PolyAI

GUIDE

How to implement voice AI in your contact center

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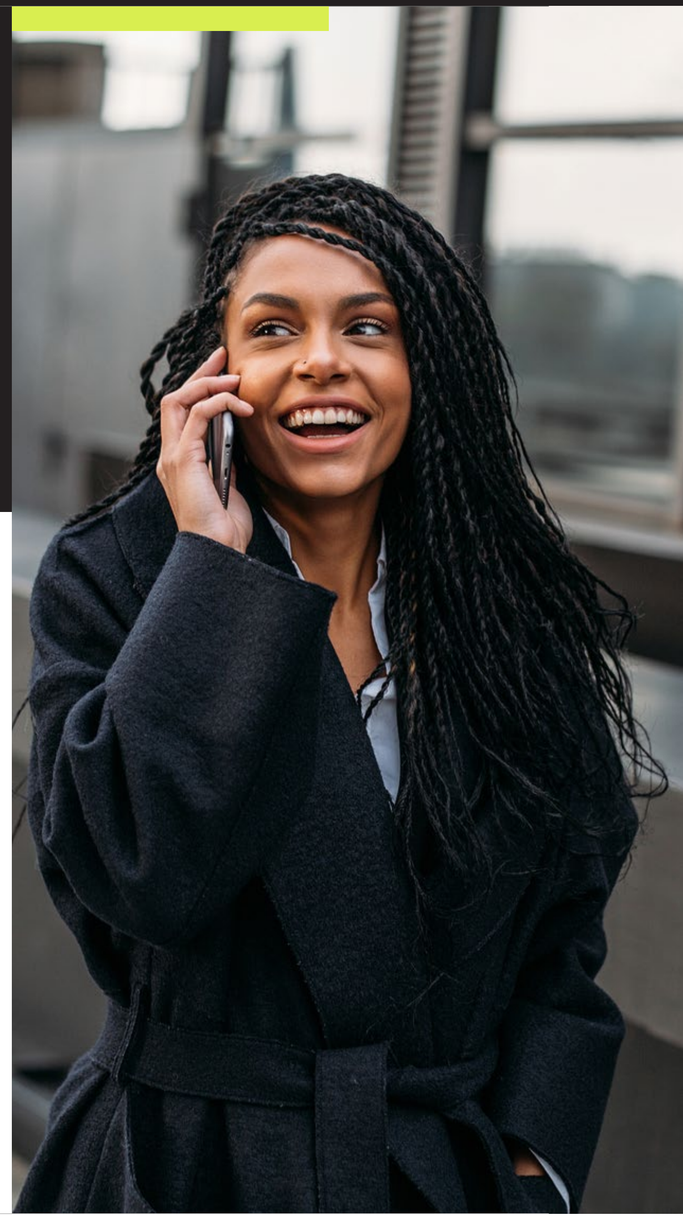
INTRODUCTION

Most contact centers are embarking on a digital transformation journey.



But the journey is complex, with most contact centers battling with legacy systems and fragmented technology stacks that don't always behave as intended.

As a result, many contact centers are focused on ‘stopping the bleeding’ and getting their underlying architecture in order.

But the contact center of the future is already here. AI promises automated customer service with unprecedented levels of personalization and voice-of-the-customer data like you’ve never seen before.

This sounds great in theory, but it can be daunting for contact center leaders who are already overwhelmed with the process of replacing the duct tape and glue currently holding their contact center together.

Meanwhile, IT teams are tasked with implementing new technologies while ensuring the smooth operation of existing systems. The shift towards AI-powered solutions can add complexity with the potential to overwhelm their resources.

In the battle to balance complex digital transformation journeys with day-to-day contact center management, many companies are getting left behind.

That doesn’t need to be the case. This implementation guide outlines the steps you can follow for effective and efficient voice AI implementation, including insight into how you can scale your customer service without overhauling your contact center architecture.

01.

Pre-build

Before you build your voice assistant, it’s important to take stock of where you are today. Running through the following 5 exercises will enable you to develop a voice AI strategy that aligns with your current state as well as it does your future vision, and will help project teams of all shapes and sizes to remain focused on what matters most to your business.

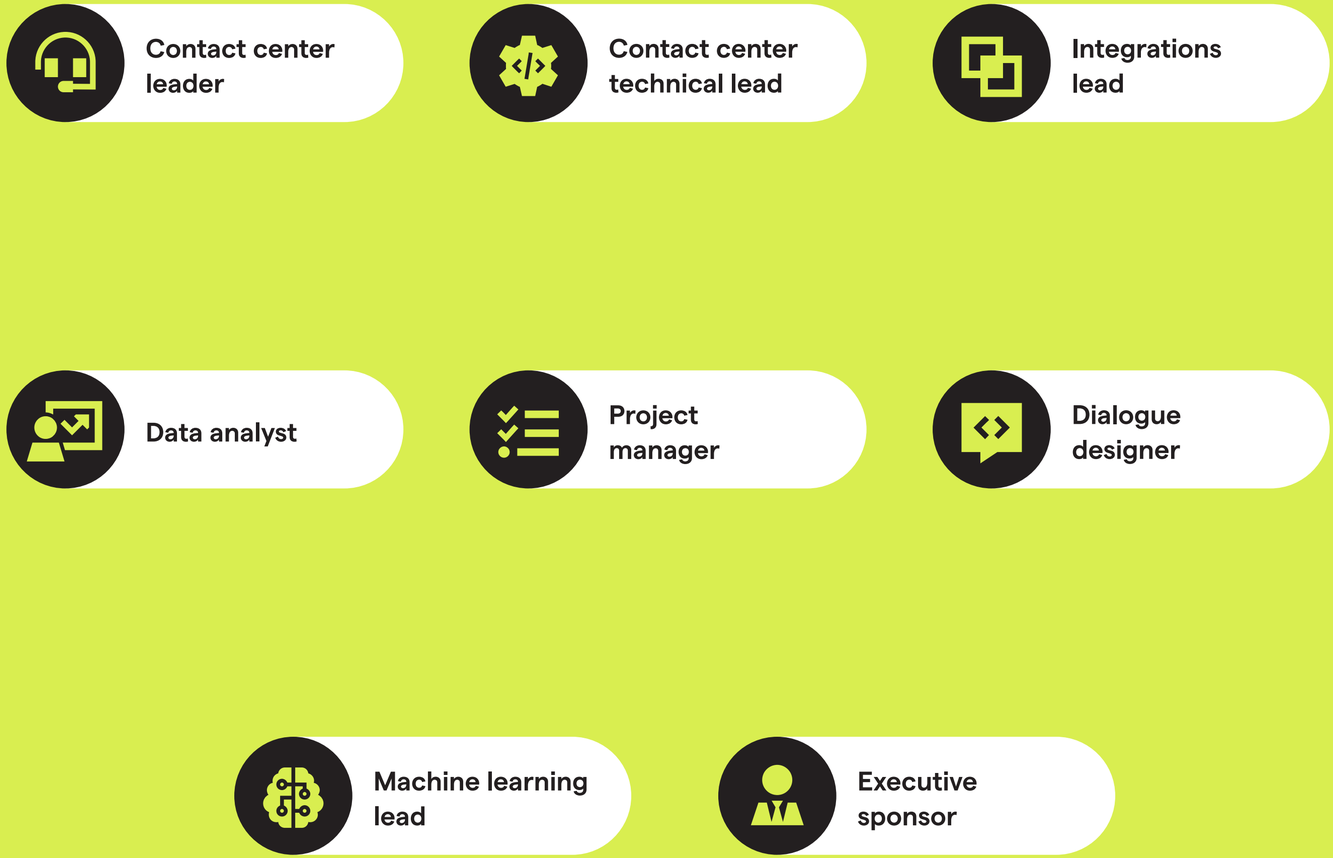
EXERCISE 1

Build your implementation team

Implementing voice AI doesn't have to be complicated. It should be a collaborative project where each team member plays a unique role in driving the overall success of implementation.

Here are the individuals that should be included to ensure you implement voice AI seamlessly.

Depending on the platform you use to create your voice assistant, some of these roles may be provided by your vendor.



Contact center leader

This role has in-depth knowledge of the customer interactions selected for automation. They will be able to:

- Provide information on customer interactions.
- Identify the steps required to complete an interaction.
- Highlight the systems your agents work with to complete the interaction.
- Identify FAQs customers ask during the interaction.
- Suggest improvements or changes that could be made to the chat interaction.

Contact center technical lead

This person manages your contact center tech stack and will be the point of contact for telephony integration. They will be able to discuss how calls will be sent to the voice AI solutions and where calls will be sent back.

Integrations lead

This is the person who can provide access to APIs, enabling your voice AI solution to access customer information to complete a specific chat interaction.

Data analyst

It's essential to quantify the benefits of voice AI. Your data analyst or business intelligence analyst should provide current & historical reporting data.

Project manager

With multiple roles in your team, having someone responsible for keeping the project on track is essential. Your project manager is responsible for coordinating resources and organizing tasks.

Dialogue designer

The dialogue designer is a CX advocate with a proven track record of designing conversations for enterprise voice assistants, at scale.

Machine learning lead

Leads the team of engineers who manage LLMs, training, safety guardrails, dialogue management, speech recognition and spoken language understanding. They should have experience deploying large-scale voice assistants in an enterprise setting.

Executive sponsor

If possible, bring a colleague from the leadership team into the project as soon as possible. Acting as the executive sponsor, this person can provide a high-level strategic view and help secure the necessary resources and buy-in from other stakeholders.

EXERCISE 2

Map out your current experience

Decide how to work with your current IVR

Voice AI can eliminate the need for traditional IVR, answering every call with a simple, open-ended question - How can I help?

But if your current IVR is already infused with some self-service, it may not make sense to rip it out and start again.

In that case, voice AI can be used to add more self-service capabilities alongside your IVR. You might decide to put voice AI in front of your IVR and route calls from your voice assistant to where self-service and digital resources already exist. Or you might put voice AI behind certain IVR options to start small and dip your toes in the water.

Taking stock of your current experience is a crucial step towards understanding what better looks like.

Gather the following resources to map out your existing experience.

	What you'll provide	Why?
Call reports	The number of calls you receive per year and the breakdown of call types.	This process will highlight the high-volume, routine calls that drive the most value when handled by voice AI.
Metrics	Your key contact center performance metrics such as average handle time, average speed to answer, abandonment, and agent utilization.	This data will help you identify areas for improvement. Once your voice assistant is deployed, you can use this data to demonstrate its impact.
Agent training material	Documentation about the process agents use to complete calls and any systems used to enter and retrieve data.	Understanding this workflow is essential for designing a voice assistant that seamlessly integrates with existing processes.
Contact center architecture	Diagrams for telephony & digital chat architecture and network connectivity.	You can identify potential integration points and dependencies by visually mapping out the connections between different systems.
API documentation	Documentation of all available APIs and input & output data formats.	This enables your voice team to understand your available APIs and how to integrate the voice AI system with your existing infrastructure and applications.
Security questionnaire	Questionnaire to identify any specific security concerns.	Ensure that every customer interaction meets your company's security and compliance requirements.
Analytics and transcripts	Call recordings or transcripts of customer calls and digital interactions.	To highlight customer behavior and preference patterns, understand specific needs and pain points, and identify common issues or recurring customer problems.
Screenshots and call recordings	Screenshots of agent desktops and systems used.	Screenshots provide insight into the workflow followed by agents during calls. By examining all aspects of agent interactions captured in screenshots, your voice AI vendor can identify key touchpoints and decision-making processes that shape the call-handling process.

EXERCISE 3

Define your change management strategy

To embrace voice AI confidently while minimizing disruptions, you will need an effective change management strategy. Successful voice AI implementation requires technical skills, adaptability, and strong leadership.

Understand the ‘why’ behind your voice AI project

First, you must understand why you are embarking on your project. Whether you want to improve efficiency, enhance customer satisfaction, or streamline your processes, be clear about the problem you want voice AI to solve.

Clear goals from the outset will ensure your project team is aligned and conflicting priorities are addressed upfront. As a result, implementation will be smoother, as decisions can be made quickly.

Engage your stakeholders

Implementing any new technology into your organization creates disruption. It impacts your operations and processes, as well as your people. When you’re clear on why you’re embarking on this project, you can engage your stakeholders. Clear communication at this stage is key to making this transition smooth.

Use this as an opportunity to explain how implementation will make processes more efficient, reduce the pressure of increasing workloads by automating repetitive routine tasks, and make jobs more fulfilling by freeing up your agents to focus on meaningful work.

Remain adaptable to deliver quick wins

Voice AI projects often turn up unexpected data about the efficacy of existing processes.

The most successful voice teams remain flexible, adapting roadmaps based on data, enabling them to make successive small changes to deliver quick wins.

To remain adaptable without losing focus, be sure to plan sprints, stay close to performance metrics and insights and communicate effectively with all stakeholders.

EXERCISE 4

Gather baseline data and set clear objectives

To succeed in your voice AI project, you must understand your baseline data and set clear objectives for introducing AI into your operations.

Your organization can approach deployment by picking a call type that needs addressing immediately, such as high-volume and routine calls that are taking up too much time for agents and not making the best use of their skills.

At this stage, you will need to decide what an impactful improvement in your metrics would look like for your company. Remember to be realistic.

Here are some goals you may want to consider. Remember to be specific and define the before-state as well as the after.

Reduce call abandonment rate from X% to Y%

Reduce call volume by X%

Reduce wait times from X seconds to Y seconds

Improve self-service rate from X% to Y%

Reduce average handle time (AHT) from X seconds to Y seconds.

However you decide to measure success, make sure you create a solution that focuses on the customer. By doing so, you can drive engagement that naturally creates efficiencies. In other words, if customers want to talk to the voice AI solution, they won't push to speak to an agent.

EXERCISE 5

Technology audit: Understanding your technical architecture

At this stage, the goal is to map and document the high-level system architecture required for calls or digital interactions to reach your voice AI solution, how calls will be transferred, and identify API integration points for data.

You can break your technical discovery into 3 key areas:

	Considerations
Contact center	What platform are you currently using? And does it support features like agent “screen pops” to enhance efficiency? Where does your solution sit? Is it on-site or in the cloud? And who's managing it? Understanding these basics will help you plan your integration.
Voice delivery	Decide whether you prefer using PSTN or SIP for calls. Can voice be delivered via SIP over the internet? Check if you can send custom header information in the SIP header and transfer the information back to your contact center. SIP headers will enable you to send messages in a screen pop alongside the call transfer to assist your agents with a more seamless handoff.
APIs	It's possible to automate a good portion of phone calls without API integrations, but if you want your voice AI to connect with other systems, APIs will be necessary. APIs to consider are REST, SOAP, JSON, and XML.

Your pre-build checklist		✓
Build your implementation team	Build your implementation team. Include dedicated experts across telephony, API integration, project management, design, engineering, and machine learning.	☐
Map out your current experience	Assess your current IVR system and explore integrating voice AI to enhance self-service capabilities without disrupting existing processes.	☐
Define your change management strategy	Understand the 'why' behind your voice AI project, engage stakeholders through clear communication, encourage buy-in by involving them in decision-making, and foster a culture of innovation for continuous improvement.	☐
Gather baseline data and set clear objectives	Set clear and realistic objectives, focus on improving key metrics, and ensure your solution enhances customer engagement to increase operational efficiency naturally.	☐
Technology audit	Map the high-level system architecture for routing calls to your voice AI solution, determining platform and delivery preferences, and identifying necessary API integration points for data exchange, with considerations for contact center platforms, voice delivery methods, and API types.	☐

Design

With your technical architecture understood, it’s time to work on designing a voice experience that engages your customers effectively.

Designing for automation

Dialogue design sounds simple in theory. We talk to each other all the time, surely we know how a conversation should go?

While common sense is important in dialogue design, it's not enough to create engaging systems.

That's because we don't always speak to automated systems in the same way we speak to other people. And with no visual interface to help callers through complex transactions, design know how is key.

Ensure you work with a dialogue designer who has a proven track record of designing conversations for enterprise voice assistants, at scale.

Here are 5 key tenets of voice design to get you started.

First impressions matter

The first thing your voice assistant says plays a huge role in how (and if) a customer will interact with the system. When designing a voice assistant, pay special attention to the first ‘turn’ of the conversation to earn the caller’s trust.

Empathy is important

Word choice, intonation, volume, and the use of silence work together to relay meaning. Expressions of empathy are one of the hardest things to get right in conversational design.

Conversations must feel human. But not too much

Conversations with a voice assistant should feel natural to create an engaging user experience. However, it’s important to strike a balance and avoid feeling too human. From the pacing and intonation of the voice to the way in which audio is edited together or synthesized, each customer requires an appropriate tone of voice.

Adjusting tone to match appropriate situations.

Changing a voice assistant’s tone of voice to match the caller’s social and cultural expectations is an effective way of creating the best experience for the customer.

Reducing cognitive load over voice is key

Overly complex instructions make a conversation hard to follow. You must design a voice assistant that is easy to understand and gives each customer control over the conversation.

Crafting seamless handoff protocols

Sometimes calls will need to passed from the voice assistant back to your team. While technically, this is a simple SIP transfer, you'll want to consider the handoff protocol to ensure maximum efficiency,without diminishing customer experience.

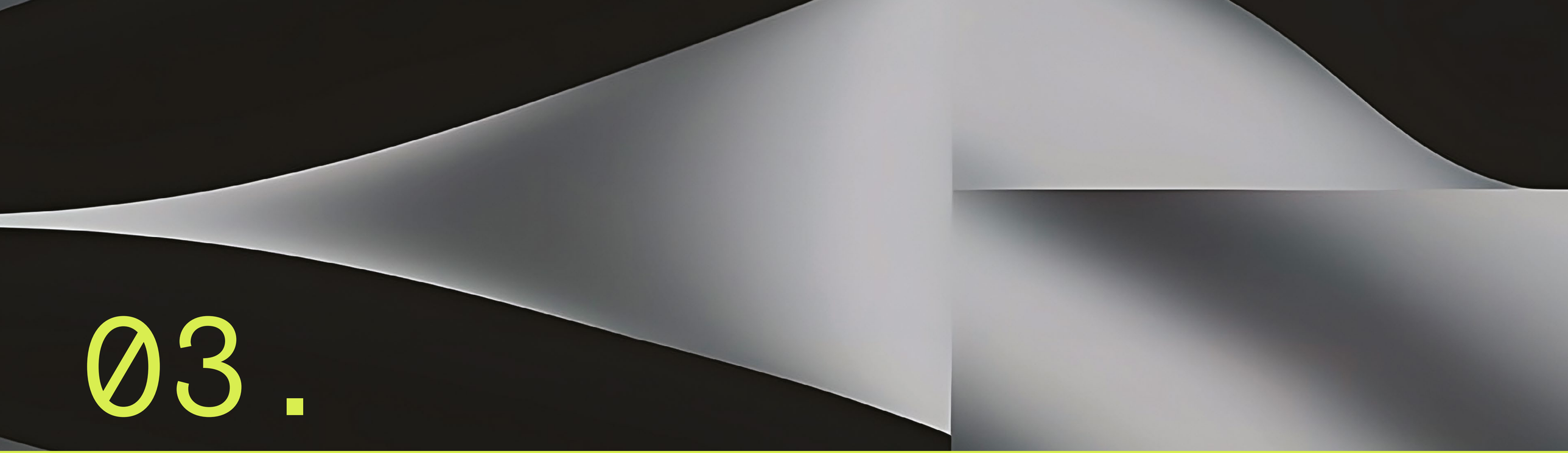
When designing handoff protocols, you'll want to consider:

Urgency
Does the caller have an emergency that requires prioritization?

Sensitivity
Is the caller in a vulnerable state or situation that would benefit from the human touch?

Revenue implications
How likely is the caller to hang up and take their business elsewhere?

Your voice design checklist		☑
Pick a voice	Review voice samples and pick a voice unique to your brand.	☐
Design for automation	Create engaging, user-friendly conversations, focusing on first impressions, empathy, appropriate human-like interaction, situational tone adjustments, and reducing cognitive load.	☐
Create a handoff protocol	Prioritize efficiency and maintain customer experience by considering urgency, sensitivity, and revenue implications	☐



Build

An engaging voice AI solution will require a specialized tech stack including speech recognition, spoken language understanding (SLU), natural language understanding (NLU), voice synthesis, dialogue management and AI guardrails.

To understand the process of building a voice assistant, it's helpful to consider conversation as three constituent parts.

PART 1:

Listening

Accents, background noise, speech recognition errors, and named entities make it very difficult to accurately capture spoken language over the phone.

A great listening stack includes:

- **Automatic speech recognition (ASR)** - These systems transcribe spoken language into text that can be digested by LLMs. They are often fine-tuned for specific accents, languages, and use cases, so you may need to use several models concurrently for accurate understanding.
- **Spoken Language Understanding (SLU) models** - Even the best ASR will result in gaps and errors in transcriptions. SLU models recover important information from incorrect speech transcriptions, using context and customer information to infer the correct input

PART 2:

Reasoning

Once the speaker's words have been transcribed, the voice assistant needs to understand the context behind what the caller is saying and how to respond in a way that continues to move the conversation toward an appropriate resolution.

A great reasoning tech stack will include:

- **Large Language Models (LLMs)** - These machine learning models can extract meaning from words and sentences and define the next steps the system should make in the context of the conversations.
- **Dialogue management** - A control layer that sits on top of LLMs to enable your company to have full control over transactional processes.
- **Safety guardrails** - A set of technical features that protect against prompt injections and other types of malicious user behavior.

PART 3:

Speaking

Once the voice assistant has listened and understood the caller's intent and the appropriate response, it then must turn that response into speech.

Even with the best technology, a robotic, unnatural voice provides a subpar brand experience and discourages callers from engaging, eliminating the benefits of voice automation.

A great speaking tech stack will combine voice cloning technology with state-of-the-art synthesis and the talent of voice actors to create an experience that sounds like talking to a real person.

Integrations

Once your voice assistant is built, it needs to be integrated into your existing tech stack to enable calls to pass back and forth to your contact center.

Call center integration - SIP

A simple SIP or PSTN connection is all that's required to route calls between your voice assistant and your team. This is virtually the same for every voice assistant, and your IT team will handle this with support from your voice AI vendor.

A typical high-level approach is shown in the **image on page 23**:

1. The call enters your existing infrastructure from the PSTN / carrier
2. Calls are forwarded to your solution via SIP INVITE. NOTE: PSTN forwarding is an alternative here. However, SIP is preferable.
   Using a combination of AI techniques your solution handles the call.
   Where applicable the process will use your APIs and services to maximize automated resolution.
3. Where it isn't possible to resolve the customer call, it is returned to the customer infrastructure, via SIP REFER, SIP INVITE, or PSTN.
4. The call is routed to the relevant agent group / queue based on the information gathered on the automated portion of the call.

Connecting to your back-end systems (APIs)

While a considerable amount of calls can be automated without them, API integrations are needed to connect your voice assistant to other systems.

Securing the necessary resources to build these APIs can be challenging, so many companies launch a voice assistant on simple call routing and FAQs initially, choosing to open up integrations once they've already demonstrated the value of automation.

Screen pops for agent handoff

Sometimes, a call needs to be transferred from the voice assistant to an agent. Instead of having the customer repeat themselves, the voice assistant can pass on all of the information gathered so far in the form of a screen pop on your agent's desktop. This information could include details about the caller, such as their name, account number, recent interactions, purchase history, preferences, or any other relevant data that will help the agent handle the call more efficiently.

How to create an effective screen pop

For a screen pop to be effective, your voice assistant must be able to reliably and precisely extract information from a conversation, such as extracting names at a phonetic level and taking alphanumeric strings without requiring keypad input.

When information is taken accurately, the data can be transferred via SIP headers or Via API as part of the call handoff. This will require development to ensure data collection, reformatting, and the Extract, Transform, Load (ETL) process are completed properly.

The three-step process is as follows:

1. Extract:
Retrieving relevant data from the conversation handled by the voice assistant. This could include caller information, call context, conversation history, key phrases or intents identified.

2. Transform:
Process and reformat this data into a structured format useful for your agents. This might involve summarizing the conversation, highlighting key points, and converting data into a standardized format.

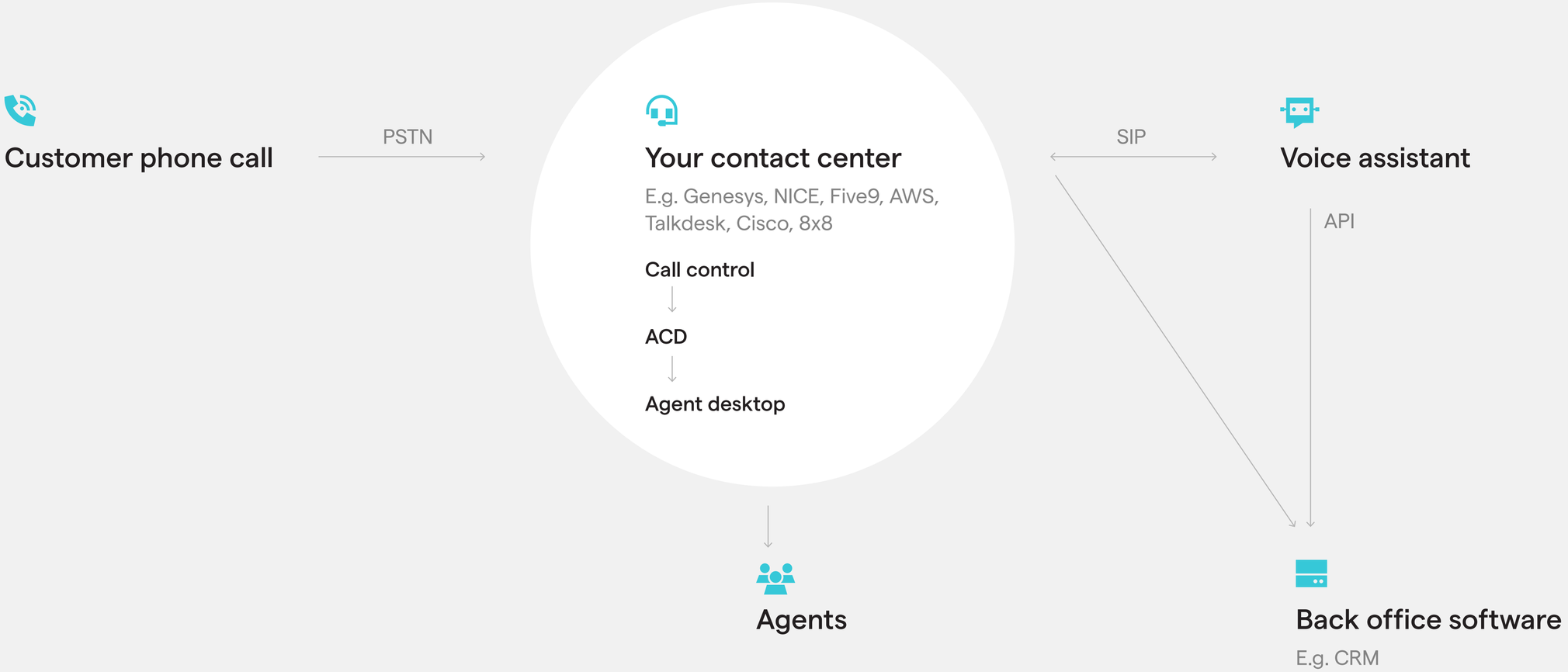
3. Load:
Deliver the transformed data to the agent's screen pop interface.

What does the workflow of voice assistant to agent handoff look like?

Consider how you would design an ideal customer journey. The best practice here would be designing a consistent set of fields that provide enough information to make the interaction efficient without overwhelming the agent with information. Fields to consider will be dependant on the call type. You might want to include the account number, caller intent, and a generated summary of all previous customer interactions within 6 months.

While this may be ideal for managing routine queries, much more specific information is needed for more complex use cases.

Here's a high-level example of what your system architecture might look like.



Your build checklist		✓
Train machine learning models	Fine-tune for accurate understanding of specific accents, languages, and use cases.	☐
Develop your tech stack for engaging voice AI	Build systems for speech recognition, spoken language understanding (SLU), natural language understanding (NLU), voice synthesis, dialogue management, and AI guardrails.	☐
Integrate your voice assistant into your existing tech stack	Integrate the voice assistant into your tech stack via a SIP or PSTN connection to enable seamless call routing between the voice assistant and your contact center, with support from your IT team and voice AI vendor.	☐
Integrate screen pop function	Ensure the voice assistant provides the agent a screen pop with relevant caller information during handoff.	☐

04.

Test and launch

Now your voice assistant is almost ready to deploy.
But first, testing!

Testing

You'll want to run a number of rigorous tests before going live with your customers.

1. Quality assurance
To test various user interactions, commands, and responses to ensure your voice assistant delivers the expected experience and identifies any issues.

2. Load tests
To ensure the voice assistant can handle the number of calls you want it to answer

3. Team demos
Have your team call in and try the system for themselves. Your agents are great for this, as they know what customers are most likely to say!

Launch

Some companies opt to go live with a percentage of calls before rolling out the voice assistant to everyone. Some take the dive to reap the rewards faster.

However you approach your launch plan, your vendor should have a support team on hand to monitor early calls, make sure everything is running smoothly, and jump in to make amendments if needed.

If you encounter unsuccessful calls due to unexpected customer inputs, use them as an opportunity to work with your vendor to develop new use cases that may not already be supported.

Your test and launch checklist		✓
Quality assurance	Test various user interactions, commands, and responses.	☐
Team testing	Have your team, especially agents, test the system to simulate customer interactions. Ensure the voice assistant can handle high volumes of calls.	☐
Optimizing accuracy and efficiency	Monitor the performance in a live environment, identifying areas for optimization and fine-tuning to enhance accuracy and efficiency.	☐
Launch	Decide whether to go live with a percentage of calls or full deployment.	☐

05.

Post-launch

In the weeks following the launch, you should closely monitor performance and make adjustments to improve based on your business goals.

Continuous improvement

Every customer call is different and it isn’t until you’ve launched your voice assistant that you’ll get to see how callers react.

This sounds scary, but the most successful teams see this stage as an opportunity. By closely monitoring early calls and making adjustments where needed, you’ll improve customer experience rapidly.

Key metrics such as AHT, call volume, and containment should be reviewed regularly with stakeholders, and tweaks and enhancements can be made to the ASR, machine learning, and dialogue design to ensure the best results for your customers.

Making updates

If there’s one thing to expect in customer service, it’s the unexpected!

As your voice assistant beds in, you’ll want to add new functionality, edit prompts and make further tweaks to improve experience and efficiency.

Creating a configurability panel, or using the one your vendor provides, will enable you to make quick tweaks at minimum cost.

Further automation

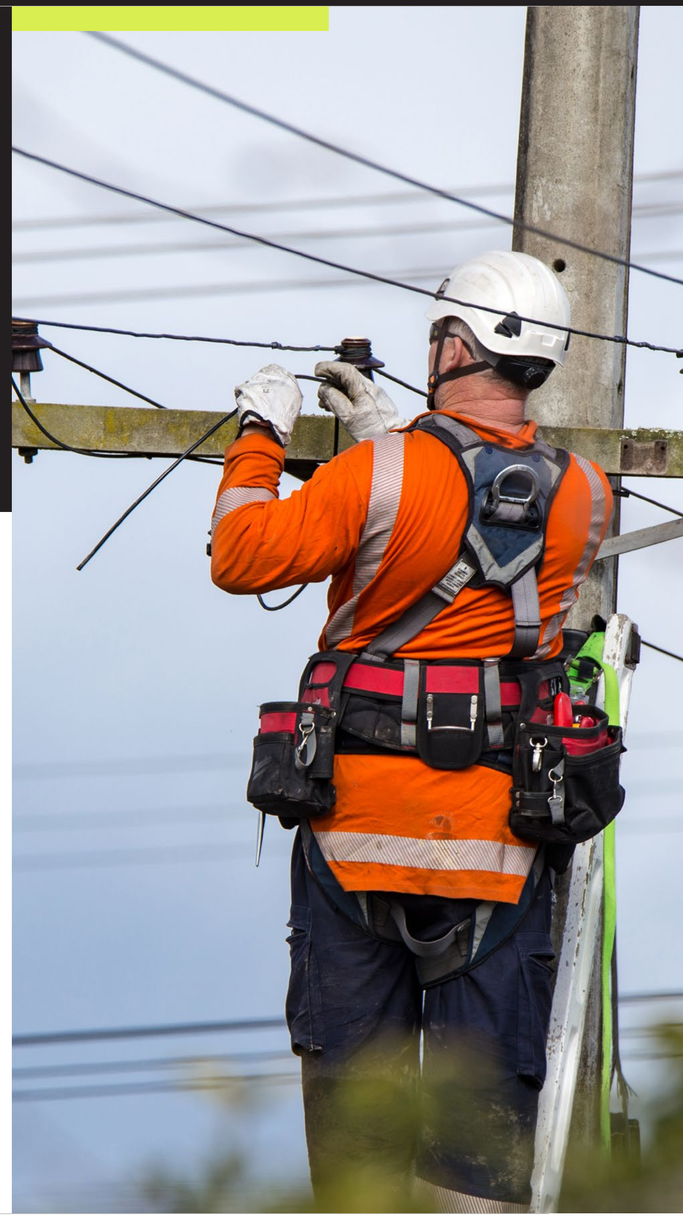
Once your voice assistant gets to work on your chosen use case, it will instantly begin gathering data that gives you a clear indication of your most popular calls and help determine the next-best call types for further automation.

This data will be extremely useful when it comes to encouraging buy-in for further investment.

Your post-launch checklist		✓
Regular monitoring	Monitor performance, analyze caller interactions, and adjust the voice assistant accordingly.	☐
Review metrics	Monitor AHT, call volume, and containment regularly.	☐
Make updates	Edit prompts and make tweaks to enhance customer experience and efficiency.	☐
Identify further automation opportunities	Analyze data to identify popular calls and use it to inform the next deployment.	☐

Voice AI implementation in practice

How a major utilities company is transforming its IVR with flexible voice automation.



The company partnered with PolyAI to build a voice assistant that could work with its existing Nuance IVR, enabling them to get a solution up and running quickly without overhauling its existing contact center infrastructure. Here's how it works:

1. Every call is received by CISCO Cube and sent to Nuance.
2. Calls are forwarded to PolyAI via SIP with mutual TLS (mTLS). This happens immediately.

Calls that require a specialist agent are redirected to Nuance, using the same routing logic to map calls to existing automatic call distribution (ACDs).

Previously, customers calling about an emergency situation were met with a 90-second recorded message explaining their options. Now, when callers mention an emergency or request financial assistance, PolyAI immediately connects them to an agent.

18%

call containment with no API integrations

93%

reduction in Cost Per Contact for calls that are fully automated

0

hold times, greeting callers immediately and providing support or all routing

Conclusion

Implementing voice AI in your contact center is an essential step to staying competitive and delivering effortless customer experience at scale.

By following these steps - from initial assessments and team setup to design development, and thorough testing - you can smoothly integrate voice AI into your operations.

The future of contact centers is here, and with the right approach, voice AI can transform your operations and enhance your customer service.

How to get started

Join our voice AI experts for a **live demo** of remarkably lifelike voice assistants.

Discover the power of customer-led voice assistants with our **monthly demo sessions,** where we'll showcase the latest advancements in AI technology and how it can revolutionize your business.

Expect to learn more about:

- The ROI of voice AI
- The best way to design voice experiences for customer engagement
- How other companies have successfully deployed voice AI
- How to begin your voice AI journey