

SoundHound

Get to Market Faster with the Right Voice AI Strategy

Buy, "Rent," or Partner? The Critical Decision Facing Companies In the Voice First Era



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Introduction

The Critical Decision to Build, “Rent,” or Partner



The Critical Decision to Build, “Rent,” or Partner

Conversational AI is causing the "third wave" of technology disruption for businesses and consumers. The first disruption happened in the 1980s with the wide distribution and adoption of desktop computers. Keyboards became the primary human-to-machine interface. The second wave came with the advent of mobile devices driving the adoption of touch, tapping, and scrolling as an interface. The third wave is coming in the form of a sound wave, and the ubiquity of voice assistants is fueling a meteoric rise in conversational AI solutions for products, apps, and services for companies spanning all industries, geographies, and sizes. The preferred human-to-machine interface will soon be voice. That's why today, every company needs a voice strategy and a path toward its own conversational AI experiences.

Most companies embarking on the voice AI journey quickly find themselves at a crossroads when it's time to decide "how" they will implement their strategy. Once teams have determined their unique needs for a conversational interface and have decided to move forward, the decision to build, "rent", or partner often leads to some confusion and even a few missteps.

Companies looking for entree into the conversational AI space currently have three choices for how they implement a voice assistant:



Build

The choice to build a voice experience in-house may seem like the best way to get a voice assistant that addresses your unique goals, challenges, and customers. Sadly, this approach usually ends after a 2 or 3-year period, when companies discover that it will likely take them a decade or more to build a viable conversational assistant in-house.

Rent

A second option that seems like an easy road to a voice-first strategy is to insert an existing voice assistant from one of the big-tech companies into your product or app. This short-term solution comes with a variety of long-term consequences—which we will discuss in this paper.

Partner

Find the right conversational AI partner with a robust, proven voice AI platform that is scalable and customizable to create a branded voice experience that meets your unique product and service needs while delivering a voice experience tailored to your customers and their unique use cases. The right partnership will give you transparency into data and allow for iterations and changes as your product and customer needs change—growing with your company as part of your branding strategy and product roadmap.

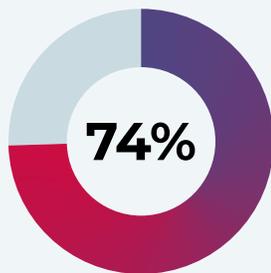
Because of the complexity of voice assistant technology, developing a robust conversational voice assistant requires either having all the expertise in-house (build), adopting an existing voice assistant owned by another entity (“rent”), or entering into a technology partnership with an independent voice AI platform provider (partner). In some cases, organizations may try to do a combination of approaches by putting together a solution that's a blend of technology from a variety of providers—but find the resulting experience can be disjointed and inconsistent.

For those who immediately recognize the difficulties associated with building a voice assistant in-house, the lure of integrating a pre-packaged, big-tech voice assistant from one of the large consumer technology players is a temptation that can lead to unintended consequences.

The 'rented' approach to voice experiences delivers exactly what it describes, a borrowed space on a platform that is not your own.

“Renting” from an established third-party voice assistant can offer short-term utility; however, these assistants are primarily an extension of the mainstream company's services and often overtake the host product with their own brand. Subsequently, you may experience a loss of brand control, user loyalty, and visibility into valuable data and analytics resulting in an inability to innovate, differentiate, and customize your voice-enabled product experiences.

On the other hand, brand-owned voice assistants developed with a well-established independent voice AI platform provider allow brands to get to market faster with proven technology solutions and customized voice experiences that extend their brand and product functionality.



of business leaders think controlling brand identity and user experience drive the value of voice assistants.

[Opus Research](#)

Instead of taking years to develop a voice assistant in-house, established voice AI platform providers can immediately begin the work of customizing a conversational AI interface to meet the needs and desires of your unique users. Through a combination of customized content domains, languages, vocabulary, voices, and commands, branded voice assistants transform your voice interface from a transactional interaction to a helpful assistant that delights customers and delivers real brand value.

If you haven't started your journey toward a conversational AI strategy, you're already on your way, or you've started the journey with one of the big tech solutions, it's never too late to change course or expand your customer journey to include a customized, conversational AI experience on a new channel, app, product, or in your customer service center of excellence.

In this guide, we'll explore the role of the conversational assistant in the overall customer experience, the underlying technologies that create exceptional voice experiences, and the opportunities for personalization and monetization that will begin to drive real business value and prove ROI on the conversational intelligence investment.

Chapter One

Conversational AI is the New Customer Experience



Conversational AI is the New Customer Experience

In the business sector, voice assistants are taking a leading role in customer-facing applications—literally becoming the voice of the brand. As such, they are taking on the part of call center agents, sales representatives, greeters, operators, order takers, and other public-facing functions.

As voice assistants enter the customer service sector, customer service itself is evolving. No longer just a function created to respond to customer inquiries or requests, the role of customer service has been redefined and now encompasses the entire customer experience. Consumer demands for engaging and delightful brand experiences regardless of channel, product, or device have driven companies to see every touchpoint through the lens of customer service.

The growing trends toward more engaging and valuable customer experiences are prompting companies across industries to seek solutions that provide greater convenience, ease, and value. The ubiquity of voice assistants is bringing conversational AI to the center of these efforts.

To better meet the needs of their customers as well as their own, brands are steering away from the traditional voice assistant owned by the large tech companies. Instead, companies looking to build stronger brands, differentiate themselves from the competition, and create loyal customers are turning to solutions that allow them to develop brand-owned voice experiences.

Brands across industries are turning to independent voice AI providers with disruptive technology offerings to help them design and build custom voice assistants that extend the value of their brands, reflect their company personality and stated values, and create connections directly with their customers.

Hardware manufacturers and OEMs in key industries are well on their way to established voice-enabled products. In automotive, [Navigant](#) predicts that 90% of new vehicles globally will have voice assistants by 2028, and [Statista](#) predicts that there will be 75 billion connected devices worldwide by 2025.





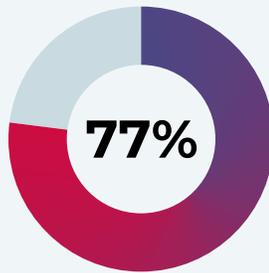
75 Billion

connected devices predicted worldwide by 2025

[Statista](#)

Across industries, 94% of large companies expect to adopt conversational AI in two years, according to a [Pindrop study](#), indicating the imperative most companies feel to include a voice user interface in their product and service roadmaps.

Today, companies have the choice to build on their own, combine technology from a variety of vendors, partner with an end-to-end independent conversational AI platform provider, or "rent" an experience from one of the large voice AI technology companies with existing voice assistants—such as Google or Amazon. The decision to buy, "rent", or partner will determine which companies can create voice experiences that put their brand at the heart of the customer relationship and easily grow their conversational AI experience to other channels, languages, geographies, and products.



of business leaders across 8 industries stated that voice assistants help companies to control their brand identity and user experience.

[Opus Research](#)

In a recent study by [Opus Research](#) (sponsored by SoundHound), 77% of business leaders across 8 industries stated that voice assistants drive value through improved customer support and 76% agreed that they help companies to control their brand identity and user experience.

Importantly, voice-enabling your product, service, or app should be considered with the same long-term considerations as any new product or product upgrade. Keep in mind that the voice assistant you implement today should be the same voice-assistant that will serve your brand as your company grows.

Of those already employing a voice assistant, 81% are using the technology to improve customer service, and 52% are using voice AI for sales activity

All these trends are adding up to immense growth and adoption of conversational AI solutions in a variety of markets, including IoT, automotive, retail, hospitality, enterprise, healthcare, contact centers, restaurants, device manufacturing, and banking and finance..

Here are 7 key considerations for brands looking for a long-term voice AI solution:

-  **1 Own Your Customer Voice Experience**
-  **2 Retain Access to User Data and Analytics**
-  **3 Strengthen Customer Loyalty with Relevant Knowledge**
-  **4 Brand Your Voice Experience with a Custom Wake Word**
-  **5 Build a Platform for Monetization and Voice Commerce**
-  **6 Grow Engagement with Personalized and Proactive Voice Assistants**
-  **7 The Importance of Consumer Privacy for the Customer Relationship**

Own Your Customer Voice Experience

Maintain transparency, ownership of your customer experience, and access to data and analytics.

The need for better user experiences with voice assistants has created a growing trend among manufacturers and app developers to seek customized, branded solutions and lessen their dependence on general purpose voice assistants offered by the big tech companies.

The biggest differences between accepting an established voice assistant and partnering with an independent voice AI technology provider to build one are the opportunities for branding and customization and the flexibility to offer the voice experience their customers want and expect. Of course, the ability to maintain a brand voice depends on not only ownership of the voice experience but complete visibility into the data and analytics that provide the critical insights business leaders need to steer their product and customer service roadmaps.

Businesses across industries are feeling the dual pressures of further differentiating their products from their competitors and the growing demand for fast, accurate responses to customer questions through voice interfaces designed specifically for their products and users.

In a recent report, "[The Dawn of Brand-Owned Virtual Assistants](#)," RAIN Agency identified four key motivators for brands to migrate from a "mainstream voice assistant (MVA)" strategy to an "owned (OVA)" approach.

1 MVAs (like Google and Alexa) don't provide visibility into data and analytics

2 Brands are beholden to MVA platform updates that may require costly product or app code updates

3 OVAs (brand-owned voice assistants) give complete control over data analytics and insights

4 OVAs allow for customized domains to meet customer needs and desires

While the agency recognizes a place for mainstream voice assistants as channels for marketing and sales, they also understand that companies wanting control over their customer relationships, brand identity, and deeper insights into data and analytics must do so through a wholly-owned voice assistant.

When brands choose to own their voice assistant, they are choosing to own the entire customer experience. From the customized wake word to the sound of the voice to customized commands and domains and responsive design iterations, owning the customer experience creates deeper connections and more opportunities to deliver exactly what your customers expect from your brand.

Retain Access to User Data and Analytics

Continuously improve your voice experiences to meet customer desires and product needs.

Ownership of data and control over customer relationships are among the key differentiators between independent conversational AI platforms and voice assistant solutions offered by the mainstream, big tech providers. These key elements of the customer relationship are what originally spurred the rising adoption of custom voice assistant solutions, and they remain the two critical aspects of a brand-owned voice strategy today.

When brands have visibility into data insights—including the most common queries, queries that are supported but need custom commands, and those that aren't supported yet—these data points can be used to inform improvements in the customer experience. When the voice interface is used to operate a device, manufacturers can easily see what additional functions users would like the product to have and make improvements in subsequent models that further differentiate their products from those of their competitors.

Customizations based on consumer research and user needs allow companies to provide tailored voice experiences that strengthen relationships and provide real value to their audiences, and iterations based on user data extend their ability to meet customer needs and provide greater value. All these actions require that the brand owns the voice experience and has visibility into all data and analytics at all times.

When a voice assistant is "rented" from a big tech provider, access to data is limited. In fact, user data that could be used to improve your product or user experience can be appropriated by the same voice AI provider to optimize their own products to compete with yours.

Brands looking to voice-enable their products must ask themselves one important question: "Do we want other parties to have more visibility into our user behaviors, desires, and preferences than we do—giving them the ability to leverage and benefit from our user insights?"

Strengthen Customer Loyalty with Relevant Knowledge

Deliver the information your customers find most helpful in the context of their experiences.

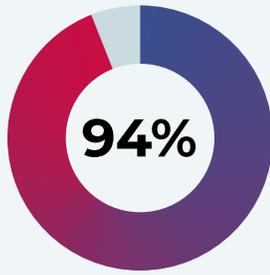
When your customers interact with your brand, they expect the voice assistant to understand their requests in the context of your product, service, or app. Delivering a customer experience that not only meets those needs—but has the ability to delight—depends on access to the right content domains and the design of the conversation itself.

If your voice assistant lacks access to domain knowledge that customers demand, the experience will be incomplete. At the same time, how the domains are created is as important as the data they contain. Historically, big tech voice assistants have relied on users to create and upload "skills" or "actions" that provide the answers to questions. The value and quality of these knowledge domains is as varied as the developers who created them.

Conversely, established content providers, such as Parkopedia, What3Words, Yelp, HERE, and StatsPerform, have developed and continue to update the data they provide through their content domains. Adding these domains to address relevant use cases in specific products, services, or apps ensures that your voice assistant is delivering accurate answers to the types of questions your customers are asking. In addition to content domain partnerships, well-established voice AI platform providers offer a range of public content domains they have developed over time for use in various applications to serve existing and potential partners.



Partnering with a voice AI platform provider with an established library of proven domains is fundamental to accurate voice experiences. Coupling public content domains with customized domains developed for your own product or service experience deliver two benefits. First, they allow your voice assistant to answer questions and provide the product functionality unique to your product, app, and customers. Secondly, it allows you to grow your voice experience over time, making the assistant more useful and opening the door to monetization and voice commerce opportunities.



Almost all users consider voice technology easy to use and say it does more than save time—it improves their quality of life.

Adobe

Understanding the context and the users' likely environment allows expert voice AI developers to adjust the voice assistant to respond appropriately when a user utters a phrase with possible multiple meanings. By using technology that is context-aware, your customized conversational assistant will deliver more accurate responses faster and serve more effectively as the voice of your brand.

For example, when you ask your physician if an activity is too "taxing" given your condition, you wouldn't expect them to refer you to an income tax software company. They would understand your meaning within the context of your visit. Similarly, if you ask your microwave to thaw chicken, the domain-specific voice interface will likely understand

that command and not confuse the word "thaw" with "Thor" and try to find a movie on your TV. The combination of customized domains and public domains that fit the context of your customer user cases reduces the incidence of an unaware voice assistant and opens the door to delivering real value to customers.

When the voice assistant is built on an independent platform, companies have the power to iterate and improve their voice experiences as well as their products and services. No matter how good a voice assistant is when it's first launched, its ultimate value lies in future iterations based on user experience data.

Brand Your Voice Experience With a Custom Wake Word

In a voice-first world, the sound of your voice interface is as significant as the sight of your logo.

The ubiquity of voice assistants has created a need for greater brand recognition and differentiation. Whether conscious or unconscious, customers will soon start recognizing brands by the sound of their voice as much as by the sight of their logos—that is, unless that brand uses a general-purpose big tech voice assistant that looks and sounds like every other brand in the market.

Starting the product or service interaction with a custom wake word will continue to be essential to creating a differentiated, branded experience. Having a branded wake word that users speak to invoke your

voice assistant helps deepen user engagement and creates lasting impressions every time they use your product or mobile app.

The creation of a wake word is an essential element of a customized voice experience. Wake words that are poorly designed, too difficult to utter correctly, contain too many similar sounds to other words, and don't reflect the brand image detract from the overall user experience and can negate the convenience of a completely hands-free interaction. Brands looking to increase customer satisfaction can do so with the help of the expertise of an independent voice AI provider with the experience and technology to create a robust, branded wake word.

A well-crafted wake word developed with advanced voice AI technology eliminates false acceptances and rejections—leading to frictionless experiences by ensuring your wake word activates only when your customers want it to and every time they ask for you by name.

In certain situations, users may want to be able to activate their voice assistant with something other than the designated wake word. Multiple wake word technology allows your users to simply utter "help, help" or something other than your name in times of need.

Customizations based on your customer base, needs, desires, and your product or app requirements are key to great user experiences and will determine how well you can differentiate from your competition. Asking customers to invoke the name of a "rented" voice assistant—like Google or Alexa—does little to improve brand recognition and may actually inhibit it.

For these reasons, an independent voice AI platform provider can offer wake words as stand-alone technology offerings or as part of end-to-end solutions—giving companies greater choice in how they develop their own voice assistants.

Create a Conversational Interface That's *More Human*™

Your customers expect to talk to your voice assistant just as they would another person.

The naturalness of your conversational experience will help to differentiate your voice experience from the competition. One of the greatest challenges with voice assistants is also one of their greatest benefits—the ability to sound human, almost. Making your voice assistant seem more human is the goal of anyone implementing a voice interface. When the technology doesn't live up to the promise and users find themselves needing to learn how to speak to the machine through memorized phrases, the moment is lost—and so is the magic.

Brands can help bridge the gap between robotic-sounding command and control voice experiences and those that seem more human through thoughtful design and a deep understanding of who your customers are and who you are as a brand.



Getting there requires advanced voice AI technology. Building it yourself requires an investment in resources that often exceeds the initial expectations of brands who attempt to build this level of capability in house. After all, it's not an investment in one or two people. It requires building a team of 30 people. Even with a large team, brands aren't looking at a year or two in development, instead, it can take up to a decade or more to develop a conversational voice experience that meets your needs and those of your users.



Delivering customer experiences that differentiate your brand in a market that will soon be filled with voice user interfaces will rest on the quality of the experience. In the near future, it won't be enough to just check the box to say you have a voice interface. Soon, your brand will be judged on the ability of your voice assistant to understand the complexity of human speech and interact with your users in a way that feels more natural and truly conversational.

Voice assistants that are built on the most robust conversational AI platforms will continue to evolve and grow as the technology provider expands voice capabilities, content libraries, and languages as part of their own product roadmap. These will be the customer experiences that begin to rise to the top and provide true brand differentiation and recognition for innovation and useability.

Build a Platform for Monetization and Voice Commerce

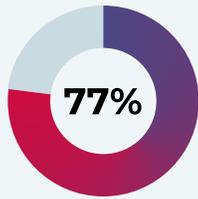
Unlock the earnings potential of your product, service, or app through voice purchasing opportunities.

The promise of a connected world and the ubiquity of voice assistants across industries has created an emerging opportunity to create commerce opportunities for brands that deliver greater value to consumers. While the business need to monetize the voice experience is creating greater pressure on product leaders in a number of industries, the first priority given to a voice assistant is to deliver a better customer experience. Balancing the need for frictionless customer experiences and showing greater ROI on the investment is coming down to one key element: a voice assistant built on an independent platform.

When considering monetization opportunities, brands are beginning to realize that their greatest opportunity lies in meeting their customers where they are and offering opportunities based on how users are already interacting with their product and fulfilling their unmet needs. Looking at user data and finding the gaps in service is at the heart of the evolutions in voice experiences already underway.

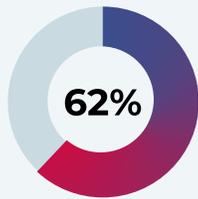
Advances in technology that allow for things like greater personalization and the ability to learn user preferences are opening the door to revenue generation by filling known customer needs and desires for purchasing and payment opportunities.

While consumers are showing an appetite for voice-enabled purchasing conveniences, the pressure is mounting for auto, home, and small device manufacturers to show real revenue as a result of the investment in voice AI technology. In some cases, the ability to show a direct bottom line impact will be the proof point they need to pursue a voice-enabled solution for their products. Recent studies are already uncovering the focus on pursuing revenue through voice for many brands.



of companies are using voice technology to identify new business opportunities

[Opus Research](#)



are using voice technology to increase revenues

[Opus Research](#)

The real power of voice AI for businesses will come as we open up the aperture on how we think of voice commerce. While interactive voice ads first emerged as the vehicle for monetization, more creative and complex systems of revenue sharing are more likely to take shape as the future of voice AI monetization. Things like proactive suggestions based on a user's conversation and context will be a natural extension of a conversation and add value for users wanting to add convenience and efficiency to their everyday lives.

Responsiveness and proactive solutions will likely grow from business partnerships between device manufacturers and content domain creators or businesses—like restaurants and gas stations. These partnerships will give businesses preferred listings in voice assistant results and provide users with special offers and other benefits to their search for products and services.

The success of voice commerce opportunities will be dependent on two important factors. First is the ability to personalize interactions and build voice assistants on advanced technology that can infer intent and recognize context to deliver proactive results. Secondly, building trust with consumers about personal privacy and allowing them to opt-in or opt-out of services.



Grow Engagement With Personalized and Proactive Voice Assistants

Design with your users, your proprietary product controls, future product and voice improvements, and revenue generation in mind.

Customized voice assistants become product, business, and industry specialists that act very much like the specialists in the human world. On the other hand, established voice assistants from big tech—even those with a branded wake word or some minor modifications—deliver the same general voice experience to every user.

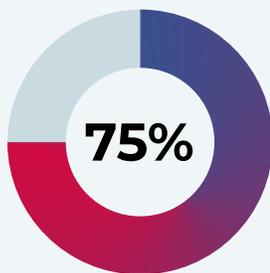
Up until now, the default behavior for a voice assistant has been to wait for a wake-up phrase or other form of user activation. The advent of more advanced voice AI technology is ushering in an era where voice assistants take a proactive role. These intuitive conversational assistants will provide even greater value to users by collecting information around the context of the query and the situation of the user and then taking the initiative to make helpful suggestions and take actions.

For example, a consumer wearable device may make a suggestion for taking a rest period, eating a meal, or checking with a health professional about an irregular heartbeat. In the manufacturing environment, voice assistants may provide information about equipment statuses, preventative maintenance suggestions, or the need to refill fluids. In-car voice assistants can help drivers get vehicle statuses such as fuel levels, diagnostics and service needs, and system settings that may need attention.

When the fuel level is low, voice assistants may suggest gas stations nearby or charging stations for electric vehicles.

In a proactive conversational assistant world, users of a variety of other types of devices would be able to get the weather, calendar updates, reminders, and to-do lists without asking. The proactive voice assistant would deliver information based on the actions users are currently taking, time of day, day of the week, and their normal routines.

When users opt-in to additional features, voice assistants can become truly personal assistants when allowed to store certain information and learn preferences. These personalizations may be extended between devices by seamlessly connecting users to their cars, smart home devices, and wearables—allowing people to perform tasks such as turning the lights off, setting the alarm, preheating the oven, or turning up the thermostat from their car or wearable device.



of consumers are more likely to purchase from a brand that makes recommendations based on past purchases.

[Instapage](#)

Opt-in personalizations can help users navigate their everyday lives and participate in commerce activities as part of their daily routines. Getting proactive and reactive suggestions for ordering food, making reservations, stopping for gas, and a variety of other necessary activities will transform making purchases from a discrete activity to part of a conversation.

For instance, when searching for a football game or other sporting event, viewers can be asked if they'd like to order food—a common activity for people watching a 2-3 hour game. When heading home, drivers can be asked if they want to order dinner for delivery or reserve a spot at a gas pump or charging station and prepay for services and products.

The Importance of Consumer Privacy for the Customer Relationship

Consumers are willing to share limited information to brands they trust with the promise of a personalized, elevated customer experience.

Differentiating yourself in a market increasingly populated by voice assistants requires choice and the flexibility to design a solution to meet your requirements and the desires of your users. If your users' desires include the need to keep personal data private or a reluctance to use a voice interface because of privacy concerns, new advances in conversational AI technology are offering more choice for manufacturers across industries and eliminating or reducing dependence on the cloud. The advent of Edge technology now makes it possible to provide greater security and privacy for consumers while delivering a conversational voice experience.

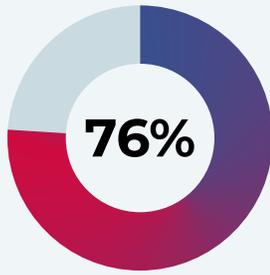
For customers, privacy concerns are often at odds with the desire for more personalized experiences. Brand-owned voice assistants allow companies across industries to mitigate those concerns by giving them greater control and user consent over how and when information is collected and where it is stored—on device or in the cloud.

When the voice experience requires connection to the cloud, brands that have built trust and continue to be transparent about how and when data is

Partnerships between device manufacturers and service and product providers will begin to grow a network of options for people to make purchases with greater ease and convenience in the normal course of their days. The possibilities for voice commerce and monetization opportunities are just now beginning to be imagined by leading device manufacturers and the independent conversational AI platform providers that are their partners. These types of innovations are only possible with brand-owned voice experiences.

collected and how it is used will ease customer's minds and make them more likely to opt-in to data collection options.





of customers are comfortable sharing their data for personalization.

Merkle

Adding a level of personalization can make branded voice experiences easier and more convenient while adding greater value for both the user and the brand. Understanding context, a user's preferences, and remembering previous interactions allows voice assistants to respond with answers and proactive suggestions. With Edge technology, users don't necessarily have to choose between personalization and privacy. Product manufacturers can deliver both.

Personalized experiences that don't create privacy concerns require transparency and communication to users about which data is collected and how it is used. When companies implement an established voice assistant through a big tech voice AI provider, the voice experience is always tied to the cloud. What's more, the host company will lose transparency into the data, how it is collected, if it is sold to or seen by others, and its uses—forefeiting any ability to create meaningful customer connections and personalized experiences.

What's worse is the entity that owns the data can decide to sell certain information or use it for their own marketing purposes, causing consumer distrust in the company hosting the voice assistant.

Brands seeking to provide trusted, personalized voice experiences will want to partner with an independent conversational AI platform provider to develop a customized voice assistant that delivers a unique experience to their customers and allows the company to own their customer relationships and retain visibility into data insights and analytics.

Chapter Two

The Independent Voice AI Technology Advantage



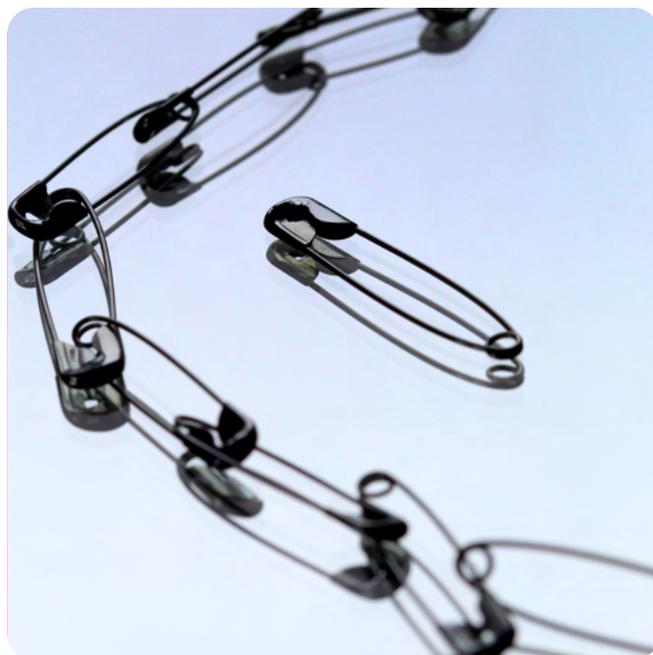
The Independent Voice AI Technology Advantage

Whether you partner with an independent conversational AI platform provider for the entire solution, or you're just looking to supplement technology you have already developed, there are a variety of tools and technologies that can help you deliver the best voice experience to your customers.

Get to market faster by bypassing the discovery phase and relying on a conversational AI platform built on proven technology that's been around long enough to have experienced continuous improvement. If you decide to build it yourself, your competitors can use that time to form relationships with your customers. Instead of attempting to build your own voice assistant from the ground up, spend your time understanding your customers, their needs, and desires and your own internal requirements. Then, partner with a conversational AI expert to build a customized voice solution that delights your customers and delivers real business value and ROI to you.

While we recommend getting all your technology from one source, we also acknowledge that some brands want to keep some of the development in-house. If that's the case, you'll want to ensure that the technology you buy to supplement your own is well-established and that the technology provider has been in the market long enough to ensure they won't disappear or be acquired before the end of your product lifecycle.

Some essential technologies may require a great deal of time and resources to develop or may not be offered via a rented solution. In order to provide the best user experience possible, consider carefully whether or not the below technologies will be an option for your solution of choice.



8 Critical Conversational Intelligence Technologies:

-  **1** Natural Language Understanding (NLU)
-  **2** Automatic Speech Recognition (ASR)
-  **3** Custom Content Domains
-  **4** Extensive Domain Libraries
-  **5** Text-to-Speech (TTS)
-  **6** Performance Enhancing Technologies
-  **7** Connectivity Options
-  **8** Custom Wake Words

Natural Language Understanding (NLU)

When building a voice assistant, companies can choose to develop their own NLU technology or purchase it from an outside vendor. In some cases, the ASR and NLU are bundled into a single offering. Combined, the ASR and NLU technologies determine the level of sophistication and naturalness of the voice interface and the voice assistant's ability to look past the spoken word to understand the user's intent.

In combination with the right content domains and the ability to understand context, a strong NLU technology can respond more accurately to users and distinguish between similar words and names based on that context.

Automatic Speech Recognition (ASR)

Among the voice AI technologies available to companies looking for "right fit" solutions is the ASR engine. In an independent voice AI platform, highly optimized, tunable, and scalable ASR engines can support a range of vocabulary sizes, including those containing millions of words.

Customized solutions are created based on user testing and data. As user data is collected, acoustic models are trained to perform in the environment where they will be used—optimizing the voice assistant's ability to perform quickly and accurately to

user requests—even in noisy environments and when accented language is spoken.

ASR technology is in a rapid growth phase as a safer alternative to traditional transcription methods. Using legacy solutions, transcriptions required a level of human interaction that caused concern about data privacy. Previously, these exposures (no matter how brief) were unavoidable. The advent of advanced ASR technology solutions has provided a solution that completely removes the human element and shared data storage concerns from the transcription equation—keeping personally identifiable information secure while accelerating the time required to create complete and accurate transcriptions.

By using ASR technology to transcribe everything from legal documents and patient conversations to banking customer service calls, individuals no longer need to worry about who is seeing their personally identifiable information, if it's getting leaked, or if their voiceprint is vulnerable to hacking.

Custom Content Domains

Custom voice assistants equipped with specialized domain knowledge are essential to delivering conversational interfaces with highly-accurate results—leading to greater customer satisfaction and voice assistant adoption.

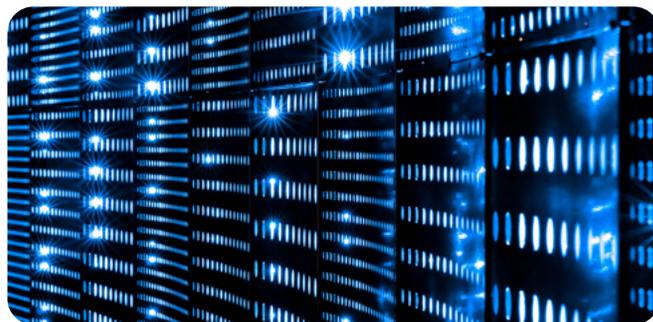
When brands partner with an independent voice AI platform provider, they are often given the option of developing private domains. Private domains allow companies to enhance product functionality or propriety operations without sharing their operating instructions in the cloud or proprietary product information with another entity.

To further tailor the voice experience, independent voice AI solutions offer the ability to develop custom commands to access the content domains. Using custom commands, companies are able to fine-tune their voice experience by modifying queries to match their users' likely phrasing. Companies can also choose to use the default commands that come with each content domain.

Content Domain Library

Content domains give companies access to the information their voice assistant needs to answer user queries. Public domains include content ranging from sports scores to weather, music, podcasts, travel information, recipes, ride-sharing, and much more.

Independent conversational AI platform providers have libraries of these domains for developers and brands to choose from—further customizing and enriching their user experiences.



Text-to-Speech (TTS)

In addition to specialized knowledge, custom voice assistants have become part of the sonic branding strategies for companies looking for market differentiation and leadership. Custom wake words and custom TTS voices have allowed brands to further promote their corporate personality and values.



Companies can express their brand personality by choosing a voice whose gender, tone, and personality accurately match their values. A custom digital voice or one from a library of standard voices can help companies add personality to their voice assistants and differentiate them from the competition.

Performance Enhancing Technologies

Each customer use case comes with its own challenges for optimal voice AI performance. Voice assistants in the car must be able to filter for road noise and distinguish between the driver and passengers. In a hotel room, air conditioner or heater noise, background talking, and TV noise may be factors that affect the accuracy of the voice assistant.

To adjust for that, independent conversational AI platform providers give companies the choice of various AI components and training data to help enhance the performance of the voice assistant in the environment where it will most likely be used.

Depending on your unique use case and user environment, you may want to further customize your voice assistant by including some or all of the following performance-enhancing technologies.



Echo Cancellation and Noise Reduction

Echo cancellation and noise reduction technologies maximize voice AI performance through broader augmentation detection, rigorous testing, and custom data sets designed to filter a range of background noises at varying distances.

These technologies allow brands to optimize their voice assistant for the environment in which it will be used and eliminate false positive triggers for their custom wake word.



Beamforming

Sound quality and audio signal processing are improved through sophisticated beamforming technology. Whether developing a voice assistant for a multi-microphone environment or eliminating other sounds to identify the commands of a single voice, beamforming enables best-quality audio experiences.



Speaker ID

Speaker ID technology provides highly-accurate identification of distinct individual speakers for customized responses to the same spoken phrases. Using speaker ID, brands can personalize their voice experiences and improve customer confidence with programmable voice verification.

Since performance-enhancing technologies require understanding the environment where the voice assistant is most likely to be used and then designing it using specific training data, it's not likely brands could get the same level of performance from a voice assistant designed for every use case.

Connectivity Solutions for Every Brand and Use Case

Although voice recognition technology has been around for decades, the potential for voice-enabled devices is still being discovered by hardware manufacturers. In addition to cloud-only connectivity, there are now a range of Edge connectivity options available—giving brands the ability to choose if they want to offer their users access to the cloud, leave the voice assistant embedded into the device itself, or only offer limited cloud connectivity on an embedded device.

The Choices for Voice Assistant Connectivity Include:



Cloud-Only

When we talk about voice assistants in the cloud, we are referring to those voice user interfaces built for the purpose of retrieving real-time data and information for users. Cloud-only solutions access functionality from a variety of content domains available through an internet connection.

Equipped with real-time data and information from the cloud, connected voice assistants deliver the most relevant responses to user queries. Cloud-only solutions also have the benefit of delivering voice experiences with no device CPU or memory capability restrictions.

Voice assistants with cloud connectivity reside in speakers, cars, mobile apps, and anywhere users may expect to get instant answers to a variety of questions. Rented solutions are primarily cloud-only without edge capabilities.



Edge Connectivity

When voice AI has no connection to the cloud, it is considered to be embedded or Edge solutions. Fully-embedded voice solutions allow the voice assistant to process data locally without the privacy or connectivity concerns of the Internet. These solutions give developers access to natural language commands with less CPU impact. Even without a cloud connection, these voice user interfaces can perform a wide range of functions, provide hands-free access to devices, and deliver a limited set of information to the user. Some solutions include a bundled wake word and the ability to instantly update commands.

Adding some cloud connectivity to a fully-embedded conversational AI solution gives brands the flexibility to use the cloud to retrieve information or push product updates.

As more CPU space is available, fully-embedded conversational AI solutions can deliver as much Natural Language Understanding (NLU) capabilities as necessary for your purposes and to meet customer desires for hands-free convenience. These solutions can include full accessibility to custom commands and the ability to create custom domains for proprietary on-device functionality.



Edge+Cloud

In some instances, manufacturers and service providers want the power of cloud connectivity combined with the reliability of embedded voice technology. Edge+Cloud solutions ensure that a device is always-on and responsive to commands. Adding cloud connectivity to a voice assistant on the Edge allows manufacturers to seamlessly push product updates and deliver a broader voice experience.

A choice of cloud connectivity allows manufacturers to optimize their voice-enabled products and devices. Brands can choose to collect specific usage data to provide greater personalization or inform product updates—thereby combining the privacy of embedded and Edge technology with the benefits of product and voice optimization over time.

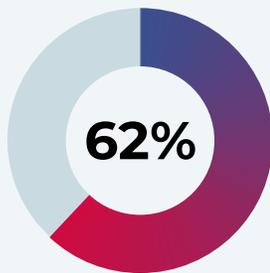
Chapter Three

The Drive Toward Omnichannel Experiences and Monetization



The Drive Toward Omnichannel Experiences and Monetization

In a recent [Opus Research report](#) commissioned by SoundHound, a majority of business leaders (62%) said that the need to offer a consistent brand experience regardless of channels was the main goal of their voice assistant strategy. While there is still some confusion in the market over the benefits of a custom experience versus creating skills or actions for a mainstream assistant, the desire to have an omnichannel voice experience reinforces the importance for companies to have a custom voice assistant.

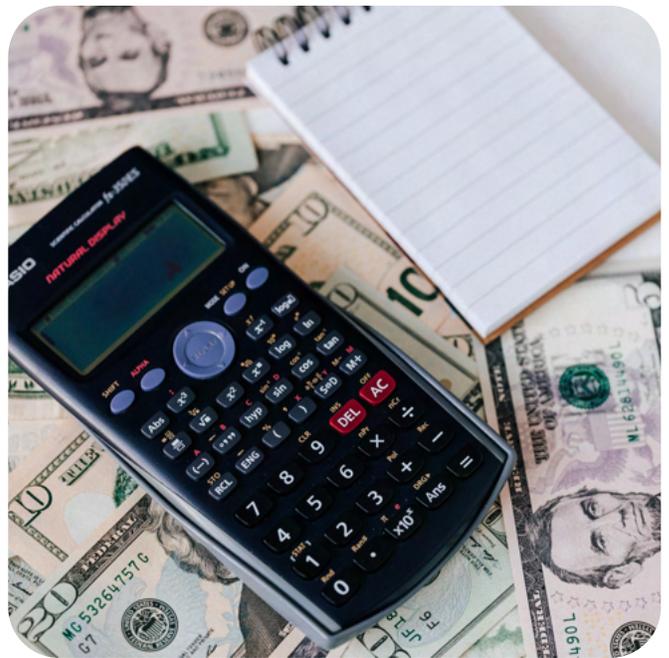


62% of business leaders identified the need to offer a consistent brand experience regardless of channels as the main goal of their voice assistant strategy.

[Opus Research](#)

When brands rent the voice assistant of another company, the opportunities to extend that voice experience beyond a single product is limited. The desire to solve today's challenges can be short-sighted as companies often don't know what they don't know about the future. Implementing a well-known voice assistant into your product may seem like a fast and less expensive way to enter the voice-first era.

However, short-term gains can create long-term costs, including loss of brand identity, an inconsistent voice experience across channels, and reliance on a technology that was built for a specific channel—in-home speakers. Inherent limitations of third-party technology and loss of control over the voice assistant will keep brands implementing these solutions from innovating the experience, expanding into new channels, and delivering value.



The Low-Hanging Fruit of a Voice-Enabled Mobile App

Rapid adoption of voice search and a variety of mobile apps has set the stage for voice-enabling mobile apps of all types. Since users are already using their voice to open the app through the resident voice user interface, it makes sense to continue to use voice in your own app experience. Why create the friction of requiring users to type, swipe, and tap once they've already started saying what they want?

The Opus Research report found that many companies begin their voice-first journey by voice-enabling their mobile apps. Because voice interaction can unlock immediate functionality beyond the limits of a mobile touchscreen, voice-enabled apps are a valuable entry point for brands developing a voice-first strategy.

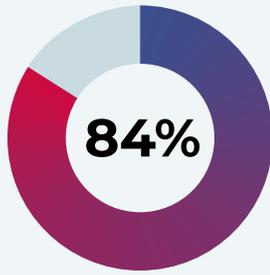
Instead of limiting the number of available features and capabilities of your mobile app, implementing a conversational, natural language voice assistant gives you the opportunity to add even more functions. When the constraints of a touch-only interface are removed, the possibilities for features and functions become endless.

Voice-enabled mobile app experiences solve two of the major challenges facing app developers: navigational complexity and functionality. Developers have long straddled the gap between too many menu options and not enough. Touch-only screen interfaces can be frustrating for users as they navigate complex menu trees to filter for the results they seek. On the other hand, they can also abandon the app if there aren't enough choices to filter down to specific items or requests.

“The inherent convenience of hands-free, conversational interfaces allows users to ask for what they want without knowing exactly what it's called and where it is in the menu hierarchy.”

Grow Your Voice Experience Across Channels

Whether you begin with a voice-enabled app or product, the next logical step is to begin growing your conversational AI experience across channels and products. Contact centers, products, websites, phone systems, and point-of-sale devices—such as kiosks and self-service vending machines—all make the list of places where you can create a branded voice experience all your own.



of consumers consider customer service to be a key factor when deciding whether or not to purchase—and likely whether or not to purchase again.

[Zendesk](#)

By their very nature, rented solutions don't have the capabilities to extend your voice assistant into an omnichannel experience. In these instances, companies miss out on the increased brand awareness and loyalty through creating a seamless voice experience across channels and devices.

Voice assistants in the contact center and centers of excellence directly address the challenge of getting your customers the help they need when they need it without the friction and frustration of traditional IVR systems. Traditionally difficult to hire, train, and retrain employees, company call centers are feeling the impact of the Great Resignation and the growing demands of customers for easy, convenient ways to interact with the companies where they do business. Times of global crisis, like the pandemic, put additional strain on call centers as anxious customers want immediate and accurate answers to their questions.

Even in normal times, legacy IVR systems can create a web of negative customer experiences through long and complex menus, endless loops, repeated information, and misunderstood responses. A few minutes of dealing with an IVR system can leave a caller frustrated and miserable, begging for a human agent—who may not be immediately available.

A voice assistant in a contact center can act as the first level of response for common, routine inquiries and as an agent's helper when the human touch is required. Instead of starting from scratch and asking the caller to repeat information already provided to the system, the voice assistant can accompany the caller to the agent, provide background information, and even suggest a resolution.

When a unified conversational intelligence platform is implemented across the organization, the voice assistant can continue to follow the customer from the call center into the CRM (Customer Relationship Management) tools. These enterprise-level voice AI solutions are not only interacting with customers. They're making it easier for sales and marketing teams to track, message, update, and notify other team members about relevant customer-oriented data. Companies adopting these specialized voice assistants are investing in better user relationships and upleveling the customer experience for their brand.

Drive Real Revenue With Voice Commerce and Monetization

While increased customer satisfaction and improved Net Promoter Scores (NPS) have driven brands to make interactions easier, more convenient, and hands-free, the desire to monetize on the voice AI investment ranks highly as a future goal for brands across industries. In fact, 64% of the Opus Research study respondents indicated that monetization is being prioritized over other goals in their organizations.

Conversational AI that's able to accept a complex set of instructions or queries, understand the context of a conversation, recognize users via two-step authentication, and personalize the experience is at the heart of what's required to make monetization a viable option for voice assistants.

With ownership of the voice experience, access to customers, and understanding of their interactions through data, brands will soon be able to fully realize the revenue potential of voice AI.

Voice commerce, voice ads, and monetization of the voice user experience are emerging as the next big evolution of voice AI. Innovations such as proactive suggestions and responsive voice commerce are taking hold inside companies in the IoT, automotive, and retail markets.

Building better customer experiences that include proactive and personalized voice experiences has implications for the bottom line. Even without the benefits and revenue opportunities of the emerging voice commerce opportunities, brands of all sizes are realizing ROI on their custom voice assistants through a variety of customer-centric metrics, including:



Customer loyalty and brand affinity



Increased Net Promoter Scores (NPS)



Higher Customer Satisfaction Scores (CSAT)



Product interaction and engagement

Conclusion

The Impact of the Decision to Build, Rent, or Partner on the Brand Future



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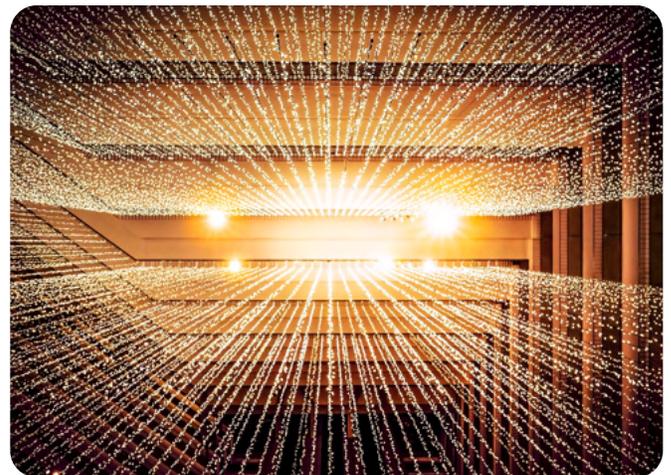
The critical decision to buy, "rent", or partner will determine which brands deliver on the promise of better user experiences and those that simply check the box with a voice interface they don't own or control. Companies that deliver product, app, and service interactions that are easier, more convenient—and in some cases safer—through natural sounding voice assistants are more likely to see a return on their investment now and far into the future.

“The growing customer demand for convenience, ease, hands-free operations, and exceptional experiences regardless of the channel or product has driven brands to a precipice of choice: Build, “Rent”, or Partner?”

We recognize that brands are in various stages of voice AI adoption and implementation—somewhat dependent on the markets they serve. While some have taken the wait-and-see approach, others are already looking past the current state of conversational AI technology and functionality to the next era of proactive and personalized voice assistants for their customers.

Regardless of their progress toward a voice-enabled future, all brands across industries are seeking ways to improve the user experience, gain brand loyalty, and grow revenue. Conversational assistants are already stepping in to solve for a variety of business pain points, including operational efficiencies, staffing challenges, revenue opportunities, and frictionless customer experiences that are more convenient.

Wholly-owned voice assistants built on advanced conversational AI technology with a range of connectivity options, access to large content libraries, and opportunities for monetization are helping brands solve not only today's needs, but leading them into the future.



For brands wanting a conversational assistant all their own, there are two key considerations. First, form a partnership with a voice AI technology partner who can deliver the most advanced platform and customizations to ensure that your voice experiences are tailored to meet your needs and those of your users. Secondly, choose a partner that can give you access to a wide range of content domains and business partners that can open the doors to monetization opportunities and deliver greater value to your customers.

At SoundHound, we have all the tools and expertise needed to create custom voice assistants and a consistent brand voice. Explore SoundHound's independent voice AI platform at soundhound.com. Talk to us about how we can help bring your voice strategy to life.

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