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SMART SPEAKER CONSUMER ADOPTION REPORT

MARCH 2018

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Table of Contents

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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.

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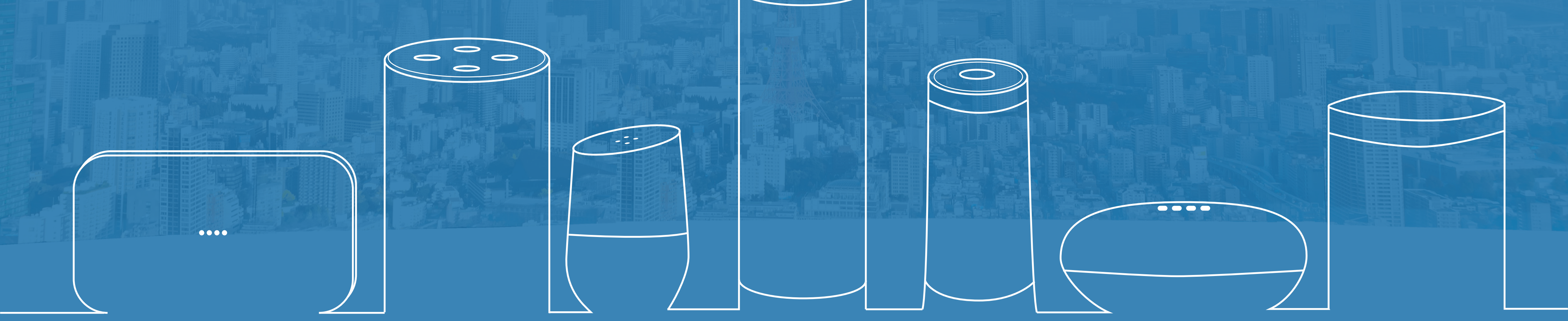

19.7% of American Adults Have Access to Smart Speakers Today

The Voicebot Smart Speaker Consumer Adoption Report found that 19.7% of U.S. adults have access to smart speakers today. That is up from less than 1% of the population just two years ago.

Smart speakers were the number one gift during the 2017 holiday season. Sixteen percent of our survey participants reported either giving a smart speaker as a gift or receiving one as a present. However, product momentum started much earlier.

Amazon is the largest ecommerce retailer in the U.S. and its Amazon Echo smart speaker was the number one selling product on its online store in both 2016 and 2017. CEO Jeff Bezos claimed before the 2017 holiday shopping season that the company had already sold tens of millions of Alexa-enabled products. Google revealed in January that more than one Google Home products were sold every second between October and December 2017. That is at least 7.6 million units for a single vendor that commanded no more than one third of the market in 2017.

What is clear is that smart speakers are popular and unit sales are consistently exceeding analyst projections. In addition, the devices are introducing consumers to voice interaction in the home and carrying that expectation over to smartphones and a variety of use cases, including shopping. Welcome to the new voice-first world.

Methodology

The survey was conducted online in January 2018 and was completed by 1,057 U.S. adults age 18 or older. Because we only reached online adults which represent 88.5% of the population, the overall device ownership numbers are adjusted downward to provide an aggregate ownership level. Other findings are relative to smart speaker owners and do not require adjustment.

Rapid Adoption That Consistently Exceeds Forecasts

Analysts at Activate have a chart that shows consumer adoption of smart speakers as faster than smartphones. That all depends on what you classify as a smartphone, but there is clear evidence that the smart speaker adoption rate has exceeded every analyst forecast. So far in this market, forecasts only get revised upwards. Mary Meeker of KPCB saw this earlier than most:

"In the computing industry, inflection points are typically only obvious with hindsight. So ask the question – iPhone sales may have peaked in 2015 per most analyst estimates that are out there while Amazon Echo sales are just beginning to take off. Food for thought."

Since Meeker's presentation in 2016, total smart speaker sales have grown about fifteen fold. That was less than two years ago. The brains behind smart speakers have also refused to be contained within audio devices. You can now find voice assistant access in televisions, household appliances, lamps, smoke detectors and hundreds of millions of smart phones.

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It's clear that smart speakers and the voice assistants that power them now matter. Smart speakers have undeniable consumer reach and Voicebot set out with PullString and RAIN Agency to find out how they are being used today and by whom. There are five categories of findings in the attached report.

- Smart Speaker Ownership
- Use Cases
- Voice Commerce
- Voice App Discovery
- What Non-owners Have to Say

We hope you find the data informative and encourage you to read Voicebot.ai throughout the year to track updates to market adoption figures and stay informed about other studies tracking the trajectory of voice and AI technologies.

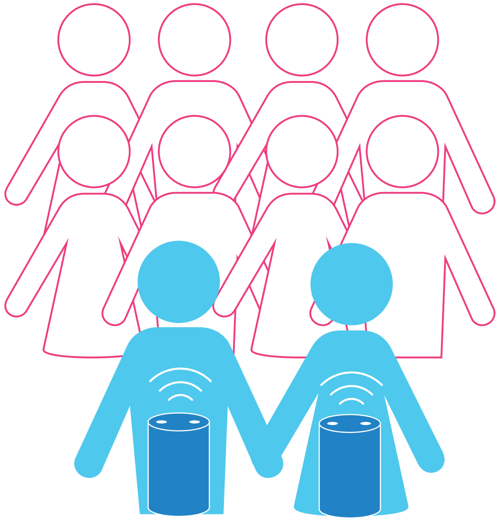
Smart Speaker Ownership

Nearly 1 in 5 U.S. Adults Have Access to a Smart Speaker

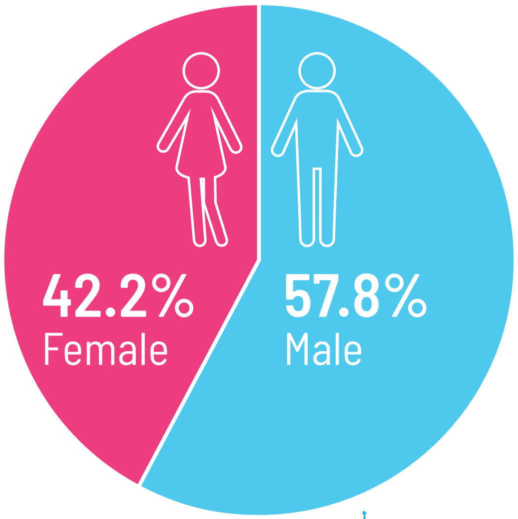
Men make up nearly 58% of all users today

Smart speaker adoption has exceeded all analyst expectation and has moved from just about 1% reach among U.S. adults to nearly 20% in just two years. This growth means that smart speakers and the voice assistants that power them have rapidly become an important channel for marketers and media organizations to reach consumers. The market reach today is not uniform. It is expanding quickly, but smart speakers users are more likely to be male by a ratio of 58% to 42%.

19.7% of U.S. Adults Use Smart Speakers



Gender Breakdown of U.S. Smart Speaker Users



Source: Voicebot Smart Speaker Consumer Adoption Report January 2018

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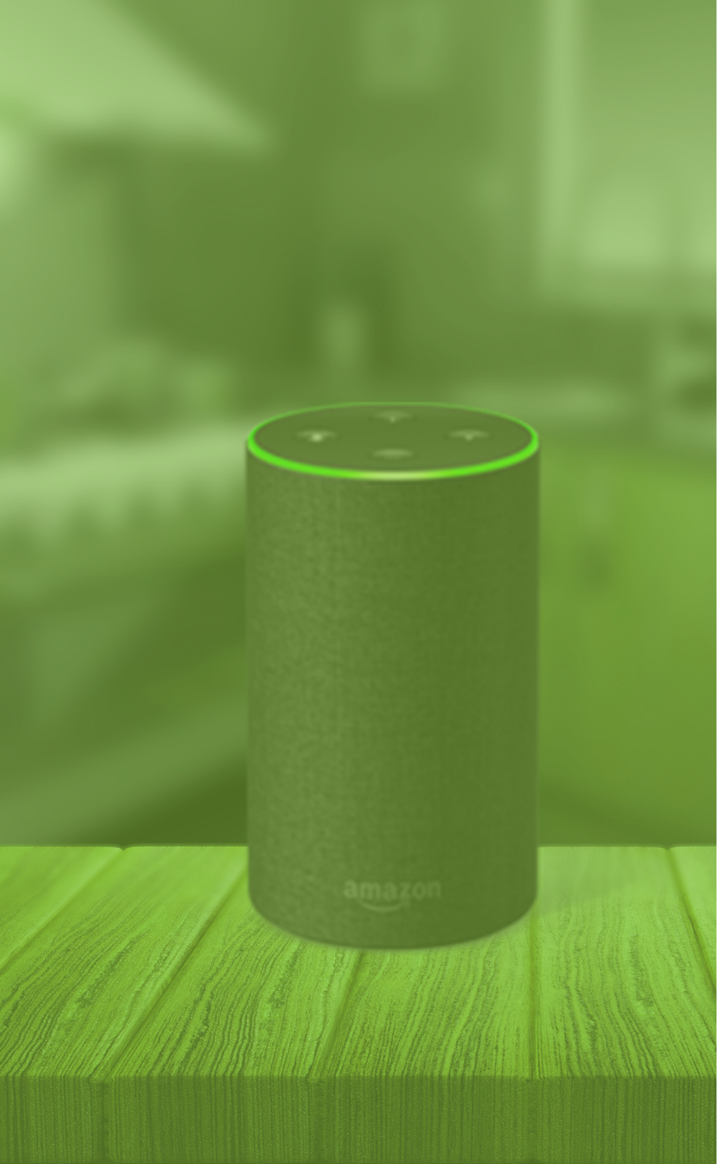
Total Smart Speaker Users Have Risen to 47.3 Million

The 19.7% consumer reach figure translates into 47.3 million U.S. adults with access to a smart speaker. This will typically mean they live in a home where they have access to one or more smart speakers although they may not be the primary owner. This is one way that smart speakers differ from mobile. Most mobile devices have a single user, whereas smart speakers are communal devices used by entire households.

How does the march to nearly 50 million smart speaker consumers in 3 years compare to growth rates of other communications channels? Television took 13 years, the internet four years and Facebook just two years. Smart speakers are devices but are growing almost as quickly as social media apps. That is what has surprised so many analysts.

US Smart Speaker Total Audience Reach

Source: Voicebot Smart Speaker Consumer Adoption Report January 2018



Consumers Own an Average of 1.8 Smart Speakers

However, nearly two-thirds own only a single device

Another factor of smart speaker adoption that has surprised analysts is how many devices some consumers will purchase. There is an average of 1.8 devices per household, but it is really a bifurcated adoption model. About two-thirds of households own a single device and 85% have no more than two devices. Then there are the 15% of households that have three or more. Over 2% of households claim to have 5-10 devices and 1.7% have more than 10 devices in use.

The implication for device manufacturers is that the market is nowhere near saturation. Eighty-percent of the population are still prospects for their first smart speaker and 85% of current smart speaker owners are prospects for additional devices for their home. So, the average is 1.8 devices, but the median ownership is still just one device. There is widespread speculation that smart speaker sales will peak in just a couple of years due to saturation. It appears the market has much more growth ahead of it.

Ratio of Devices Per Household

Source: Voicebot Smart Speaker Consumer Adoption Report January 2018

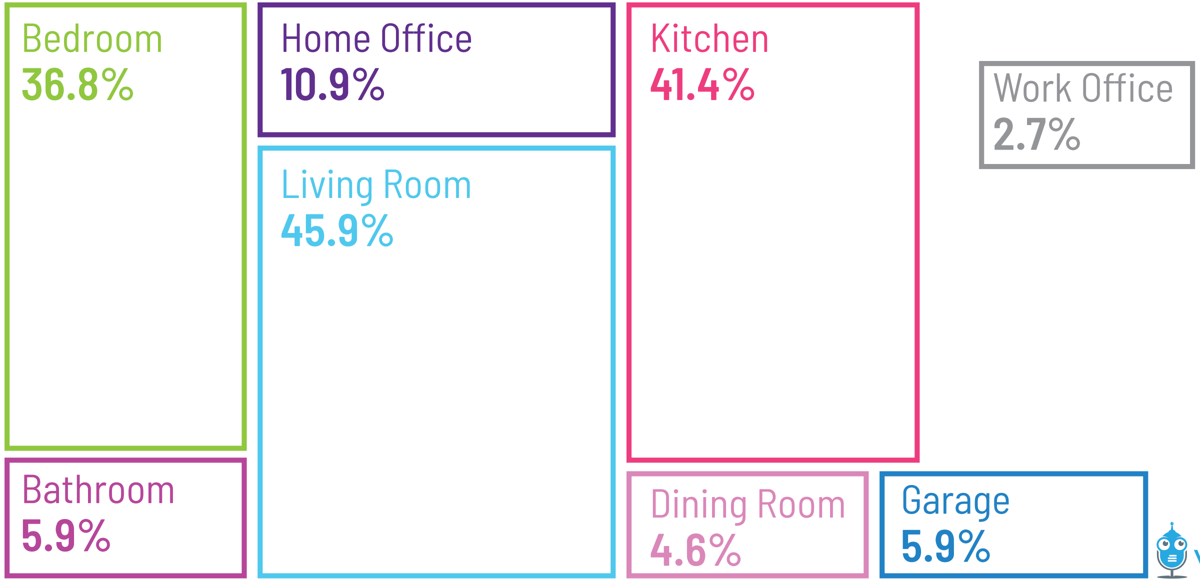
Living Room and Kitchen Are Most Popular Locations

Bedrooms come in third place and everywhere else is uncommon

The living room has become the most common location choice at 46% for smart speaker owners. However, that is trailed closely by the 41% that choose the kitchen. These are the primary communal gathering spots in the household which expose more people to the devices.

Bedrooms have become the next most popular spot at 37% and that number has climbed over the past year. No other location comes close to the big three locations with home office at 11% and everywhere else in single digits. Trailing far behind is the workplace. Low penetration in offices is a big opportunity for additional smart speaker sales.

Primary Household Location for Smart Speakers



Source: Voicebot Smart Speaker Consumer Adoption Report January 2018

Amazon Still Has a 3.5 Times Larger Installed User Base Than Google

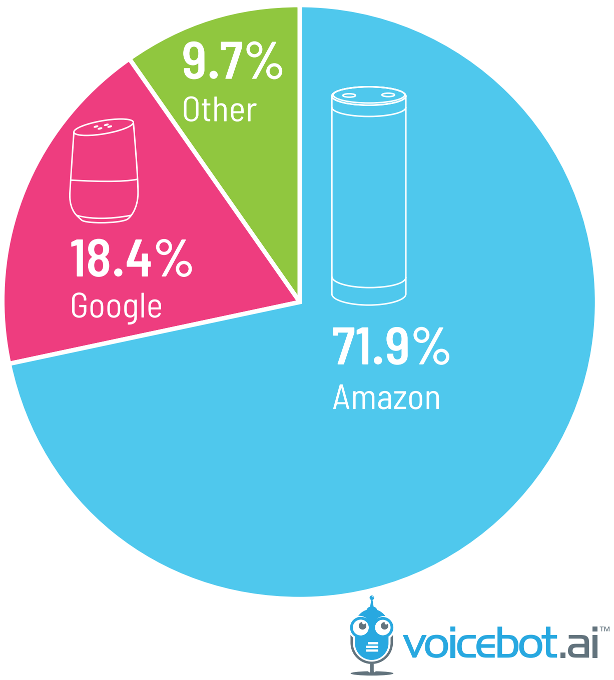
Independent device manufacturers reach nearly 10% market share

Amazon commands nearly 72% market share today among U.S. adults followed by Google with 18.4% and other manufacturers posting 9.7%. There are many forecasts that show Google with a higher market share for 2017 sales. To be clear, this survey measured total installed user base or cumulative market share and Amazon is still benefitting from its two-year time to market lead. With that said, Google made impressive inroads in 2017 and the market share gap is likely to close further in 2018.

The biggest voice technology story of 2017 was the fierce battle between Amazon and Google. Amazon's Echo smart speaker position in the U.S. is particularly strong. Google Home by contrast has staked out a lead in several other countries such as Canada, France and Australia. Amazon's lead in UK and Germany narrowed considerably in 2017 and both companies launched products in Japan in the same week.

U.S. consumers also have a wide variety of smart speakers to select from manufacturers not named Amazon or Google. The leader of the back-of-the-pack is Sonos. The important footnote about Sonos is that it uses Amazon Alexa as its voice assistant. That means the market share of the Alexa voice assistant is even higher than 72% of users. Other Alexa-enabled smart speakers include the low-priced Eufy and a high-priced Harman Kardon model. Harman Kardon also has the Microsoft Cortana-enabled Invoke and Google Assistant is available through JBL, Sony and a few other devices. The data in this chart is strictly related to device market share and not voice assistant user share.

Smart Speaker Market Share Installed Base 2017



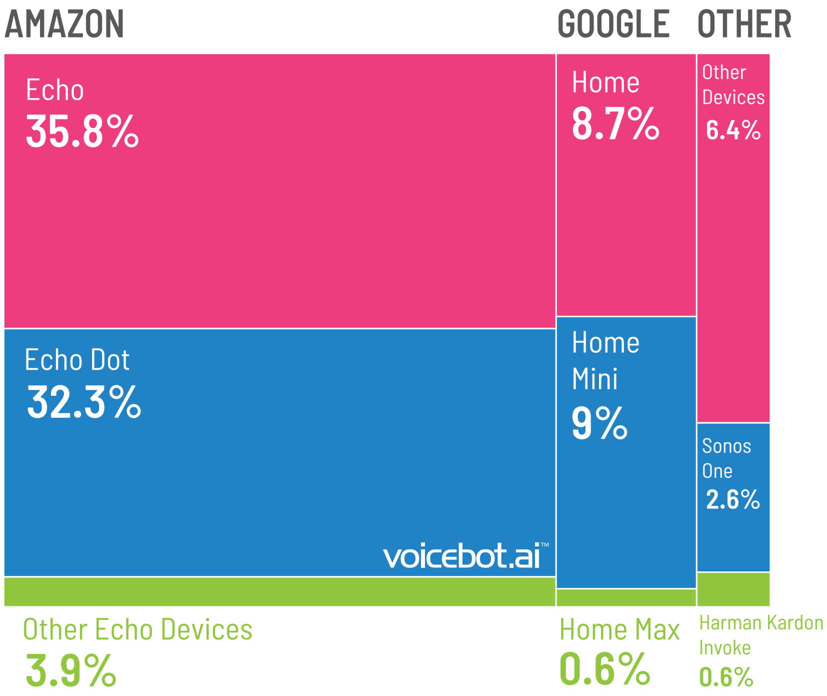
Amazon Echo and Dot Command about Two-Thirds of the Market

Google Home Mini surpassed total Google Home sales in just three months

The Amazon Echo and Echo Dot smart speakers have been in the market the longest and unsurprisingly command the largest share of users. An interesting finding is the higher priced Echo and Google Home have matched sales with the lower priced Dot and Mini respectively. Part of this is a function of timing. Both Dot and Mini entered the market about one year after Echo and Home respectively. However, while Mini overtook its older sibling in just three months, the Amazon Echo Dot still trails the Echo in total user reach after about 15 months.

This parity in high and low priced model adoption is an interesting development. It may be that many owners of single devices opt for the higher priced and better sounding Echo and Home. By contrast, it may be that many of the additional devices in households are the lower-priced units. This share breakdown does not reveal total volume of sales. It represents users with access to particular devices. The other notable data point is how few Harman Kardon Invoke devices are in use at only 0.6%. On the other end of the spectrum there is Sonos One. The Alexa-enabled smart speaker carved out a respectable 2.6% market share in only about three months.

Device Market Share Breakdown 2017

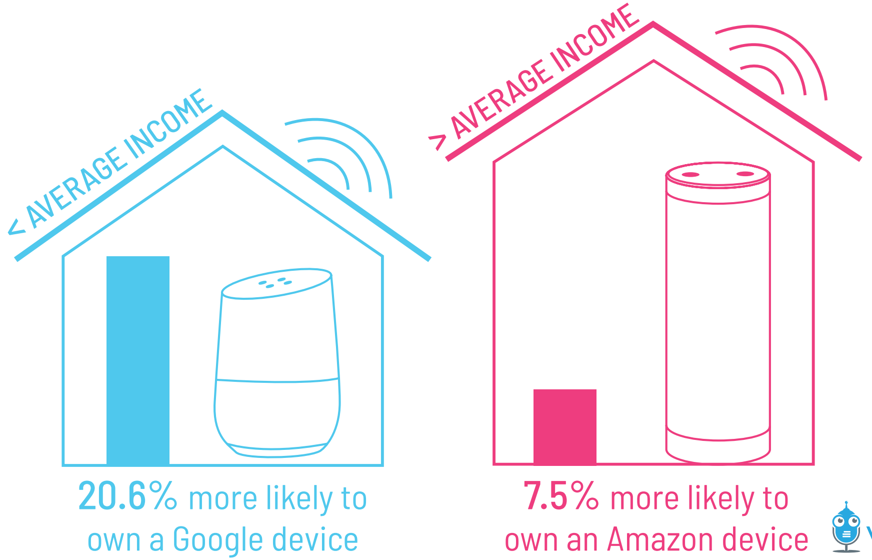


Amazon Devices More Likely to Be Owned by Upper Income Households and Google by the Less Affluent

The data show that upper income households are marginally more likely to own Amazon Echo devices. However, households with income below the national average are 20.6% more likely to own a Google smart speaker. This data appears to show Google smart speakers following a similar path as Android OS smartphones. Earlier studies showed income of Apple iPhone users averages about 40% above the national average whereas Android user income is lower.

The results make logical sense as Android users are more tied to the Google ecosystem of services and therefore more likely to prefer a Google smart speaker. By contrast, 2017 data show that Amazon Prime had far more members in upper income households. Prime membership is an added advantage for Amazon Echo users and may be a further enticement to choose it over Google.

Device Ownership by Household Income



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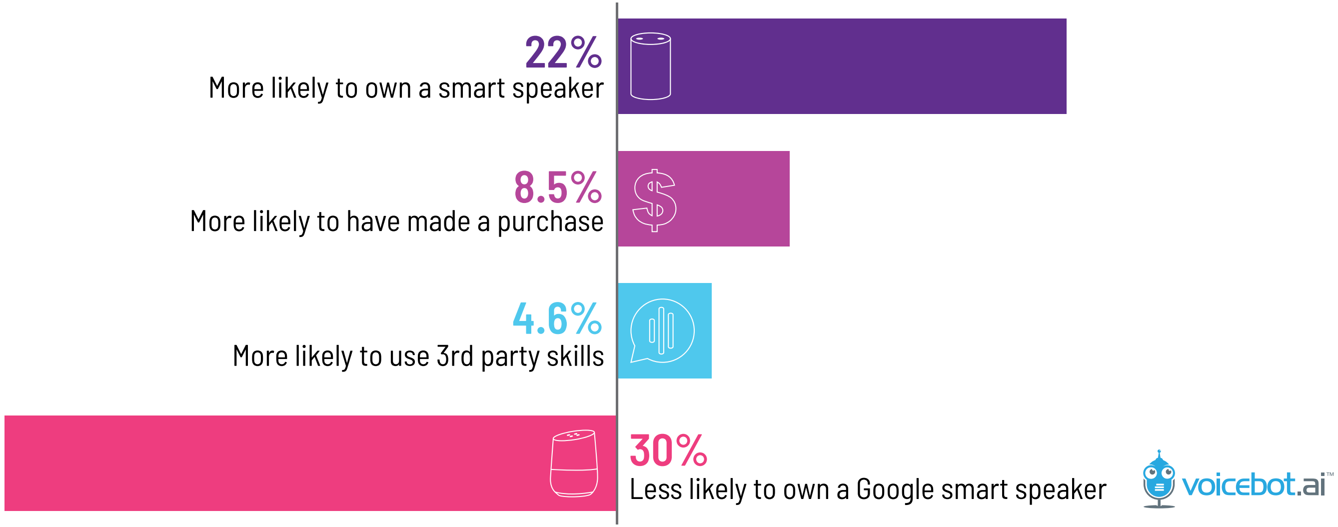
iPhone Users 22% More Likely to Own a Smart Speaker

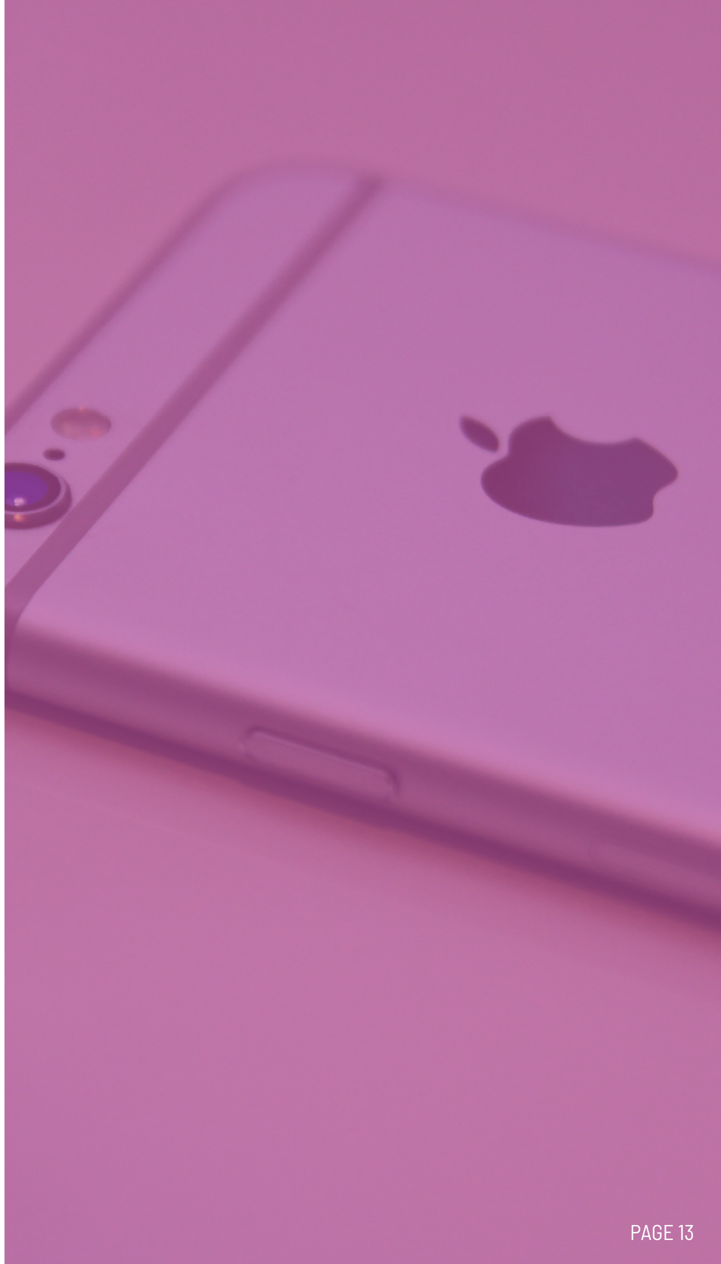
And 30% Less Likely to own a Google Home

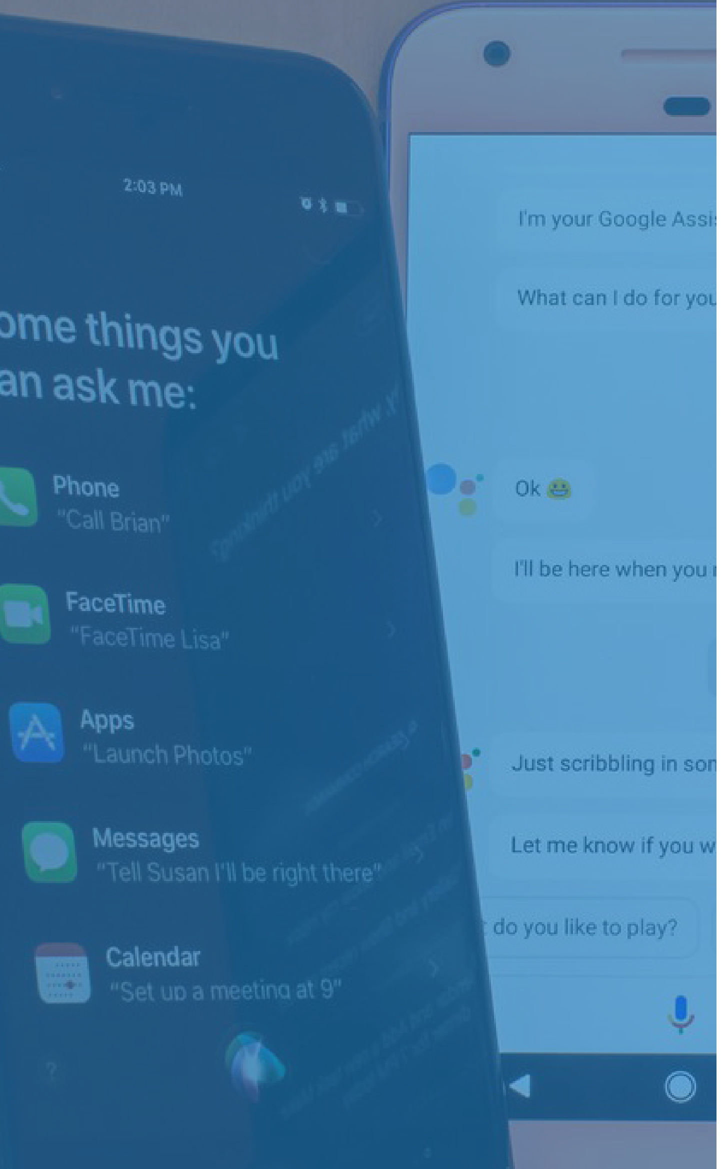
iOS users are attractive consumers and far more likely to own a smart speaker overall, but far less likely to own a Google device. However, the data also suggests that Google is at less risk of losing share to Apple HomePod than Amazon. Apple and Amazon may be the focus of multi-manufacturer households where HomePod is a luxury item for music listening in living spaces while Echo products get placed in the kitchen and bedrooms for utilitarian tasks.

In addition, iPhone owners are a good fit for Amazon because they are far more likely to have made a purchase by voice and more likely to use the 30,000 Alexa skills offered to Echo users. The favoritism shown by Apple owners to Alexa devices may also appeal to developers. Historically, iPhone app users have been far more valuable to developers on a revenue basis than Android users.

Device Market Share for iPhone Users







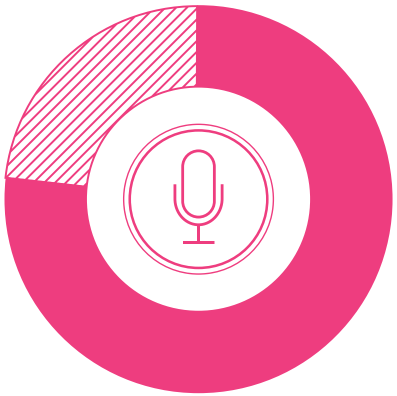
Siri Has Broad Awareness Among iPhone Users

Google Assistant has been tried by fewer than half of Android smartphone users

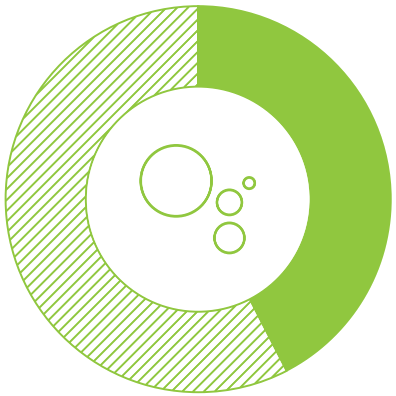
Siri has received a lot of bad PR over the years, but she has broad awareness among iPhone owners and has been tried by about 77% of them. Apple announced in June 2017 that there were 375 million monthly active Siri users globally which makes it the most widely used voice assistant globally. Keep in mind that Google Assistant's 400 million number refers to devices and not users.

Google has had voice interaction on Android devices for years, but Google Assistant is new so the 43% trial rate has room to expand. This usage rate suggests about 51 million US Android users have tried Google Assistant. These data points also illustrate the advantage Siri and Google Assistant have over Alexa in reaching consumers with voice assistants beyond the smart speaker.

Voice Assistant Trial Rate on Smartphones



76.7% of iOS iPhone owners have tried Apple Siri



42.7% of Android smartphone owners have tried Google Assistant

Source: Voicebot Smart Speaker Consumer Adoption Report January 2018

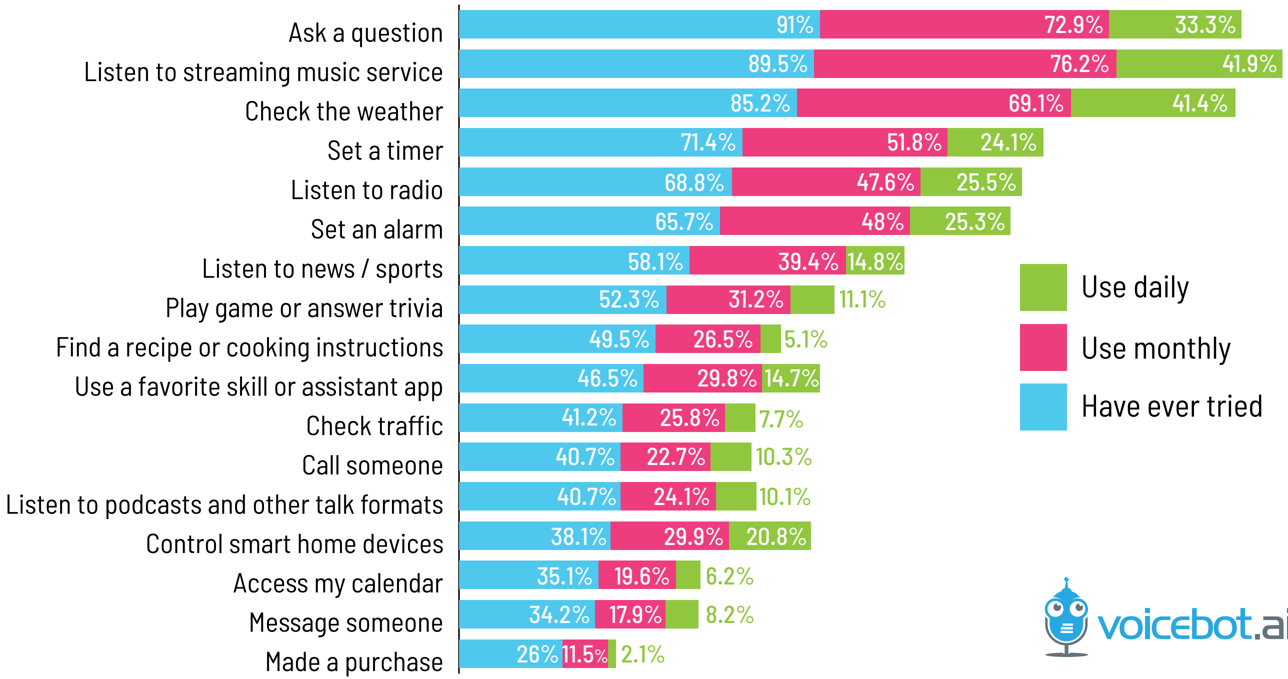
Smart Speaker Use Cases

Questions, Music and Weather Most Common Use Cases

There are a number of studies about smart speaker use cases, but they have not adequately quantified frequency of use. The Voicebot smart speaker data provides more insight into use case frequency which is a better indicator of actual smart speaker utility. The top seven categories are identical for the daily, monthly and ever tried response categories but the order changes and smart home creeps into the daily list pushing out news and sports.

This is completely logical. Activities such as listening to music, checking the weather and controlling smart home devices occur already with high frequency and smart speakers are simply shifting that behavior to voice interaction. The data confirm that smart speakers are being incorporated into everyday lives of consumers: 63% report using them daily and 77% at least weekly.

Smart Speaker Use Case Frequency January 2018



Adoption of Voice Apps, Smart Home, Calling and Messaging Have Room for Growth

Third-Party Voice Apps

Listening to music is the top use case for both monthly and daily periods. Checking the weather and asking questions are also popular, but you also see radio listening along with timers and alarms as high in both consumer trial and frequency of use. Answering questions, timers and alarms are first-party skills. They are provided directly by the voice assistant platform. Weather can be first-party or provided by third-party voice apps. Music is generally considered second-party (same company but offered by a different division so not truly native to the voice assistant) or third-party. Radio is always third-party as are most smart home and news and sports offerings. We can conclude from the data that users routinely access a mix of first-party skills and third-party voice apps.

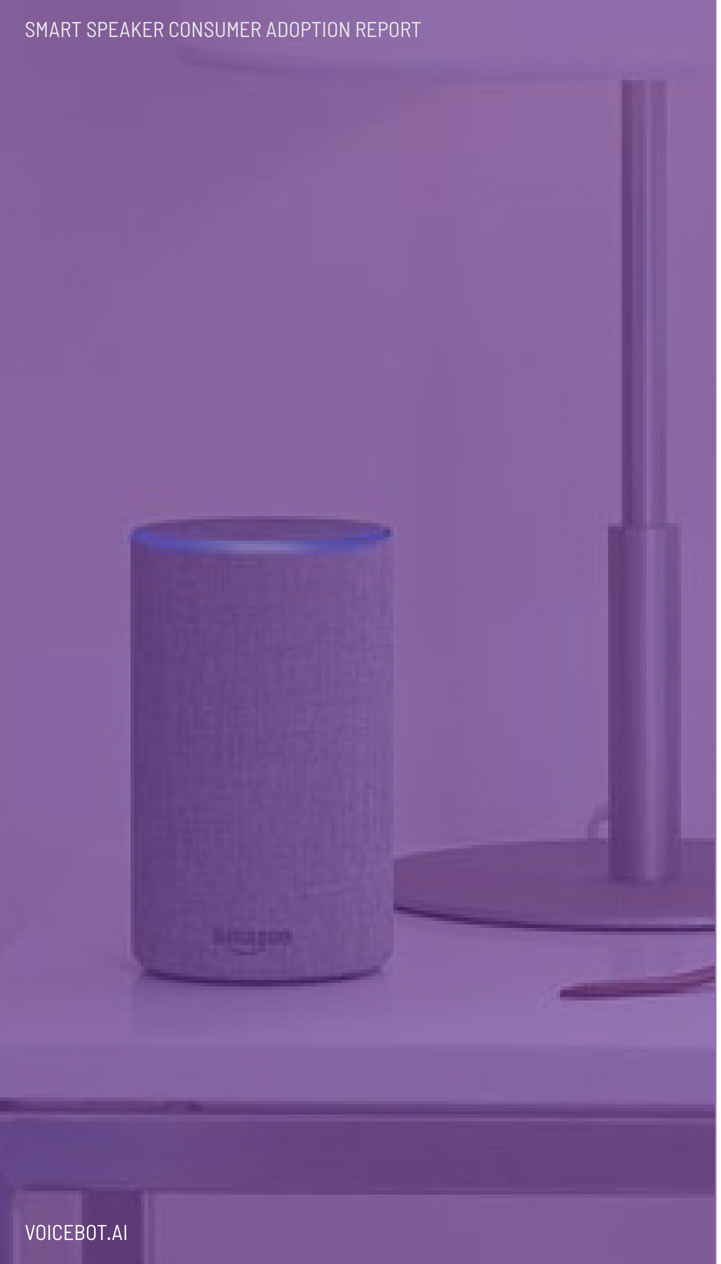
Beyond the most popular use cases, the story of third-party voice app usage is mixed. There is likely some confusion among smart speaker owners about the difference between a third-party skill or voice app and the native, first-party capabilities. We see that over 50% of users have tried a game or trivia through their voice assistant and about 46.5% have tried a "favorite skill or assistant app." The games are most likely third-party voice apps as are smart home controls so the overall numbers seem close to 50% to match our other finding that 48.2% report having tried a third-party voice app. Maybe the more important finding is that only about 30% of users access third-party voice apps at least monthly. That may mean that few voice apps today are designed to drive frequent repeat usage. Developers have an opportunity to significantly grow their user base by attracting new users that historically haven't tried third-party voice apps and then getting everyone to come back for more. The re-engagement challenge was addressed on mobile predominantly through notifications. It is unlikely developers will be able to rely on that tactic for voice.

Calling and Messaging

Calling and messaging usage represents another interesting finding. The fact that 40% have tried to call or message someone through their smart speaker is interesting because it previously required both callers to have a smart speaker. Even with the recent updates to enable calling directly to telephone numbers not associated with a smart speaker, this feature still requires more than one person to execute. The other use cases can be done alone so there are no dependencies. The fact that 10.3% of smart speaker owners say they are using their devices to call or message someone daily is a significant change in behavior. The increased availability of video calling through smart displays may cause this figure to grow even faster in 2018.

Smart Home

Smart home voice apps are used frequently by people that adopt the capabilities. While only 38% of smart speaker owners have ever tried a smart home voice app, over half of them use the features daily. This makes sense as smart home devices such as turning on lights or controlling the thermostat are daily activities in the physical world that are simply being made accessible by voice. Contrast this with asking questions where only about one-third of smart speaker owners that have tried this feature claim to use it daily.



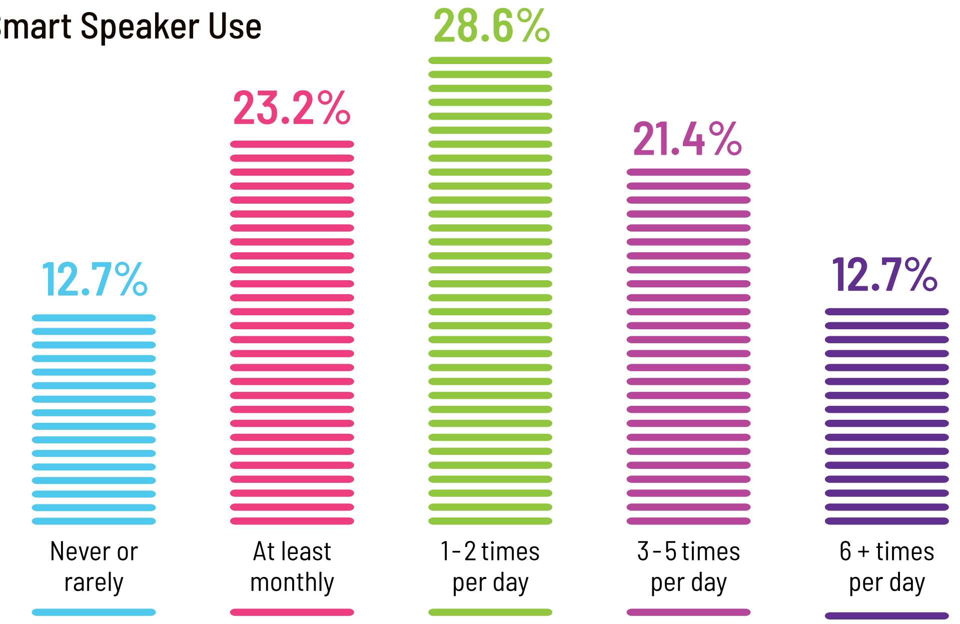
Use Frequency Fits a Bell Curve But is Skewed Toward Daily

Nearly 63% use smart speakers daily and over 77% at least weekly

Once a smart speaker enters a household it appears to generate regular use. And, this isn't just about music listening. Answering questions, checking the weather and playing games all rate highly on a monthly basis.

Even more interesting is the finding that 34% of smart speaker owners utilize the devices several times per day. The data suggest that smart speakers are no fad, but instead are being incorporated into consumers' daily lives.

Frequency of Smart Speaker Use



Voice Commerce

11.5% of Smart Speakers Owners Shop By Voice Monthly

And 26% have made at least one purchase by voice

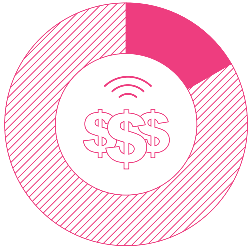
Maybe the most intriguing use case is voice commerce. 26% of smart speaker owners say they have made a purchase using the device and 11.5% make purchases monthly. When we adjust this for total population, we see that about 23% of the population has tried voice commerce. This is nearly identical to the Edison Research finding that 22% of consumers had made a purchase by voice.

There was widespread skepticism about the likelihood of voice becoming a purchasing channel, but apparently consumers are more interested in this feature than the experts. When you consider the general population, about 16.7% consider themselves likely or very likely to order products by voice. And, iPhone owners maintain their advantage over Android with 8.5% more likely to have made a purchase by voice.

Voice Commerce is More Popular Than Expected

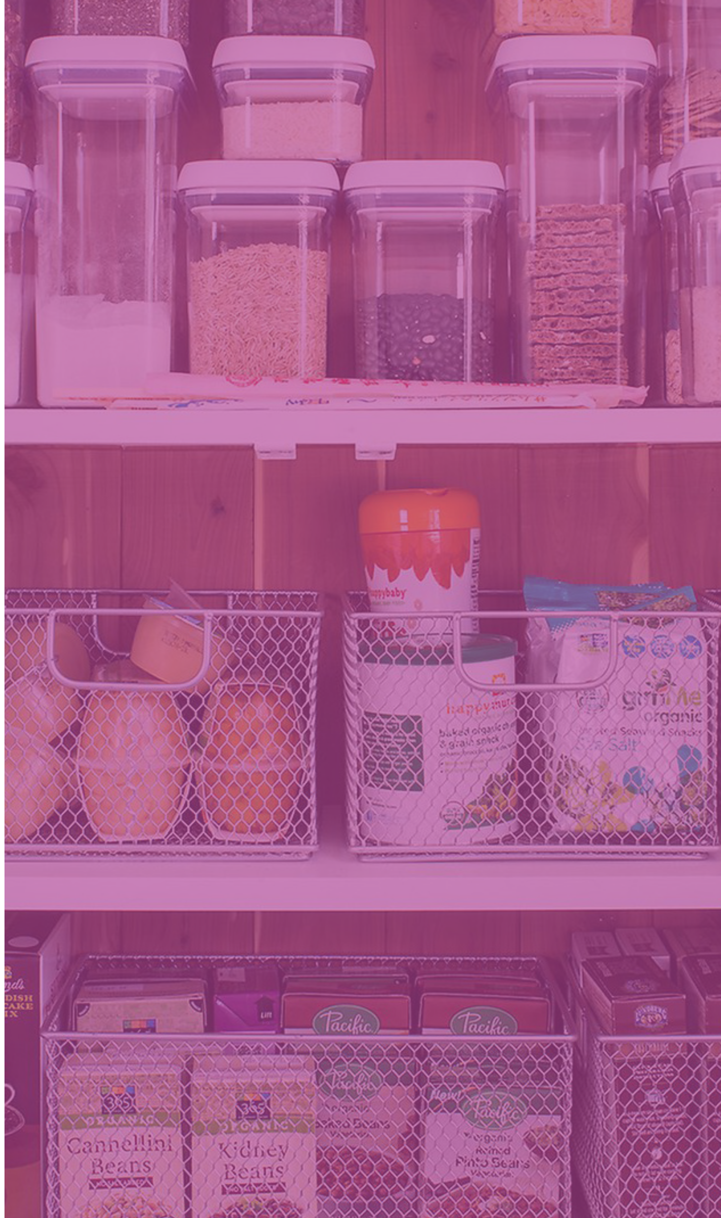
26% of smart speaker owners have made a purchase by voice

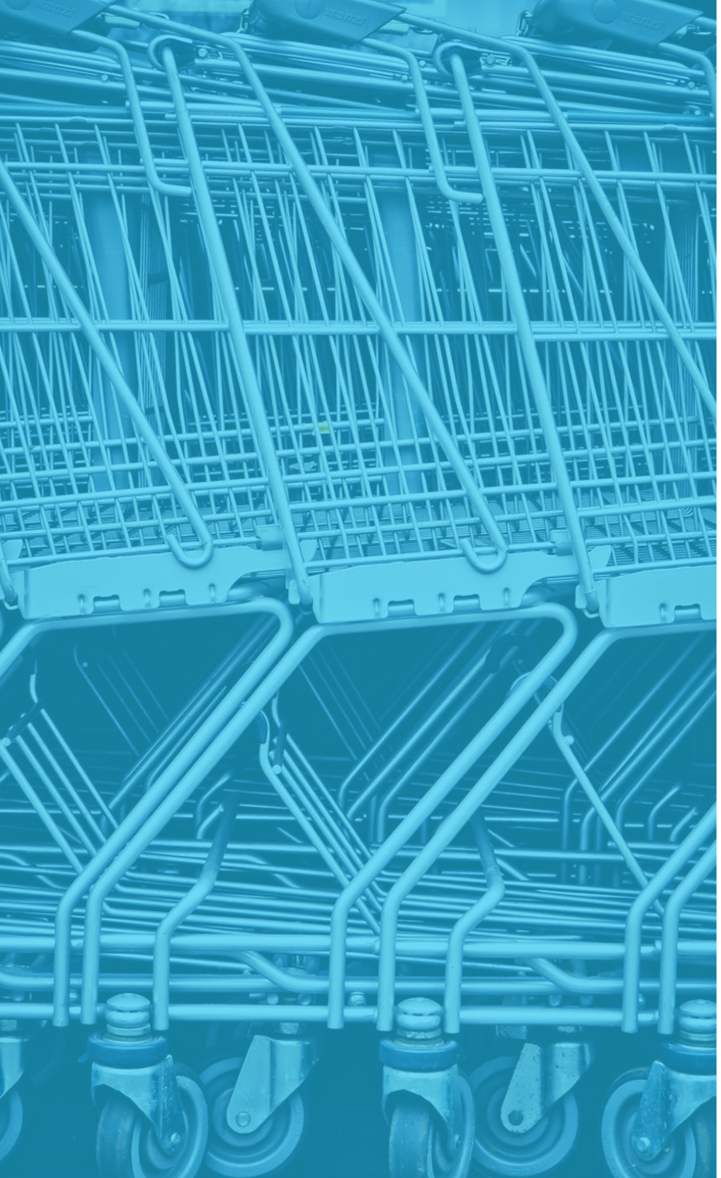
11.5% of smart speaker owners make purchases by voice monthly



16.7% of general population is likely or very likely to order products by voice

Source: Voicebot Smart Speaker Consumer Adoption Report January 2018



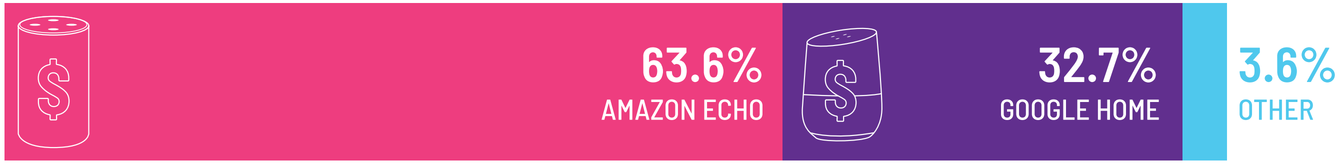


Amazon Echo Owners Account for Two-thirds of Voice Shoppers

But, a higher proportion Google Home owners have made a purchase by voice

Google Home users are surprisingly 50% more likely to have made a voice purchase than Amazon Echo buyers which are 50% more likely to have made a voice purchase than owners of other smart speakers. However, there are still many more Amazon Echo owners that have shopped by voice than Google Home owners. That is because Echo has a much larger installed base. Of the sample of voice commerce shoppers, two-thirds own and Amazon Echo device.

Total Percent of All Voice Commerce Users by Device Ownership



Voice Commerce Usage Rate by Device

Source: Voicebot Smart Speaker Consumer Adoption Report January 2018

Voice App Discovery

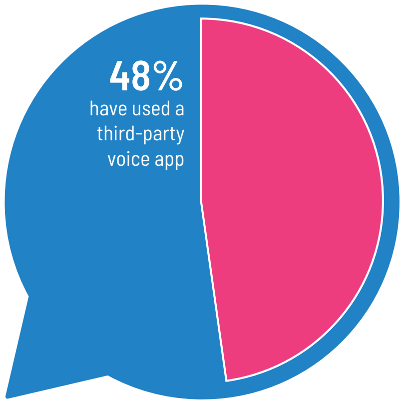
48% of Smart Speaker Owners Using 3rd-Party Voice Apps

An astonishing 11% have submitted voice app reviews

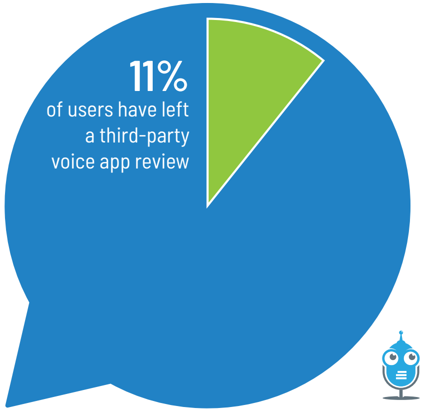
There is still a lot of friction in voice app discovery and promotion. We have seen some data that show voice app retention numbers are very low. So, app developers need to take a two-pronged approach. First, they need to design their apps to facilitate re-engagement over time to establish repeat users. Second, they need to promote their voice apps through a variety of channels to generate awareness among more consumers.

Having 11% of smart speaker owners leave a review doesn't seem like a lot but some estimates suggest that only about 0.5% of online product buyers leave reviews. Mobile app reviews routinely fall at less than 1% and some as low as 0.15%. In comparison, voice app review rates are very high, 10-20x higher. App reviews can help with discovery and trial so every voice app developer should make it part of their promotion strategy. This is particularly important since a large number of users appear to be willing to leave a review and voice app developers need to make sure they capture as many positive reviews as possible and minimize negative reviews.

Have Used a 3rd-Party Voice App



Have Submitted a 3rd-Party Voice App Review



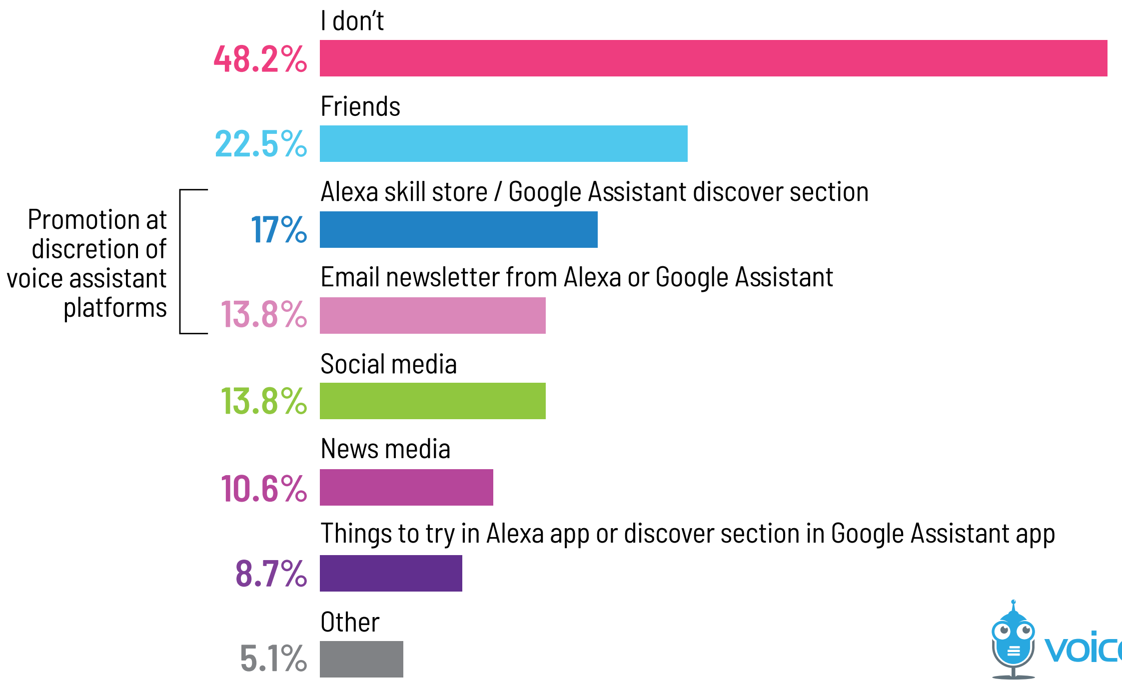
Friends Help Friends Find Voice Apps

22.5% rely on friends for suggestions, other discovery is random

It is worth noting from the start that 48.2% of smart speaker owners claim to not discover third party voice apps at all. Of those who do, most discover voice apps through friends (22.5%). Beyond generating strong word of mouth promotion, voice app publishers need to employ a variety of tactics to drive user adoption since no single approach has enough effectiveness to work on its own.

After friends, the voice app/skill promotion by Google and Amazon are the most effective tactics, but not something in the control of developers. Less effective are the Amazon and Google suggestions about what voice apps to try. And, developers have no control of this promotion tactic either. Social media and PR are the best bet to generate interest and the tactics where voice app publishers can make the most direct impact.

The Mechanisms of Voice App Discovery



Non-Owners Speak Out

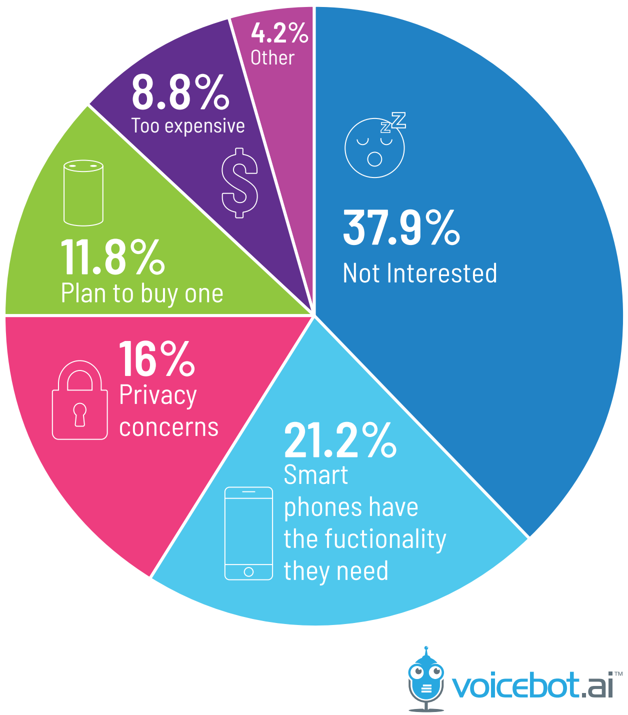
Only 16% of Non-Owners Cited Privacy as Concern

Many consumers believe their smartphones have the features they need

There is often conjecture that consumers will be wary of adding a listening device to their homes, but two data points undermine this line of thought. The first is the rapid adoption of smart speakers by consumers. The second is that only a small percentage of consumers that do not own smart speakers reported that privacy concerns were a reason for not purchasing a device. Either this is a non-issue in general or consumers believe that Amazon, Google and others have taken sufficient precautions to protect consumer privacy.

By contrast 37.9% of consumers without smart speakers said they are simply not interested in the devices and 21.2% believe their smartphones have all the functionality they need today. A mere 9% suggested they thought the devices were too expensive. Given that Amazon Echo Dot and Google Home Mini were routinely selling for under $30 in 2017, this finding is not too surprising but might fall even further in 2018.

Why Some Consumers Have Not Purchased a Smart Speaker

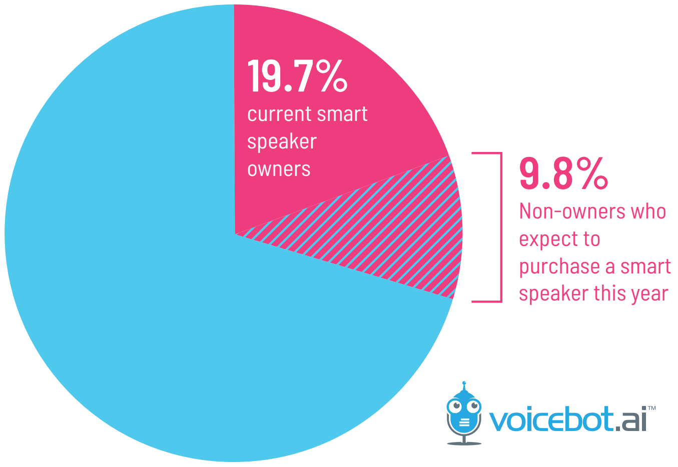


Consumers Say Smart Speakers Headed Toward 50% Growth

26% of these consumers plan to buy Apple HomePod

9.8% of consumers that do not own a smart speaker today expect to purchase one in 2018. If true, this would account for 50% growth in the smart speaker user base and help the installed base surpass 25% of U.S. adults during the year. After that, the fat part of the market will involve convincing consumers that smart speakers truly offer a new set of useful capabilities that are either not available on smartphones or provide a richer experience in some settings where mobile devices are suboptimal. Of those consumers expecting to purchase a smart speaker in 2018, 26% are focused on Apple HomePod. This will not represent 26% market share, but rather 26% of new smart speaker owners.

Consumers That Plan to Purchase First Smart Speaker in 2018



What Have We Learned?

Many people own smart speakers and use them frequently

The reported data reveals several important details about smart speaker adoption.

- There are now a lot of users (19.7% of adults). This represents a consumer channel with substantial reach.
- There are many smart speaker use cases that consumers employ frequently with 63% reporting daily use and 77% weekly use.
- Smart speaker owners skew towards males (58%) and Amazon Echo. However, Google is closing the gap.
- One in five adults have purchased something by voice and 11% of smart speaker owners use voice commerce monthly.
- Consumers saying they plan to buy smart speakers in 2018 could increase the installed base by another 50%.

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Report Authors

Bret Kinsella
Managing Editor
bret@voicebot.ai

Ava Mutchler
Associate Editor
ava@voicebot.ai

To request custom voice or AI industry research contact: info@voicebot.ai