Yellow.ai Recognized for

2021

Technology Innovation Leadership

Middle Eastern and South Asian
Conversational Artificial Intelligence Market
Excellence in Best Practices

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Best Practices Criteria for World-Class Performance

Frost & Sullivan applies a rigorous analytical process to evaluate multiple nominees for each award category before determining the final award recipient. The process involves a detailed evaluation of best practices criteria across two dimensions for each nominated company. Yellow.ai excels in many of the criteria in the conversational AI market.

AWARD CRITERIA

Technology Leverage	Business Impact
Commitment to Innovation	Financial Performance
Commitment to Creativity	Customer Acquisition
Stage Gate Efficiency	Operational Efficiency
Commercialization Success	Growth Potential
Application Diversity	Human Capital

Commitment to Innovation

Founded in January 2016, India-based Yellow.ai developed a conversational artificial intelligence (AI) platform designed to make conversations between businesses and their customers and employees resolution-driven. The company's commitment towards innovation in Customer Experience (CX) and Employee Experience (EX) is critical in the digital transformation and modernization era, with customers and employees preferring to connect with businesses across multiple new-age communications platforms and requiring information on-demand in languages native to them.

Through its proprietary Conversational AI Platform, Yellow.ai builds enterprise-grade chat and voice bots, leveraging best-in-class AI and Human Intelligence to deliver highly differentiated and elevated CX at a fraction of the enterprise's current operational cost. The platform enables enterprises to hyper-automate CX and EX across text-based channels, such as Web, In-app, Facebook, WhatsApp, Instagram, Google Business Messages, Apple Business Chat, WeChat, LINE, Viber, Telegram and voice-based channels, such as Telephone, Google Assistant, and Alexa, in more than 100 languages. Thus far, Yellow.ai has enabled Total Experience Automation for more than 1,000 enterprises in over 50 countries. The platform supports the company in capturing, understanding, and analyzing conversations and automating processes arising from these conversations in real-time. Yellow.ai prioritizes product and engineering innovation to address current, emerging, and future challenges, enabling the company to achieve impressive scale and stay ahead of the curve in the conversational AI market.

The Power of the Platform

Conversational AI continues to grow more sophisticated on various fronts, particularly through ongoing additions (e.g., multi-use case support, multi-domain and multi-industry requirements).

Yellow.ai's platform is industry and function-agnostic, supporting any conversational AI scenario, with uses in CX, such as marketing (e.g., lead acquisition, campaign management, and outbound engagement), customer support (e.g., self-service, contact centers, voice AI), conversational commerce (e.g., chat bot-assisted sales, voice commerce). The platform also supports EX through features like onboarding, voice-of-employee and ITSM resolution) wherein the company developed VEAs (Virtual Enterprise Assistants) for multi-industry organizations to improve EX across functions, such as HR, ITSM, Procurement, Finance, and Corporate Communications. The platform's agnostic platform also enables Yellow.ai to work with enterprises in more than 10 industries, including banking, retail, and oil and gas. The platform also addresses various areas of impact, ranging from customer support to sales and marketing to HR and IT. To this end, Yellow.ai provides support that spans more than 35 consumer channels across voice and chat out-of-the-box, and it offers IVAs (Intelligent Virtual Assistants) in more than 100 languages supported by the company's multilingual translation models.

> *"Frost & Sullivan finds that Yellow.ai's unique tri-fold combination approach of NLP, ML and AI to CX differentiates it from competing vendors that offer only automation or human agents."*
>
> *- Samantha Fisher, Best Practices Research Analyst*

In addition, Yellow.ai leveraged its extensive experience and customer requirements to create an AI marketplace that offers pre-trained conversational apps (i.e. vertical bots), pre-built connectors and integrations, offering plug-and-play, out-of-the-box chat box applications with enterprise applications. The company designed these offerings to streamline deployment, onboarding, and application.

Yellow.ai offers advanced functionalities that provide key differentiation, such as automated intent and entity detection, reduced training data needs, supporting "human-in-the-loop," and low-code/no-code capability.

- Yellow.ai based its proprietary deep learning-based Insights Engine, Document Cognition, on a Transformer Model that ingests unstructured data and automatically creates intents from it, allowing enterprises to offer cognitive search across platforms without the slightest need for manual training. It also offers a wide range of connections with leading knowledge management systems, such as Microsoft Sharepoint, Servicenow, and Confluence, enabling enterprises to use their existing knowledge base to bootstrap faster than the competition.
- The data-efficient proprietary NLP model synthesizes countless possible queries and scenarios, and structured training data availability for training the bots. Yellow.ai developed its proprietary NLP engine based on a few-shot learning model that gives outstanding results even with 50% less data.

- Yellow.ai's proprietary no-code platform offers key features, such as NLP infused with machine learning and AI, empowering business decision-makers to leverage advanced technologies, such as AI, without having any technical know-how.
- The company understands that for the virtual assistants (VA) to provide a great user experience, they need to work effectively and efficiently with human agents. While Yellow.ai's VA deflects a vast majority of the incoming queries, the company equips them to increase human agent productivity. One such feature is the agent recommendations (multi-turn NLG to provide text response suggestions).

The company also introduced agent actions to automate agent workflows, which also enables enterprises to use the workflow data to retrain the bot. This constant improvement leads to more deflections with appropriate responses while still keeping the human in the loop.

All in all, the core of Yellow.ai's platform is its seamless interoperability across multiple use-cases, languages and channels of communication.

Strategic Creativity

Technology, market shift, and changes in consumer behavior continue to disrupt industries and teams globally. Additionally, the rapid change in customer behavior leads to more rapid digital transformation and modernization initiative implementations across enterprises. To address these disruptions, Yellow.ai, led by its product and engineering focus across the three main pillars listed below, aims to place itself at the forefront of global CX and EX automation initiatives.

- **Differentiation:** Innovation to drive the next level of use cases and solve industry-changing/defining problems at a scale not achieved previously.

- **Table-stakes:** Innovation to keep-up with the technology and stay relevant in the conversational AI market.

- **Incremental:** Innovation to improve the existing product line incrementally.

Based on its experience with over 1,000 customers across more than 10 industries, Yellow.ai monitors the strong pulse of the market, which currently tilts toward increased automation and API-led easy integrations.

Yellow.ai caters to customer needs through its automated and personalized resolutions via conversations. The company natively integrates with enterprises' core systems, such as Core Banking System, Core Insurance System, Customer Relationship Management Software, and ERP, HRMS, ITSM, and RPA systems, to complete the user-intended action. For example, a customer talking with an airline's chatbot wants to change his or her itinerary. Yellow.ai enables the passenger to perform this without raising a ticket or waiting for a live agent. The platform assists the human ticketing system by freeing up agents for more complicated customer issues.

By working with global enterprises, such as Schlumberger, Siemens, and Alstom, Yellow.ai realized that implementing an enterprise-grade VA is ineffective without tools to support large-scale implementations. To solve the challenge for a return on investment (ROI) generating conversational AI

execution at scale, Yellow.ai launched its research and development (R&D) arm, Bitonic Labs, which focuses on solving long-term technical challenges faced by enterprises looking to adopt conversational AI on a larger scale.

Since its inception, Bitonic Labs continues to deliver vital features that differentiate Yellow.ai: data-efficient NLP, Deep Learning-based Insights Engine, Translation-independent Multilingual Model, Marketplace and Community, and Omni-channel Automation-first Service Desk:

- Data-efficient NLP is a proprietary engine based on a few-shot learning model (the practice of feeding small amounts of data to learning models) that outperforms competitors with 50% fewer data.

- Deep Learning Insights Engine is a proprietary enterprise engine based on a transformer model that ingests unstructured data and creates intent from it automatically.

- Translation-independent Multilingual Model is a sentence embedding-based model that enables customers to train intent classification across languages.

- Marketplace and Community is a portal for startup discussions and product showcasing, resulting in robust creativity expression and collaborative problem-solving.

- Omni-channel Automation-first Service Desk leverages virtual assistants to deflect certain incoming queries, resulting in improved human agent performance with customer interactions.

Yellow.ai understands two realities about conversational AI: chatbots are a new type of user interface (UI), and modern chatbots are the equivalent of 1990s websites. To this end, the company designs new UIs to make human-machine interactions intrinsically intuitive. Yellow.ai's CX Automation platform takes the next step in conversational AI and chatbots, providing building blocks for bots that "become an employee" and provide the same CX as human agents.

Key Support

Yellow.ai finds that access to the Internet via mobile devices currently drives the digital economy, with the backbone being hyperconnectivity. The company believes significant growth in this economy sits on the horizon; however, complex, unfriendly, siloed, and expensive digital mediums provided by enterprises restrains digitization. Yellow.ai's. platform is industry and business-function agnostic, meaning it supports any conversational AI scenario. For specific use cases where the company sees significant traction and value-added opportunities, Yellow.ai adds features to empower and streamline those use cases. Customer feedback is the starting point for all of Yellow.ai's new products and solutions.

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The company empowers its product teams with autonomy in decision-making around strategy and implementation. Additionally, its go-to-market team adapts to market changes nimbly through iterative

product releases. Based on market feedback, Yellow.ai identifies the following use cases as a critical focus:

- **Virtual Customer Assistant (VCA) for Customer Support -** Customer Support is the most common use case implemented by organizations like Sephora, Xiaomi, Pepsico, Mondelez, etc. on the Yellow.ai platform. In 2020, the company enabled over 500 enterprises of all sizes to self-serve Customer Support.

- **Virtual Sales & Marketing Assistant -** Yellow.ai platform is an end-to-end relationship management stack. Hence, several of Yellow.ai's customer support bots also receive training on product sales skills like inventory, managing cart abandonment, personalized recommendations and sentiment analysis, etc., enabling the "sales through support" model. The platform connects with enterprise CRM and marketing tools to pull audience data, define multiple user personas and segment users by demographics. The platform analyzes all conversations occurring on the bot based on profile parameters, resulting in adding the end user to specific segments based on the products in which they show interest and gently retargeted should they drop off from the journey.

  All conversation happening on the bot is analysed on profile parameters and the end user can be added to specific segments based on the products that they show interest in, and gently retargeted if they drop off from a journey.

- **Virtual Enterprise Assistant (VEA) for Employee Experience:** Yellow.ai developed VEAs for various organizations to improve the employee experience across functions such as human resources, procurement, and corporate communications. Key features built around VEAs include channels, orchestration, insights engine and knowledge management, taxonomy, and fulfillment. The platform also integrates with all typical enterprise apps, including human resource management, information technology service management, and enterprise resource management, enabling app programming interface, retail price index, and secure file transfer protocol-based data exchange and automation.

- **Virtual Assistant over IVR/ Contact Center:** Yellow.ai bots connect with the existing contact center infrastructure of all large providers, such as Cisco, Genesys, and Avaya, as first-level support agents for outbound (e.g., payment reminders) or incoming (e.g., questions regarding bills) queries. Moreover, customer feedback is the starting point for all of Yellow.ai's new products and solutions. The company empowers its product teams with autonomy in decision-making around strategy and implementation. Additionally, its go-to-market team adapts to market changes nimbly through iterative product releases.

- **Virtual Assistant over RPA (hyper-automation use cases):** Mature organizations continue to evolve from a task-based automation or a siloed RPA automation stack to a full-fledged digital Ops toolbox. For several of Yellow.ai's large customers who already use RPA automation, adding conversational AI to their stack is the logical next step. Conversational AI+RPA eliminates the need for users to know which RPA process should be triggered. The combination also removes the need for the user to provide configurations for all possible scenarios upfront.Yellow.ai

Platform acts as the frontend for these RPA automation scenarios, fetching semantic input from the user, at the start and even in the middle of a process, and showcasing the progress and output in an interactive manner. Here is a video of a sample end-to-end invoice processing automation scenario with UI Path and Yellow.ai.

Multi-purpose Technology

Yellow.ai started as a conversational AI company that automated simple conversations like most chatbot vendors. Live agents receive complex ticketed queries and workflows on platforms such as Zendesk, Freshworks, and ServiceNow. However, after Yellow.ai onboarded the first few enterprises as adopters, the company realized the potential for a next-generation solution to enhance customer value. Yellow.ai's AI+Human model is unique in the market, with its platform supporting live agents by eliminating the enterprise need for two platforms (e.g., a chat bot and ticketing platform). Yellow.ai's. AI assistants learn from live agent responses to difficult questions, which helps them improve performance. This capability is not something that occurs natively with any other platform. As of 2021, the company natively integrates with enterprises' core systems to complete the action a user intends to achieve. Yellow.ai's model continues to improve over time, resulting in constant increases in agent productivity and CX. Most conversational AI or conversational CX automation platforms are inbound only, where consumers reach out to companies for support. Yellow.ai's platform offers inbound and outbound engagement in one place. Enterprises accept inbound support chats, resolve queries, and create automated, personalized outbound campaigns for promoting their offerings. This inbound and outbound engagement effectively positions the company as a total CX automation platform. There are more than 256 billion calls made by individuals to enterprises' customer support centers every year, translating into a $1.3 trillion market; however, the satisfaction rates on these calls hover around 3%. Yellow.ai's goal is to be a part of these calls and automate a large percentage of these interactions. Yellow.ai's innovative platform effectively resolves ~80% of queries and issues autonomously, eradicating the need for ticketing systems. Thus, Yellow.ai's. technology stands to disrupt the old platform built for human-led ticketing, resulting in a mass overhaul of the outdated technology.

Valuable Outcomes

Siloed chatbot offerings continue to drive the need for Conversational Artificial Intelligence (AI) Platforms. Yellow.ai's platform leverages an AI+Human approach that is unique to the market. Combined with key technology like its natural language processing in more than 100 different languages, the platform delivers building blocks for virtual assistants and bots that "become employees," providing the same customer experiences as human agents. Yellow.ai leverages its innovative teams to offer seamless interoperability across channels and identify gaps in technology. The 2020 COVID-19 pandemic resulted in a push for improved call center communications, and Yellow.ai met the challenge, upgrading its platform through a 2021 partnership with Microsoft to humanize its assistants and bots. With its innovative excellence, robust platform, and strong overall performance, Yellow.ai earns Frost & Sullivan's 2021 Middle East and South Asia Technology Innovation Leadership Award in the conversational AI market.

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Conclusion

Siloed chatbot offerings continue to drive the need for Conversational Artificial Intelligence (AI) Platforms. Yellow.ai's platform leverages an AI+Human approach that is unique to the market. Combined with key technology like its natural language processing in more than 100 different languages, the platform delivers building blocks for virtual assistants and bots that "become employees," providing the same customer experiences as human agents. Yellow.ai leverages its innovative teams to offer seamless interoperability across channels and identify gaps in technology. The 2020 COVID-19 pandemic resulted in a push for improved call center communications, and Yellow.ai met the challenge, upgrading its platform through a 2021 partnership with Microsoft to humanize its assistants and bots. With its innovative excellence, robust platform, and strong overall performance, Yellow.ai earns Frost & Sullivan's 2021 Middle East and South Asia Technology Innovation Leadership Award in the conversational AI market.

What You Need to Know about the Technology Innovation Leadership Recognition

Frost & Sullivan's Technology Innovation Award recognizes the company that has introduced the best underlying technology for achieving remarkable product and customer success while driving future business value.

Best Practices Award Analysis

For the Technology Innovation Leadership Award, Frost & Sullivan analysts independently evaluated the criteria listed below.

Technology Leverage

Commitment to Innovation: Continuous emerging technology adoption and creation enables new product development and enhances product performance

Commitment to Creativity: Company leverages technology advancements to push the limits of form and function in the pursuit of white space innovation

Stage Gate Efficiency: Technology adoption enhances the stage gate process for launching new products and solutions

Commercialization Success: Company displays a proven track record of taking new technologies to market with a high success rate

Application Diversity: Company develops and/or integrates technology that serves multiple applications and multiple environments

Business Impact

Financial Performance: Strong overall financial performance is achieved in terms of revenues, revenue growth, operating margin, and other key financial metrics

Customer Acquisition: Customer-facing processes support efficient and consistent new customer acquisition while enhancing customer retention

Operational Efficiency: Company staff performs assigned tasks productively, quickly, and to a high-quality standard

Growth Potential: Growth is fostered by a strong customer focus that strengthens the brand and reinforces customer loyalty

Human Capital: Commitment to quality and to customers characterize the company culture, which in turn enhances employee morale and retention

About Frost & Sullivan

Frost & Sullivan is the Growth Pipeline Company™. We power our clients to a future shaped by growth. Our Growth Pipeline as a Service™ provides the CEO and the CEO's growth team with a continuous and rigorous platform of growth opportunities, ensuring long-term success. To achieve positive outcomes, our team leverages over 60 years of experience, coaching organizations of all types and sizes across 6 continents with our proven best practices. To power your Growth Pipeline future, visit Frost & Sullivan at http://www.frost.com.

The Growth Pipeline Engine™

Frost & Sullivan's proprietary model to systematically create on-going growth opportunities and strategies for our clients is fuelled by the Innovation Generator™. Learn more.

Key Impacts:

- **Growth Pipeline:** *Continuous flow of Growth opportunities*
- **Growth Strategies:** *Proven Best Practices*
- **Innovation Culture:** *Optimized Customer Experience*
- **ROI & Margin:** *Implementation Excellence*
- **Transformational Growth:** *Industry Leadership*

The Innovation Generator™

Our six analytical perspectives are crucial in capturing the broadest range of innovative growth opportunities, most of which occur at the points of these perspectives.

Analytical Perspectives:

- **Mega Trend (MT)**
- **Business Model (BM)**
- **Technology (TE)**
- **Industries (IN)**
- **Customer (CU)**
- **Geographies (GE)**