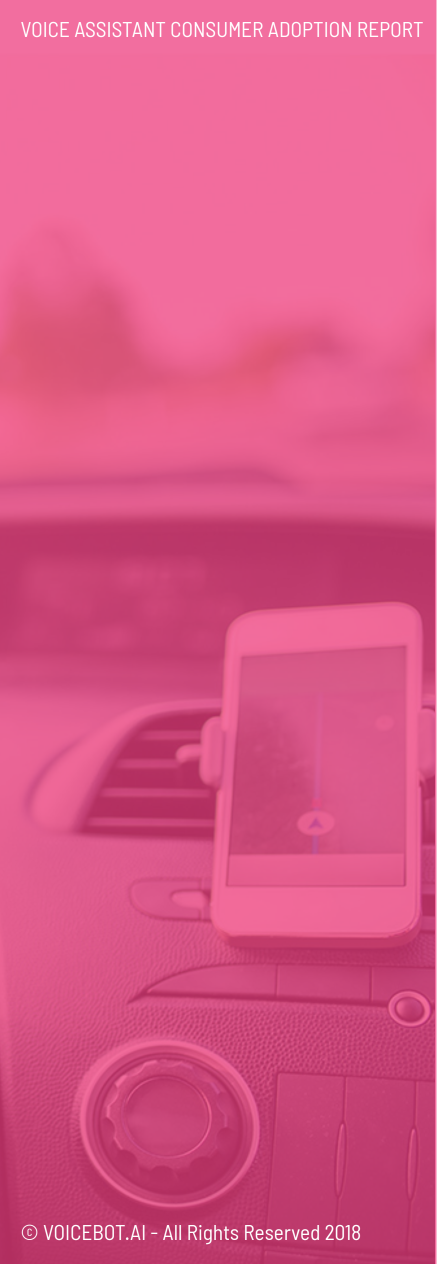
Source: Voicebot Voice Assistant Consumer Adoption Report 2018

Voice is a Utility for Smartphone Users

Comparing the most common voice assistant use cases on smartphones shows that information queries still are the most popular on monthly basis. Answering a question and finding directions are followed by communications, alerts and then navigation queries.

These data show us that consumers view voice assistants on smartphones as utilities first and foremost. All of these tasks can be quite easily executed by touch on a smartphone, but the convenience of voice in general or in specific mobile use cases is displacing touch interaction.

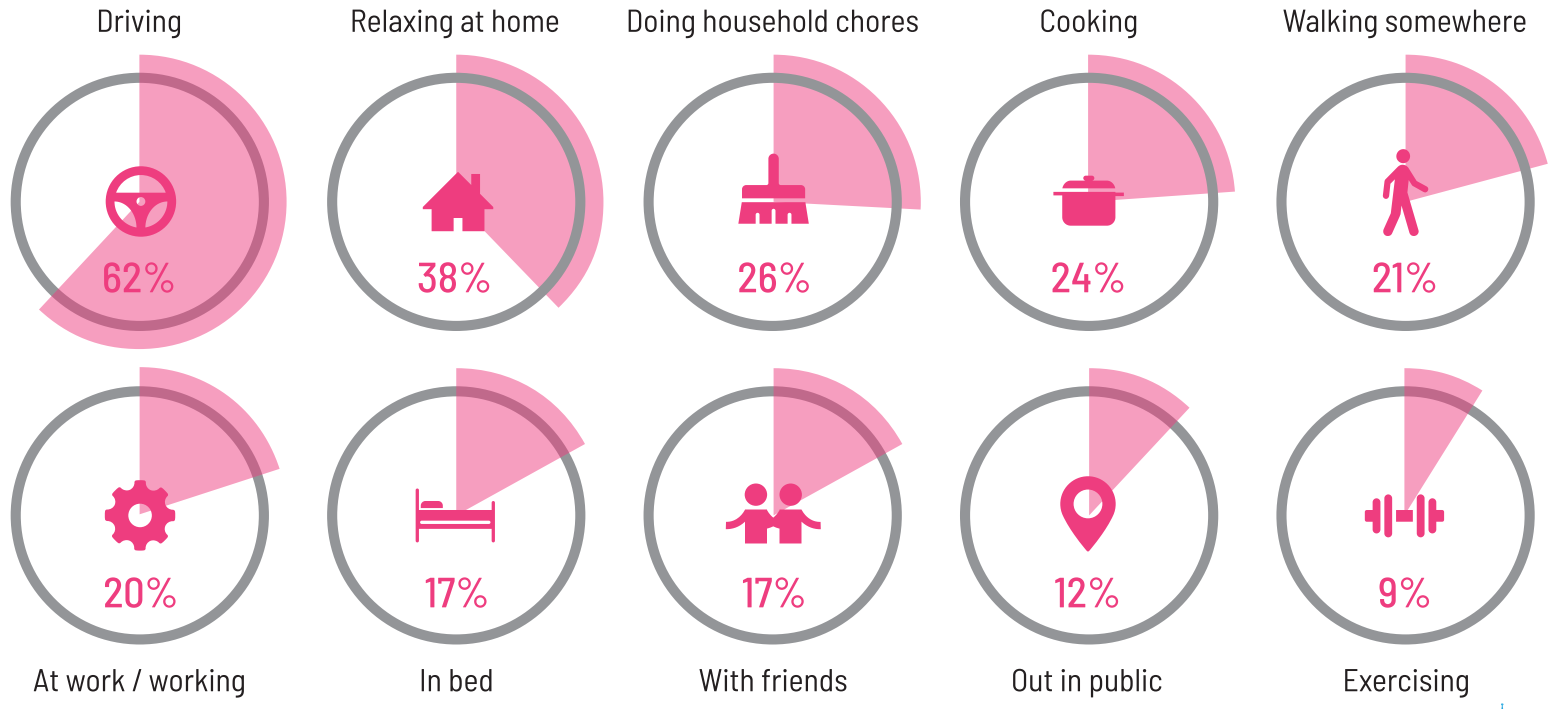
The consumer data contrasts with smart speakers where entertainment and transactional controls are key drivers of usage. This may be a reflection of the context in which voice is used on these devices, but it also represents areas where usage can grow.



Voice on Smartphones is Used Most Frequently While Driving

The most common use of voice on smartphones occurs while consumers are driving. At 62%, driving outpaces relaxing at home (38%) and doing household chores (26%) by a large margin. Four of the top five voice assistant use "contexts" involve activities where the eyes, hands or both are otherwise occupied. Voice enables users to interact with their device at a time when it would be inconvenient or unwise. However, it is interesting that the second most common "context" is relaxing at home when voice is a mere convenience as opposed to a necessity.

Common Use Cases for Smartphone Voice Assistant Users in the U.S.



Source: Voicebot Voice Assistant Consumer Adoption Report 2018

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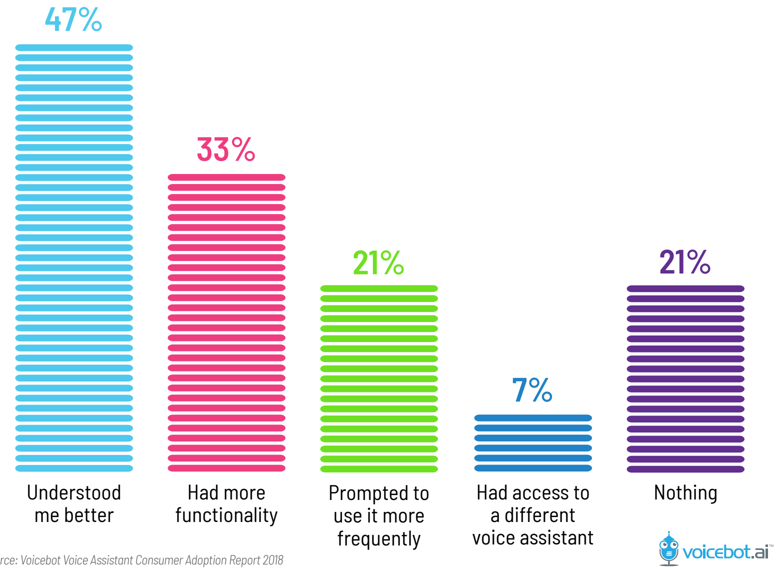
Hands Free Use Cases Drive Usage, But Understanding Holds Voice Back

The most frequently cited complaint about voice assistants on smartphones was inconsistency in understanding user requests. Forty-seven percent of consumers reported that they would use their smartphone based voice assistant more if it understood them better while one-third desired more functionality. Interestingly, 1 in 5 consumers indicated they would use voice more if prompted. Since voice interaction isn't a habit, it doesn't occur to some users that it is an option.

Confirming the finding about voice assistant use "contexts", consumers indicated that the convenience of hands free interaction and ability to multitask were the most commonly cited benefits. Thirty percent pointed out that voice was a faster means of interacting with their smartphone. It is not that touch and type are going away. Voice has become a complementary user interface that is preferable in many situations.

What Would Cause Consumers to Use Their Smartphone Voice Assistant More



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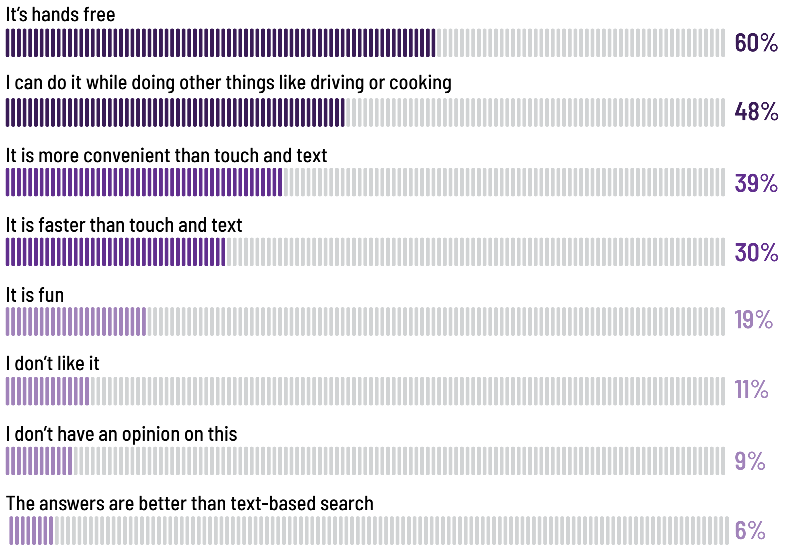
What Users Like About Voice Assistants on Smartphones



HEARABLES

Nearly Half of Consumers Own Hearables

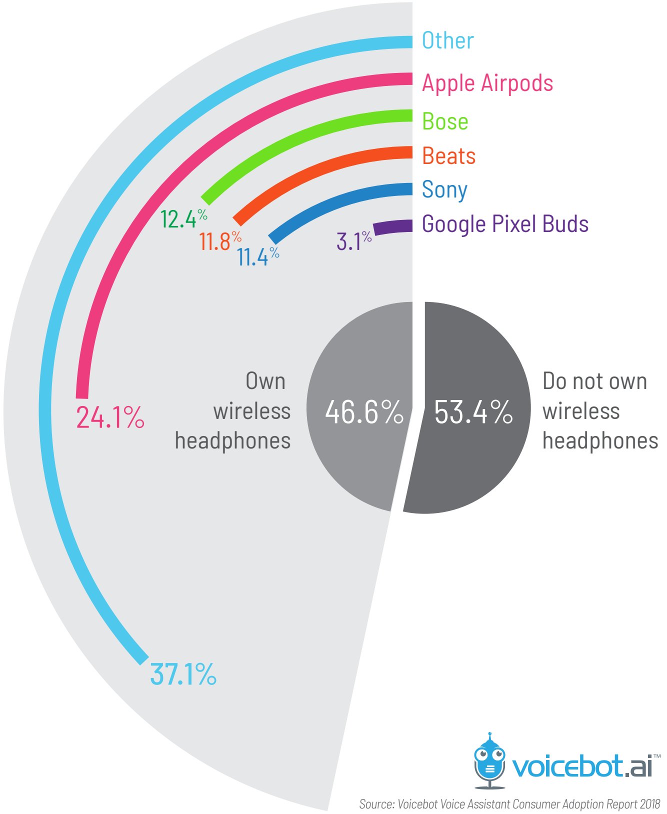
Often viewed as an extension of smartphones, hearables are wireless headphones or earbuds that offer hands free access to a voice assistant with enhanced convenience and privacy. The expansion of hearables ownership will likely increase voice assistant use on personal devices that include smartphones and the latest generation of smart watches.

In this category, Apple AirPods are the breakout leader. While the market remains fragmented with the “Other” category capturing 37% of responses, AirPods have been adopted by 24% of hearable owners. Also note that Apple owns Beats. Most of those models provide Siri access so Apple’s share of this segment is really 36%.

Google’s Pixel Buds trail far behind at only 3.1%. However, Bose and Sony offerings register at 12.4% and 11.4% respectively and both offer access to Google Assistant today in some models.

It is important to note that not all wireless headphones have voice assistant access today. However, given the direction of product sellers, most of the 63% of branded wireless headphones already have or soon will have voice assistant access with a quick tap on their ear.

Hearable Ownership by Brand



Source: Voicebot Voice Assistant Consumer Adoption Report 2018

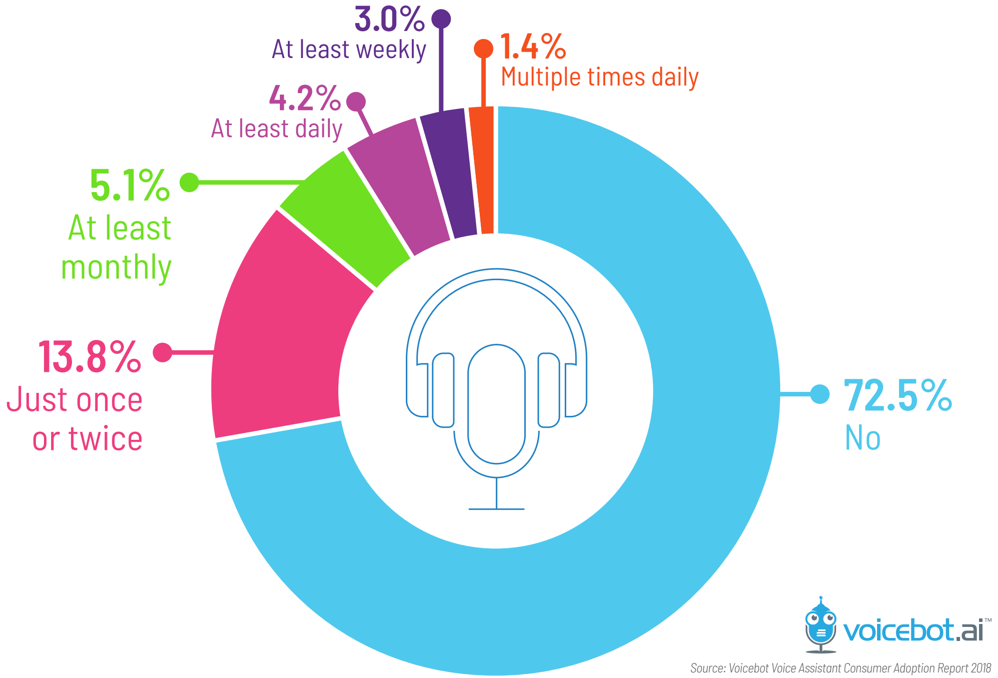
Most Consumers Don't Have Voices Ringing in Their Ears

Despite voice assistant access, over 72% of wireless headphone owners - also known as hearables - say they have never tried using voice with them. Only 13.7% say they use voice through their headphones or earbuds on at least a monthly basis and 8.6% at least daily.

Voice assistant use through hearables is about one-fifth to one-third less than regular usage on smartphones. This means that there is plenty of room to grow and that hearables have a clear case for usage beyond simple passive media consumption and hands-free phone calls. The other likely driver of hearable voice assistant usage will be the adoption of smart watches. These devices are increasingly popular and voice is a superior user interface for many interactions due to small screen size.

Pairing hearables with watches increases privacy while eliminating the need to raise your wrist to speak. As more watches become standalone connected devices that can be operated without a smartphone, hearable use for voice assistant interaction is sure to rise.

Hearable Voice Assistant Usage Rate



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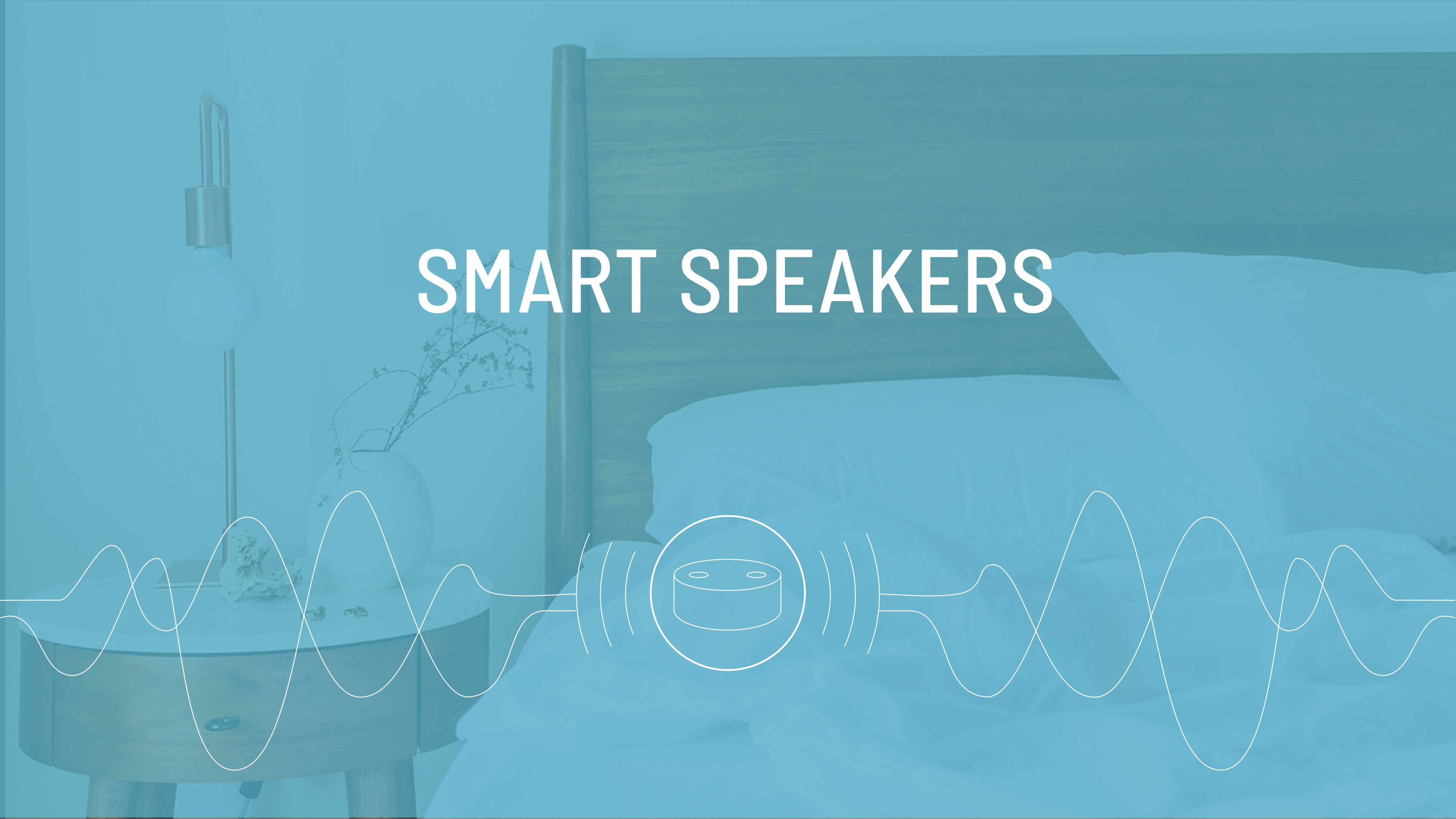
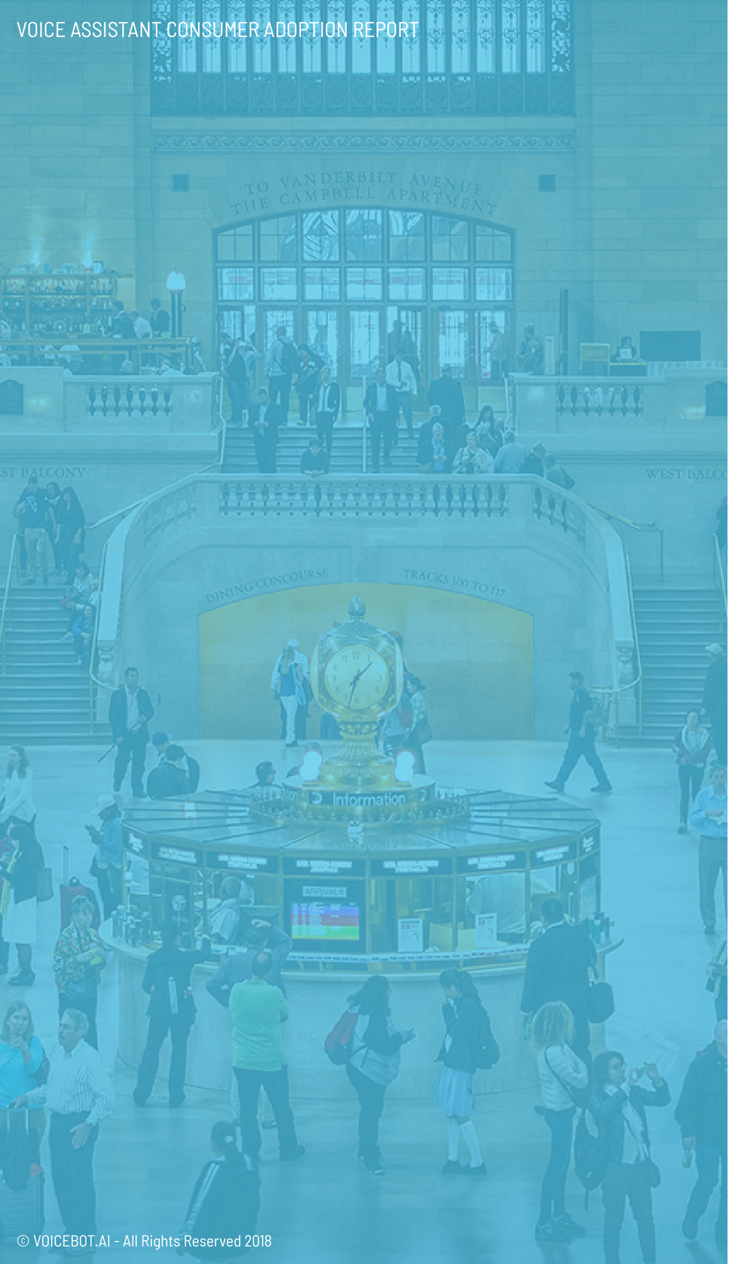
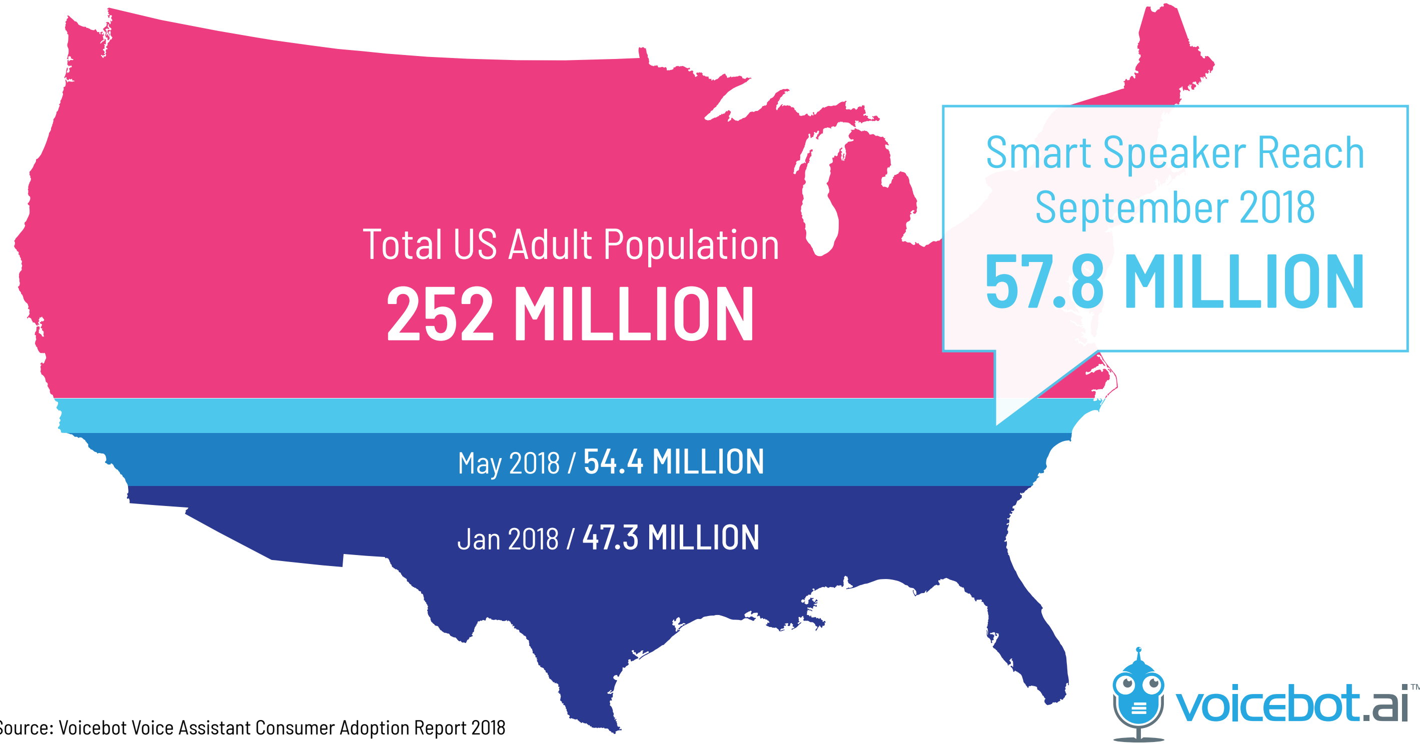

SMART SPEAKERS



U.S. Smart Speaker Users Rise to 57.8 Million

Smart speakers have continued their steady rise among U.S. adults in 2018 with the user base expanding 22% since January. This rise pegs smart speaker ownership at 22.9% of the U.S. adult population. That is a user base of 57.8 million adults.

US Adult Smart Speaker Total Audience Reach September 2018



Source: Voicebot Voice Assistant Consumer Adoption Report 2018

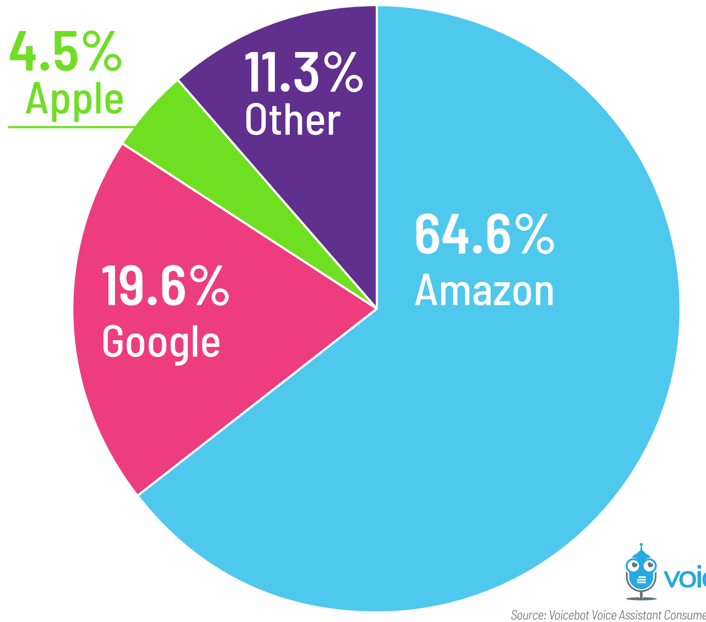
Amazon Leads But Google and Apple Rise

Amazon Echo continues to lead in smart speaker market share with 64.6% while Google has made significant market share inroads since 2017 rising to 19.6% in our latest survey. Apple debuted at 4% market share in May of 2018 after a February launch in the U.S. That figure has risen to 4.5% as Apple has carved out a leadership position in the premium smart speaker segment.

The other big movement in installed user base is the "Other" category. Brands not named Amazon, Apple and Google are starting to accumulate market share with 11.3% of all smart speaker users. This category is currently led by brands such as Sonos, JBL and Harman Kardon. It has recently expanded to include Bose, Bang & Olufsen and a variety of other devices adding speaker capabilities. Those brands are just hitting the market and their impact will not be measurable until year end.

With that said, we are talking about voice assistants and nearly all of these third-party smart speakers include either Amazon Alexa or Google Assistant onboard. Right now, Alexa and Google Assistant are sharing about 95% of the market with Siri commanding just under 5%. Can you say duopoly?

Smart Speaker U.S. Installed Base Market Share - September 2018



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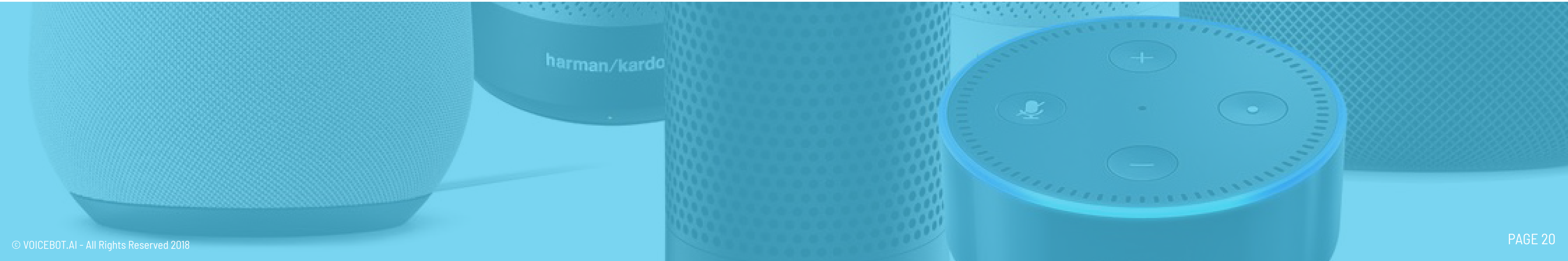
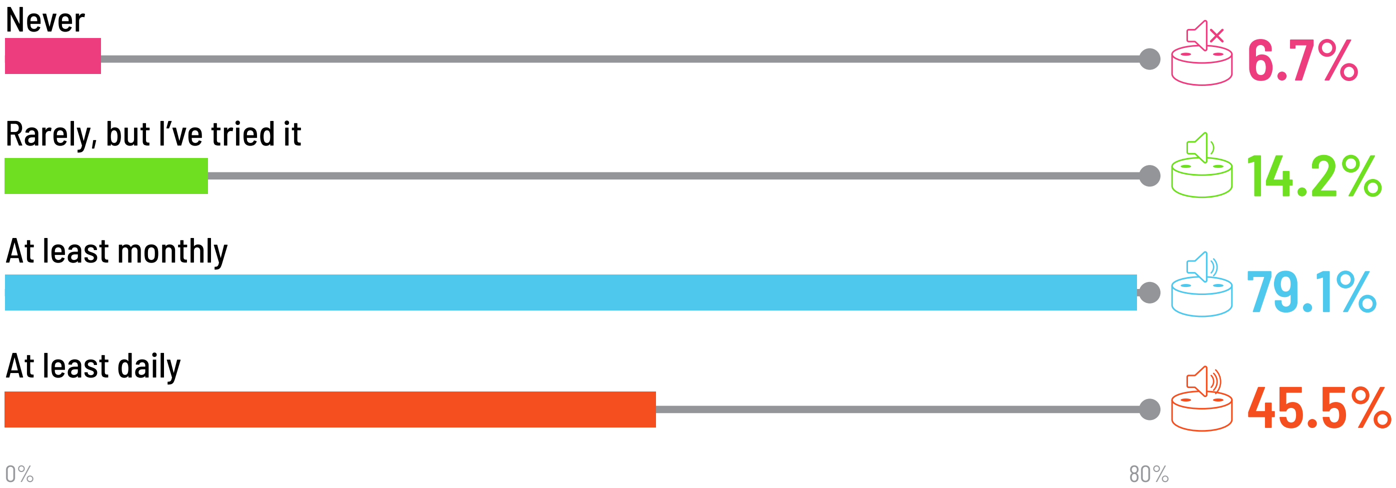


79% of Smart Speaker Owners Use Them Monthly

When new consumer technologies come along and prove to be popular, there is always a question about whether it is a fad or if they will have staying power. It seems clear that smart speakers will be around for the long haul. Over 79% report using the devices monthly and 45.5% are using them daily. Interestingly, 6.7% report never trying the devices. This suggests these adults are in a household that has a smart speaker but someone else is the primary user.

When these devices do arrive in a household, 93% try them and 4 out of 5 turn smart speaker-based voice assistant use into a monthly habit. This is a decline from 87% of device owners as monthly active users in January. The change likely reflects the ownership base spreading beyond early adopters and technology aficionados that are more likely to be heavy users. A decline was also seen in daily active users which fell from 63% in January to 45.5% in September.

Voice Assistant Use Frequency on Smart Speakers



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Source: Voicebot Voice Assistant Consumer Adoption Report 2018

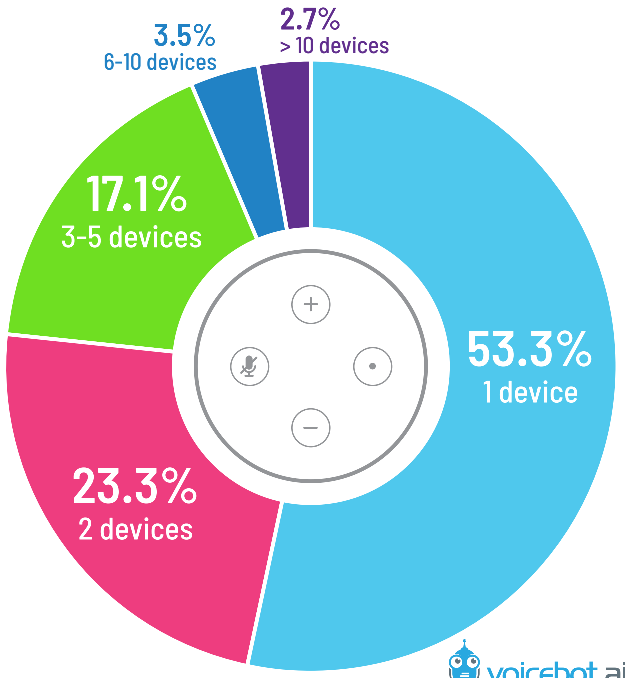
Smart Speakers Now Average 2.2 Devices Per Household

Up from About 1.8 in January

The number of smart speakers per household rose sharply between January and September climbing from about 1.8 to 2.2. This change means almost half of U.S. smart speaker owners have devices in multiple rooms within the home. It also emphasizes that much of the smart speaker unit sales in any given quarter go to consumers that are expanding their smart speaker collection as opposed to initial adoption.

At Voicebot, we see this trend as another signal that smart speakers are here to stay. When users adopt the devices, they are likely to add additional access points to make voice readily available in more rooms. The low price of entry-level smart speakers makes this expansion easy to do. And, the introduction of more high end models will mean many current smart speaker owners will be moving their Bose and Harman Kardon devices into the living rooms and bedrooms and relocating those Echo Dots and Google Home Minis to guest rooms, bathrooms and the basement.

Smart Speakers Per Household



Source: Voicebot Voice Assistant Consumer Adoption Report 2018

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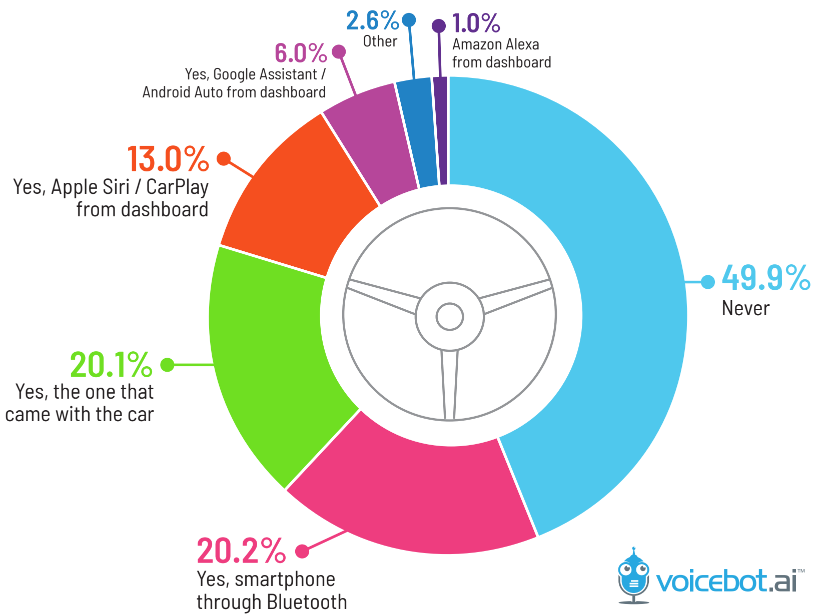
THE CAR

Half of Consumers Have Used Voice Assistants in the Car

Beyond smartphones and smart speakers the car is the other key user environment for consumer voice assistant use today. Just about 50% of consumers said they have tried a voice assistant in the car. It was about equally split between using Bluetooth to connect to their smartphone voice assistant and using the voice solution that came pre-installed in the car.

However, when you combine the Bluetooth connection to smartphones with the use of Apple CarPlay and Android Auto, you get an even bigger disparity. That figure adds to 39%, almost double the number of users that have tried a native voice assistant embedded into cars.

The player that is essentially excluded from the car is Amazon Alexa. It does not have the loyal smartphone user base nor does it have a formal position in the dashboard like Apple CarPlay and Android Auto. Amazon is working to get that dashboard positioning, but likely won't see a significant installed base for years. That is part of the motivation behind Echo Auto which is a way to place a small microphone array on the dashboard that can pick up a driver's utterance better than the smartphone based Alexa app can in a noisy environment like a car. It is a workaround to provide Alexa access until integration with car infotainment systems is widespread.



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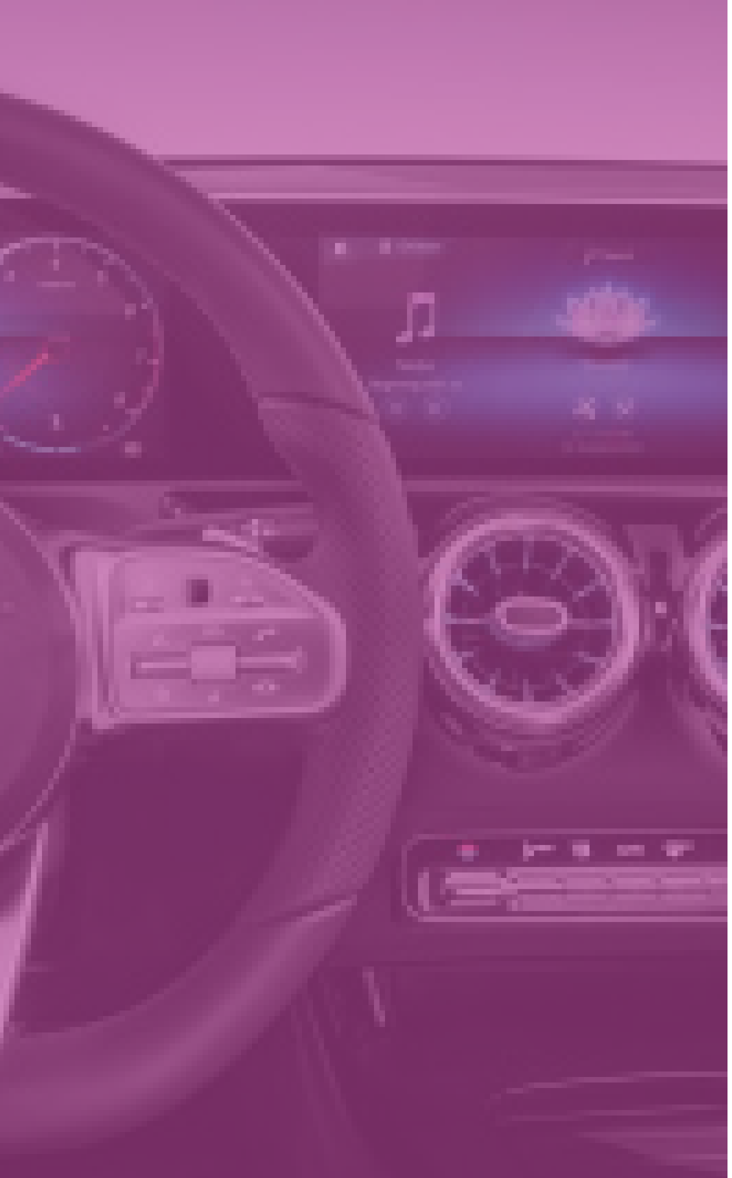
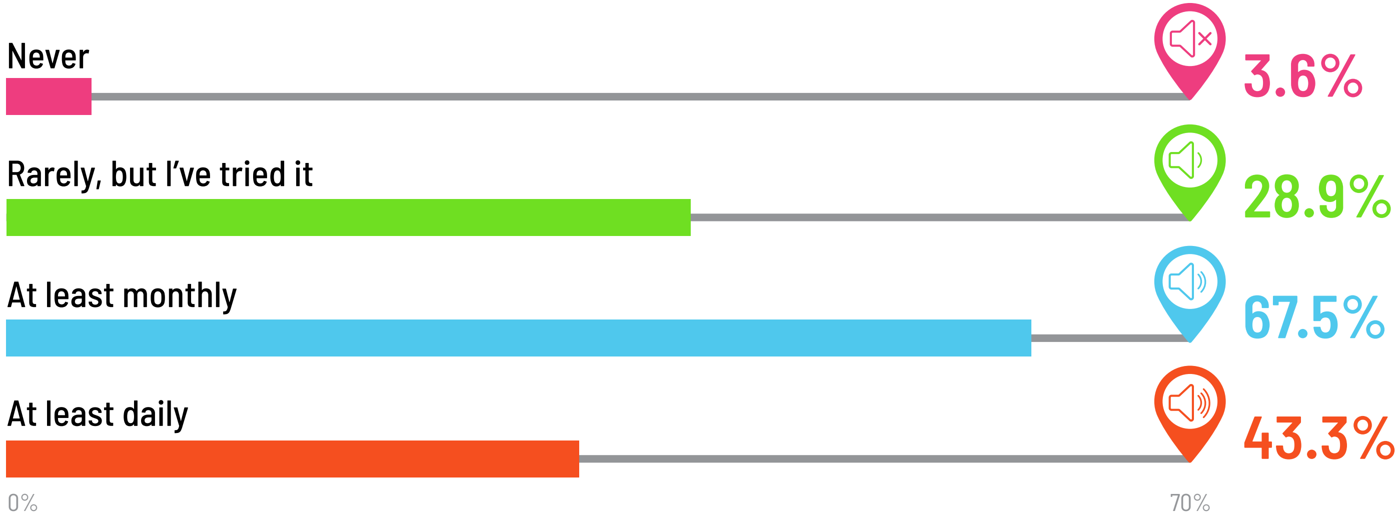


2 of 3 Consumers Use Voice Assistants in the Car at Least Monthly

Voice assistant use in the car is not as frequent as among smart speaker owners, but is higher than smartphone-based usage. About 61% of respondents report using smartphone-based voice assistants monthly while 67.5% are using them in cars during a comparable period. However, almost an identical number of U.S. adults claimed to be using voice assistants daily in the car and through a smartphone at 24%.

This is about 20% lower than daily smart speaker usage, but it is off of a much larger base of users. Voicebot estimates that there are 114 million U.S. adults that have used voice assistants in a car at least once and 77 million that are using them monthly. This high usage make sense given that driving responsibly requires hands free and eyes free interactions if attempting to access digital services.

Voice Assistant Use Frequency in the Car



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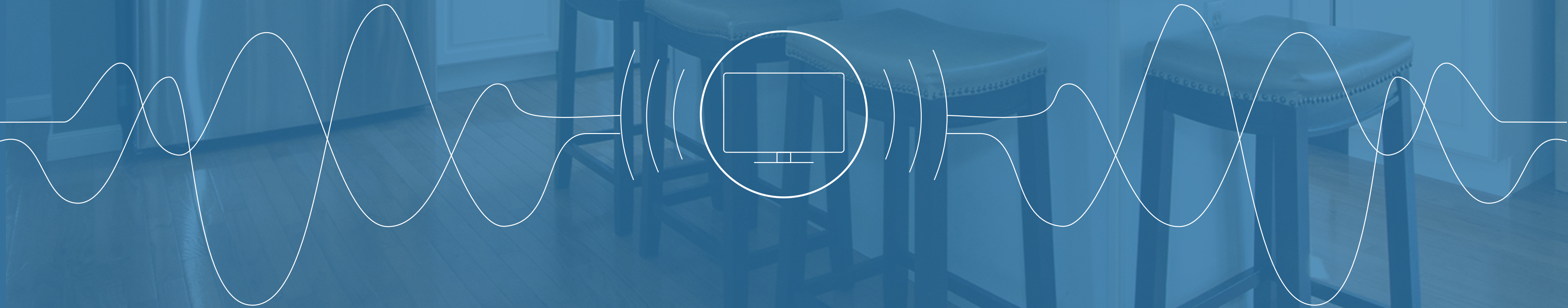
Source: Voicebot Voice Assistant Consumer Adoption Report 2018

APPLIANCES
& OTHER ACCESS POINTS



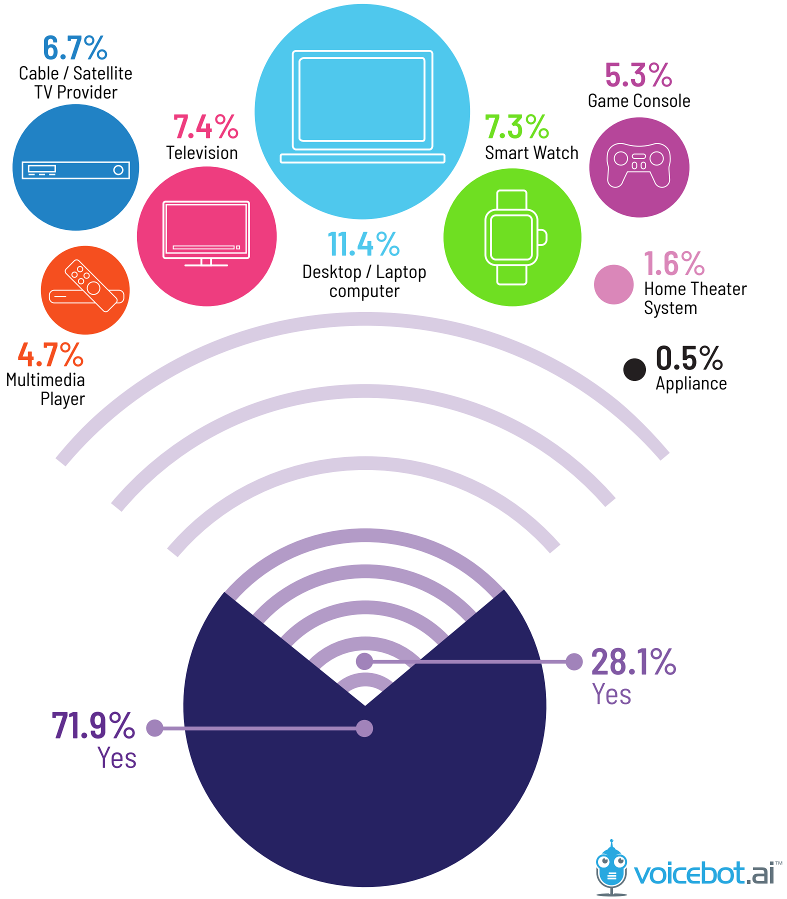
Laptops, Televisions and Smart Watches Also Seeing Voice Assistant Use

The smartphone, smart speaker and the car may be the big three access points for voice assistants, but a myriad of other devices are eager to get into the act. The leading players right now are desktop and laptop computers. Both Microsoft and Apple have built Cortana and Siri respectively into their latest operating systems, making it easy for users to gain quick access. And, both companies encourage the use of their voice assistant during the device set-up process. This has the guise of tuning the system to recognize the user's voice, but the bigger impact is to generate awareness about voice assistant presence and capabilities.

Next up are smart televisions that enable voice access to turn on or off the devices as well as navigate to channels and media without having to manually select a destination with a remote control. This is followed closely in the fourth position by cable and and satellite providers which have been furiously adding voice capabilities for the past two years. Voice is an excellent tool for media navigation and consumers are starting to notice.

The third position is held by smart watches. Small screen size is a key driver of adoption. The limited screen real estate means button navigation can be challenging. Voice eliminates that barrier.

Voice Assistant Use By Device Type



Source: Voicebot Voice Assistant Consumer Adoption Report 2018

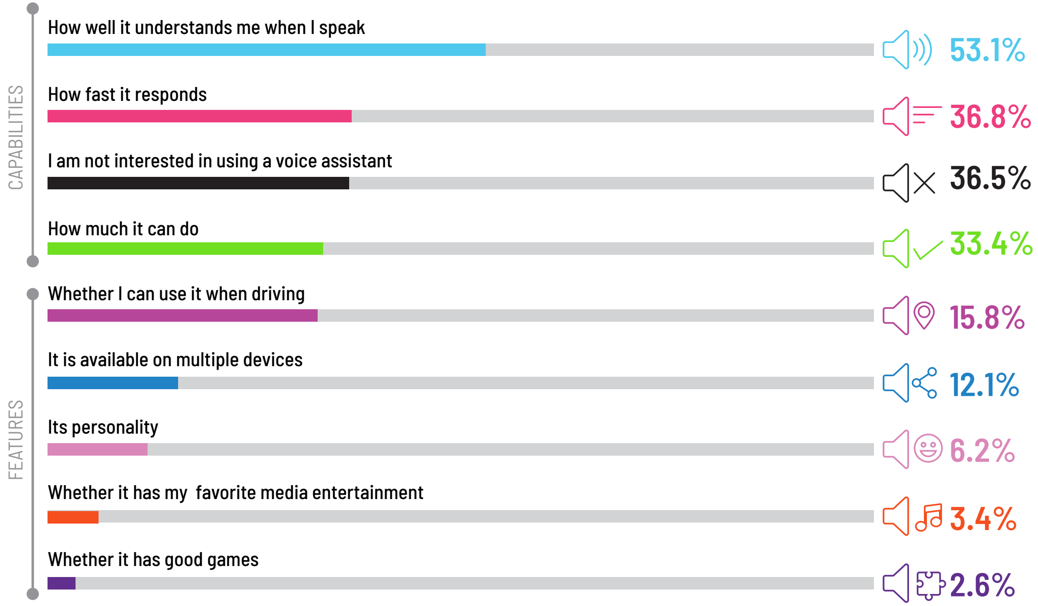

WHAT CONSUMERS SAY

How Consumers Choose Voice Assistants

When choosing a voice assistant, consumers say how well it understands them is the number one factor in their decision. That result is 20 points higher than how much the voice assistant can do. Just one-third of consumers are focused on the voice assistant features. This may be a result of Alexa and Google Assistant having near feature parity so other factors rank higher. However, it bodes well for Apple's Siri which is largely considered less capable than other voice assistants, but competes relatively well on understanding user speech.

The speed of response is also an important factor according to consumers. Less important are a voice assistant's availability on multiple devices, its personality, and whether it has popular entertainment options. Feature and device expansion, media, games and personality have all been a focus for Amazon Alexa. Is that a bad strategy or do consumers rate these factors as less important precisely because they already exist and therefore are not a gap today? Features and capabilities may play an important role in voice assistant selection over time, but it is clear that consumers today are focused on their interactions being fast and reliable. This can also serve as guidance to voice app publishers that want to deliver a positive user experience. Voice app design should be optimized for these factors.

Most Important Qualities of a Voice Assistant



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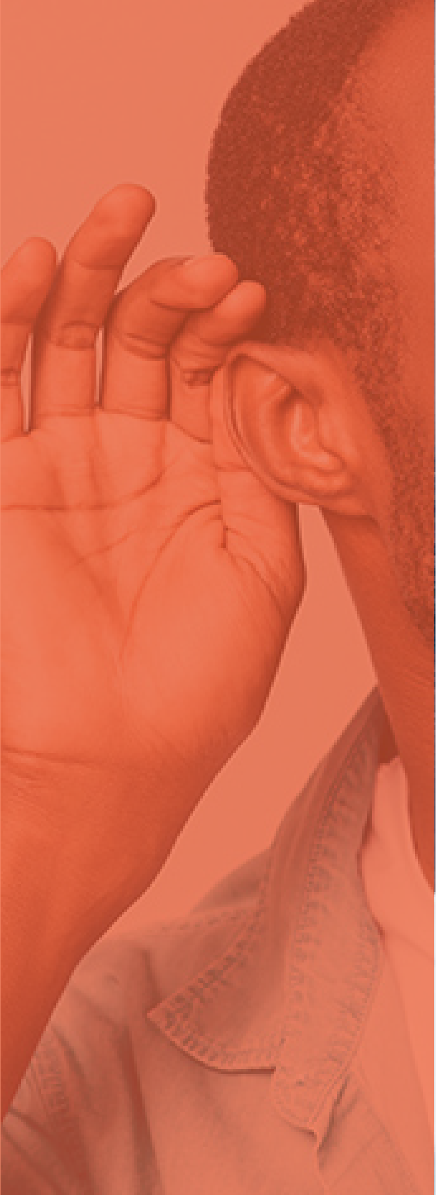
Source: Voicebot Voice Assistant Consumer Adoption Report 2018

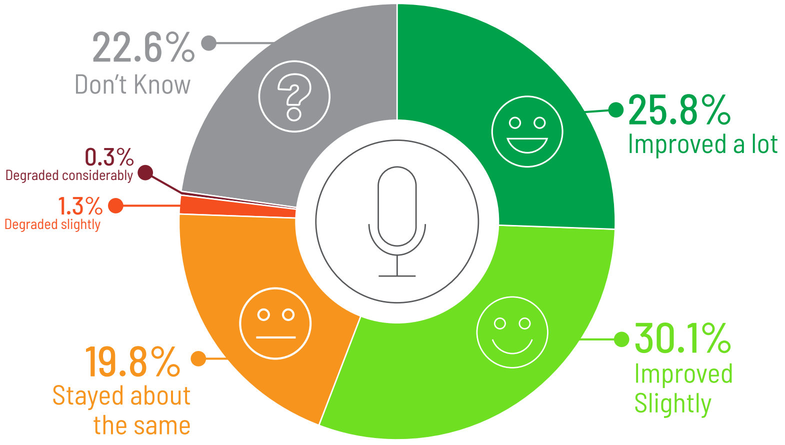


Consumers Believe Voice Assistants Are Improving

A consistent response across device surfaces is that consumers believe voice assistants have improved over the past two years. This sentiment is particularly important for smartphones and cars since voice on these surfaces pre-date many of the modern advances in speech recognition. Those earlier generations of voice recognition could have soured users on voice in general despite its improvements.

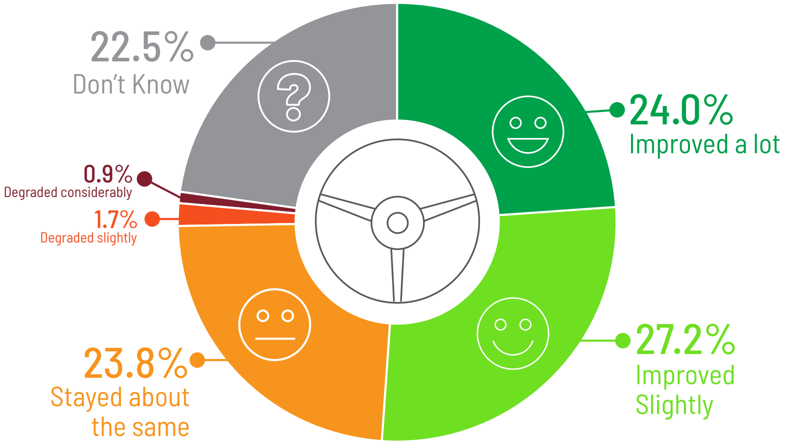
But, 56% of consumers believe voice assistants on smartphones have improved and 51% have a similar belief about about in-car experiences. More significant, only 1.6% - 2.8% believe the capabilities have regressed and 20% - 24% have not noticed a difference.

In the past 2 years, have smartphone voice assistants...



Source: Voicebot Voice Assistant Consumer Adoption Report 2018

In the past 2 years, have voice assistants in cars...



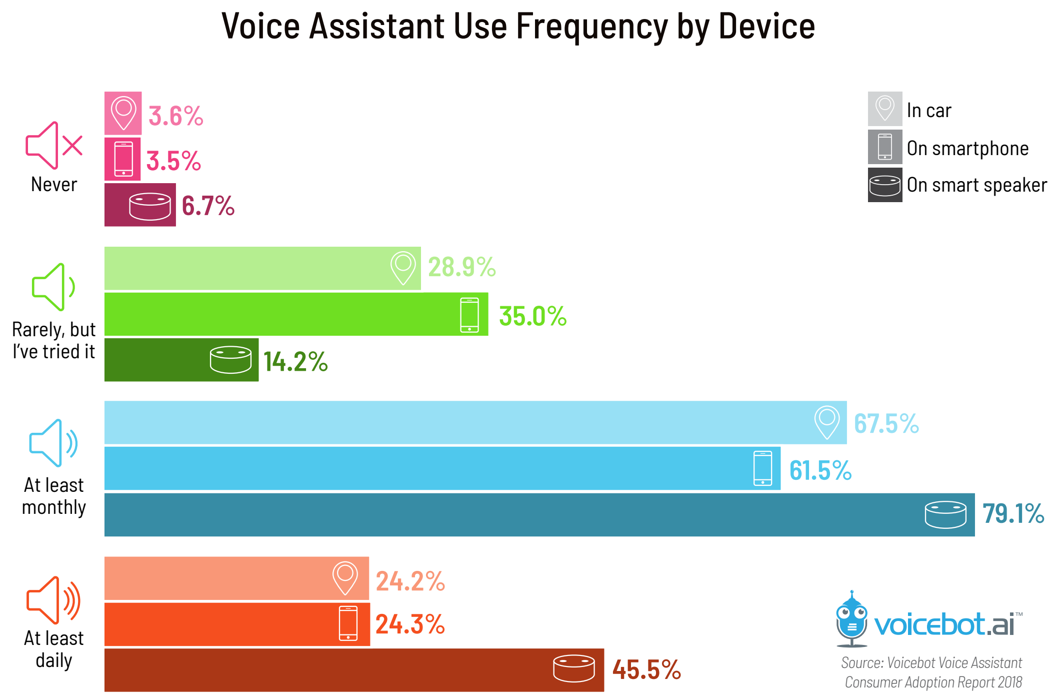
Source: Voicebot Voice Assistant Consumer Adoption Report 2018

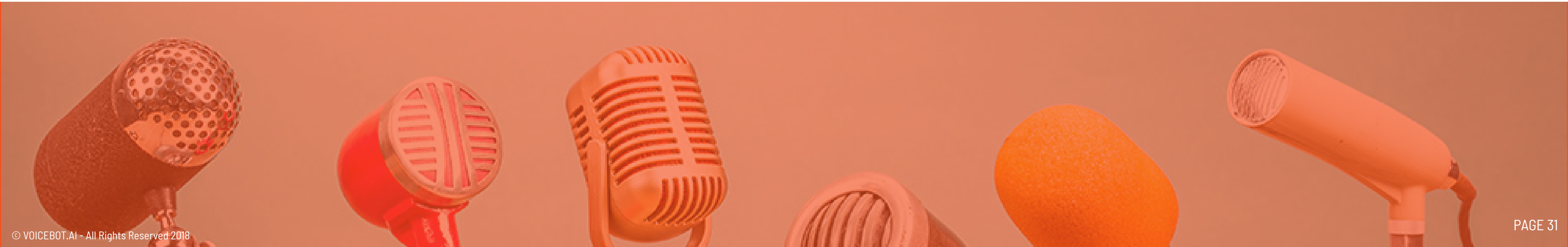
Regular Voice Assistant Use is Highest on Smart Speakers, but Smartphone and In-car are also Popular

Smart speakers have brought renewed attention to voice assistants but they represent just a portion of devices used to access them. Far more people are accessing voice assistants today on their smartphones and in their cars than through smart speakers.

However, smart speakers have played an important role in the expansion of voice assistant usage. First, they have increased the frequency of voice use and set new expectations about what the assistants can do. Second, the most advanced voice assistants today started on smart speakers and are now proliferating across other devices. This includes new devices such as televisions and watches that historically have not had voice access. And, where voice has been available previously, notably on smartphones and in cars, the new voice assistants are displacing a previous generation of voice access.

Voice assistants appear to be here to stay and destined to become a bigger part of consumers' lives across a wide number of use cases and contexts.





Additional Resources

VOICEINSIDER

Voice Insider is an email newsletter for people that are on the inside of the industry, need to know the information that will never appear in leading tech publications, or have either a professional or personal obsession with knowing the story behind the story for voice AI.

Voicebot's editorial team frequently comes across interesting voice industry information that doesn't quite fit into our standard news coverage or research reports. Voice Insider is a channel for us to share information which is useful to know but you otherwise would have missed. Each week we cover a key insight, a pro tip, look at key industry events, present a chart of the week (often of data not published elsewhere), rumors and more. You can see some example issues by clicking below.

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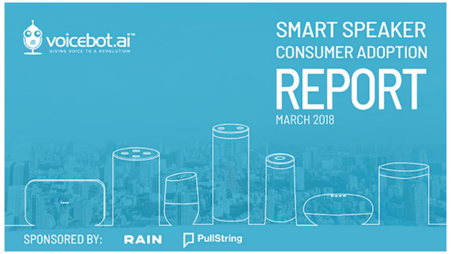

Smart Speaker Consumer Adoption Report

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