Conversational A.I.:
It’s A Bot Time for a New Conversation on Customer Engagement

Stratecast Analysis by
Jeff Cotrupe
Conversational A.I.:
It’s A Bot Time for a New Conversation on Customer Engagement

Introduction

By 2020, customer experience will overtake product and price as the #1 way for companies to differentiate themselves. US companies are now losing more than $83 billion annually due to poor customer experiences, an effect compounded by the reality that it costs six to seven times more to attract a new customer than to retain an existing one. Yet, while consumers punish poor experiences by taking their business elsewhere, they also reward companies who get customer experience right: 74% have spent more with a business due to a history of good service. These statistics emphasize the importance of synergizing customer experience with marketing and sales, to enhance both retention and revenue generation. In fact, this concept informed Stratecast’s establishment of Customer Experience, Marketing, and Sales Analytics (CEMSA) as one of five functional Big Data & Analytics (BDA) categories, as shown in Exhibit 1. CEMSA accounted for 25% of the $44.39 billion global BDA market, or approximately $11.1 billion, in 2015.

Exhibit 1: BDA Functional Overview focusing on CEMSA

---

1 In preparing this report, Stratecast conducted interviews with the following representatives of Next IT:
   - Rick Collins, President
   - Jennifer Snell, Vice President

Please note that the insights and opinions expressed in this assessment are those of Stratecast, and have been developed through the Stratecast research and analysis process. These expressed insights and opinions do not necessarily reflect the views of the company executives interviewed.

2 Walker Research, Customers 2020, available [here](#)

3 IBM, The State of Marketing 2013, quoted [here](#), and available [here](#)

4 White House Office of Consumer Affairs (2015), quoted [here](#), and available [here](#)

5 American Express, 2014 Global Customer Service Barometer, quoted [here](#), and available [here](#)
The importance of CEMSA was reflected in Stratecast’s 2015 BDA Market Survey: 28% of respondents are using CEMSA-focused solutions; and 32% are in the process of implementing, evaluating, or doing proofs of concept (PoCs). ⁶

Most organizations understand the direct correlation between customer experience and business performance. The question is how to make those experiences pay off even more through higher revenue per interaction. This SPIE report analyzes how smart companies are achieving just these types of results through artificial intelligence (A.I.) and other technologies, to serve and effectively engage with their customers.

**A Quick History of the Evolution of Support**

A decade ago, the model for support was a toll-free number. When apparent that maintaining call centers staffed with live customer service representatives had become too resource-intensive, companies at first did not change the model; they simply changed the venue, moving support offshore, where CSRs worked for pennies on the dollar. This generated legions of angry customers and late-night comedy routines about the new wave of CSRs: “My name is Arremando, but you can call me Skip.”

The next step was a landmark of sorts: automating processes such that customers could access self-service portals to handle the most common tasks. However, customers found themselves choosing between the lesser of two evils:

- The ease of full service—with added opportunity costs (waiting for a CSR) and sometimes monetary costs (paying for service).
- Free, immediate access to self-service offerings—which offer limited functionality and often result in the customer reverting back to full service anyway.

Either way, this represents an enormous cost to companies, and an inefficient, frustrating, churn-inducing experience for customers.

Fast-forward to the advent of lightweight, general purpose virtual assistants, such as Apple’s Siri, introduced with the iPhone 4S in 2011. Siri-like virtual assistants (VAs) are now at work in many organizations, providing human-like guidance to users, usually in the form of animated characters with jaunty names keyed to the organization’s brand image. Five key technologies provide the foundation for VAs:

1. **Machine learning**, a simplified model of actual human neural circuitry that ingests data and solves problems, and has the ability to continuously “learn” and adapt based on evolving inputs and customer needs.

2. **Artificial intelligence and artificial general intelligence (AI/AGI)**, which builds on machine learning by enabling machines to exhibit intelligent, human-like behavior.

---

3. **Natural Language Processing (NLP)**, the ability of a computer to interpret or understand human language, both typed and using voiced speech, and take appropriate action.

4. **Real-time analytics**, which occurs via stream processing of data in primary data storage, or random access memory (RAM), before the data is sent to secondary data storage.

5. **Web services and user profiles**. Web services support interoperable machine-to-machine interaction over the Web; systems develop user profiles by accessing customer demographic and usage basics as well as a variety of contextual, social, and behavioral data points. This enables the system to determine the optimal products and services to offer a user, the best channels to use for selling and servicing actions, and more.

Machine-accelerated productivity automates repetitive consumer and business processes so businesses can scale. The quantum leap here, however, is in applying the technology, not merely to reduce headcount in call centers, but as the tip of the spear for a whole new strategy where user self-help is a catalyst for stronger customer engagements, revenue generation, and share of wallet.

Today, consumers who may have eschewed the use of virtual assistants such as Siri, as incapable of complex or specialized tasks, are beginning to use a new wave of intelligent virtual assistants (IVAs), or chatbots, which provide conversational interfaces delivered via conversation as a platform (CAAP). An IVA is usually an avatar, some of which appear in this report in Exhibit 3, with a dialogue box where the conversation takes place. While early IVAs were little more than a cartoon interface and some extra guidance for search, the technology has evolved such that today’s IVAs can be thought of as emulated humans: photorealistic and often animated with facial expressions. This powerful implementation of conversational A.I. transcends mere understanding of user input to actually responding to what a user says, creating the experience of a conversation; they provide the full-service experience to customers in a self-service fashion, while companies reap the benefits of lower cost, scalability, and consistency in delivery. Today, IVAs are helping consumers shop, order services, book travel, schedule meetings, and more.

IVAs use natural language processing (NLP) to address an issue that has long plagued customer support in all its forms: customers often do not use the same language as a business to describe their needs. This is also why conversational interfaces may replace search for some functions. If a user’s search terms are ambiguous or vague, search results may be of little use; or even if a search is well-formed, the user must still choose the best answer from a list of search results. With conversational A.I., any shortcomings in search entries can be identified; the system can “talk” to the user to understand actual intent; and instead of providing a list of results, the system can provide the single best response.

---

7 In fact, this disparity between what customers experience and what companies can recognize and quantify is the basis of one of the most important ways to measure the quality of communications services: the Mean Opinion Score (MOS), which assigns a numeric value corresponding to a user’s perception of a given service.
IVAs Save Money—and Give Customers What They Want in the Bargain

Conversational A.I. represents the intersection of company and customer needs. Today, many customers do not want to talk on the phone to get answers; they want automated support; 64% prefer to contact customer service via text entry. This is even truer among millennials, or Generation Y, defined as those reaching adulthood around the year 2000, who are highly connected and technologically advanced. The word that millennials use with regard to text-based communication is that they are “talking” to people. So, it is not surprising that 76% of younger consumers embrace text messaging as a customer service option; and that these younger consumers are twice as likely as those over age 35 to stay loyal to those who serve them this way. Millennials currently account for more than one-fifth of all consumer discretionary purchases, which translates into more than $1 trillion in direct buying power. So, more and more, the question of how to leverage good customer experiences into better business performance equates to, “How can we most effectively engage with millennials?” Conversational A.I. provides an answer; and the following section discusses one way it is being deployed today: chatbots.

Microsoft and Facebook Enter the Fray with Chatbots

Chatbots are apps, similar to IVAs and personal assistants (PAs), that integrate with a chat platform and APIs to provide advanced functionality through user-to-bot text or voice conversations. Microsoft and Facebook have recently announced their intentions to launch chatbots, which lends credibility and investment potential, but has also added intrigue.

Microsoft’s Tay Goes Astray…but Microsoft’s IVA Strategy Rolls On

Microsoft recently released on Twitter a chatbot called Tay, to conduct research on conversational interfaces. Tay, a “female” bot, is targeted at 18-24 year olds in the US. Microsoft’s concept is that the more that users chat with Tay, the smarter she will get, leading to more personalized experiences. Almost immediately upon the launch of Tay, so-called Twitter “trolls” began repeatedly baiting the chatbot into negative conversations, such that within 24 hours, Tay generated a series of offensive tweets; Microsoft shut Tay down within a few days of launch. Tay illustrated the paradox in conversational A.I.: many have said Microsoft should have built stronger safeguards into Tay—yet, the market continues to demand more dynamic A.I. that can respond to any question or comment. It is, however, possible to achieve both safety and utility if safeguards are put in place, including:

- The underlying directive that an IVA engage in goal-based, not open-ended, conversations. This means the IVA guides the dialogue toward predictable endpoints; and if the IVA isn’t sure what its goal is, it asks questions to clarify user intent.

---

8 Source: Harris-One Reach Customer Service Poll (2014)
9 Millennial Marketing, Who Are Millennials (2016), quoted and available here
10 Tay is definitely a female character; the author’s quotation marks are a humor-induced exclamation at the thought of referring to a chatbot by gender.
• Human oversight of the responses an IVA gives to a user, such that a bot passes users to human agents when it lacks confidence in its ability to respond.

Tay had no human oversight, and was not engineered to conduct goal-based dialogue, which is why users were able to manipulate her responses.

Despite this initial misstep, Microsoft’s branded Conversations as a Platform (CAAP) strategy continues unabated, based on Cortana, a voice-controlled IVA similar to Apple’s Siri. Cortana, which is on Windows 10 now, is initially being deployed on Windows Phone; but Microsoft stated that Cortana will also work on iOS and Android devices. Cortana will use Microsoft’s Bing search engine and user smartphone data to make personalized recommendations in order to handle tasks such as shopping and ordering, looking up flights, scheduling, and more. Microsoft is working with developers to create A.I. bots that will work with Cortana to expand its capabilities.

**Facebook Chatbots are Using Multimedia for Sales and Support**

Using its Messenger Platform, Facebook is now enabling businesses to deliver automated customer support, eCommerce guidance, content, and interactive experiences through chatbots that can send text, images, links, and call to action buttons. Facebook chatbots let users shop, make restaurant reservations, and more. Facebook will drive chatbot usage with a persistent search bar at the top of Messenger. Similar to Microsoft, Facebook is working with developers to build their own chatbots, either using Facebook’s Bot Engine directly or by working with Facebook partners.

**IVAs Engage Customers across Channels with Personalized Content**

Chatbots can fulfill a range of needs, but they have a singular purpose. The object of automated assistance today is to truly engage customers to drive revenue and relationships. IVAs are a key component in a strategy that helps companies avoid a siloed approach to the AI stack; and, instead, can meet a range of users’ needs, and scenarios across the enterprise, with the right combination of IVAs, IVRs, chat, chat and messaging bots, and apps.

Finding partners who can apply cognitive technology to consumer interactions, to deliver on the promise of conversational A.I., is the best path to building engagement platforms that will deliver successful outcomes. A capable company Stratecast has identified in this regard is Next IT.

**Next IT Offers Conversational A.I., Supporting Customers and Employees**

Next IT delivers solutions that revolutionize how technology interacts with people, and has been doing so for more than a decade. Its Alme conversational A.I. platform—which is extensible through plugins, as illustrated in Exhibit 2—engages customers, and supports employees by letting them do what is most natural: having conversations. Users can talk, type or tap, and Alme-based IVAs deliver accurate answers. Alme supports user interactions across engagement channels including IVAs, IVRs, chat, messaging and chat bots, and apps.
Next IT sees its role as going well beyond helping users perform tasks to becoming an extension of its client’s brands. It identifies a customer’s areas of heavy customer interaction, puts the appropriate language model in place, and evolves its solution over time to grow the relationship. While the client’s original focus may have been to simply automate customer support, Next IT helps it transcend churn reduction and compete for share of wallet.

Another thing that sets Next IT apart from competitors is that its solutions actively address both customer engagement and workforce support. Its Customer Engagement products include solutions specifically designed for travel, insurance, and communications; and its Workforce Support products address IT helpdesk, human capital management (human resources), and sales engineering. Aptly noting that if growth trends continue, healthcare spending will account for 20% of US GDP by 2022, 11 Next IT also offers a product addressing that sector. The Alme Health Coach is a HIPAA-compliant app that achieves what many see as the way to achieve healthcare transformation: real-time, patient-focused engagement, and population health management.

Next IT’s Quick Start offering helps clients get up and running quickly, with expertise developed from specific use cases, such as those in the following section.

11 Milken Institute, *Checkup Time: Chronic Disease and Wellness in America* (January 2014), quoted here, and available here
Case Study Snapshots: Next IT Solutions in Action

Exhibit 3 shows results that companies are obtaining from Next IT solutions. All company names are known to Stratecast; some interviews were granted under non-disclosure agreements; but Stratecast believes that all of these results, named or not, add value to readers of this report.

### Exhibit 3: Selected Customer Results Achieved by Deploying Next IT

<table>
<thead>
<tr>
<th>Customer: IVA/Chatbot</th>
<th>Situation/Need</th>
<th>Solution</th>
<th>Benefits</th>
<th>ROI</th>
</tr>
</thead>
</table>
| Amtrak: Ask Julie     | • Sought a way to simplify online booking  
                        • Needed to reduce customer support costs | IVA went live in six months; and now answers 5+ million questions/year  
                        • 8X ROI  
                        • 25% more bookings generated, and 30% increase in revenue per booking  
                        • Saving $1 million/year in customer service emails |  
| Top-tier airline      | • Sought to improve online customer service  
                        • Wanted to create engagement to quickly connect travelers with relevant information | Has answered 20 million questions to date  
                        • Removed live chat within nine months due to decline in need  
                        • Ranked #1 airline in customer satisfaction by JD Power |  
| Wall Street-based financial services firm | With hundreds of forms and 350+ online apps, associates had trouble finding right form or app, spent an average of 20–30 minutes looking for each | Launched arguably world’s largest, most complex IVA, answering 27,000+ questions/day  
                        • Comprehensive knowledge of 3,000 products and 400 applications  
                        • 98% adoption with target audience  
                        •Knows each customer and current context; and delivers the right form, information or application instantly  
                        • Saved $32M per year in billable time wasted in searching |  |
<table>
<thead>
<tr>
<th>Customer: IVA/Chatbot</th>
<th>Situation/Need</th>
<th>Solution</th>
<th>Benefits</th>
<th>ROI</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>US Army: Sgt Star</strong></td>
<td>• Sought a way to engage tech-savvy youth&lt;br&gt;• Needed to save cost on recruiting processes</td>
<td>• First IVA with its own mobile app, and first to talk with users on Facebook&lt;br&gt;• Has answered 16+ million questions to date&lt;br&gt;• Average on-site interaction time up from four minutes to 10.4 minutes&lt;br&gt;• Does the job of 55 recruiters by pre-qualifying recruits, delivering more qualified leads</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>One of largest US cable-based communications service providers (CSPs)</strong></td>
<td>Needed a solution to sit in front of live chat and deflect call center traffic</td>
<td>• IVA answers both common and account-specific questions&lt;br&gt;• 5X ROI&lt;br&gt;• 91% decrease in live chat volume&lt;br&gt;• 50% less time spent completing a task with IVA versus live chat agent</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Aetna: Ask Ann</strong></td>
<td>Sought automated way to help members complete a secure, HIPAA-compliant (and therefore complex, difficult) account registration process</td>
<td>• More than half of those registering on member Web site engage with Ann&lt;br&gt;• Averages 20,000+ chats/day&lt;br&gt;• 29% reduction in calls to member service helpdesk</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Sources: Next IT and clients

Clearly, Next IT IVAs are achieving the promise of conversational A.I., which is to not only generate savings by automating processes, but also generate revenue by the quality of the experience and information that the IVA provides.

**Analyst’s Advocate: Issues around Choice and Privacy**

Moving away from presenting users with choices—à la search results—and, instead, presenting one best choice, may make a customer’s experience more convenient. However, the elapsed time since the Web began presenting users with seemingly limitless choices, considered against the totality of the human era, is still a recent phenomenon, and one that few users will relinquish easily. For that reason, while usage of IVAs and chatbots will grow, perhaps exponentially, Stratecast does not believe these instantiations of conversational A.I. will ever fully replace search. However, it does not
have to be an all-or-nothing proposition: an A.I.-enabled search engine could present a recommended choice—while enabling users to ask it to justify the choice, and to provide additional choices on demand.

Another issue with A.I. is privacy. Fair enough: Google analyzes searches to learn more about those who search; so, no one should fear that conversational A.I. is going to tear asunder consumer privacy—privacy many believe no longer exists. The issue, however, is what organizations that collect data from bot-to-human interactions might do with what they learn. The concept is much the same as Stratecast explored in a recent report focused on the Internet of Things (IoT): “A world where someone somewhere is collecting data about nearly every object that... touches human lives, is at once fascinating—and terrifying... The rise of the (connected) machines could signal the fall of human privacy: a brave new world where someone, human or electronic, is always watching—and analyzing.” 12 Stratecast, which took on the issue of privacy full bore in another recent report, 13 believes that IoT and A.I. are going to generate device-based privacy regulation, or industry self-regulation, building on what governments and some industry groups are already doing.

The idea is not that A.I. and IoT are evil—far from it. The optimized experiences and conveniences they are starting to deliver are nothing short of spectacular. However, mankind might be well advised to proceed on both fronts with caution.

---

12 Stratecast, The Internet of Things (IoT): How Real is It Today? (BDA 3-13, December 2015), available here
13 Stratecast, BDA State of the Market: Privacy “You Want Me on Your Data; You Need Me on Your Data” (BDA 4-01, March 2016)
A decade ago, the model for customer service was offering customers a toll-free number to call for support. In the years since, the cost pressures associated with staffing call centers, and the evolution of society to a “texting culture,” have led to a happy intersection of how companies wish to serve and how customers wish to be served—and smack in the middle of that intersection stands conversational A.I. Simple online automation of basic tasks has evolved to today’s IVAs and chatbots, which lead conversations and perform ever-more-complex tasks, responding to and anticipating user requests based on real-time data about user preferences, context, available services, and much more. IVAs and chatbots are moving companies away from presenting results (e.g., “here is a list of stores”) and toward providing the single best response (e.g., “here is the closest store to your location”). Then, after caller and bot conclude their brief exchange, the bot will place a ship-to-store order and arrange for payment.

A capable provider of conversational A.I. solutions is Next IT. The company and its Alme platform-based solutions are enabling companies to support both customers and employees in ways that enhance working lives, personal lives, and the bottom line.

Microsoft’s bold chatbot experiment, Tay, was a reminder that proponents of machine learning and A.I. are still working out the bugs. And the public and private spheres will have something to say—in fact, probably a great deal to say—about how to implement conversational A.I. without further compromising consumer privacy. Yet, individual company ROI figures such as 5X and 8X, substantial revenue growth, and projected cost savings of $32 million are powerful reasons for every organization that has not already done so to take a hard look at implementing a conversational A.I. solution from a provider such as Next IT.
About Stratecast
Stratecast collaborates with our clients to reach smart business decisions in the rapidly evolving and hyper-competitive Information and Communications Technology markets. Leveraging a mix of action-oriented subscription research and customized consulting engagements, Stratecast delivers knowledge and perspective that is only attainable through years of real-world experience in an industry where customers are collaborators; today’s partners are tomorrow’s competitors; and agility and innovation are essential elements for success. Contact your Stratecast Account Executive to engage our experience to assist you in attaining your growth objectives.

About Frost & Sullivan
Frost & Sullivan, the Growth Partnership Company, works in collaboration with clients to leverage visionary innovation that addresses the global challenges and related growth opportunities that will make or break today's market participants. For more than 50 years, we have been developing growth strategies for the Global 1000, emerging businesses, the public sector and the investment community. Is your organization prepared for the next profound wave of industry convergence, disruptive technologies, increasing competitive intensity, Mega Trends, breakthrough best practices, changing customer dynamics and emerging economies? For more information about Frost & Sullivan’s Growth Partnership Services, visit http://www.frost.com.

CONTACT US
For more information, visit www.stratecast.com, dial 877-463-7678, or email inquiries@stratecast.com.