

F R O S T & S U L L I V A N

FROST & SULLIVAN BEST PRACTICES AWARD

ADVANCED AUTOMOTIVE CONVERSATIONAL
PLATFORM - NORTH AMERICA

Technology Innovation 2019



FROST & SULLIVAN

2019

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Background and Company Performance

Industry Challenges

Automotive retail has become one of the most competitive consumer markets with its shifting focus from product to the customer. The abundance of digitally connected customers has increased the use of mobile devices, increased the proliferation of social media, and increased the demand for personalized online purchase experiences in a way that is disrupting the automotive retail industry. This disruption has made it crucial for original equipment manufacturers (OEMs) and dealerships to reconsider their conventional retail business models for today's digitally connected customers or risk losing their business to forward-thinking competitors.

When shopping for a new vehicle, only a small portion of customers visit dealerships having done no online research. The vast majority prefers to conduct online research regarding things such as vehicle specifications, on-road price, and customer reviews before making a purchasing decision. As such, online vehicle marketplaces should integrate a lead response technology that can address any of the customer queries instantly. If the customer does not get an instant response from the online retail channels they are not likely to visit that particular dealership, impacting lead generation and revenue for the dealers. To avoid losing these opportunities, OEMs should make use of digital assistants to help their customers with instant replies and follow-ups 24/7. More than just building a conversation, these assistants should also be well equipped to understand the user's context/intent and curate responses accordingly. Building a cognitive knowledge base by integrating multiple data points is required to intelligently answer questions about a manufacturer's entire model line-up anytime in a personalized manner.

It is also imperative for OEMs and dealerships to manage trust and complexity for customers throughout the vehicle ownership life cycle. Customers expect a seamless mode of communication with their brand for queries regarding warranty information, service requests, insurance claims, and searching for parts and accessories. However, not all brands have a customer engagement platform in place to ensure uninterrupted customer service across multiple retail channels. Frost & Sullivan expects these challenges to pose serious threats to OEM business and impact brand loyalty among potential customers.

Technology Attributes and Future Business Value

Industry Impact and Product Impact

Changing mobility preferences of customers, a lack of personalized shopping experience, and the inability of chatbots to stimulate human-like conversation are the key challenges faced by the automotive retail market. CarLabs.ai, founded in 2016, aims to address these challenges by building an artificial intelligence (AI)-based customer engagement and

marketing platform. CarLabs functions far beyond just acting as a chatbot and automated email company, and it automates a significant portion of managed and live chat conversations. Its intelligent assistants will engage with leads found on social platforms, ads and organic web traffic. It will provide decision support and then hand off the leads, once qualified, to the sales workforce within auto dealerships to automate sales, provide 24/7 customer responses and reduce costly call center volumes. All the customer data from multiple sources is tracked and captured in CRM systems,

With the increasing awareness of digital assistants and their use in the automotive industry, OEMs expect them to solve more complex business challenges. The ability of digital assistants to dynamically retrieve vehicle specifications of different models and provide comparisons to competitive brands requires the integration of numerous data points.

CarLabs' Software-as-a-Service (SaaS)-based customer engagement platform allows for the creation of an intelligent knowledge-base from multiple data points and then organizes the data and other digital assets using a human-like conversational logic. It then applies natural language processing, an automotive-specific dictionary, spellcheck and other AI and machine learning (ML) tools to deliver real value and decision support in the form of a conversation.

Once the platform understands the user intent and context, multiple techniques are deployed to access the data and accordingly curate that information into appropriate sentences. Other chatbot companies in the industry answer basic questions and answers (Q&As) and offer decision-tree-structured responses. However, CarLabs distinguishes itself from the market with its auto-domain-specific business logic and its ability to dynamically retrieve information and programmatically construct sentences for any type of query. Also its analytics support tools offer verbatims and insights into what the customer wants. Its platform can power conversations on any messaging channel or application including Web chat, Facebook, Twitter, Alexa, and SMS.

With more than 7 million consumer exchanges on the CarLabs platform, the company has accomplished impressive results among key business clients, including:

- More than a 50% reduction in call center volume
- 50x increase in customer-brand engagement via Facebook Messenger
- Click-to Messenger ad campaigns resulted in 20% increased daily calls to dealerships and 46% increased daily average dealer inventory searches

Frost & Sullivan believes that the capability to dynamically retrieve vehicle information using cognitive intelligence, provide human-like conversation and offer 24/7 personalized customer service, CarLabs is uniquely positioned to strengthen its market position and winning future sales among OEMs and dealerships.

Customer Acquisition

Deploying a digital assistant on a Web site and automating responses is not enough. These assistants should have the capability to intelligently derive insights from customer conversations and classify intent leads from the others. CarLabs' proprietary natural language processing tools, along with its built-in automotive specific database, will help in responding to any type of customer queries about vehicles, models, brands, and much more. It also has a sophisticated analytics engine in place that optimizes the experience based on user input and data. These factors are a huge competitive advantage for CarLabs when acquiring new customers and retaining its existing customers in the industry.

In 2017, CarLabs partnered with Kia Motors America to create the AI-powered virtual assistant called Kian in order to guide customers through their shopping experience on Kia.com. Four months after its launch, the company was able to achieve 3x more lead conversions through Kian than from the traditional Kia Web site. Similar to Kian, CarLabs partnered with Honda to launch Honda Bot on Facebook Messenger in 2018 with the goal of helping customers throughout their vehicle purchase journey starting with targeted Click-to-messenger ads on Facebook. Car shoppers can use this platform to connect with a virtual Honda representative and inquire about products, pricing details, estimate payments, special offers and discounts, search inventory, and view nearby dealers from the convenience of Facebook's Messenger platform. At National Automobile Dealers Association (NADA) 2019, DealerSocket announced that it will be incorporating CarLabs' AI capabilities into DealerSocket's suite of products in order to improve the customer experience. This will allow dealers to deliver personalized and fully automated sales interactions with customers.

Apart from the OEMs and automotive software companies, CarLabs is also partnering with captive finance groups such as Hyundai Capital America and BMW Financial Services in order to create finance assistants. These have the goal of helping customers manage their financing accounts. Financing related enquires, such as the number of payments left in a leasing period and changing the due date, will be handled by these assistants.

The Carlabs.ai platform architecture and integration with open source technology from Microsoft, Amazon Web Services (AWS) and others allows it to integrate with numerous third party data sources, customer service platforms and CRM databases. CarLabs is most integrated with Amazon Web Services and is classified as an Advanced Technology Partner for Amazon Web Services (AWS) and hosts its solution on the AWS cloud. They also leverage other AWS tools including natural language processing tool Comprehend and machine learning tools including Sagemaker, Forecast, and Personalize to enhance solutions for CarLabs clients. Frost & Sullivan believes that CarLabs partnerships with leading OEMs, automotive software companies, and financial groups are a huge competitive advantage for the company and a strong testament to its growth potential in the automotive industry.

Scalability and Technology Licensing

OEMs expect future customer engagement solutions to be robust, scalable, and current with the latest features in order to provide the best possible experience for the customers. CarLabs' pricing structure includes a one-time engineering fee to integrate a client's content into its knowledge-based engagement platform. They also charge a monthly subscription fee that includes analytics, support, and continuous solution optimization. Because CarLabs' solutions are SaaS based, they have the potential to continually innovate its platform with new skills and features that can be seamlessly delivered to its clients through its monthly licensing service. Because it can continually innovate throughout its lifetime, CarLabs solutions have great potential to be licensed across different automaker's functions such as marketing, sales, finance, and call center support and will help build a strong customer base in the industry.

Application Diversity

CarLabs not only helps clients with the customer shopping experience using chatbots, but it also builds ownership agents, finance assistants, and engagement tools such as Facebook/Instagram advertisements, messenger marketing platform, and chat advertisements. The company's ownerships agents will help current customers who visit the Web sites or social media channels gain information regarding items such as warranties, parts and accessories, and vehicle issues after the vehicle purchase. Finance assistants help answers questions about customer accounts with the captive finance organization. Customers can also take 24/7 actions using these assistants, such as making payments, enabling paperless billing, and setting up autopay options.

When customers click on CarLabs-developed social media advertisements, digital assistants will open up to assess the customer's intent and deliver appropriate information. The messenger marketing platform will integrate with a dealer's internal customer relationship management (CRM) solution to help customers sign up for online portals or search for recalls. Chat advertisements will display personalized ad campaigns for the customers via chatbots, thereby increasing engagement rates to 87% when compared to traditional click-through ads. The capability of CarLabs' solutions to cater to diversified marketing and sales use cases for OEMs and dealerships using intelligent conversational assistants will help the company become a trusted technology partner in the automotive retail industry.

Conclusion

OEM brands and dealerships are struggling to accommodate the changing mobility preferences of customers and to provide a 24/7 personalized service experience. With digital assistants booming in the market, it is imperative for brands to identify their requirements and integrate intelligent assistants into their social media channels to achieve significant lead conversion rates and brand loyalty among the consumers. Once digital assistants are deployed, it is even more challenging to provide accurate responses based on a user's intent and provide any level of automotive specific information requested by the customers. CarLabs identified this challenge and builds conversational engagement platforms with an intelligent knowledge base that can dynamically retrieve information about any vehicle specification. Using this, it can answer questions about a manufacturer's entire model line-up through 24/7 assistance. By leveraging expertise in AI and ML technologies, CarLabs is able to intelligently and seamlessly stimulate human-like communication architecture between the consumers and the brand.

Acquiring clients such as Honda, Kia Motors, Hyundai Capital America, BMW Financial Services, and DealerSocket within four years of the company's launch has proven to be crucial in building CarLabs' strong brand reputation. Increased lead conversation rates, a reduction in call center volumes, and increased Web site traffic through chatbot engagements are some of the significant benefits achieved by CarLabs clients. For its strong overall performance, robust customer engagement solutions, and key industry partnerships, CarLabs has earned Frost & Sullivan's 2019 Technology Innovation Award.

Significance of Technology Innovation

Ultimately, growth in any organization depends on finding new ways to excite the market and maintaining a long-term commitment to innovation. At its core, technology innovation, or any other type of innovation, can only be sustained with leadership in 3 key areas: understanding demand, nurturing the brand, and differentiating from the competition.



Understanding Technology Innovation

Technology innovation begins with a spark of creativity that is systematically pursued, developed, and commercialized. That spark can result from a successful partnership, a productive in-house innovation group, or a bright-minded individual. Regardless of the source, the success of any new technology is ultimately determined by its innovativeness and its impact on the business as a whole.

Key Benchmarking Criteria

For the Technology Innovation Award, Frost & Sullivan analysts independently evaluated 2 key factors—Technology Attributes and Future Business Value—according to the criteria identified below.

Technology Attributes

- Criterion 1: Industry Impact
- Criterion 2: Product Impact
- Criterion 3: Scalability
- Criterion 4: Visionary Innovation
- Criterion 5: Application Diversity

Future Business Value

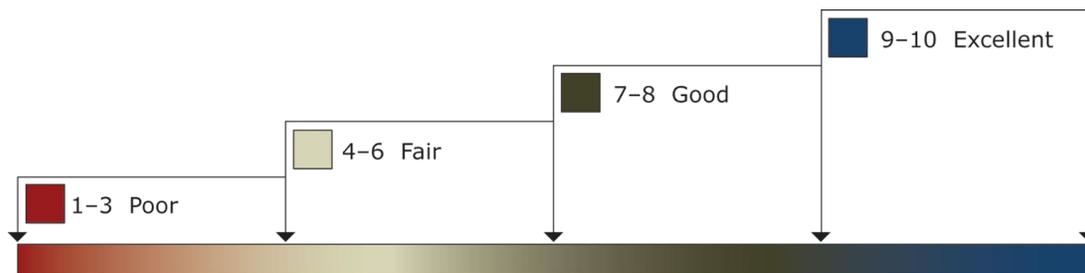
- Criterion 1: Financial Performance
- Criterion 2: Customer Acquisition
- Criterion 3: Technology Licensing
- Criterion 4: Brand Loyalty
- Criterion 5: Human Capital

Best Practices Award Analysis for CarLabs.ai

Decision Support Scorecard

To support its evaluation of best practices across multiple business performance categories, Frost & Sullivan employs a customized Decision Support Scorecard. This tool allows research and consulting teams to objectively analyze performance according to the key benchmarking criteria listed in the previous section, and to assign ratings on that basis. The tool follows a 10-point scale that allows for nuances in performance evaluation. Ratings guidelines are illustrated below.

RATINGS GUIDELINES



The Decision Support Scorecard considers Technology Attributes and Future Business Value (i.e., the overarching categories for all 10 benchmarking criteria; the definitions for each criterion are provided beneath the scorecard). The research team confirms the veracity of this weighted scorecard through sensitivity analysis, which confirms that small changes to the ratings for a specific criterion do not lead to a significant change in the overall relative rankings of the companies.

The results of this analysis are shown below. To remain unbiased and to protect the interests of all organizations reviewed, Frost & Sullivan has chosen to refer to the other key participants as Competitor 1 and Competitor 2.

<i>Measurement of 1-10 (1 = poor; 10 = excellent)</i>			
Technology Innovation	Technology Attributes	Future Business Value	Average Rating
CarLabs.ai	9.0	9.1	9.05
Competitor 1	7.6	7.2	7.40
Competitor 2	8.0	8.5	8.25

Technology Attributes

Criterion 1: Industry Impact

Requirement: Technology enables the pursuit of groundbreaking ideas, contributing to the betterment of the entire industry.

Criterion 2: Product Impact

Requirement: Specific technology helps enhance features and functionalities of the entire product line for the company.

Criterion 3: Scalability

Requirement: Technology is scalable, enabling new generations of products over time, with increasing levels of quality and functionality.

Criterion 4: Visionary Innovation

Requirement: Specific new technology represents true innovation based on a deep understanding of future needs and applications.

Criterion 5: Application Diversity

Requirement: New technology serves multiple products, multiple applications, and multiple user environments.

Future Business Value

Criterion 1: Financial Performance

Requirement: Potential is high for strong financial performance in terms of revenue, operating margins, and other relevant financial metrics.

Criterion 2: Customer Acquisition

Requirement: Specific technology enables acquisition of new customers, even as it enhances value to current customers.

Criterion 3: Technology Licensing

Requirement: New technology displays great potential to be licensed across many verticals and applications, thereby driving incremental revenue streams.

Criterion 4: Brand Loyalty

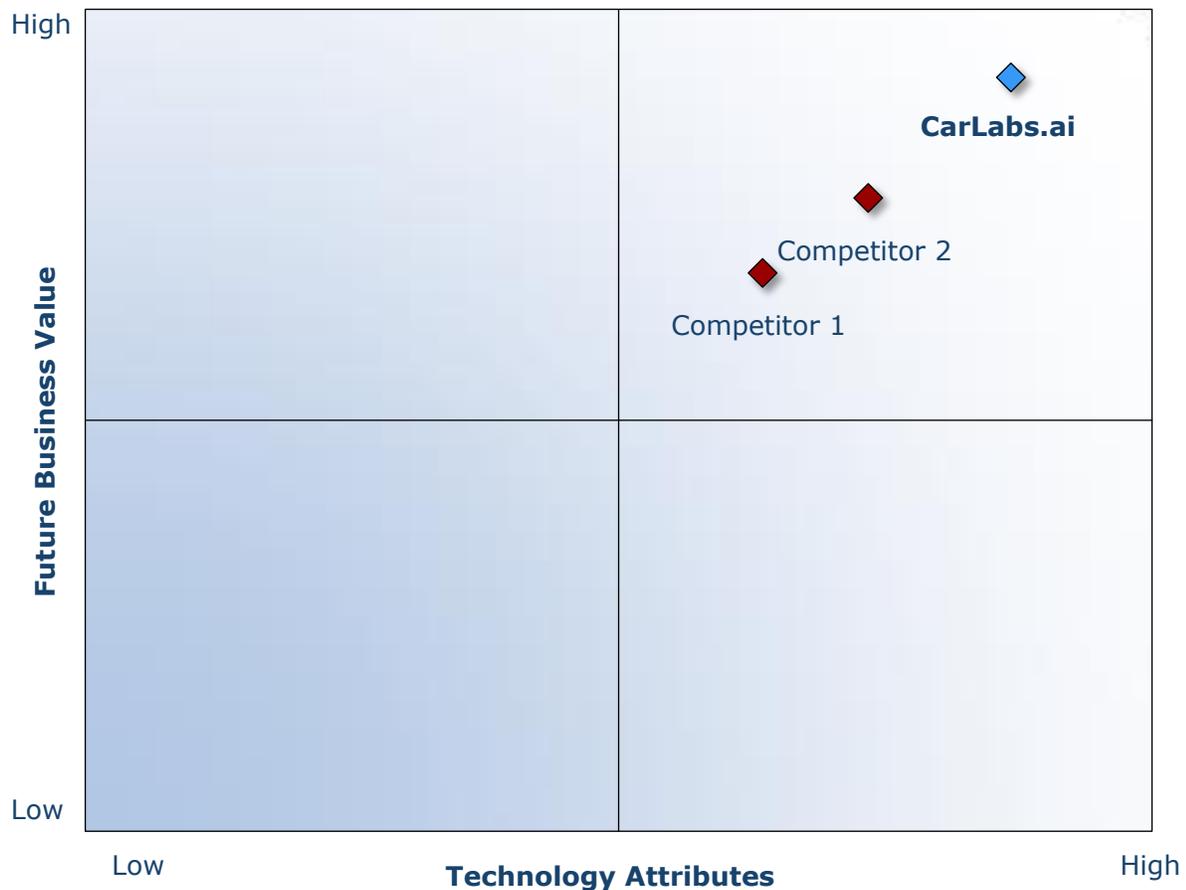
Requirement: New technology enhances the company’s brand, creating and/or nurturing brand loyalty.

Criterion 5: Human Capital

Requirement: Customer impact is enhanced through the leverage of specific technology, translating into positive impact on employee morale and retention.

Decision Support Matrix

Once all companies have been evaluated according to the Decision Support Scorecard, analysts then position the candidates on the matrix shown below, enabling them to visualize which companies are truly breakthrough and which ones are not yet operating at best-in-class levels.



Best Practices Recognition: 10 Steps to Researching, Identifying, and Recognizing Best Practices

Frost & Sullivan analysts follow a 10-step process to evaluate award candidates and assess their fit with select best practices criteria. The reputation and integrity of the awards are based on close adherence to this process.

STEP	OBJECTIVE	KEY ACTIVITIES	OUTPUT
1 Monitor, target, and screen	Identify award recipient candidates from around the world	<ul style="list-style-type: none"> • Conduct in-depth industry research • Identify emerging industries • Scan multiple regions 	Pipeline of candidates that potentially meet all best practices criteria
2 Perform 360-degree research	Perform comprehensive, 360-degree research on all candidates in the pipeline	<ul style="list-style-type: none"> • Interview thought leaders and industry practitioners • Assess candidates' fit with best practices criteria • Rank all candidates 	Matrix positioning of all candidates' performance relative to one another
3 Invite thought leadership in best practices	Perform in-depth examination of all candidates	<ul style="list-style-type: none"> • Confirm best practices criteria • Examine eligibility of all candidates • Identify any information gaps 	Detailed profiles of all ranked candidates
4 Initiate research director review	Conduct an unbiased evaluation of all candidate profiles	<ul style="list-style-type: none"> • Brainstorm ranking options • Invite multiple perspectives on candidates' performance • Update candidate profiles 	Final prioritization of all eligible candidates and companion best practices positioning paper
5 Assemble panel of industry experts	Present findings to an expert panel of industry thought leaders	<ul style="list-style-type: none"> • Share findings • Strengthen cases for candidate eligibility • Prioritize candidates 	Refined list of prioritized award candidates
6 Conduct global industry review	Build consensus on award candidates' eligibility	<ul style="list-style-type: none"> • Hold global team meeting to review all candidates • Pressure-test fit with criteria • Confirm inclusion of all eligible candidates 	Final list of eligible award candidates, representing success stories worldwide
7 Perform quality check	Develop official award consideration materials	<ul style="list-style-type: none"> • Perform final performance benchmarking activities • Write nominations • Perform quality review 	High-quality, accurate, and creative presentation of nominees' successes
8 Reconnect with panel of industry experts	Finalize the selection of the best practices award recipient	<ul style="list-style-type: none"> • Review analysis with panel • Build consensus • Select recipient 	Decision on which company performs best against all best practices criteria
9 Communicate recognition	Inform award recipient of recognition	<ul style="list-style-type: none"> • Present award to the CEO • Inspire the organization for continued success • Celebrate the recipient's performance 	Announcement of award and plan for how recipient can use the award to enhance the brand
10 Take strategic action	Upon licensing, company is able to share award news with stakeholders and customers	<ul style="list-style-type: none"> • Coordinate media outreach • Design a marketing plan • Assess award's role in strategic planning 	Widespread awareness of recipient's award status among investors, media personnel, and employees

The Intersection between 360-Degree Research and Best Practices Awards

Research Methodology

Frost & Sullivan's 360-degree research methodology represents the analytical rigor of the research process. It offers a 360-degree view of industry challenges, trends, and issues by integrating all 7 of Frost & Sullivan's research methodologies. Too often companies make important growth decisions based on a narrow understanding of their environment, resulting in errors of both omission and commission. Successful growth strategies are founded on a thorough understanding of market, technical, economic, financial, customer, best practices, and demographic analyses. The integration of these research disciplines into the 360-degree research methodology provides an evaluation platform for benchmarking industry participants and for identifying those performing at best-in-class levels.

360-DEGREE RESEARCH: SEEING ORDER IN THE CHAOS



About Frost & Sullivan

Frost & Sullivan, the Growth Partnership Company, helps clients accelerate growth and achieve best-in-class positions in growth, innovation, and leadership. The company's Growth Partnership Service provides the CEO and the CEO's growth team with disciplined research and best-practices models to drive the generation, evaluation, and implementation of powerful growth strategies. Frost & Sullivan leverages nearly 60 years of experience in partnering with Global 1000 companies, emerging businesses, and the investment community from 45 offices on 6 continents. To join Frost & Sullivan's Growth Partnership, visit <http://www.frost.com>.