



**Radisys**

SOLUTION BRIEF

## Add the Power of Conversational AI and Speech Analytics to Voice and Video Communications

Throughout the evolution of communication technologies, the mantra of “voice is king” rings loud and clear. Voice is now becoming a preferred way of interacting with devices and applications due to the popularity of smart speakers, voice-enabled applications, and conversational artificial intelligence (AI). Today’s communications service providers are looking to add conversational intelligence to their services to capitalize on the growing market. By combining the power of real-time communication and actionable speech analytics, communication service providers are well-positioned to disrupt the market with unique conversational AI services such as “in-call” virtual assistant for business conferencing applications, biometric authentication, real-time language translation, immersive customer engagement with voice-enabled commerce, and more. While in-call speech recognition has traditionally been expensive, resource-intensive, and highly complex to implement, Radisys Engage In-call Assistant overcomes these shortcomings.

**The Radisys Engage In-Call Assistant**—a carrier-grade speech analytics as a service—is an integrated voice processing solution that combines the ability to “listen and act” on spoken commands. The cloud-based platform—with flexibility for both public and private cloud deployments—provides a suite of programmable conversational AI tools to

power new, innovative, and intuitive services. Engage In-Call Assistant integrates with the telecom infrastructure and supports Web and mobile app as well. It gives service providers the performance, security, quality, and control they need to build scalable high-value customer experiences over their network services and as over-the-top applications.

## The Growth of Conversational AI Powered Applications and Services

As smartphones and other apps revolutionize people's lives, users are increasingly interacting with applications and devices through conversation. With Siri, Cortana, Alexa, and Google in smartphones, smart speakers, and automobiles, person to application speech interaction has taken off globally. And it makes sense: voice is the natural and intuitive way for people to interact. According to Edison Research, most consumers who own a smart speaker want the capabilities to be ubiquitous—available at home, on the road, and at work. The global conversational AI market is projected to grow from \$4.2 billion in 2019 to \$15.69 billion by 2024, growing at a rate of 30.2%<sup>1</sup>.

The global conversational AI market is projected to reach **US\$15.69 billion by 2024.**

Businesses in vertical markets are voice-powering their applications to ensure that customers and clients have intuitive access to those services. These industries include automotive, consumer, banking, financial and insurance services, government, retail, healthcare, military, education, legal services, aerospace, utilities, travel and tourism, telecommunications, and many more.

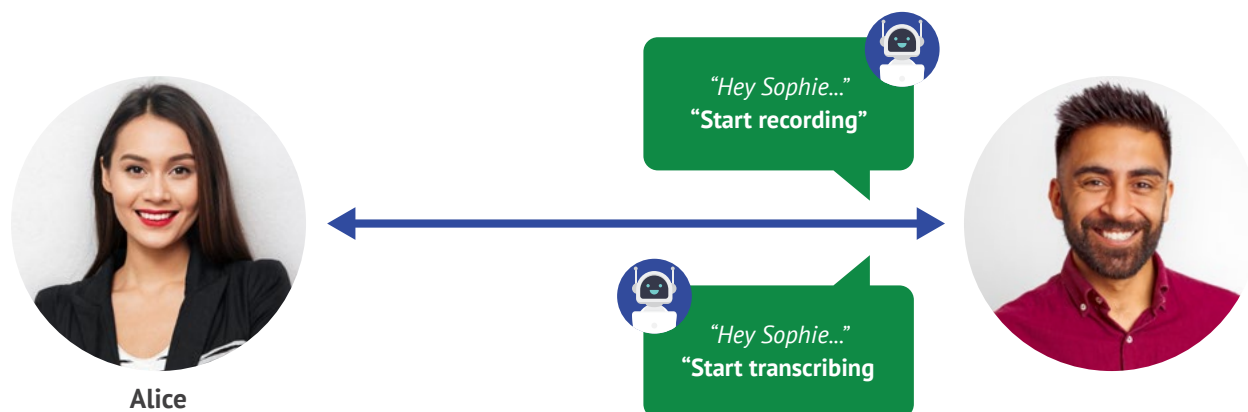
## Opportunities and Challenges for Communication Service Providers

Communication Service Providers (CSPs) are well-positioned to take advantage of the voice-enablement trend. While many service providers have started delivering smart speaker or virtual assistant services, those services are offered independent of their telephony service.

CSPs have a tremendous opportunity to disrupt the market with “In-Call” digital assistant and Speech analytics services.

CSPs sit on a gold mine just waiting to be tapped. They have millions of subscribers (both consumer and business) using their network daily for voice, video and text chat services over secure and reliable networks. These networks can fill a gap that the smartphone or smart speaker speech-enabled virtual assistant services cannot reach—in the context of phone calls. In addition, CSPs can apply real-time conversational analytics to enhance communication experiences for businesses and consumers.

<sup>1</sup> Conversational AI Global Forecast by Markets & Markets



However, the traditional approaches to in-call voice-enabled services that can “listen, interpret, and act” are complex and costly.

The high Capex and Opex and the lack of in-house skills are prohibiting CSPs from incorporating cost-effective automation and voice intelligence with their communication services, leaving the mass market—a significant opportunity—untapped.

## Bring the Power of Actionable Speech Analytics to Voice & Video Communications with Engage In-Call Assistant

With deployments in over 150 operators’ networks globally, serving over 1.5 billion subscribers, Radisys is an industry leader in advanced media processing for real-time communication services (such as VoLTE, Unified Communications, Conferencing, Contact Center / Customer Service, and WebRTC). Radisys Engage is a communication and digital engagement platform—a software as a service (SaaS) solution—that supports many programmable conversational AI-based voice and video analytic services. The Engage In-Call Assistant delivers speech analytics as a service, combining the ability to process speech ranging from a limited vocabulary of keywords and commands to natural language interaction in the context of voice and video calls. It offers a much more cost-effective alternative to traditional advanced speech recognition (ASR) approaches and lowers the cost and complexity of deploying and maintaining multiple network elements.

### Challenges with Delivering Speech-Enabled In-Call Services

**Cost:**

Operational and capital costs for natural language speech recognition, transcription, and text-to-speech systems

**Complexity:**

Complexity of integration with telephony infrastructure and maintenance of multiple external network elements

**Quality:**

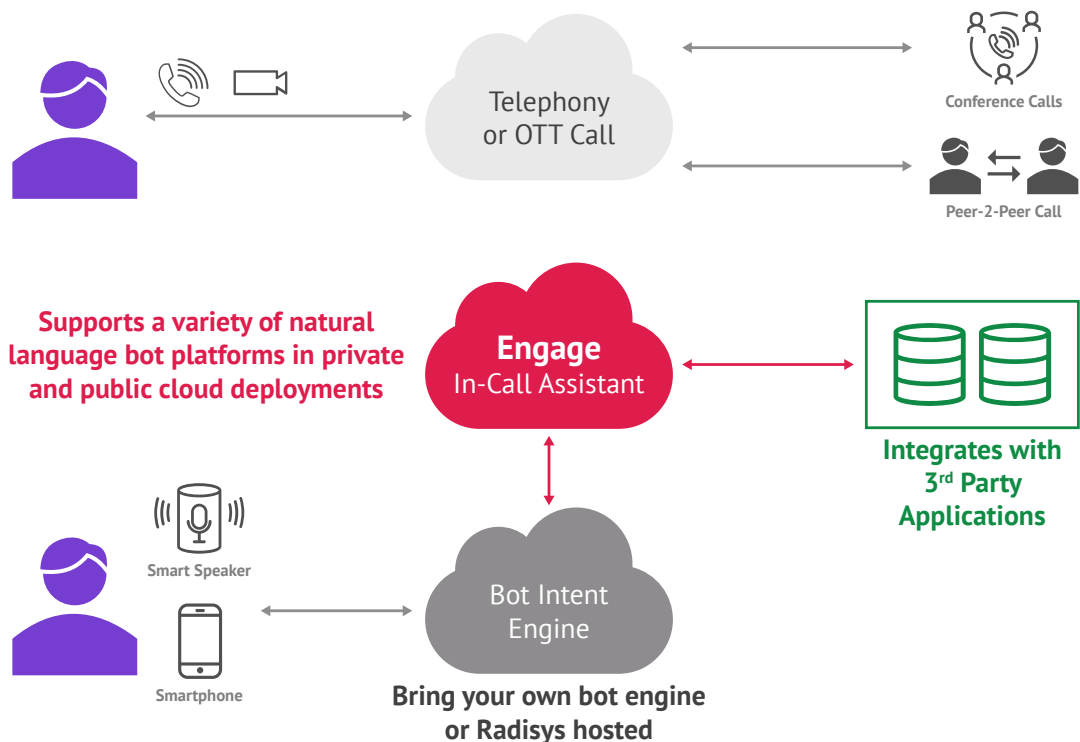
Ensuring accuracy of speech recognition for callers on the go and with unpredictable network conditions

**Privacy:**

Users can be wary of interacting with cloud service providers that have murky privacy policies.

**Reach:**

Locking into one cloud speech recognition solution can limit access to users who speak fewer common languages.



The cloud-based In-Call Assistant can be deployed in the service provider network or hosted by Radisys in a public cloud. It can seamlessly integrate with the service provider’s digital assistant infrastructure, the telephony infrastructure, and any 3rd party applications to deliver conversational AI-powered services to millions of subscribers and businesses.

### Generate New Revenue Streams with In-Call Actionable Analytics

The advanced speech and video processing in Engage In-Call Assistant solution enables actionable analytics that invoke background noise reduction, biometric authentication, sentiment-triggered alerts, and real-time language translations. With in-call wake-word detection capabilities, the system can also provide personal virtual assistant services to callers, allowing them to speak words to invoke actions like “hold my call,” “mute my line,” “record the call,” and “transcribe the call,” to name a few. The Engage In-Call Assistant solution creates new opportunities for service providers by enabling cost-effective and innovative digital engagement applications for multiple verticals.



#### USE CASE 1: REAL-TIME BACKGROUND NOISE REDUCTION

Working from home or participating in conferences in unpredictable, noisy environments is the new way of life. These transient noises are incredibly distracting both to the speaker and the bridge participants, reducing call effectiveness and team productivity. Traditional simple noise filters and basic noise cancellation algorithms are effective in limited scenarios. Businesses need better systems that can filter real-world noises like a crying baby, barking dogs, emergency sirens, airport announcements, and even keyboard clicks.

The Engage In-Call Assistant leverages AI-powered analytics to immediately identify noises and eliminate these distractions from important calls. Without any user action, this service can ensure that the C-Level executive conducting a conference call from home will not have to apologize when a delivery driver rings the doorbell or for the loud-barking dog in the background of the call.

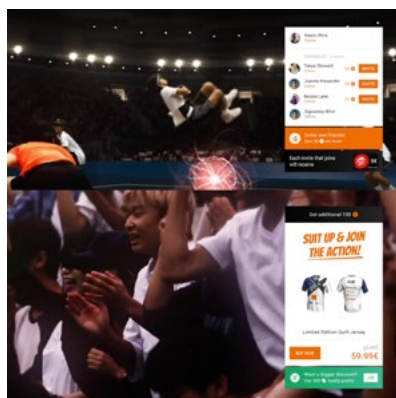


### USE CASE 2: PERSONAL VIRTUAL ASSISTANT SERVICES & BIOMETRIC AUTHENTICATION FOR BUSINESS COLLABORATION APPLICATIONS

Most speech recognition service innovation is currently happening in consumer applications that depend on a smart speaker which connects to a cloud via the Internet. The ability to provide similar device-independent personal virtual assistant services for business applications remains an open gap. CSPs have a tremendous opportunity to disrupt the market by incorporating personal digital assistant service within their consumer voice and business communication and collaboration services.

The personal virtual assistant service enabled by Engage In-Call Assistant simplifies performing multiple tasks such as: muting the bridge, adding a user to the call or bridge, authenticating a new attendee, recording a call, transcribing a call, etc. The automatic detection of keywords to invoke actions makes these features and services intuitive for users. It also establishes sticky services that will retain business and consumer customers who relish these new valuable experiences.

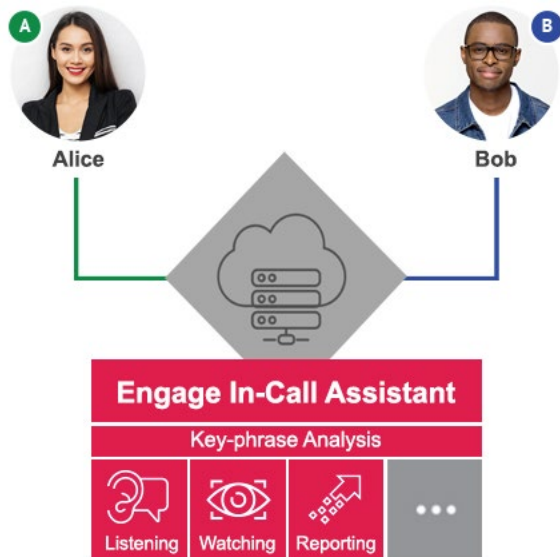
Also, by linking the power of Engage In-Call Assistant’s cloud-based computer-vision and speaker-verification solutions, service providers can enable biometric authentication for restricted collaboration session. The cost-effective in-network solution scales as needed, offering CSPs new monetization services.



### USE CASE 3: CONVERSATIONAL COMMERCE IN IMMERSIVE SOCIAL COLLABORATION APPLICATIONS

The value of in-call personal virtual assistance equally applies in social collaboration settings where friends and family gather online to play an online game or watch an online event. [Here is a video](#) of an immersive social collaboration application that is designed to help simplify a customer’s digital life while improving communication service provider’s engagement with customers. Radisys partnered with several industry leaders in a collaborative project as part of the TM Forum’s Catalyst “Ready Telco One” program and provided the speech-enabled user interaction intelligence and virtual and augmented reality (VR/AR) foundation for the Catalyst project.

The Engage In-Call Assistant can detect voice-commands used in augmented reality (AR) and virtual reality (VR) applications to increase the enjoyment of immersive events. The system does more than monitor for offensive language, answer questions related to player statistics, and offer special product promotions. The intuitive system can also be teamed with other applications, such as e-commerce, to improve user experiences. For instance, the voice-detection capabilities can process virtual transactions, and even order food or merchandise for delivery.



#### USE CASE 4: CONVERSATIONAL ANALYTICS FOR LIVE ASSISTANCE TO SUPPORT AGENTS

Marketing is an area where in-call keyword detection can make a significant impact for communication providers. The Engage In-Call Assistant can be programmed to track certain words and phrases in conversations for real-time actions and post-call processing.

The Engage In-Call Assistant solution’s voice analytics element is entirely programmable, providing the means to capture, analyze and act based on target phrases “heard” during a call. For example, a caller mentioning the need to upgrade their phone or asking about a new product can automatically trigger an alert to the customer support agent to mention incentives on selected products. These automated

alerts create sales opportunities for the business while enabling intelligent customer support for the agent that drives overall customer satisfaction. Similar capabilities can be used to assess the customer satisfaction scores, agent performance, customer interest in products and services, quality of a sales call and more.



#### USE CASE 5: REAL-TIME LANGUAGE TRANSLATION SERVICE

With in-call voice recognition using natural language processing, a business can quickly adapt the engagement to better support the customer. With the service “listening,” it can detect an alternate language during a call and prompt that user if they prefer to “continue” using a different language, and automatically start using the different language.

It is very natural for a person who does not speak a particular language to ask if the person speaks an alternative language. For example, an Italian speaker connecting to an English caller may ask “do you speak Italian?” Likewise, if the person knows that they need translations to English at all times, they say the wake-phrase “translate English” to instruct their

personal assistant to either connect them with an English-speaking agent or use a real-time translator that converts the call to English.

Each of these... distinct approaches leverages the Engage In-Call Assistant system to detect either of the key phrases “translate English” or “speak Italian”—or French, German, Spanish, or any other programmed language—to begin providing automatic language translations for the requester. The Engage In-Call Assistant enables multi-language translations service that can provide accurate, real-

time translations of the conversation to foster more effective communication in the preferred language. This in-line service helps businesses prove their customer-centered strategy by communicating in the caller's preferred language.

Businesses can further extend their positive customer experience by retaining this preferred language information in a customer record tied to the caller's number. With that information restored, subsequent calls begin with the preserved language. Speaking the key phrase at any time can trigger the system to respond to a caller's request to change the language.

## Summary

The opportunities for incorporating intelligent in-call voice & video analytics are endless. The Radisys Engage In-Call Assistant delivers high-value benefits and advantages to communication service providers by allowing them to innovate services that sharpen their competitive edge in today's marketplace. As operators strive to reduce churn and grow their ARPU associated with enterprise and consumer subscribers, empowering applications and service offerings with cost-effective intelligent analytics can differentiate services and build a strong ROI that improves their competitive edge.

## KEY BENEFITS

**Enables Service Providers to Accelerate Delivery of Differentiated "In-Call" Voice-Enabled Services at Significantly Lower Cost.**

- Enables new services without requiring additional software downloads on user devices and deploying expensive NLP solutions for all calls
- In-line always-on "in-call" speech processing at a fraction of the cost
- Integrated intelligent noise reduction enhances the quality of calls and speech recognition
- Accelerates go-to-market of new services using cloud-based "as a Service" model
- Flexibility to bring your own network services and deploy the solution in a private cloud or on a Radisys hosted public cloud

## Why Radisys

- Radisys develops transformative solutions that propel operators toward becoming digital experience providers with integrated apps that promote data consumption.
- We offer proven strategies and end-to-end success management support to enhance operators' market position.
- 30 years of product and operational excellence serving the telecom community.
- Our team of experts collaborate with you to introduce a full suite of locally relevant apps and digital capabilities.
- Radisys helps ensure operator success with a seamless implementation of a market-specific strategy.



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