

AWS re:Invent

NOV. 28 – DEC. 2, 2022 | LAS VEGAS, NV



AIM307

JPMorganChase's real-time agent assist contact center productivity

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JP Morgan Chase

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Global Financial Sector
AWS



Great customer experience is critical for growth

75%

stated that customer experience impacts purchasing decisions¹

40%

stopped doing business with a company due to poor customer service²

85%

saw improvement in customer experiences due to real-time customer analytics³

1. Statista, "Importance of customer experience," bit.ly/3PGKciw

2. Statista, "Customers who stopped," bit.ly/3CtGe9T

3. Statista, "Advantages of using," bit.ly/3Rc8PF3



Poll: Which of the following contact center challenges have you or your customers faced?



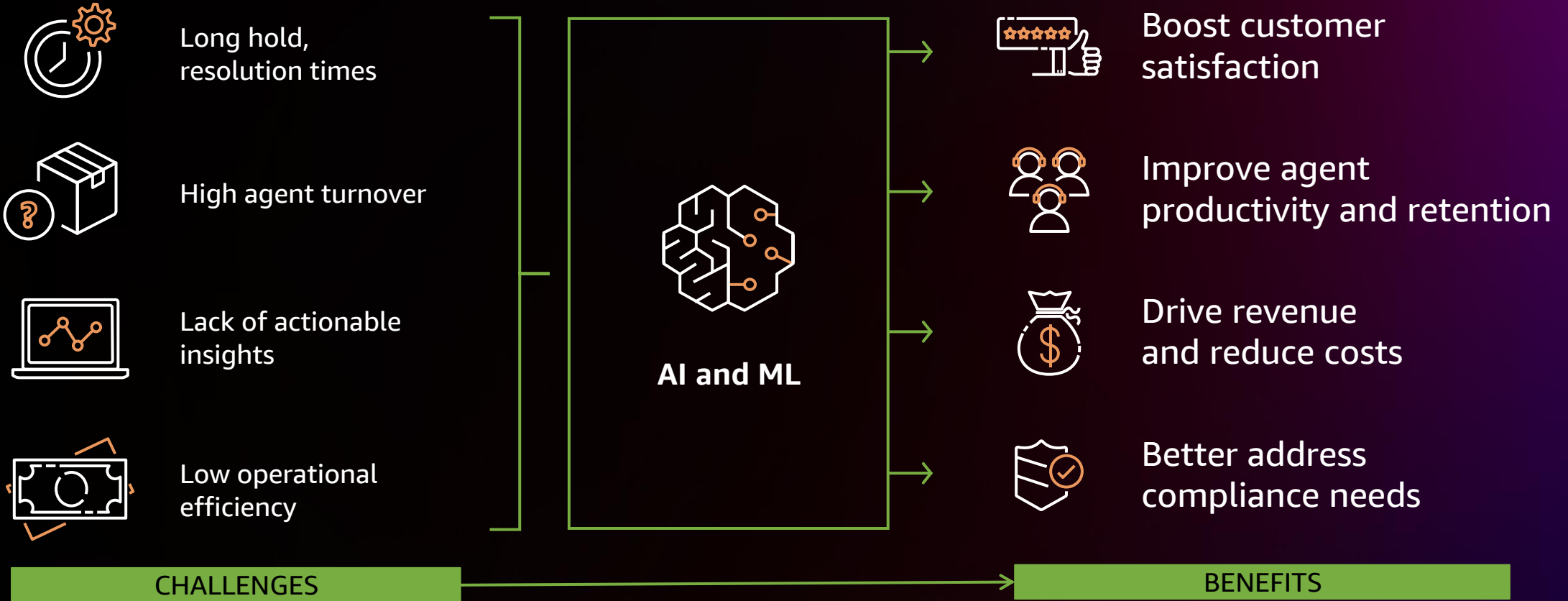
- Long hold or resolution times
- Too much data but a lack of actionable insights
- Low agent productivity and operational efficiency
- High agent churn

prod-livepolling.awseventservices.com

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Using AI to solve contact center challenges



Two flexible options for your contact center goals

ADD AI/ML TO THE CONTACT CENTER OF YOUR CHOICE



AWS CCI solutions

Add AI to existing on-premises
and cloud contact centers



Amazon Connect

Easy-to-use cloud contact center with
built-in AI/ML capabilities

AWS Contact Center Intelligence (CCI) solutions

ADD AI TO YOUR EXISTING CONTACT CENTER



CCI solutions use a combination of AWS AI services that address 3 main use cases in any contact center — with no ML expertise required

Support contact centers such as

 GENESYS™

8x8

:talkdesk®


CISCO

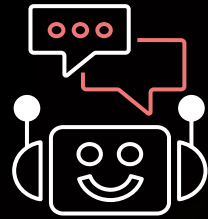
AVAYA

... and many more!



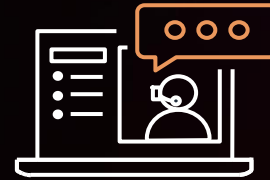
AWS CCI solutions use cases

ADDRESSING 3 PRIMARY JOBS WITH AI AND AUTOMATION



Self-service virtual agents

- Answer calls without a live agent
- Offload repetitive queries to virtual agents, reduce employee frustration
- Reduce call transfers with intelligent routing to improve agent productivity



Real-time call analytics & agent assist

- Alert supervisor to help improve customer satisfaction
- Provide agents with actionable insights and easy search capabilities from the knowledge base
- Capture insights like customer sentiment, call intent, and more



Post-call analytics

- Identify trends and business improvement opportunities to drive revenue
- Assess agent performance and monitor compliance
- Improve employee retention, reduce operational costs

Powering AWS CCI solutions and Amazon Connect

AWS AI LANGUAGE SERVICES

Conversational
AI



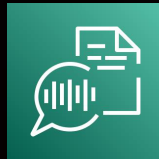
Amazon
Lex

Text to
speech



Amazon
Polly

Speech
to text



Amazon
Transcribe

Intelligent
search



Amazon
Kendra

Natural language
processing



Amazon
Comprehend

Machine
translation



Amazon
Translate

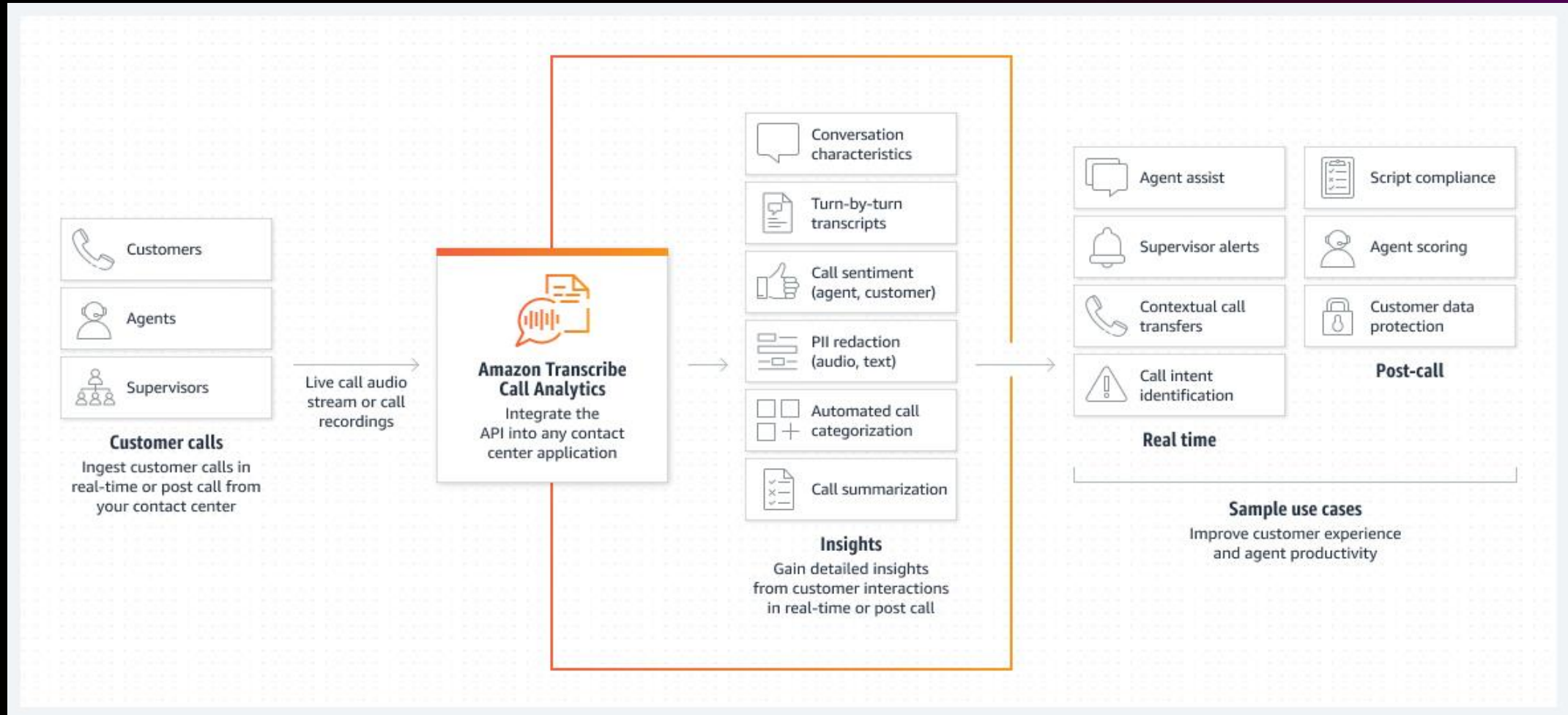
Voice connector
(SIP)



Amazon
Chime SDK

Announcing

AMAZON TRANSCRIBE – REAL-TIME ANALYTICS DURING LIVE CALLS



Poll: What contact center platform does your company operate on?



- Amazon Connect
- Genesys
- Other on-premises platforms
- Other cloud platforms

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Poll: Which AI/ML contact center solution are you looking to implement or improve in the next year?



- Self-service virtual agents
- Real-time call analytics
- Agent assist
- Post-call analytics

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JPMorganChase – Using AWS CCI solutions to solve contact center challenges

REAL-TIME CALL ANALYTICS AND AGENT ASSIST



Technology at JPMorgan Chase

ADOPTING CLOUD BASED TECHNOLOGIES, AI, MACHINE LEARNING, AND DATA SCIENCE

- Process ~\$9–10 trillion dollars in payments
- Serve 80% of Fortune 500 companies who bank with us
- Operate as the bank of choice for approximately half of US households
- AI/ML drives innovation and smoothly manages our technology estate, consisting of :
 - 6K+ applications
 - 500 PB data storage
 - 270K+ virtual workspaces

Chase – Overview

DELIVERING EXCEPTIONAL CLIENT SERVICE; ACTING WITH INTEGRITY AND RESPONSIBILITY; SUPPORTING THE GROWTH OF OUR EMPLOYEES



66M households
5M small businesses

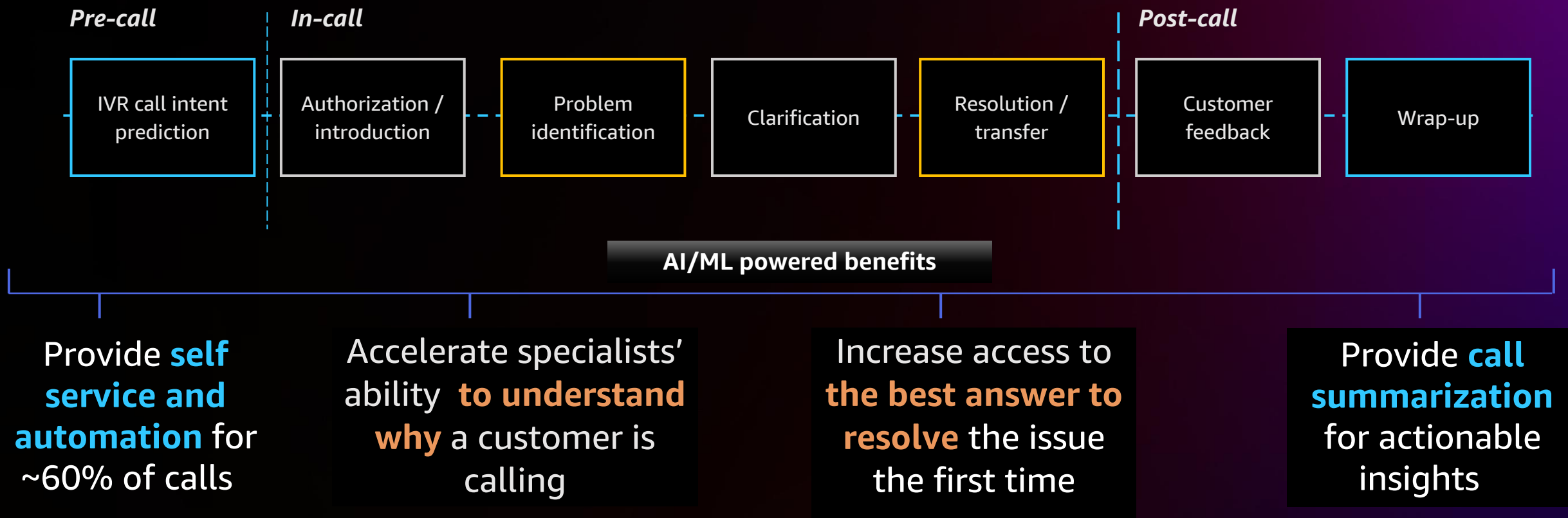


61.9M digitally active
48.9M mobile



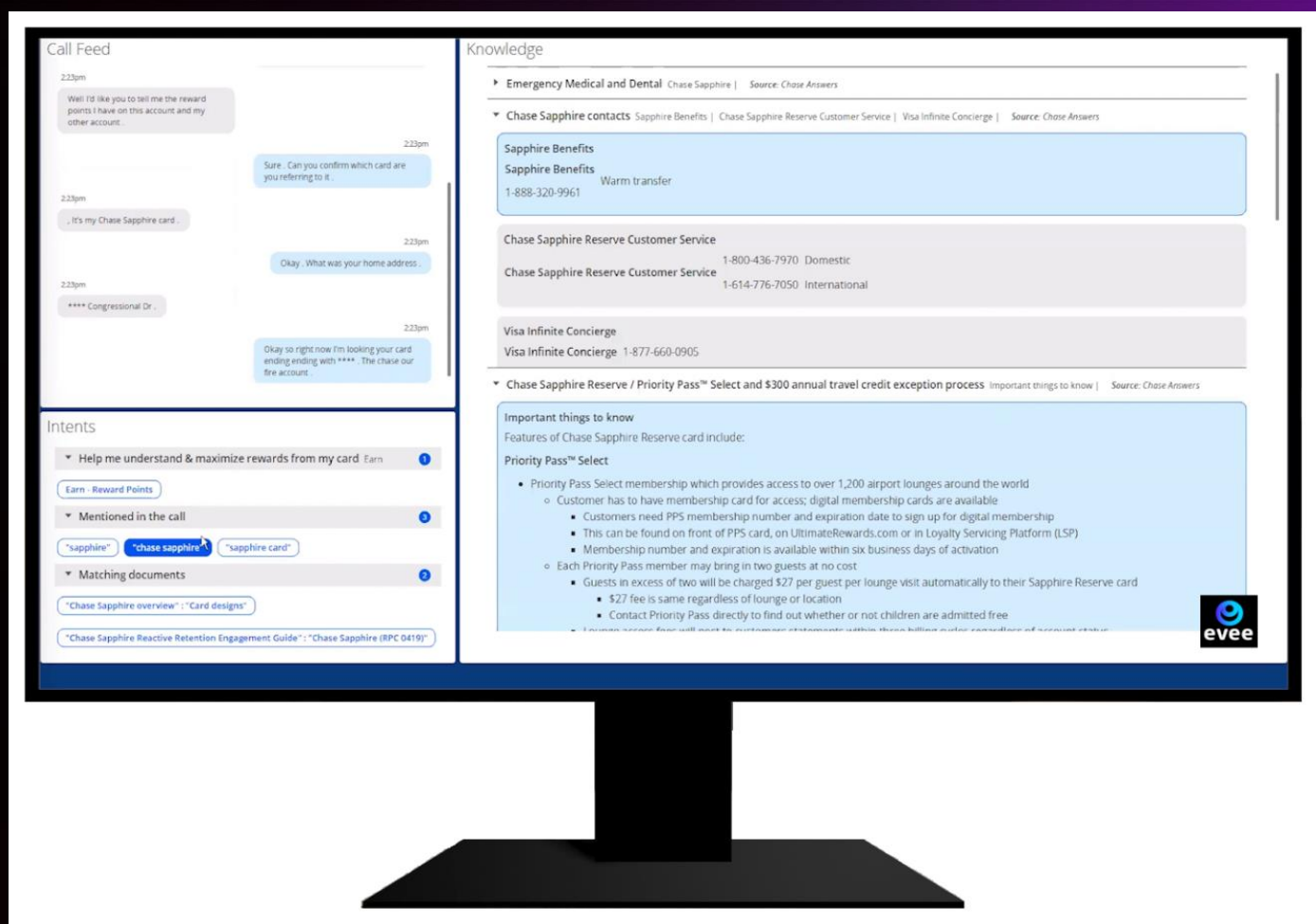
32M calls to our
contact centers

Chase – Call center experience



How it all started

Real-time Virtual Agent Assistant EVEE was born



Increased

FIRST CALL RESOLUTION



Reduced

OPERATING COST



Improved

AGENT SATISFACTION



Improved

CUSTOMER LOYALTY



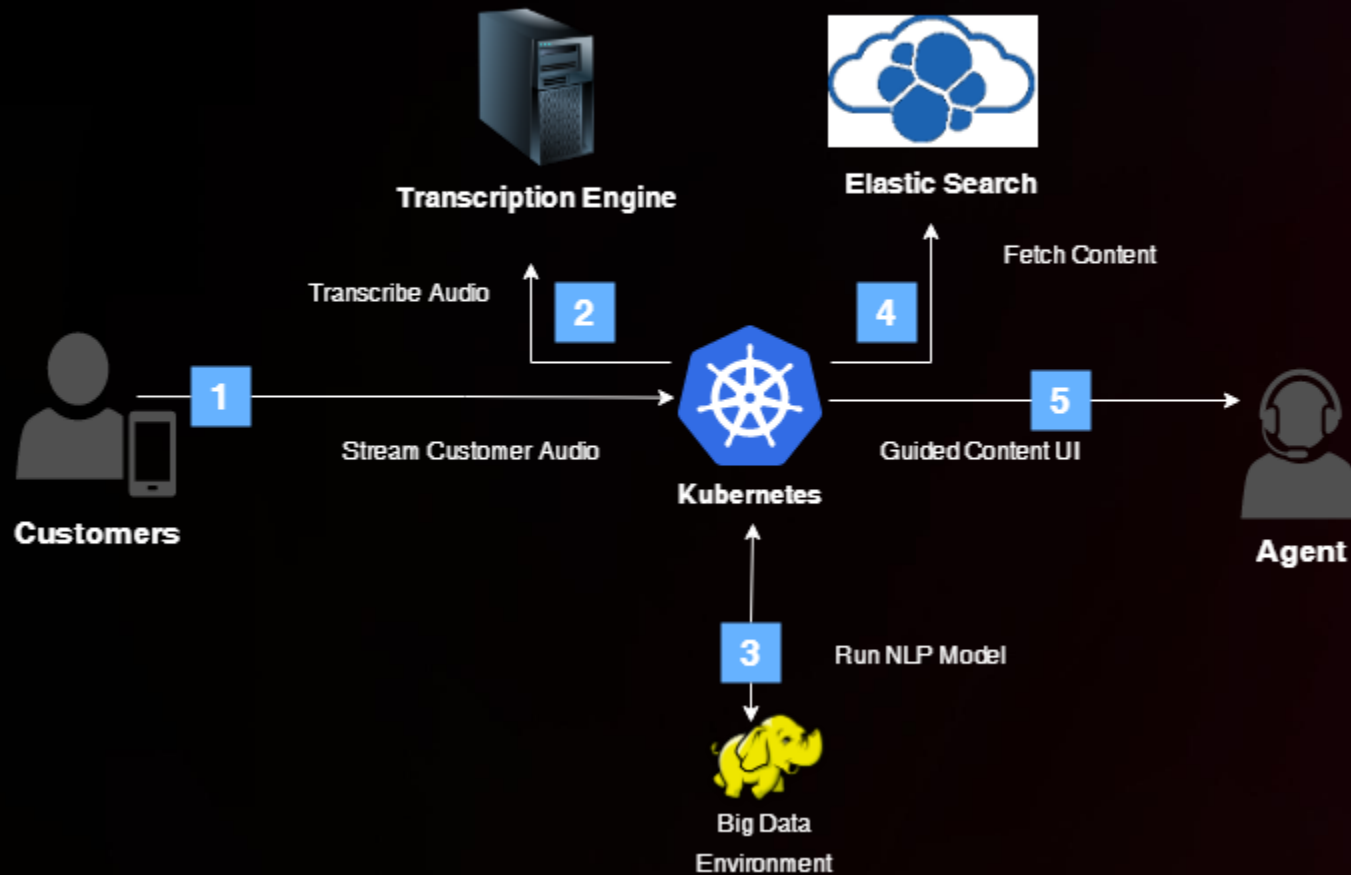
Accelerated

AGENT EDUCATION



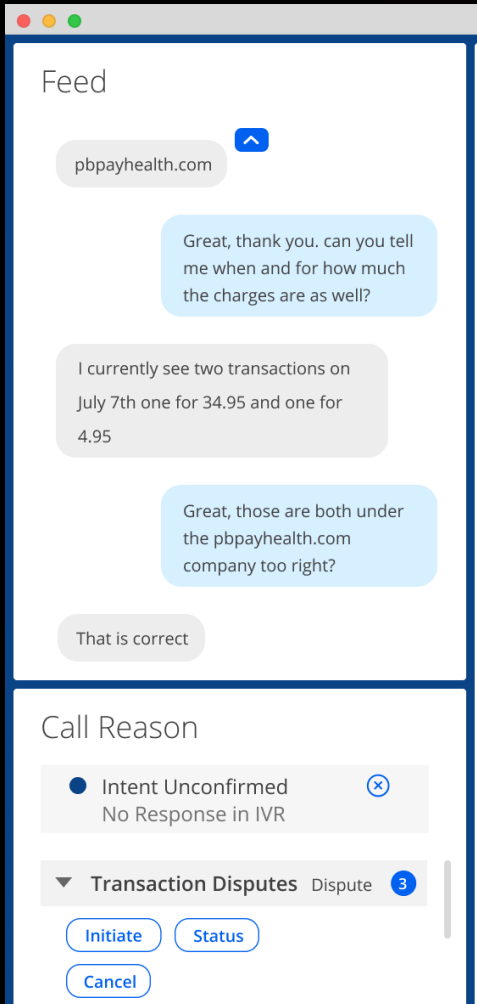
Agent assist on-prem architecture

WHERE WE STARTED



1. Customer audio is streamed real time
2. Audio is transcribed using an on-prem transcription engine
3. The transcribed text is through a NLP model to produce the intent
4. The intent from the model is sent through elastic search to fetch relevant content
5. The real time guided content is shown to the agent

Migration to **real-time transcription** using **Amazon Transcribe**



- **Improvement in word error rate over incumbent service of ~12%**
- **Out-of-the-box automated redaction of personally identifiable information**
- **Redirection of ~3 FTE developers from dedicated support to new feature delivery**
- **Pilot users called out increase in accuracy in user acceptance tests**
- **Enabled call intent ML models to analyze calls parallel to transcription API**

Next phases



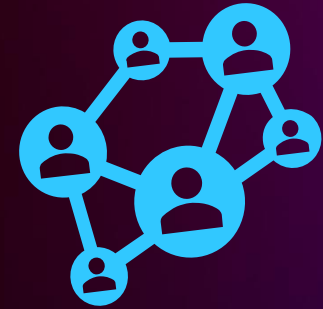
Call reason accuracy drives improved experiences



Call summary automation reduces "general inquiry" by >20%



Transcription output can be used as training data for predictive modeling



Enables a more seamless omnichannel customer experience



We aim to deliver the right answers to our specialists at the right time

Amazon Kendra suggested answers

Current **rewards** products

Current **rewards** products. **Amazon Prime Rewards Visa Signature card: RPC 0510 - Fee \$0.**
Amazon Rewards Visa Signature card: RPC 0441 - Fee \$0

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▶ Document fields  



What are Amazon Kendra suggested answers? [Info](#)

Sort: Relevance ▼ ↓

Current **rewards** products

...Current **rewards** products. **Amazon Prime Rewards Visa Signature card: RPC 0510 - Fee \$0.**
Amazon Rewards Visa Signature card: RPC 0441 - Fee \$0...



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Amazon Prime

...fee of \$12.99, plus taxes as applicable). **Amazon Prime Student** is usually \$49 annually, plus taxes as applicable and then bills at the full price of \$119 after four years. Upon instant approval, the **Amazon Rewards Signature Visa Card** is automatically made the default payment method for **Prime...**

[https://\[redacted\]section.txt](https://[redacted]section.txt)

▶ Document fields  

Earning **amazon.com Rewards**

...Signature Visa credit card customers to change to the **Amazon Prime Rewards Signature card.**

Evaluating **Amazon Kendra** for retrieving the best knowledge management answer for our specialists resulted in:

- Ability to incorporate agent feedback to improve answer accuracy
- Out-of-the-box filtering capability
- Ability to add content from multiple sources and formats
- Reduction in dev time from weeks to days

Champions are now a part of our development lifecycle

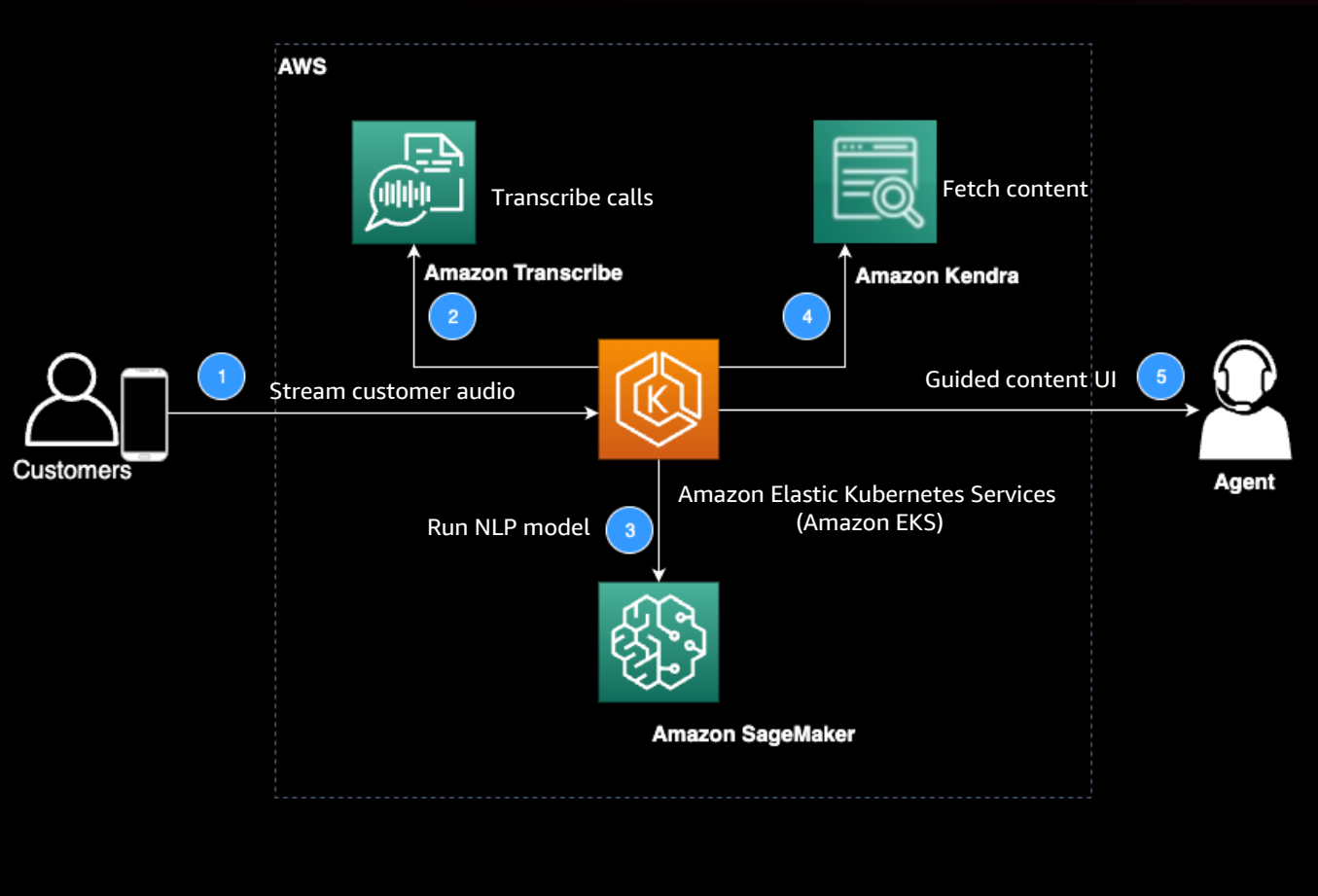


User acceptance testing is now done with our model office, staffed with phone specialists who:

- Grade accuracy of call intent models
- Grade relevance of knowledge management articles
- Provide feedback and curate training data for optimization of models
- Collect feature requests for the tool

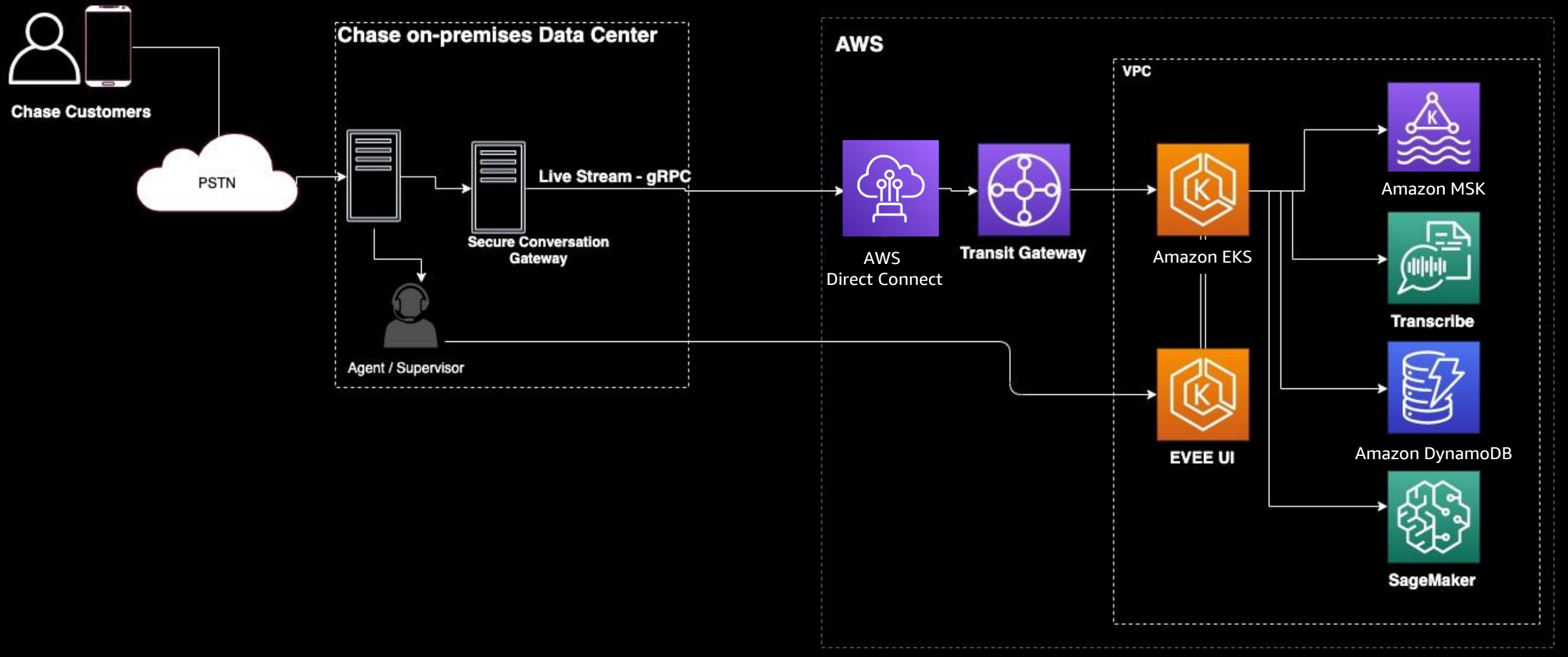
Real-time call analytics and agent assist

REFERENCE ARCHITECTURE

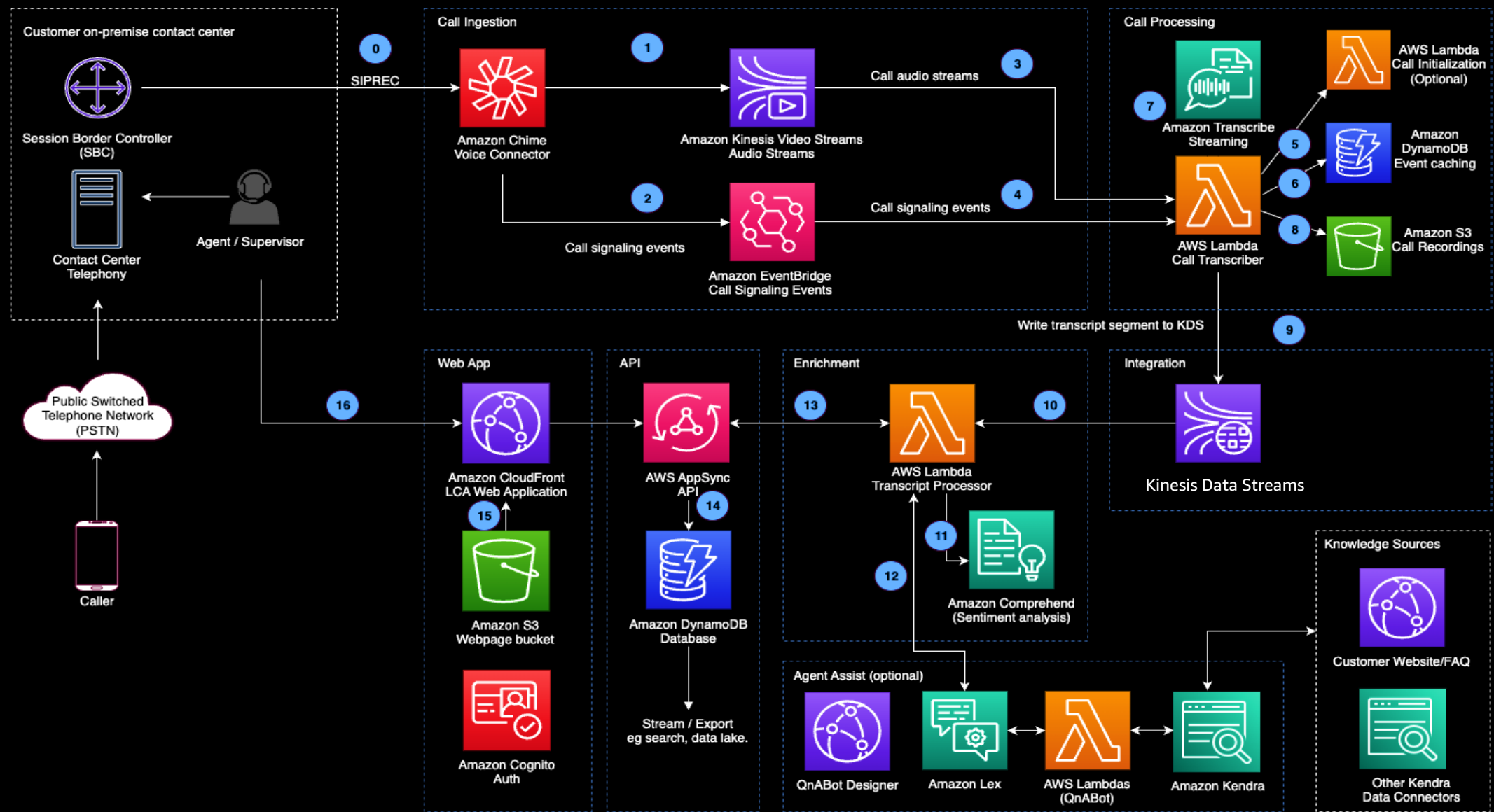


1. Customer audio is streamed real time into AWS
2. Audio is transcribed using Amazon Transcribe
3. The transcribed text is through a NLP model to produce the intent
4. The intent from the model is sent through Amazon Kendra to fetch relevant content
5. The real-time guided content is shown to the agent

EVEE public cloud architecture



Build transcribe live call analytics with a few clicks

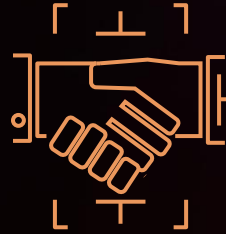


AWS CCI next steps



DISCOVERY WORKSHOP to PROOF OF CONCEPT

- Identify the use case
- Determine KPIs
- Do a workshop/
immersion day
- Start a POC



WHO CAN HELP

- Work with AWS
experts
- AWS ProServe
- ML Solution Labs
- Data Labs team



AWS CCI PARTNERS

- Contact center platforms
- Consulting partners
- Independent software
vendors (ISV)



AWS Contact Center Intelligence Solutions
go.aws/ccs

Contact Center Intelligence (CCI) sessions

ID	Session type	Time	Session Title	Location
Monday, November 28				
BIZ310-R	Workshop	10:00am-12:00pm	Improve customer retention with AI-powered contact centers	Level 3, Murano 3306, Venetian
AIM402	Workshop	4:00pm - 6:00pm	Extract AI-driven customer insights using Post-Call Analytics	Level 2 South, Ballroom L, Mandalay Bay
Tuesday, November 29				
BIZ310-R1	Workshop	11:45am-1:45pm	Improve customer retention with AI-powered contact centers	Level 1 North, South Pacific G, Mandalay Bay
AIM403	Workshop	11:45am-1:45pm	Build human-like customer experiences with conversational AI	Level 2 South, Ballroom A, Mandalay Bay
AIM332	Breakout	1:15pm- 2:15pm	WaFd bank delivers enhanced self-service with AWS conversational AI	Upper Level, Cristal 7, Wynn
AIM317	Chalk Talk	2:45pm-3:45pm	AI-powered contact centers are key for successful organizations	Level 1, Montrachet 1, Wynn
Wednesday, November 30				
BIZ204	Breakout	8:30am-9:30am	Optimize contact center outcomes with Amazon Connect	Level 1 North, South Pacific F, Mandalay Bay
AIM402-R1	Workshop	9:15am - 11:15am	Extract AI-driven customer insights using Post-Call Analytics	Level 1, Lafleur 2, Wynn
AIM307	Breakout	11:30am - 12:30pm	JPMorgan Chase real-time agent assist for contact center productivity	Level 1, Encore Ballroom 5, Encore
PEX305	Workshop	3:15pm - 5:15pm	AWS Contact Center Intelligence using AWS AI services	Level 1, Lafleur 2, Wynn
Thursday, December 1				
AIM317	Chalk Talk	1:15pm- 2:15pm	AI-powered contact centers are key for successful organizations	Level 3, 354, MGM Grand
BIZ307	Workshop	2:00pm - 4:00pm	Use AI to live transcribe and translate multiparty video calls	Level 1 North, Islander C, Mandalay Bay



Additional resources



[Live call analytics and agent assist for your contact center with Amazon language AI services](#)
Blog post describing the features and architecture of the AWS CCI live call analytics and agent assist application



[Guidance for Live Call Analytics with Agent Assist on AWS](#)
Guidance on how to setup a LCA with agent assist solution to capture intent and context from conversations, and offer intelligent search features



[Post call analytics for your contact center with Amazon language AI services](#)
Blog post describing the features and architecture of the AWS CCI post call analytics application



[Amazon Transcribe Call Analytics documentation](#)
Public documentation on the underlying Amazon Transcribe APIs with example usage and responses



[AWS Contact Center Intelligence Solutions](#)
Identify the AWS Contact Center Intelligence use case that works best for you



AWS speakers,
more resources
are on [the wiki](#)

Thank you!

Ami Ehlenberger

Vafa Ahmadiyeh



Please complete the session survey in the **mobile app**

