

13th Annual Customer Contact, West: A Frost & Sullivan Executive MindXchange

Zone 3: Leveraging Intelligent Automation & Analytics to Elevate the Agent Experience

Case History with Ryan Hillman from Expedia
Moderated by Jacob Britt of Aceyus

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SESSION ABSTRACT

Have AI platforms in the Contact Center gained self-awareness? Do they already know customer behaviors and more importantly what agents need to delight customers?... probably not.

While true Artificial Intelligence (AI) is still being developed; forward thinking Contact Centers are looking to utilize the data and customer insight information they already have to create Intelligent Automation (IA). Automating repeatable tasks in support of 'on demand' customer expectations; as well as establishing a more productive and engaging agent experience.

KEY TAKE-AWAYS

- Best Practices for leveraging agent tribal knowledge to identify and prioritize the biggest pain points in your current agent/customer experience
- Guide to leverage your existing data to establish repeatable processes for Intelligent Automation
- Critical factors in determining what "should not" be considered for Intelligent Automation (areas where automation can fail)
- How to create an iterative process for utilizing Intelligent Automation to enhance "just in time" agent training, process improvements and career advancement

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INTRODUCTION/OVERVIEW

The Current AI Landscape

Artificial Intelligence has long been a topic of interest through sci-fiction and movies, but in the last 20-30 years we have seen a dramatic increase in computing ability along with a decrease in the size and cost. This has paved the way for consumer and commercial “smart devices” (i.e. IoT). These advancements have allowed humans to become more efficient and connect experiences that otherwise were segmented or unaware of each other. This rapid technology growth has fueled the concept and excitement that Artificial Intelligence is not only possible, but may be just around the corner.

AI is the buzzword that lots of people are talking about, and it tends to mean something different for many people

Initial Questions

Speaker/Moderator Posed	Audience Responses
What is AI and how do we perceive it? Is it real, and do we have it today?	Initially, attendees offered that AI does exist in society and that it didn't have to be self-aware or learning capable to be considered AI. “It may not be ‘Skynet’, but it does exist.”
What are some good examples of existing AI?	Watson, Siri, Cortona, Alexa, Driver-less cars, Google Home, etc.
Have these AI systems become self-aware? Do they work on their own?	They are not self-aware, they are ‘learning’ and gathering data. These devices are sometimes really successful at performing specific tasks or accessing data quickly. i.e. “Alexa, what is the weather today?”
How far away are we from true AI?	Artificial Intelligence will be the equivalent of Human Intelligence by 2035. (Source: TEDx Talk Link.) Prior to AI self-awareness, Engineers developing AI technology are limiting it to specific use cases. i.e. a program which can beat a chess master or identify ‘cat’ images on the internet.

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A member of the audience added that in his prior work experience (at IBM with their Watson Platform) they had used an acronym to evaluate how advanced an AI platform or tool was: **U.R.L.** Did it have;

Understanding, – i.e. The ability to read/decipher text or voice;

Reasoning, – i.e. The ability to act or make decisions based on the information obtained;

Learning – i.e. The ability to apply continuous improvement through increased understanding and learning.

The importance of business nuance and context was discussed as those are elements which are dependent on individual companies to 'teach' to their respective AI solutions.

In the path to true AI there a couple areas of focus (Machine Learning and Deep Learning)

Machine Learning: The use of algorithms to parse data, learn from it, and then make a determination or prediction about something. Requires that we feed the machine a large amount of data (essentially teaching the machine through trial and error) – Often requires hand-engineering.

An example of this type of trial and error learning is the game of concentration where individual cards are flipped over trying to match two patterns, or remember where they are for future turns. Each round becomes easier to match the cards as you can remember the cards you have already seen, and remove the matches as you learn.

Deep Learning: Another algorithm method using the concept of neural networks using layers (via GPUs). Modeled after neurons in the brain. Each layer allows for more ability, but comes at a cost of additional computing power – Less hand engineering, but more computing overhead (commonly used for image recognition)

i.e. how many of these pictures include cats or with additional layers how many are Siamese cats?

What does this mean? Unless you are a company willing to invest ~\$500 Million into AI research like Google in 2014, then you are left to wait for other companies to develop true AI. However, there are things you can do today to take advantage of current "AI" or Machine/Deep learning.

(i.e. How do we use all of the data we already have to learn and become more efficient?)

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Additional Questions:

Speaker/Moderator Posed	Audience Responses
<p>How is your company using AI Technology currently?</p>	<p>At Lane Bryant it is being used for guided messaging to teach customers how to accomplish tasks and/or providing smart information up front.</p> <p>Another attendee mentioned they are starting with their employees (enablement), helping them to find information faster, not sifting through multiple systems and using metrics to determine how useful it was (AI response and accuracy metrics).</p> <p>Others mentioned Digital Assistants or Virtual Agents as areas they were implementing AI tech.</p>
<p>The difference between Artificial Intelligence (AI) and Intelligent Automation (IA)</p>	<p>There was also some discussion regarding the separation of robotics/automation from AI within their company. Some view these as different tracks to develop technology (automation vs. true intelligence)</p> <p>Aaron from Expedia provided an example that you can automate the cancellation of a hotel, but with AI you would know a hurricane is coming and automatically change the reservation ahead of time.</p> <p>There is a need to understand customer preference, context and nuance for when to use AI vs. Automation</p> <p>Ryan cautioned that you should be conservative with IA based on what you know about a customer.</p>
<p>Related to the above statement by several researchers that in 2035 AI will be on par with Human Intelligence ...</p> <p>How many people are scared versus excited?</p>	<p>Most people were excited about AI technology, but hesitant based on several factors.</p> <p>Customer adoption being slow, large number of customers being 'old school' and not willing to embrace automation or AI options.</p> <p>"The last thing I want to do is have a computer voice tell me what they think I want to know."</p>

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	<p>It was also discussed that there have been several supposed advancements to the Contact Center environment that have negatively impacted customer experience or direct interactions with a customer (most of them due to cost savings and not better customer experiences)</p> <p>Examples:</p> <ul style="list-style-type: none"> ▪ Offshore outsourcing had large growing pains that directly impacted customer experiences in a negative way ▪ IVRs are one of the last automation experience most customers can remember. <p>Customers were directly impacted by the above examples and are very much aware that they were implemented as channel containment measures to save costs and not increase customer satisfaction.</p> <p>Customers are leery of more change and even though AI and IA can introduce an improved experience there is guilt by experience/suspicion</p>
<p>Transactional vs Experiential</p>	<p>It was mentioned that with respect to AI that if the customer knows what they want then we can use IA or AI tech to address their need. However, when it comes to problem solving or things that require detailed explanation; we do not yet have the technology to address the issue.</p> <p>In other words, transactions can be automated and turned into effortless experiences, but problem solving or emotional issues still need human interaction (i.e. an agent).</p> <p>Begin by understanding the types of interactions you have with your customers. Some industries may have less capability for truly transactional experiences (i.e. Healthcare, Wellness, etc.)</p>

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Expedia's Key Drivers for IA:

Expedia, Inc. was highly transaction focused leading up to 2012, and a large agent contingent was required for all service. Around 2013 we pivoted to focus on adding Intelligent Automation (IA), improving experiences and lowering effort for customer service. For us, IA started with web/IVR FAQs and web self-service, expanded to IVR self-service, and now spans multiple text-based channels as well as digital assistants. It has truly been a transformational shift for us and our travelers to allow quick, effortless intelligent automation for many of their key needs.

Former Expedia, Inc. CEO Dara Khosrowshahi

"We want Expedia to become a real-time travel assistant, one that can call your Uber ride to the airport at the right time, have a car waiting when you land and choose your favorite room in a hotel."

"You are going to get into a world where people are going to ask questions . . . and we will be able to answer any question about travel"

TAKE-AWAY (S) -- Key take-aways and ideas from the presentation

1. Think carefully about when and where to use and teach your Intelligent Automation.

Most of our travelers are open to intelligent automation – recently in our text-based channels across multiple brands Expedia, Inc. has seen ~70% of users engage with IA.

Applications of IA at Expedia in Service

- Understanding the traveler's need
- Question answering
- Information collection
- Action
- Warm handoff
- Suggested responses
- Notification

Emotional or Complex Areas Where Expedia Practices IA Restraint

- Billing issues
- In-trip issues

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- Traveler needs (typically involves problem solving)
- Interactions where confidence in understanding the traveler need is low

2. Cloud services and open source technology are available that makes machine learning and deep learning accessible

From a technology perspective, Expedia, Inc. has leveraged scikit-learn, NLTK, and Stanford NLP to create natural language processing/understanding assets within our technology groups that enable AI like experiences without investing big in AI research.

Our AI only comes alive when you add in training data sets for our traveler and agent specific needs to machine learning models. For most companies, the ability to understand your customer needs will likely be unique to your business, so training and adjusting the understanding of needs will be something you are the expert in.

By creating in-house AI building blocks, we keep our training data local, thus not allowing bigger tech companies a free ride to learn the nature of our customer and agent interactions, as well as maintain ownership of truly understanding our travelers needs and how to serve them.

IMPLEMENTATION GUIDELINES -- "How to do it" -- specific action steps for organizations to implement the ideas and strategies discussed

Until the customer doesn't know the difference between your IA and agents (your natural language processing/understanding is basic), you need to acknowledge that the customer might not be open to IA and allow easy access to an agent.

1. Start

- Avoid spreading yourself too thin by channel breadth (test channel preference with customers)
- Build critical mass by starting with simple, reactive, menu driven IA self-service or QA use cases and a basic understanding of your customers' needs, reducing call volume
 - Provide accessible in-channel agent handoff
 - Collect feedback in real time on key metrics (NPS, Resolution, Effort)
 - Learn from your customers' behavior and adjust your IA's behavior quickly – create an agile and experiment-driven culture

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2. Improve

- Holistically understand/define your customers' needs
- Provide NLP/NLU for existing use cases to improve discovery
- Add/improve IA in your agent tool(s)
- Expand to more challenging use cases, building IA as required and expanding NLP/NLU to support understanding of the relevant customer need

3. Advance

- Include intelligence/personalization based on the customer's profile, recent actions, booking history, weather events, trends, etc.
- Focus on giving awesome agent experiences for the remaining use cases
- Pursue proactive/notification scenarios
- Expand channels as desired

BEST PRACTICE(S)

Pitfalls and Guidance

1. Natural Language Understanding (NLU)

- Linguistic variation (dialect, pronunciation) and spelling
 - Be realistic with the state of technology and your use case. Train your machine learning model with proper spelling and then auto-correct real-time input from your customers prior to attempting to understand
- Ambiguity challenges with determining the customer need (short phrases, paragraphs, false positives)
 - Combine machine learning with rules/exact matches
- Multiple customer needs in a single input
 - At a minimum understand where this is most likely to happen and plan to address in the future
- Underestimating training effort for classifiers
 - Plan accordingly with resources and/or budget for manual classification (internal or through Mechanical Turk, etc.)
 - Map your customer needs to a classification structure and beware of classification collisions
- Relevancy – testing the boundary of the IA – questions outside your domain
 - Save for later – eventually explore models for differentiating “ham” vs. “spam”

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- Emotional context - central to reasoning (common sense)
 - Explore sentiment analysis, but be realistic given the state of technology and your customer needs
- Context from inputs in the conversation or prior conversations
 - Save for later – consider passing past conversation context to your natural language layer
- The more messages in a conversation, the harder it is to automate
 - Customer service typically has longer conversations so pick your use cases accordingly

2. Understanding your Users and Channels

- Forcing menus/hierarchies on your users can rule out almost half of your self-service funnel
 - Observed 41% of travelers typing in Facebook Messenger even when presented with top actions and clear indication that the bot is present
 - 208% increase in customers using IA self-service actions after implementing NLU
- Assuming your customers will realize they're talking to IA in text channels and have a higher tolerance for it compared to speaking to a human
 - Create a UX that handles this behavior gracefully and facilitates handoff to an agent

3. Question Answering

- Surfacing answers to Frequently Asked Questions (FAQs) is often more effort because of lower overall volume and sometimes being harder to classify.
 - If high priority, ensure thought is placed into customer need structure and NLP/NLU
- Not having robust APIs to retrieve answers from knowledge base
 - Without them you will not be able to provide answers across channels

4. Action (Transactions)

- Avoiding a big dig to increase the scope of your automation and helpfulness of your bot
 - Supporting more transactional use cases (especially for top needs) will pay off in trust and adoption of your IA

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5. Agents

- Not providing data collected by IA to agents during handoff
 - Everything provided to IA should be provided to agents, both in summary and detail where possible as you begin
- Ineffective IA templates for agents
 - Result is loss of trust in the systems and IA. Make agents part of the process

6. Overall

- Failure to collaborate with teams owning data sources, and not bringing together silos of data required to power IA
 - Be a leader in bringing together disparate parts of your company required to create effective IA

ACTION ITEM(S)

Step 1:

Identify the need/business case for IA and channels and/or agent tools to target

Example channels:

- Web/App (UX may vary between conversational (chat) or native)
- Phone
- Facebook Messenger
- Alexa

Step 2:

Evaluate Intelligent Automation-as-a-service and open source technology offerings to decide which is right for your company, technology atmosphere, and overall strategy.

Examples IAaaS:

- API.ai
- Amazon Lex
- Microsoft Bot Framework/Cognitive Services
- IBM Watson
- Google Natural Language
- Gupshup.io
- Chatfuel
- BotEngine.ai

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Example open source:

- Scikit-learn
- NLTK
- Stanford NLP
- TensorFlow
- MXNet

Step 3:

Proceed with implementation guidelines above

Step 4:

Evaluate Contact Propensity, Net Promoter Score, and Effort, experiment rapidly through test and learns, then adjust accordingly

FINAL THOUGHT -- Summary or final insights

Attendees may have entered the session wanting to hear all about Artificial Intelligence; and how its widespread use is improving both customer journey and agent experience. However, the case history from Expedia and the discussion presented them with a deeper understanding of where Artificial Intelligence is and how long it will likely be before it takes a stronghold in all customer interactions. Conversely, forward thinking companies (like Expedia, and those of the attendees who were actively engaged in the dialogue during this session) can utilize several methodologies and technologies that are widely available today to create Intelligent Automation. These technologies can easily handle a vast majority of the more simple 'transactional' interactions which have typically flooded customer service organizations in the past. Doing so, will free up customer service associates to be the source of support for customers who have more complex and often emotional based needs. This gives organizations the ability to focus their resources and efforts on the customer journey interactions that matter most to Net Promoter Scores and Customer Satisfaction ratings. Finally, it helps establish a model for agents to be empowered to truly help customers on an emotional level as they are less focused on the transactional elements or traditional Contact Center efficiency metrics (AHT, ASA and Service Level).