

Voice AI

Conversational Intelligence for Operator Networks



What if every phone call could be smarter and more meaningful? By embedding AI-enhanced features directly into native calls, operators can transform the trillions of calls made globally each month into value-creating interactions for consumers and businesses, by enabling capabilities such as real-time translation, call transcription and summarization, fraud detection, virtual AI assistants, business insights, and intelligent customer support.

Era of Voice AI in Traditional Telecom Networks

For decades, the nature of voice calling—unlike messaging, video, and internet-based applications that have been transformed by mobile data—has remained largely unchanged. This is despite significant evolution in underlying networks and technologies, from analog to digital, circuit-switched to IP, and advances in 4G and 5G calling, including superior audio quality. However, the combination of underlying network bandwidth and performance, along with the potential for enhanced capabilities enabled by AI, natural language speech processing, and 5G new calling, has ushered in new opportunities for added value and differentiation.

Voice calls can now be enriched with conversational intelligence, translation, transcription, and intelligent assistants, transforming traditional phone calls into an interactive, data-rich, and monetizable channel. This marks a pivotal moment for operators and enterprises to reimagine voice as a platform for innovation.



Figure 1

In North America alone, traditional mobile networks carry an estimated 280 billion voice minutes per month (see figure 1). Globally, monthly voice telephony traffic is estimated at approximately 1 trillion minutes (see figure 2).

These statistics underscore the enormous potential for Voice AI to unlock new opportunities. By transforming everyday calls into actionable insights, Voice AI enables a new generation of conversational intelligence applications. These applications deliver meaningful value to consumers through enhanced experiences such as real-time translation, call summarization, and virtual assistance, while also benefiting network operators by

creating new revenue streams, improving service quality, and strengthening customer engagement. Leveraging the voice network, operators can provide more secure and responsive services instead of relying on unmanaged over-the-top internet connections.



Figure 2

AI Powering Conversational Intelligence (CI)

Conversational Intelligence refers to the use of AI and machine learning to understand, generate, and manage human-like conversations. It goes beyond simple voice recognition or text processing by enabling systems to:

- Understand context: Grasp the meaning behind user queries, not just keywords.
- Interpret intent and sentiment: Detect emotions, urgency, and preferences.
- Generate human-like responses: Provide accurate, context-aware answers.
- Learn over time: Continuously improve from interactions to enhance accuracy and personalization.

CI is the foundation for applications such as AI chatbots, voice- and video-based virtual assistants, customer support automation, and real-time language translation.

AI-powered conversational intelligence achieves its full transformative potential only when seamlessly integrated into traditional voice networks. Eliminating the need for app downloads or additional software, while providing ubiquitous global coverage, enables intelligent, context-aware interactions directly over the channels users already rely on. This approach not only enhances the end-user experience but also empowers network operators to deliver new value at scale, creating a truly universal and frictionless conversational ecosystem.

Radisys enables AI-powered conversational intelligence applications as an integrated solution within operator IMS (IP Multimedia Subsystem) core networks by embedding AI services into the session control and media layers.

- S-CSCF / AS Integration: AI logic connects via Application Servers (AS) to manage call sessions and invoke conversational services in real time.
- Media Handling: Media Resource Functions (MRF) can route voice streams to AI engines for speech recognition, natural language understanding, and response generation.
- APIs and Orchestration: Network APIs allow dynamic control, routing, and analytics, enabling seamless, real-time conversational intelligence directly over traditional voice calls.

This enables access to AI conversational intelligence applications on essentially any voice call traversing natively through the telecom operator network, providing truly seamless global reach.

Voice Conversations that Do More: Real-World Applications

AI-enabled conversational voice calling delivers significant value to consumers, enterprises, and network operators alike. The following examples illustrate some of its transformative applications:

Live Language Translation

AI-powered live language translation enables seamless multilingual conversations in real time, breaking down communication barriers for both consumers and businesses. By integrating directly into voice and messaging networks, it allows users to interact naturally without installing additional apps.

Call Transcriptions and Summarization

Automated call transcription converts voice conversations into accurate, searchable text, capturing every detail for compliance and record-keeping. Summarization algorithms condense lengthy discussions into key points, saving time and improving decision-making efficiency.

Fraudulent Call Detection

Conversational AI can analyze voice patterns, call behavior, and metadata to identify potentially fraudulent or spoofed calls in real time. This proactive detection helps protect consumers and enterprises while reducing financial and reputational risks.

Virtual Assistants and Agents

AI virtual assistants provide intelligent, context-aware responses across voice and messaging channels, automating routine tasks and personal interactions. They enhance productivity by enabling users to complete actions, retrieve information, and manage workflows hands-free.

Conversational Business Insights

By analyzing voice and text interactions, AI uncovers actionable insights about customer sentiment, trends, and preferences. These insights empower businesses to optimize products, services, and operational strategies based on real-time conversational data.

Customer Service and Support Agents

AI-driven customer service agents handle inquiries, troubleshoot issues, and escalate complex cases efficiently across multiple channels. They improve customer satisfaction, including determining sentiment, while reducing operational costs and agent workload.

Accessibility and Call Quality

AI improves the calling experience through real-time voice enhancement, noise reduction, and intelligibility optimization, ensuring clearer conversations in challenging environments and better accessibility for hard-of-hearing users. Network-integrated solutions such as Engage Clarity complement these capabilities by further enhancing intelligibility without apps or special devices.



Monetizing Conversations, Shaping Tomorrow

AI-powered voice is redefining how value is created across the telecom ecosystem. For the first time, voice conversations are no longer just a utility but a monetizable channel that drives efficiency, engagement, and growth.

Operators

For operators, AI-powered voice services offer a path to redefine the value of voice. By embedding intelligence into their networks, operators can drive incremental revenue for both business and consumer subscribers, create differentiated service tiers, bundle advanced capabilities into subscription plans, and improve customer loyalty while also lowering operational costs. Compelling services that leverage unique carrier and user information can also increase stickiness by creating higher switching barriers.

Enterprises and SMBs

For businesses, intelligent voice services turn routine conversations into a strategic asset. Every interaction becomes a source of insight that can improve customer engagement, strengthen compliance, and enhance productivity. Beyond efficiency gains, enterprises and SMBs can personalize services, improve customer satisfaction, and explore new business models where conversations drive measurable business outcomes.

Consumers

For consumers, calling is enriched with greater convenience, accessibility, and security. AI-powered services add practical value to everyday conversations, making them smarter, more productive, and more trustworthy. This creates a strong incentive for adoption and a willingness to pay for enhanced experiences, while preserving the simplicity of a phone call.

Radisys: Driving the Voice AI-Powered Future

Radisys is uniquely positioned to help operators capture the AI-powered voice opportunity by combining decades of telecom expertise with future-ready innovation. Unlike over-the-top players, Radisys integrates intelligence directly into operator networks, ensuring scale, reliability, and compliance.

Heritage and Expertise in Media Processing

Radisys has a proven legacy of delivering high-capacity, carrier-grade media processing solutions trusted by Tier-1 operators worldwide. This foundation ensures performance, low latency, and operational excellence for AI-enabled services.

Deep Integration into Operator Networks

Radisys embeds AI-powered voice capabilities directly into mobile and wireline IMS networks, spanning session control, signaling, and media layers across both the edge and core. This approach allows operators to deliver advanced services seamlessly within their existing infrastructure.

Engage Digital Platform

At the center is Radisys' Engage Digital Platform (EDP), a flexible and open environment that accelerates service creation. With APIs, visual design tools, and pre-built reference applications, EDP empowers operators and enterprises to rapidly design, deploy, and monetize conversational services tailored to their customers.

By uniting its deep telecom heritage with advanced AI integration, Radisys enables operators to reimagine voice as a foundation for innovation, customer engagement, and new growth opportunities.

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We Help You Succeed!

Radisy's Engage business model is focused on channels and ensuring our customers are successful in servicing their enterprise, SMB, and consumer customers. We have 20+ years of experience in digital services, supporting our OEM, ISV, and reseller channels with products that offer telco-grade reliability, scalability, serviceability, and automation.



Achieve higher double-digit margins



Compete with cost effective solution for SMBs & enterprise



Promote your brand



Training & Support



Professional service to meet custom requirements



Self-Service Developer toolkits



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