Decision Makers' Guide to Enterprise Intelligent Assistants
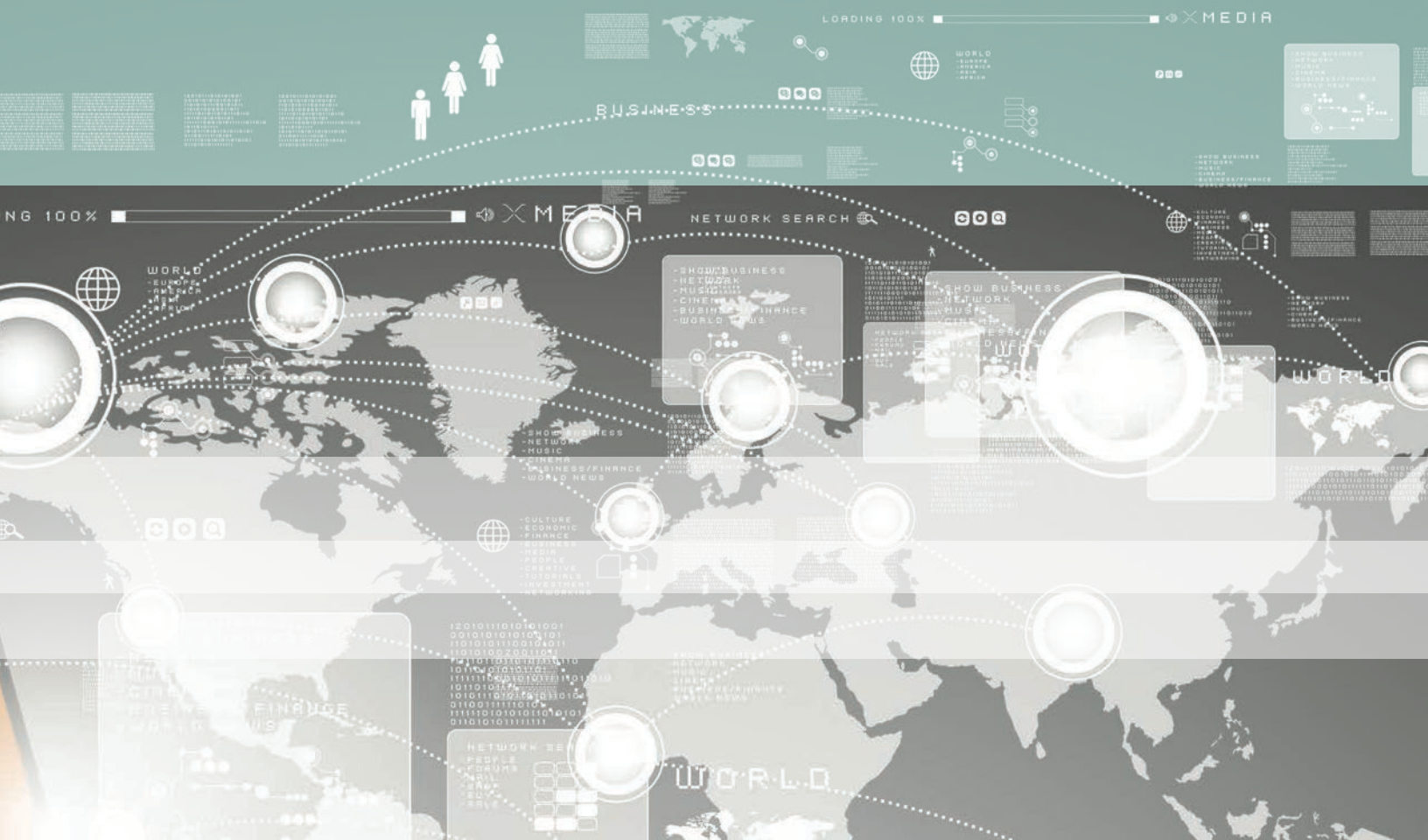
(May 2022)   »

opusresearch

Decision Makers' Guide to Enterprise Intelligent Assistants

(May 2022) »

While it's important to acknowledge we're still in the "early days" in the development and acceptance of Enterprise Intelligent Assistants, the proliferation of chatbots, voicebots and virtual assistants has already reached billions of end users. With a growing audience, the number of use cases will grow as well, and there is no turning back.

Opus Research presents a comprehensive assessment of enterprise-grade Intelligent Assistant solution providers bringing natural language processing, machine learning, AI and analytics to support customer care, self-service, employee assistance, messaging and device control.
This report evaluates 21 firms to better understand enabling platforms & technology, integration points & scalability, track record and future vision for enterprise-scale Conversional AI.

In this document, Opus Research evaluates the offering according to criteria that go beyond the immediate impacts on customer satisfaction and loyalty to address long-term value of insights garnered from analysis of conversations and shared among product development teams, marketing departments and human resources.

Dan Miller, Lead Analyst & Founder, Opus Research
Derek Top, Research Director & Senior Analyst, Opus Research
Scott Baker, Senior Analyst, Opus Research

Opus Research, Inc.
893 Hague Ave.
Saint Paul, MN 55104

www.opusresearch.net

» Table of Contents

Addressing First-Order Concerns for Intelligent Assistants

Customers have spoken! …or texted or messaged. Millions of people routinely now converse with their favorite brands through "voicebots," "chatbots," or dialog boxes in their mobile apps, websites, and messaging channels. To stay competitive, thousands of companies feel compelled to integrate elements of "Conversational AI" into their customer care infrastructures.

Yet, the path is not clearly defined. There are literally thousands of firms or individuals that claim to have the technology and resources to build bots and help companies automate the handling of routine, frequently invoked actions. In this document, Opus Research evaluates the offerings of 21 firms according to criteria that go beyond the immediate impacts on customer satisfaction and loyalty to address long-term value of insights garnered from analysis of conversations and shared among product development teams, marketing departments, and human resources.

Successful Enterprise Intelligent Assistants address the first-order concerns of customers by employing so-called "Conversational AI" to recognize intent expressed in natural language input and respond with consistently correct answers or actions, including the transfer of the conversation to a live customer care agent, when appropriate. From the customer's perspective, the pay-off is faster resolution of issues like "Where's my package?", "Did you receive my payment?" or "How do I cancel my service?." These conversations are a rich source of insights and correct responses that, with the help of machine learning and human supervision, will continue to improve the quality of responses and, customer satisfaction.

Our evaluation gives higher marks to solution providers that take an approach that employs artificial intelligence to augment human intelligence (and vice versa) when deploying intelligent assistants (IAs).

An "agent assist" or "co-pilot" approach to supporting customer care agents in the course of real-time conversations are also well-regarded. So are solution providers that provide the tools and workflows for agents to serve as subject matter experts (SMEs) that can train "bots" to provide the best possible answers over time.

Other attributes that define successful EIA solution providers include:

➤ **Focus on CX and UX:** IAs are the natural user interface through which both customers and employees benefit from Conversational AI.

➤ **Offers for two distinct segments:** Small and medium-sized businesses (SMBs) and newcomers have contrasting needs with experienced enterprises. This is satisfied by tooling that spans so-called "no-code/low code" as well as "pro-code" approaches.

➤ **Place emphasis on outcomes:** Positive outcomes, like task completion, greatly improve customer sentiment and satisfaction with a corresponding positive impact on employee morale and retention.

➤ **Take a cloud-based, multi-vendor approach:** IA solutions leverage all four pillars of the Conversational Cloud: Self-Service, Application integration and Automation; Interaction Processing/Intelligent Routing and Data/Conversational Intelligence.

➤ **Offering significant "zero-day capabilities" remain a factor:** Premium placed on what works "out of the box," including pre-configured conversation models, domain expertise, and connectors to backend systems.

➤ **Pay attention to Orchestration:** To support the training and maintenance of IVAs that carry out asynchronous conversations between companies and their customers and involving access to backend IT systems calls for unprecedented amounts of monitoring and tooling.

➤ **Build communities:** Successful solutions depend on citizen developers (internal) as well as partnerships with system integrators and business process outsourcers as go-to-market partners.
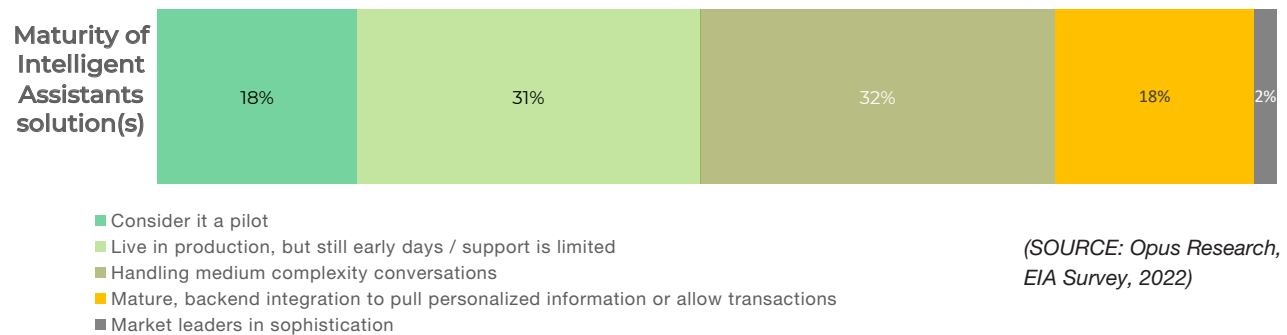
Selection Criteria Anticipate Mature Intelligent Assistants

Opus Research started to monitor implementations of Enterprise Intelligent Assistants more than seven years ago. At that time, only very large companies with budgets surrounding "digital transformation" were making investments in development, deployment, and maintenance of IAs. They were the proverbial "Early Adopters" seeking a competitive edge from gaining experience with new technologies.

In the first quarter of 2022, Opus Research conducted a survey of 250 firms that offer customers access to customer care and other services through bots. It reflects a new reality where less than one-out-of-five (18%) consider themselves in a "pilot" phase of deployment. The rest have already gone live with their intelligent virtual assistants. Roughly one-third of the total see themselves in early days of live deployment, while the same number (32%) are already handling conversations of "medium complexity." [Figure 1 below]

The remaining 20% are, most likely, the Early Adopters mentioned above. Eighteen percent think of their chatbots or voicebots as "mature", thanks to robust connections to the IT systems that house customer records, inventory or transaction processing resources. The other 2% clearly see themselves as "leaders" with highly sophisticated voice or chatbots. They were, most likely, the aforementioned Early Adopters who sought competitive advantage years ago. Today they define and drive demand for new tools and "integrated development environments" (IDEs) as well as the specifications for connectors and APIs to popular Customer Relationship Management (CRM), Enterprise Resource Planning (ERP), Process Automation and IT Service Management systems.

Figure 1: Snapshot of EIA Implementation Maturity

Maturity of Intelligent Assistants solution(s)

| 18% | 31% | 32% | 18% | 2% |

■ Consider it a pilot
■ Live in production, but still early days / support is limited
■ Handling medium complexity conversations
■ Mature, backend integration to pull personalized information or allow transactions
■ Market leaders in sophistication
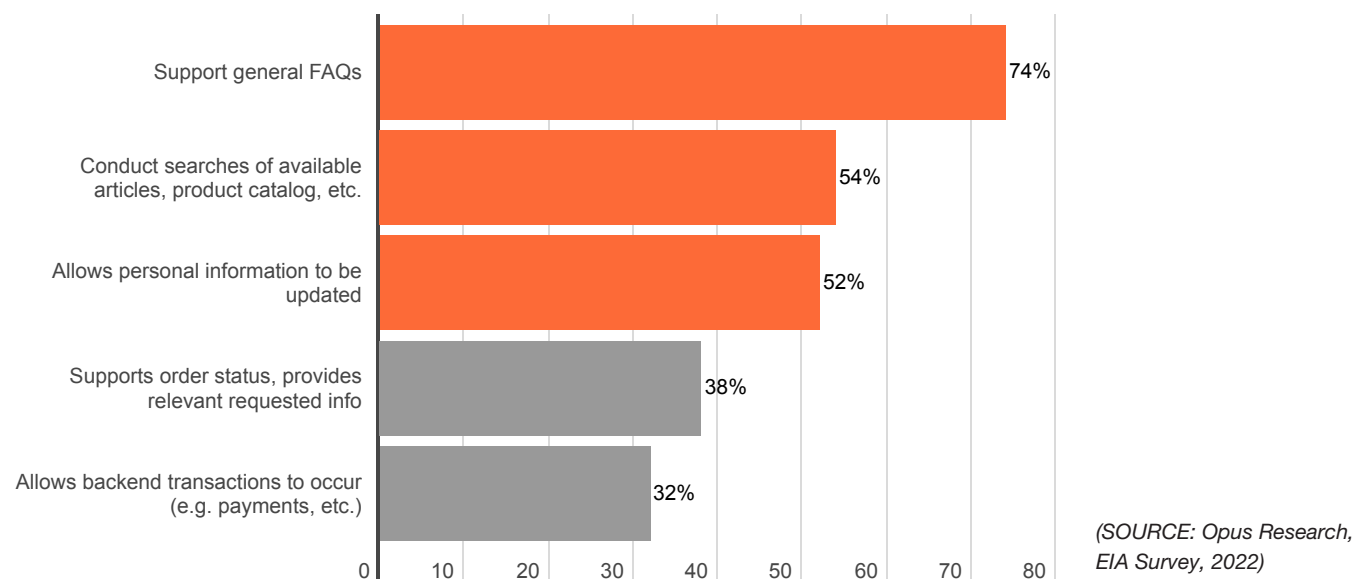
(SOURCE: Opus Research, EIA Survey, 2022)

Opus Research uses the requirements and demands of this diverse base of enterprise customers to define the evaluation criteria employed in this document. The Early Adopters hired teams of developers with skills ranging from knowledge management, dialog design, computational linguistics and the like. Such teams also had skilled developers accustomed to writing code for managing conversations and helping users achieve their objectives.

Today, solution providers offer development tools designed for non-technical personnel who are experts in customer care or Help Desk applications. They help train the models that support conversations that culminate in task completion. The tools they use are "no code" or "low code" alternatives that employ drop-down menus of common tasks or actions and "connectors" that direct the dialogs. If you can play a videogame, you can build a bot.

Fulfilling Expectations for Enterprise Intelligent Assistants
Results of the survey also provide a snapshot of the basic capabilities baked into today's bots. Figure 2 below shows which functions and support is currently offered by the respondents' intelligent assistants.

Figure 2: Functions Supported by Today's Intelligent Assistants

- Support general FAQs — 74%
- Conduct searches of available articles, product catalog, etc. — 54%
- Allows personal information to be updated — 52%
- Supports order status, provides relevant requested info — 38%
- Allows backend transactions to occur (e.g. payments, etc.) — 32%

(SOURCE: Opus Research, EIA Survey, 2022)
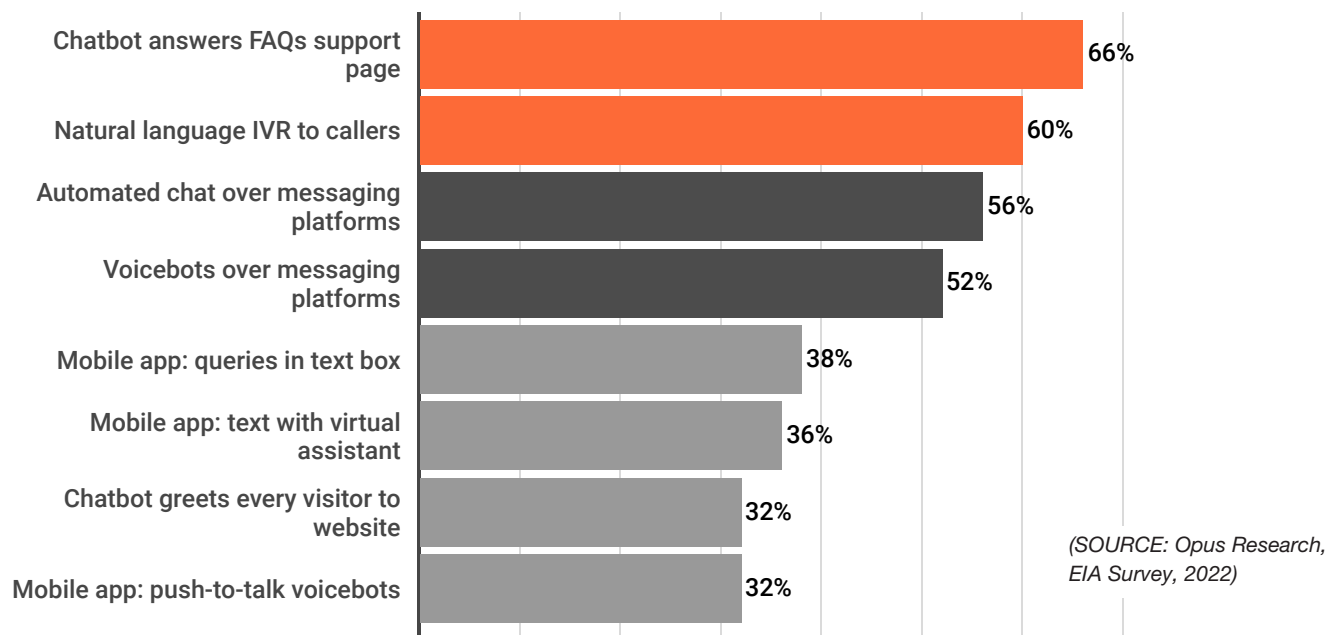
opusresearch

These capabilities were developed to respond to organic demands from customers. To avoid long wait times associated with reaching live agents or representatives, millions have grown accustomed to interacting with chatbots or voicebots when looking for answers or resolving issues with their selected brands.

Almost three-quarters of respondents (74%) offering assistants empowered to support frequently asked questions (FAQs) while more than half have deployed IAs that conduct searches (54%) and allows personal information to be updated (52%). Still, the market for automated customer care is maturing with many implementations designed to provide order status (38%) and even allow backend transactions and payments (32%).

In vertical industries like financial services, travel and hospitality, telecommunications, entertainment, healthcare and insurance, customer needs are not satisfied by looking up pat answers in static FAQs or by directing customers to a related website To reach customers at their time of choice over their device choice, IAs are made available in the manner described in Figure 3:

Figure 3: Type of Access Provided by Intelligent Assistants

Type	Percentage
Chatbot answers FAQs support page	66%
Natural language IVR to callers	60%
Automated chat over messaging platforms	56%
Voicebots over messaging platforms	52%
Mobile app: queries in text box	38%
Mobile app: text with virtual assistant	36%
Chatbot greets every visitor to website	32%
Mobile app: push-to-talk voicebots	32%

(SOURCE: Opus Research, EIA Survey, 2022)

Ideally, the answers, actions and results provided are identical, regardless of channel or modality. The longest-standing and most sophisticated companies have already launched a multiplicity of intelligent virtual assistants and their first-order challenge is to implement solutions that leverage the results of past investments. This is the reality that shapes the solution providers included in this year's report.

47%

Do your customer support agents have the option to use an Intelligent Assistant for internal use?

"INITIALLY, WE WERE NOT LOOKING AT A VIRTUAL ASSISTANT … NEVER CONSIDERED BECAUSE NO ONE WAS USING IT IN OUR SPACE. IT HAS MADE A HUGE IMPACT ON OUR BUSINESS AND WE ARE EXCITED FOR NEXT STEPS."
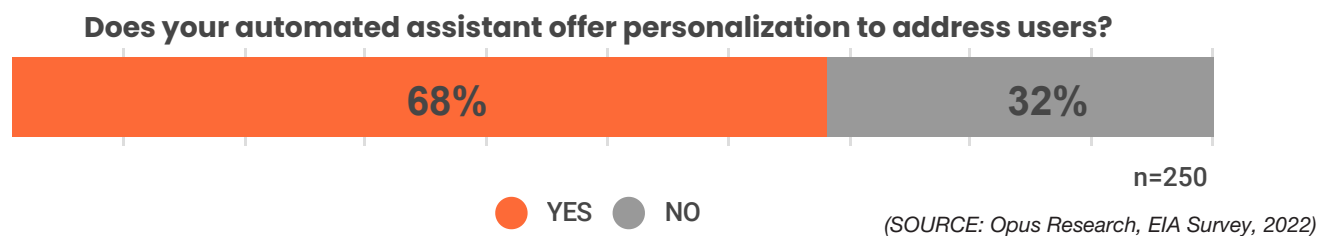—DIRECTOR, SUPPORT SERVICES | HEALTHCARE BENEFITS PROVIDE

n=250

47%

Now is the Time to Evaluate Options

The 250 respondents to our survey offer insights into the features and functions that define mature IAs today and in the future. These are not "nice-to-have" features. They are destined to be key to competitive success in both digital and voice channels.

For example, 68% of respondents have already put into place IAs that are capable of providing personalized responses to authenticated customers or prospects [Figure 4 below]. They recognize that establishing trust early in a conversation paves the way for faster recognition of intent and the ability to complete tasks (including transactions) quickly.
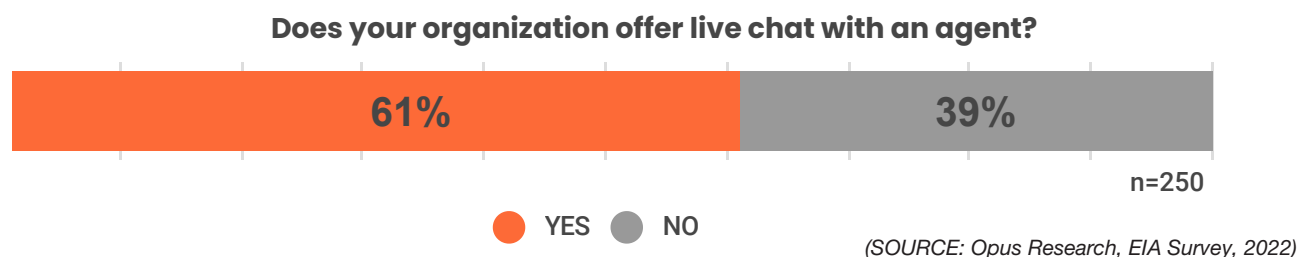
Is the assistance in real-time (providing answers during the course of the call/chat)?

65%   35%
n=250
n=117

Figure 4: Automated Assistants Utilize Personalization

Does your automated assistant offer personalization to address users?

68%	32%

YES   NO

n=250

(SOURCE: Opus Research, EIA Survey, 2022)

Sixty-one percent of respondents also mention offers live chat with an agent during the course of a conversation with an IA. "Intelligent transfer" from bot to live agent was an early addition to the list of IA functions offered by solution providers. But there is now a difference. Originally it was associated with "out of scope" or unrecognized requests that confounded a bot.

Today, experienced companies know that the bulk of asynchronous conversations benefit from one or more transfers between IA and live agent in order to help customers complete their tasks or transactions.

Figure 5: Organizations that Offer Live Chat with Agents

Does your organization offer live chat with an agent?

61%	39%

n=250

YES   NO

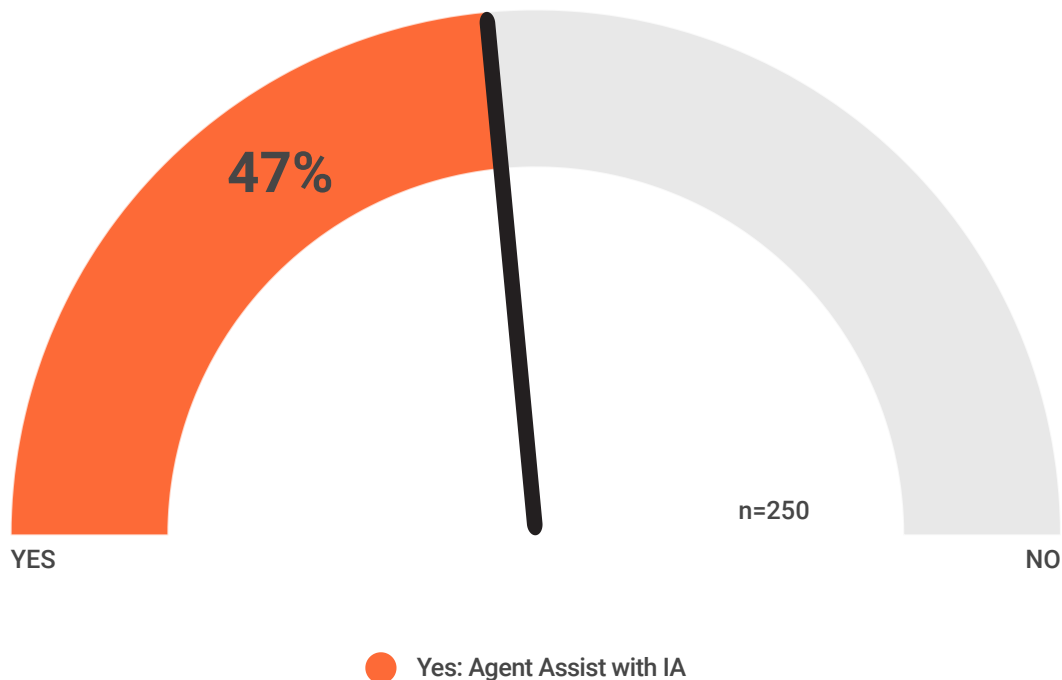(SOURCE: Opus Research, EIA Survey, 2022)

In regards to AI/HI balance, nearly half (47%) of respondents already have their live agents interacting with intelligent assistants to help improve their responses (Figure 6 below). Nearly two-thirds of those instances involve agents interacting with virtual assistants in the course of conversations with customers.

Based on submissions from vendors participating in this report, we know that the other instances involve such activities as the generation of post-calls summations and dispositions, review of content to ensure compliance with regulations, as well as company policies, and other forms of training. In other words, we've reached a point where bots and live agents are interdependent. Humans can train bots who, are then available to make sure that other humans are performing at a high level.

Figure 6: Intelligent Assistance for Live Agent Customer Support

Do your customer support agents have the option to use an Intelligent Assistant for internal use?

47%

YES

n=250

NO

🟠 Yes: Agent Assist with IA

Is the assistance in real-time (providing answers during the course of the call/chat)?

65%	35%

n=117

🟠 YES ⚫ NO
YES NO
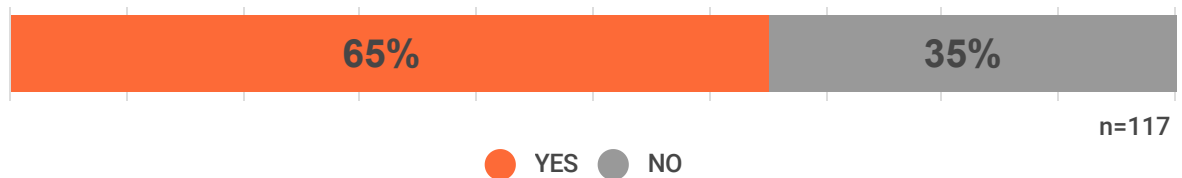
(SOURCE: Opus Research, EIA Survey, 2022)

CALL DEFLECTION HELPS US DRIVE COSTS DOWN WITHIN OUR CALL
CENTER. ALSO ALLOWS OUR ACCESS SPECIALISTS TO BETTER SERVE
CALLERS WITH WHOM THEY ENGAGE.
—LARGE, PRIVATE RESEARCH UNIVERSITY

Balancing human with artificial intelligence is a recurring theme as enterprise decision makers evaluate their procurement options. Leading firms in our "Platform" category place emphasis on tools and capabilities that keep "humans in the loop" in crafting dialogs, supervising machine learning and joining conversations as needed.

In addition, their solution sets support orchestration, or automated management of all the complex workflows that take place in the background to support a successful conversation. That would include references to databases with customer histories or inventory status or access to the checkout in order to complete a transaction.

Intelligent Assistants in the Age of the "Conversational Cloud"

Only 11% of the respondents to this year's survey of Intelligent Assistant implementers said that they had plans to replace their solutions in the coming year. Yet their reasons for doing so provide valuable insights into potential deficiencies in past solutions.

Figure 7: Reasons to Replace Intelligent Assistant Solutions
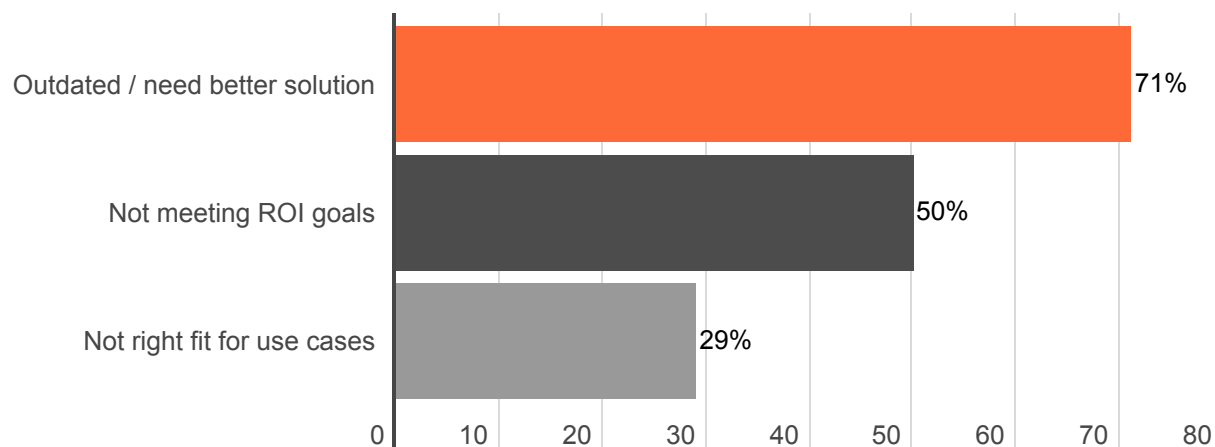
(SOURCE: Opus Research, EIA Survey, 2022)

The 71% who consider their assistant "outdated" are looking to move beyond their original AnswerBots with limited functionality, informed by databases of static information. The half that cites value to meet ROI goals speak to the need for companies to link evaluation criteria to business outcomes from the beginning. The fact that 29% say that their assistant is not a fit for their use cases provide another cautionary tale for enterprise

WE VETTED ROUGHLY 20 VENDORS AND NARROWED DOWN TO A FINAL 3 BASED
ON A SET OF CRITERIA... AMONG OTHER REASONS, THE PRIMARY REASON WAS THE
MATURITY OF THEIR NLU ENGINE AND UNDERLYING ML AND SYNTAX MODELS
−PRODUCT MANAGER, CONVERSATIONAL AI | GLOBAL BUSINESS SUPPORT SYSTEMS PROVIDER

executives who are evaluating their options. Vendor selection should be "use-case driven" and great attention should be paid to what works out-of-the-box in terms of pretrained language models and tools for creating bots that help customers *and* agents fulfill well-understood tasks.

To update or implement entirely new Intelligent Assistants and address the needs of an expanding set of use cases requires solutions that transcend traditional boundaries between conversational apps, contact centers, knowledge bases and data repositories. Instead they lean on an AI-infused amalgam of resources that reside in what Opus Research calls "The Conversational Cloud." The vendors with the highest evaluations in this Intelliview are the ones whose solutions architecture, tools for service creation and management, data repositories and integration resources reside, at least in part, in public clouds or private clouds.

They are shared data centers where the computing resources that can run natural language processing and machine learning models can be closely linked to those governing task routing, person-to-person interactions and references to highly capacious databases or knowledge repositories. The Conversational Cloud enables unprecedented speed and agility when launching new IA applications or refining use cases. As such, they house the engines that speed progress in the Enterprise Intelligent Assistant domain.

Participant Categories: Leaders in Conversational AI

To provide the best tools for readers to evaluate solution providers, Opus Research has organized this year's respondents into three categories:

Voice First Assistance
Five firms provide "Voice First Assistance" resources. They offer a range of solutions and services that enable enterprise customers to deliver a natural user interface that listens and understands spoken input and responds with a mixture of life-like spoken output or relevant visual material from apps, websites or videos, rendered on smartphones, tablets or other screens as appropriate for each use case.

Included in this category: Almawave, Five9, Interactions, PolyAI, Zaion

Digital Assistance
Eight solution providers offer tools and services to create and maintain Conversational Intelligent Assistants offered over multiple, digital channels. Their core offerings support natural conversations between companies and their customers largely through digital channels, such as smartphone apps, SMS and other messaging platforms. Like their Voice First counterparts, they enable enterprises to respond to digital input with a mixture

of life-like spoken output or relevant visual material from apps, websites or videos, rendered on smartphones, tablets or other screens as appropriate for each use case.

Included in this category: Aivo, Artificial Solutions, Cognigy, Creative Virtual, Inbenta, Kasisto, Rasa, Salesforce

Intelligent Assistant Platforms

Eight firms responded as Platform providers. They offer comprehensive, or "end-to-end" solutions that embrace training and management of a variety of bots supporting multiple channels and modalities, plus connectors or APIs to IT systems and reporting/evaluation resources.

Included in this category: [24]7.ai, Amelia, Avaamo, Kore, LivePerson, Nuance, Verint, Uniphore

## Figure 8: Roster of Participants | 2022 EIA Intelliview

24-7	Engagement Cloud balances Artificial Intelligence and Human Insights (AI+HI)
Aivo	Easy-to-manage tools for digital, live and voice customer care
Almawave	Iride® Wave Bot: built on Composite AI (ML, deep learning & knowledge representation.
Artificial Solutions	Provides tools for development, deployment, analysis and optimization of conversational AI
Avaamo	Automates every conversation end users (Employee, Customers, Partner) and enterprises
Cognigy	Low-code Conversational Service Automation
Creative Virtual	V-Person & V-Portal support conversations among both live and automated agents
Five9	Evolved to manage virtual agents, CTI, live recording & 3rd party ASR and TTS
Inbenta	Interaction Management Platform for chatbot, search, knowledge and human-to-human
Interactions	"Optichannel" Intelligent Virtual Agent (IVA) for voice and chat
IPsoft / Amelia	Amelia transforms both employee and customer experience in collaboration with human colleagues
Kasisto	KAI is a leading Conversational AI solution for the financial services industry
Kore.ai	Experience optimization (XO) platform for 150 Fortune 2000 companies; over 100 million users
LivePerson	Mature offering with extensive list of partners and tech suppliers and customer success
Nuance	An open and flexible framework to enable blending of human and AI engagements
Poly AI	Proprietary approach to building highly efficient voicebots
Rasa	Open-Source enterprise conversational AI platform used by millions of practitioners across the globe
Salesforce	Product suite in Service Cloud to address a vast spectrum of use cases for Salesforce customers
Uniphore	U-Service for self-service and U-Assist for agent assistance
Verint	Native, mature resources for sophisticated automated voice and chat agents and sharing insights
Zaion	Complete solution for processing voice-based customer interactions

Participant Data: Snapshot of EIA Deployments

In addition to soliciting from a detailed questionnaire each company's technology features, business strategies, and future plans, Opus Research also gathered quantitative data on current Enterprise Intelligent Assistant deployments.

Below are a series of datapoints that outline a snapshot of geographic regions, vertical industry distribution, deployed use cases, and channel modalities based on the aggregate data collected solution providers included in this report.

Figure 9: Deployments of Enterprise Intelligent Assistants By Region
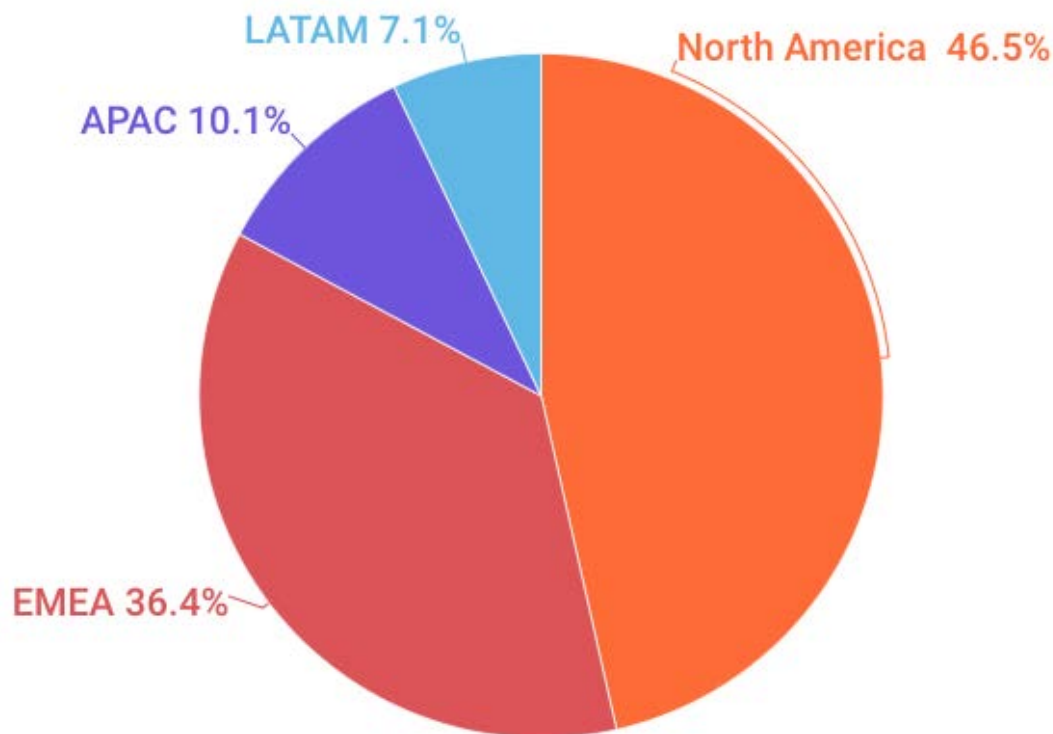
(SOURCE: Opus Research, EIA Report 2022)

The vast majority of current deployments are in North America (46.5%) and EMEA (36.5.%). This reflects the organic demand for EIA solutions from large enterprises, subject to change as those companies take advantage of the growing number of languages supported by the leading firms in all categories.

Figure 10: Deployments of Enterprise Intelligent Assistants By Vertical
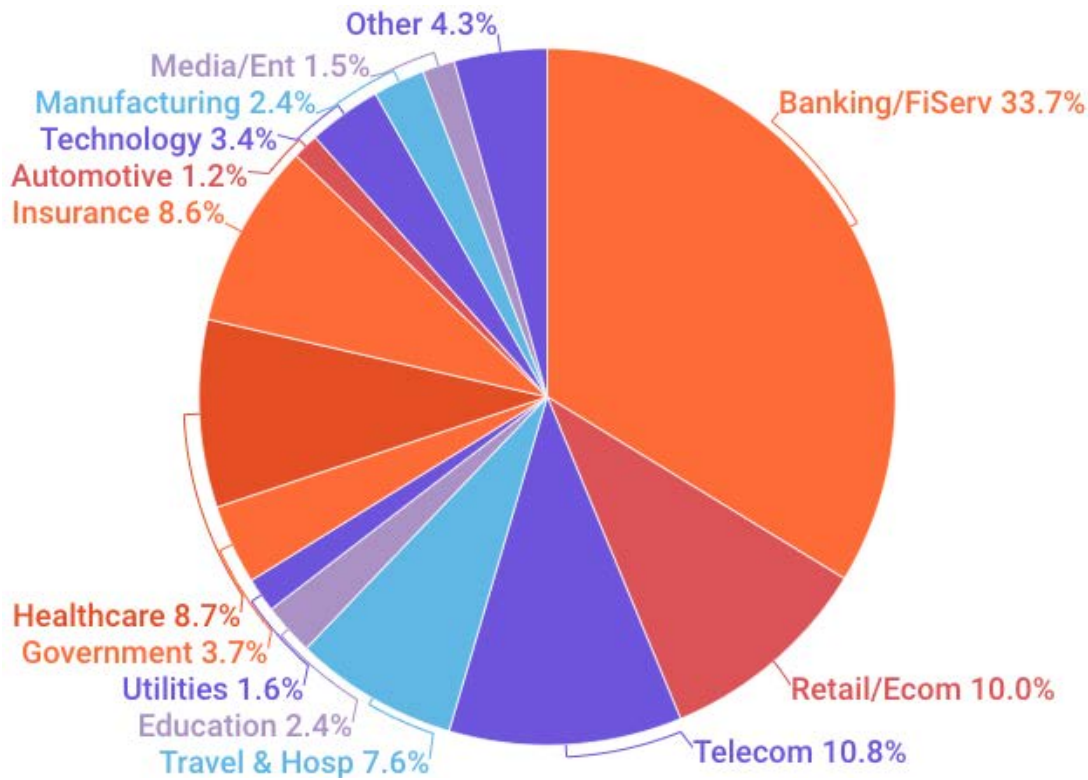
(SOURCE: Opus Research, EIA Report, 2022)

Banks and Financial Services companies were among the first enterprises able to build businesses cases for and ROI models for EIA deployments, representing more than one-third of all implementations. Mature implementations among Telecom (service initiation, outage reporting), Insurance (enrollment, form-filling) and Travel & Hospitality (booking, loyalty programs) We expect to see high growth in Healthcare (scheduling, Q&A), Retail/Ecommerce (shopping, recommendations), and Government (Citizens Services) as regulatory and technical barriers are overcome.

Figure 11: Deployments of Enterprise Intelligent Assistants By Use Case

HR Support 8.7%
Finance/Accounting 7.0%
Marketing/Sales 8.7%
Help Desk 13.1%
Customer Care 62.5%
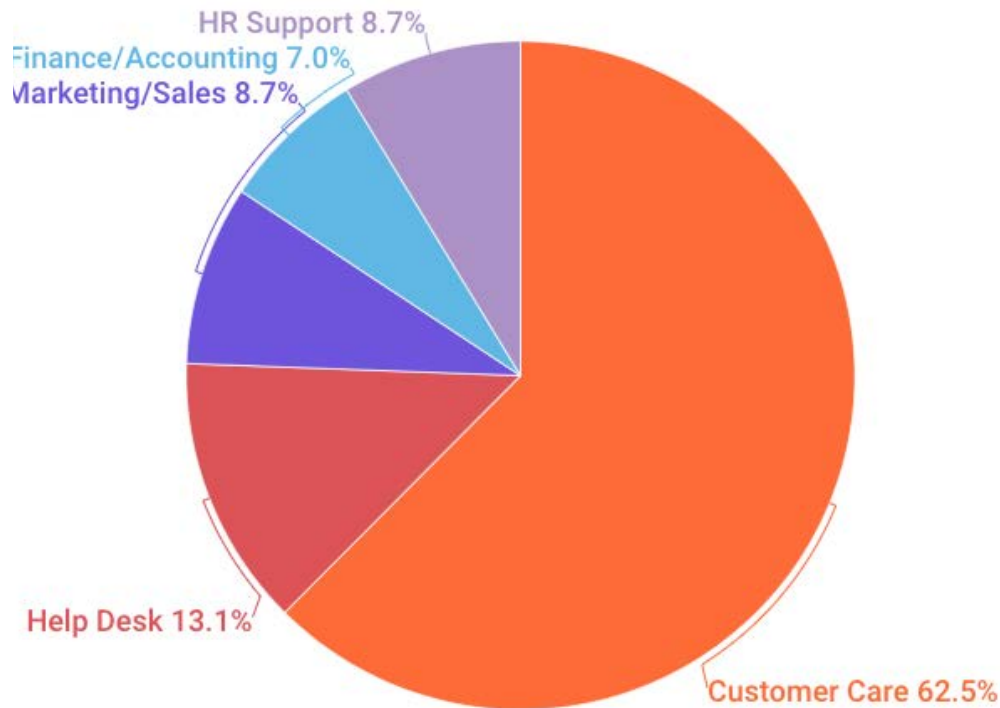
*(SOURCE:
Opus Research,
EIA Report, 2022)*

This snapshot reflects rapid growth in implementations of customer facing resources. Many of the early implementations and use cases for EIAs were internal "Help Desk" functions where companies cut their teeth on relatively easy, repetitive functions like Password Reset or tracking trouble tickets. Addressing the needs (and opportunities) of Marketing/Sales (8.7%) is a strong growth area and reflects the value of using AI-infused resources to gain insights that can be shared among business units.

Figure 12: Deployments of Enterprise Intelligent Assistants By Modality
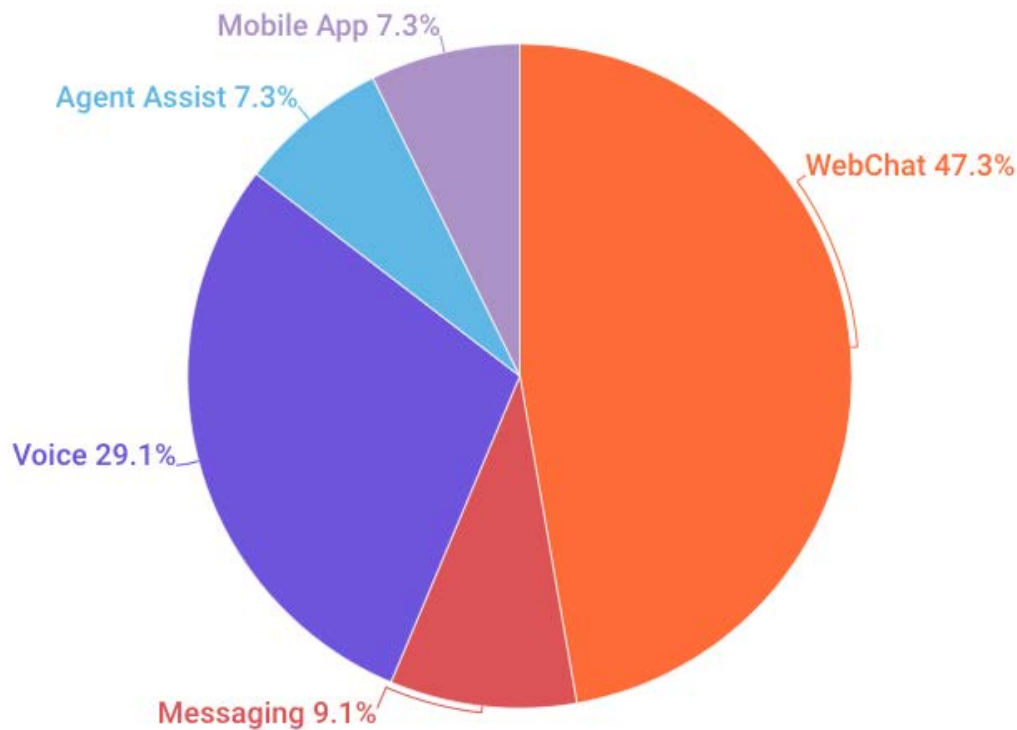
(SOURCE: Opus Research, EIA Report, 2022)

Webchat EIA deployments account for nearly one-half of reported deployments (47.3%), with another 29.1% accounted for by voicebots. This reflects the staying power of precursor technologies like the FAQ page or interactive voice response (IVR) systems. Opus Research expects to see accelerated growth of "Messaging" (9.1%) as the use of popular platforms like WhatsApp, WeChat take off, as well as expanded use of Agent Assist Intelligent Assistants to be deployed much more broadly in the near future.

Competitive Differentiators of EIA Solution Providers

Opus Research asked each solution provider included in this report for a detailed analysis of each company's product solutions and business strategies. This document (Appendix A) provides brief profiles of all these offerings and also positions each vendor on Intelliview maps (figures below) based on the strength of their product offerings and market positions. Included in our analysis was a deep consideration of the following attributes:

Features and Technology

✔+ Resources enable orchestrated, AI-infused IA development and management, tools and run time integrates disparate data, processes and workflows; use of "native" technologies that support both "agent assist and customer assistance".

✔ Differentiated approach to creation, deployment and ongoing tuning of IVAs or agent assistants across multiple channels. Fulfills basic requirements for ASR, NLP, application development, tuning and maintenance, both native and 3rd party. Presents "best-of-breed" examples of point solutions and use cases for Conversational AI.

✔– Tools and resources focused on static answers and hard-coded actions.

Integration Points and Scalability

✔+ Orchestrates synchronous or asynchronous interactions and/or transactions across multiple APIs and connectors to internal or external data, processes or workflows during conversations. Takes an "open" approach to connections and APIs with both internal and external resources, processes and workflows

✔ Responds at scale based on connections to CRM, KM, RPA sources over voice and text channels

✔– Offers selective, use-case driven connectors or integration points or relies on 3rd party, one-off integrations

Track Record

✔+ Significant enterprise deployments; multiple use cases and positive customer references; global scope

✔ Many deployments; multiple use cases or vertical expertise; mixed customer references; limited global scope

✔– Smaller, pilot-established deployments; emerging market recognition; limited global or vertical presence

Future Plans and Vision

✔+ Clearly articulated strategy for fulfilling CX and business objectives in the Conversational Cloud; and CX consistent architecture, acquisition, partnership, development and go to market strategies

✔ Clearly articulated technology strategy (Machine Learning, NLP, and conversational user interfaces across multiple channels; consistent investment in Intellectual Property and partnerships

✔– Articulated short-term roadmap for product development; insufficient information regarding long-term strategy and positioning

Intelliview Map for Enterprise Intelligent Assistants

To assist decision makers in evaluating competing solutions providers, Opus Research represents their positioning in a series of "Intelliview" Maps. Vendors are grouped into one of two following categories:

➤ **Leaders:** Success is necessitated with a holistic approach, recognizing tangible differences in high-value use cases, omnichannel support, orchestration & management, and growing ecosystem of partners and industry collaborators.

➤ **Standouts:** Building the next generation of tools and platforms, with a keen understating of conversational AI and data sources to help companies create compelling customer experiences and deliver value in AI and automation.

In reference to the figures below we have arrayed the solution providers to relative market positioning and success. The size of the ovals on the Intelliview reflect two, all-important factors:

➤ **Product Completeness/Flexibility** – Providers receive the highest assessments of "completeness" of services, features, and scaling capabilities.

➤ **Strategic Potential** – Capturing how vision and roadmap appeals to current and evolving technology requirements in contact center and beyond.

Opus Research has developed a solution provider comparison chart to help decision-makers evaluate how current enterprise solutions fulfill the requirements of Intelligent Assistance.

The size of the ovals represent each vendor presence based on company-provided or publicly available information of current financial strength (revenue, profitability, financial banking, longevity and size of customer base).

Figure 13: Best In Class | Voice First Assistance
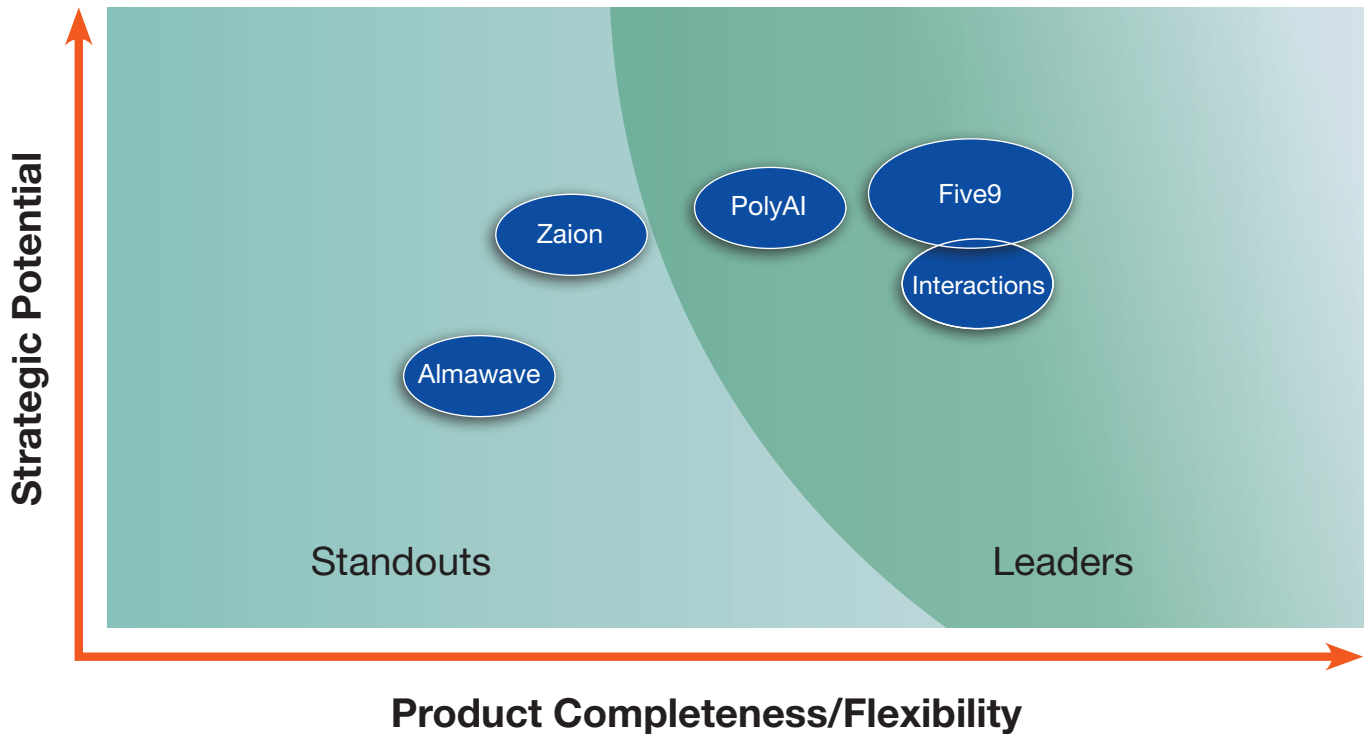
In the "Voice-First Assistance" Intelliview, Five9, Interactions and PolyAI stood out as Leaders. Although it relies on third-party speech processing and text-to-speech resources, Five9 led by offering a broad array of proven solutions designed to integrate with its cloud-based contact center offerings. Interactions has a long track record in voice support and continues to offer its clients with a unique approach to "Adaptive Understanding," relying on in-call intent analysis. PolyAI is a newer, smaller participant in the market with tools to support human-like voice-based interactions with self-service resources, designed to bolster task completion.

Zaion and Almawave distinguish themselves by integrating accurate speech recognition and natural language understanding into voice-based customer support applications. Zaion has invested significant resources into ASR technologies including sentiment analysis and deep understanding of the requirements of specific verticals, especially insurance and financial services. Almawave offers ready-made global potential based on the international footprint of its parent company, AlmaViva.

Figure 14: Best in Class | Digital Assistance
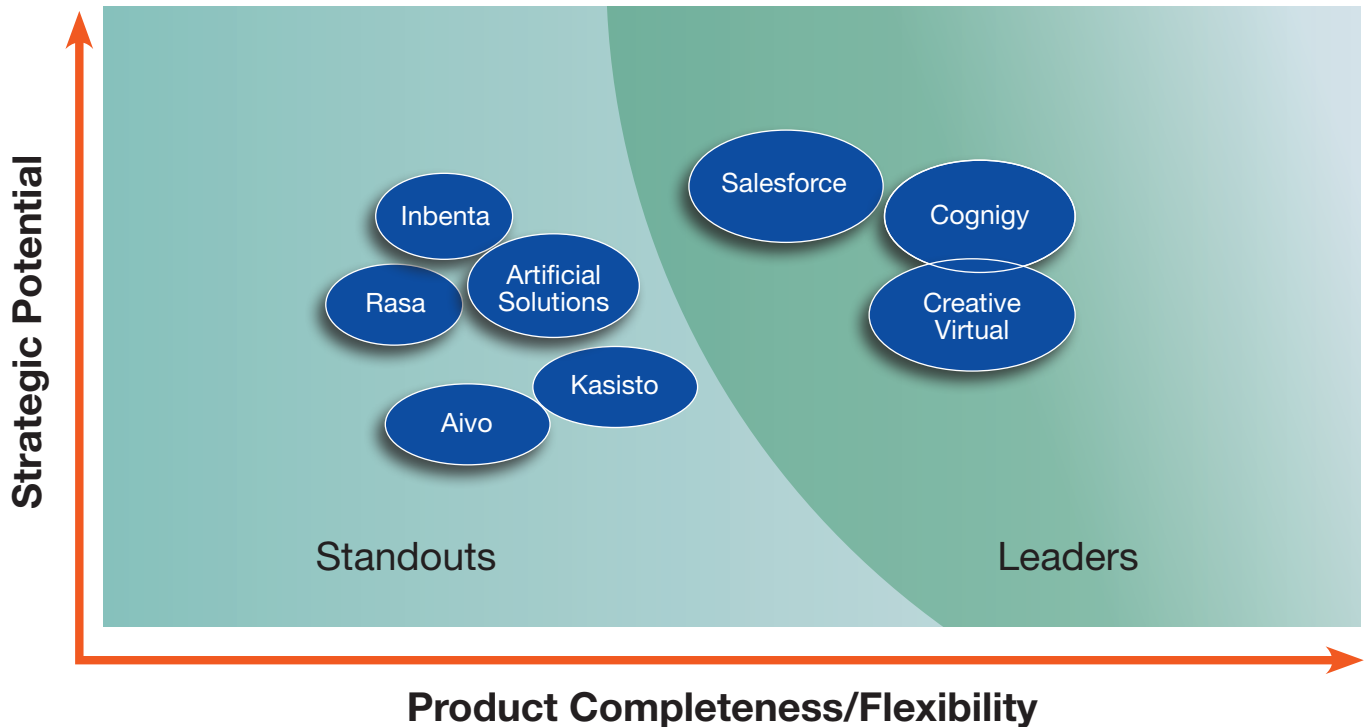
In the "Digital Assistance" Intelliview, Salesforce, Creative Virtual, and Cognigy are the Leaders

➤ Cognigy: Emphasis on orchestration and integration, broadening to full-fledged contact center solution

➤ Creative Virtual: Points for longevity, knowledge management, out-of-box solutions

➤ Salesforce: Formidable suite of AI tools to offer to its legions of customers

Among the Standouts;

➤ Kasisto: Strong vertical offering, blue-chip customer base in banking and financial services

➤ Artificial Solutions: Longstanding EIA provider, collaborative development platforms

➤ Inbenta: Impressive pre-trained linguistic models and extensive language support

➤ Aivo: Strong presence in Latin America and integration to leading platforms

➤ Rasa: Developer-friendly in offering open-source tools to build better bots.

Figure 15: Best in Class | Intelligent Assistant Platforms
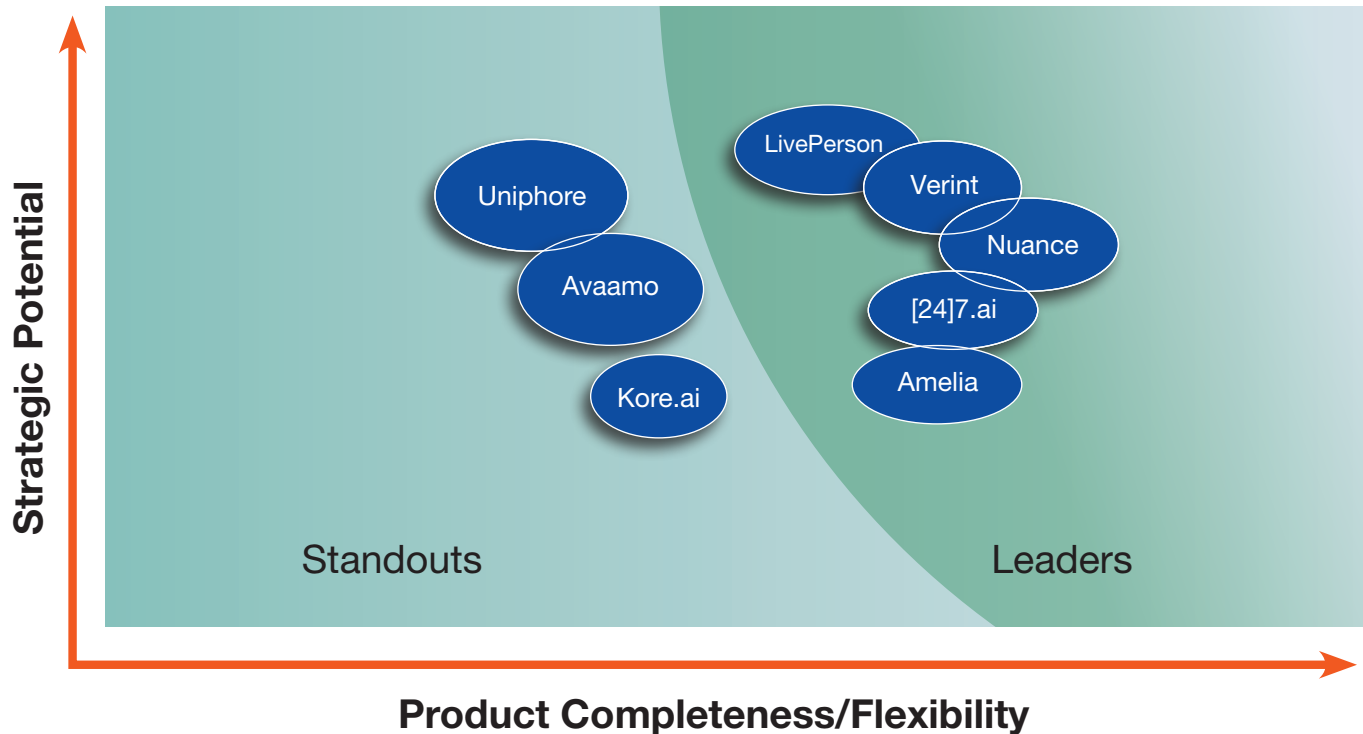
Opus Research defines "best-in-class" Platforms as comprehensive, scalable solutions that embrace the gamut of services and technologies necessary for successful Enterprise Intelligent Assistant deployments. The Leaders in alphabetical order include:

➢   [24]7.ai: Open, unified AI+HI platform features low code and third-party integration

➢   Amelia: Solutions for digital employee and hybrid workforce; white-labeled offering via NICE

➢   LivePerson: Sights on the Conversational Cloud, pending integration of VoiceBase, Tenfold

➢   Nuance: Perennial leader, omnichannel customer engagement, ability to leverage Microsoft

➢   Verint: Open platform, business-focused Conversational Intelligence data across entire enterprise

Among the Standouts:

➢   Avaamo: Impressive voice and multi-channel offerings

➢   Kore.ai: Formidable offering with exceptional modeling. testing, import/export options

➢   Uniphore: Growing customer and partner base, new acquisitions of Jacada and Colabo

[24]7.ai

Year business started: 2000
Investment/funding: No recent funding
Number of employees: Approx. 14K
Revenue: $300M

Enabling Tech	Features	Success	Strategy
✔+	✔	✔	✔+

Core Intelligent Assistant Product Suite

[24]7.ai Engagement Cloud™ is an omnichannel SaaS platform that uniquely blends AI and human insight (HI), enabling enterprises to: deliver effortless customer experiences at scale across voice and digital channels; empower agents with tools and insights that boost productivity and reduce costs; drive sales growth through precision targeting to build trust, loyalty, and retention; and improve operational efficiencies through self-service automation. With [24]7.ai Engagement Cloud, enterprises use industry-leading conversational AI technologies to predict and understand customer intent, build bots once for cross-channel deployment, and foster CX and operational excellence through continuous learning and optimization.

Additionally, clients can choose the following applications:

- [24]7 Active Share™ – Provide callers with rich visual content
- [24]7 Answers™ – Organize frequently asked questions and more into an interactive customer experience
- [24]7 Conversations™ – Create, deploy and manage AI-powered digital and voice conversations
- [24]7 Voices™ – Increase self-service with AI-powered conversational IVR
- [24]7 Assist™ – Empower agents to drive productive and personalized customer engagements
- [24]7 Target™ – Personalize advertising to deliver the right message to the right customer at the right time
- Reporting and Analytics – Elevate contact center performance through actionable insights

[24]7.ai also offers [24]7 Agent Services™ (BPO), [24]7 Managed Customer Engagement (CXaaS), and Professional Services.

Enabling Technologies

[24]7 AIVA is a technology layer that combines the industry-leading conversational AI with an intent-driven engagement platform to enable 'near-human' conversations in your digital and voice channels.

Artificial Intelligence (AI) / Machine Learning (ML): Use a combination of traditional ML and deep learning in our solutions. This includes supervised learners like SVMs and language models like BERT, unsupervised learners such as embedding models and various reinforcement learning algorithms. Key differentiation is that we provide two levels of abstraction for clients to engage with: (1) with tools like the conversation builder and intent discovery tool, the client designs and configures for the outcomes they want; the right models are picked and trained under the hood to cohesively optimize for the outcome. 2) for clients who have familiarity with AI/ML, they can access the Model Workbench (MWB) to optimize the modeling pipeline or directly train models.

Natural Language Processing (NLP): [24]7.ai proprietary NLU platform addresses: text/intent classification; conversation modeling; sentiment, emotion, and tone analysis; topic/intent discovery; entity extraction; question-answering; response recommendation for agents; personalized next-best action recommendations; and model explainability. The NLU platform largely offers two kinds of component building: (1) traditional machine learning (ML) models using simple feature engineering (such as n-grams) to achieve a quick turnaround and faster time to market, and (2) deep learning models using feature engineering based on language models, for achieving high accuracy levels on the go, after the initial solution is in production.

Intent-building, design automation: Leverage a supervised learning system that uses a one-vs-all Support Vector Machine based on Platt's calibration to produce confidence values for predicted intents. Put in place a strong NLP preprocessing pipeline that performs lemmatization, performs spell-check, etc. and feeds into the supervised learner. With the Intent Discovery Tool (IDT), clients discover the various intents their users talk about in their chat sessions.

This tool uses proprietary algorithms based on embeddings, clustering etc. This also relies on TensorFlow based models like embedding models, etc.

Automated Speech Recognition (ASR): [24]7.ai uses Microsoft's speech-to-text (STT) to power its voice-based solutions. This offers extensive language coverage (36 languages, over 73 locales), a flexible integration model (SDK as well as REST API), and a high degree of "out of the box" accuracy with extensive customization capabilities. Another third-party ASR application natively integrated into the platform, Deepgram, is primarily used for analyzing unstructured audio data. A proprietary [24]7.ai NLU/NLP stack works with Microsoft STT capabilities to determine intent and identify entities, ensuring the most appropriate response.

Text-to-Speech (TTS): [24]7.ai uses Microsoft's neural text to speech (nTTS) solution, which supports over 46 languages across 174 locales and genders. The [24]7.ai solution offers supports Speech Synthesis Markup Language (SSML), which allows developers to finetune the pitch, pronunciation, speaking rate, volume, and more of the text-to-speech output. In addition, Microsoft nTTS capability does prosody prediction and voice synthesis simultaneously, uses deep neural networks to overcome the limits of traditional text-to-speech systems in matching the patterns of stress and intonation in spoken language, and synthesizes the units of speech into a computer voice. The result is a more fluid and natural-sounding voice.

Content Design / Dialog Management: Scripted dialogue trees (Directed dialogue); Slot filling; State machines; Handling multiple intents; Intent Switching; Sentiment Detection; Social chit-chat; API logics; Conditional logics; Copy by reference & Copy by value; Voice Biometrics; STT & TTS; Rich text & Rich Speech editor; Native content for multiple channels

Multi-modal conversations: Support IVR to messaging via a customizable visual card that enables the IVR to open a digital channel while the customer is on the call. A link can be sent via SMS, web or messaging, and can connect the customer to a live chat agent. This feature can also be used to display information on a user's device during a call or a chat making it easier for the human or virtual agent to quickly gather information or explain a concept visually.

Robotic Process Automation (RPA): Conversation builder can design and automate transactions that implement business processes. Through a partnership with Blue Prism, access hard-to-access back-office systems in order to processes faster, reduce response time and deliver satisfying customer experience.

Service Creation Tools
- No code: A designer can build transactional conversations by themselves using our [24]7 Conversations product and can create conditional logics and present custom responses per each conditional logic path.
- Low code: Support API integrations on the bot builder interface where the IT developer can use our low code self-service feature to do the customer integrations.

Conversational Intelligence Elements: With [24]7 Conversation Insights, clients capture every customer interaction (written or spoken) across channels, segregate them to identify what's said by the customer vs. the agent, and analyze both what's explicitly communicated (e.g., keywords, topics, intent) and what may not be explicitly communicated (i.e., sentiment). With capability available out of the box, users address several qualitative & quantitative cross-channel use cases including text & speech analytics, intent & root-cause analysis, sentiment analysis, etc., monitor 100% of the conversations for quality and compliance, elevate agent performance, track CX and operational metrics, and share them with internal teams to guide decision making.

Analytics API or export tools for client ingest: Support both. Provide proprietary analytics via [24]7 Journey Analytics, Conversation Insights, Intent Analysis (Intent Discovery), and various dashboards via data pipeline. Also use third party visualization tools like Tableau, Microsoft Power BI and Domo to deliver reports & dashboards. Logging and reporting system allow data feeds to export all of the key information from conversations including utterance phrases, intents, entities, and dialog specific logging as well as metadata like phone numbers, times of turns, escalations, escalation reasons as well as the versioned URL identifiers of the bot flows and models used. Model workbench and tagging tools allow the export of utterances and tagged utterances from the tuning tools.

Intelligent search options to scrape and pull FAQ responses without duplicating: Use a combination of deep learning-based language models and reinforcement learning to automatically generate prompts and relevant responses. Provide a form of response known as "Active Cards" with personalized text + visual content relevant to the current conversation. A customer can interact with this "visual canvas" and the interactions are passed back to the human/virtual agent in real time.

Integration with Customer Relationship Management (CRM), Enterprise Resource Planning (ERP) systems
- Pre-built connectors for Contact Center / CTI: Cisco, Genesys, Avaya and Aspect
- CRM: Salesforce, MS Dynamics, Oracle (Siebel)

Professional services support for integrations: [24]7.ai professional services provides integration on multiple levels: 3rd Part System Integration, design, build and launch an integration approach, through Rest API's and/or Cloud Elements, with Client's third-party systems. Team offers advisory and implementation services to integrate systems and technologies using a business-centric, value-driven approach.

Knowledge Management: Tools serve up high-quality, up-to-date content to the virtual agent. Engagement Cloud also features Agent Assist with Google CCAI and [24]7.ai-developed recommendation models. With this, Agent Assist is now capable to source recommendations from Google CCAI's Smart Reply, FAQ Assist and Doc Assist features, thus providing a wide coverage for semi-structured knowledge sources that agents typically rely on.

Customer Experience (CX) Feedback: [24]7 Engagement Cloud provides a number of analytical tools to diagnose and correct CX problems. Reports are available to monitor KPIs such as containment rates, length of conversations, customer satisfaction, etc. In addition [24]7 Journey Analytics is a tool for discovering CX problems and opportunities in omnichannel customer journeys. It uses advanced path analytics to (1) Understand how customers interact across touchpoints; (2) Build an understanding of what's working and what's not; and (3) Identify the root cause of issues.

Features and Functions
Pre-trained intent categories: Based on more than 20 years in the contact center industry, have a series of pre-built intents per vertical that gives our clients immediate access to libraries that allow them to ramp up quickly. Library with intents for: Financial Services, Insurance, Retail, Telcom, Travel & Hospitality, Utilities, Healthcare and Education. For each, offer dozens of custom intents focused on solving common issues within the industry. Typically, 70 intents for each industry.

Transfers context with conversation between channels: Support transfer of conversation from channels like webchat to other channels like Apple Messages for Business/ Messages by Google. We also capture context and can pass context. Direct users to async channels via magic links, allowing transfer phone callers to digital channels, while bringing context with the user.

Channels supported:
- **Digital**: Chatbots for desktop web, mobile web, native app, SMS/MMS
- **Voice**: [24]7.ai IVR system known as [24]7 Voices
- **Device**: Amazon Alexa, Google Home, Apple Siri, Ford SYNC*
- **Messaging platforms:** Web / Desktop (UDE) (platform for clients to connect webchat or custom apps to)[Mobile SDK for iOS & Android; Apple Messages for Business; Google Business Messages; Facebook Messenger; SMS and WhatsApp (integrated via Twillio partnership); API capabilities for: Twitter, Instagram, Slack, Skype, WeChat

Deployment Platforms supported: [24]7.ai is a SaaS provider, deploying solution across a hybrid of [24]7.ai private cloud data centers and public cloud data centers including Google and Microsoft. An actual [24]7.ai Engagement Cloud deployment has several options. The core Engagement Cloud platform is included for all clients and contains the base features that are common across all the underlying applications.

Analytics & Reporting: Real-time or near real-time performance outcome analytic dashboards; Performance analytics API or export tools for client ingest; Adapter or connectors for popular third-party performance analytics

tools; Customer fallout analysis and/or confusion matrix tools; Real-time alerts for incomprehension spikes or other real-time topic trends; Recurring vendor-generated success reporting (e.g. monthly scorecard).

Customer Success Metrics and Workflows

Recommended organizational roles: The following roles are involved in the sales, implementation, and support of our services: Product development; Support services (such as training, implementation, etc.); QA & testing; Sales. Contact centers are staffed with agents, supervisors and requisite management and support staff.

Ability to support multiple use cases: Approx. 80% of customers are using multiple use-cases. Customers use on average 2 use-cases. Clients can configure the content of an application into two or more bots. When one bot does not answer the user's question, it will auto-escalate to the other bots in the application to answer this question. Bots can share context and entities/variables between them.

Recommended success metrics: Average handling time; average response times; CSAT.
Out of the box metrics: Escalation rates by channels; containment & resolution rate by channel; drop off rates. Can log all the events related to the flow. These events can be used to create any other KPIs.

Track Record, Partnerships & Enterprise IA Maturity

- **Market presence:** Financial Services – 52%, Retail – 14%, Telecom – 13%, T&H – 11%, Education, Utilities, Government and Healthcare
- **Geographic regions:** North America – 80%, APAC – 15%, EMEA – 5%
- **Use case estimates:** Customer Service – 45%, Customer Support – 30%, Finance – 25%, Sales – 10%. IT – 5%, HR – 5%. (Some customers may have more than one use case)
- **Mix of Modalities:** Website Chat – 65%, Messaging – 25%, Voice Based App – 18%, Voice Based Telephony – 30%, Agent Assist – 10% (Customers may have more than one modality.)
- Customer engagement strategy: 95% Direct (Actively growing Partner Program, added Partner Portal)
- **Engagement model:** [24]7.ai delivers application capabilities on a rolling basis. An initial deployment typically automates FAQs and offers agent chat and messaging. By leveraging our libraries of informational intents for the top verticals, the initial deployment can automate up to 15% of interactions and clients can achieve go live in 2 weeks. The team then analyzes the transactional intents and implements a plan to progressively automate these journeys by developing the associated conversational flows and backend integrations. Clients typically achieve 30% automation within 90 days and 50% automation within 180 days.
- **Pricing Models**: [24]7.ai Engagement Cloud has two price components, an annual subscription fee, and a volume-based usage fee. Clients pay an annual subscription fee for Engagement Cloud, and each of the Engagement Clouds Apps they deploy. Platform subscriptions are based on a flat fee with functionality options available as required. Usage fees are determined on annual commit with steep discounts offered.
- **Go-to-market partners**: Infosys, Microsoft, Google, DeepForge AI – Global; Phaze2, Ascent Consulting, Blue Prism, KPMG - North America
- **Technology partners:** Microsoft, Google, Google Business Messages, Google CCAI; Apple, Apple Business Chat; NextCaller: (Call verification and fraud prevention); Blue Prism (RPA)

Key Differentiators

- Superior Intent Prediction: Unique conversational data, sentiment analysis, ability to build complex intents from simple intents
- Single AI Pipeline Across Voice and Digital channels: Bringing unified AI to the contact center; Low-Code Development: Self-serve capabilities for non-technical users to design conversations and train AI
- Continuous Learning: From intent discovery to tuning, AI gets smarter with every interaction AI/HI (Human Insights) blending: A unified platform where AI drives automation and assists human agents and where agents train AI at scale

About Opus Research

Opus Research is a diversified advisory and analysis firm providing critical insight on software and services that supports digital transformation. Opus Research is focused on the merging of intelligent assistance, NLU, machine learning, conversational AI, conversational intelligence, intelligent authentication, service automation and digital commerce. **www.opusresearch.net**

For sales inquires please e-mail info@opusresearch.net or call +1(415) 904-7666