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# Designing an Effective Instore **Shopping Assistant Using Bots**

**Executive Summary:**

The following whitepaper talks about evolution of retail and understands how emerging technology like Chatbots can be used to design an effective instore shopping assistant.

The paper explores the feasibility of bots and how behavioural traits among millennials put bots as a potential disruptive force in retail and other industries. We try to map different instore assistant activities and how chatbots can be an effective solution for the same.

We then try to understand what the most common architecture components are for the instore assistant and look into how the assistant can be used as an ecosystem for third party integrations. We then look into aspects to ensure these conversations can be tapped in to provide effective insights for retailers.

**Introduction:**

Retail as a concept has come a long way from the old system of market based on barter, to one stop supermarkets, and are now evolving to a connected Omni-channel retail platform to accommodate behaviour of millennial shoppers. And so have the customers steadily moved from an era of lack of choice and payment ambiguity to ample choices and flexible payment terms. The dexterity of customers with access to forums, social media and mobility enabling them to seek out the best deals, with one-click information, has made the customer's shopping behaviour versatile. So, now with personalized mobile and data-driven shopping techniques, the physical shopping experience is converging with the digital experiences to create a revolutionary retail experience based on ease, convenience and excitement.

Retailers have always tried to find ways to help customers find the right product at the right time to make their shopping experience easier, ensuring retailers can provide a seamless and complete shopping experience. For the customers to have this seamless shopping experience across different channels, retailers are looking at ways to combine online, mobile and in-store shopping. In this conquest, new technological solutions are being experimented upon to augment the current shopping experience.

One of the emerging solutions is Bots that are expected to be the next revolution after the App revolution. Let's explore their current state and application in retail.

**Introduction to Bots:**

Bots are software applications designed to perform simple and repetitive tasks. With advancement of artificial intelligence and machine learning, bots now have the capability to move beyond simple and repetitive tasks to more complex and dynamic tasks.

Bots are not a new phenomenon, especially with web spiders, IRC bots and the famous ELIZA, one can say bots is an old technology. One of the most common form of bots is chatbots. They did not become as successful as expected. But the fact that chatbots are not getting wide acceptance is about to change, due to a simple behavioural change we are witnessing, especially among the millennials.

*"Another phenomenon observed is customers inside the store try to search more about the products on mobile before making a purchase."*

**Business + {Bots + AI + Chat} = #ConversationalCommerce for Enterprise:**

Today's technology-savvy millennials are always on the go. They prefer on-demand service and are always connected. They are a generation that prefers to text over making a call. And this is validated with the fact that the total number of active users on messaging apps was more than the active users on social media[1] and the average number of voice minutes per millennial have fallen[2].

There is no better time for businesses to combine the 3 elements through Chatbots designed to reach out to these new age millennials –

1) Bots that are designed to perform multiple tasks

2) Artificial Intelligence and Machine Learning to teach them to perform and improve tasks

3) Messaging or chat interface to communicate with the bots

Together, these three can be used by businesses to reach out to their consumers and provide on-demand service. Microsoft, Google, Facebook, Amazon are all working to capture their share of pie in the bot revolution. Retail, Transportation, Hotels, Insurance, Media, Entertainment etc. all these industries have a huge potential to reach out to their customers through Chatbots. Chris Messina, Developer Experience Lead, Uber, coined the term "*Conversational Commerce*" to denote how businesses will use messaging as the next platform to reach out to their customers. But to scale to a million customers, we would need to automate the same and chatbots are a potential solution.

As examples of adoption of these trends, Macy is piloting "*OnCall*", an instore shopping assistant in its 10 US stores with IBM Watson to help shoppers find products in the store. Sephora and H&M have launched their chatbots on Kik. Zensar has developed its patent pending ZBot solution to power Retail instore shopping assistant to help the shopper in their customer journey. A lot of customers realize the potential of this technology and hence are trying to figure out possible use cases that can help them with the same.

We will now try to look at how bots can be used to solve some of the most common instore shopping issues.

**Application of Bots in Retail:**

Bots can help improve shoppers' instore experience by taking on some of the tasks of a retail shopping assistant. Some of their tasks include

- Helping customers find the right products
- Checking if the product is in stock
- Suggesting / Recommending product alternatives for out-of-stock items
- Getting detailed information about a specific product
- Making customers aware of instore offers especially the ones that shopper may be interested in (by knowing their purchase behaviour and current purchase intentions)

- Assisting in finding billing counters, trial rooms, exit gates etc.

A lot of these tasks can be automated with the help of a chatbot where you just need to ask the bot in the similar manner which will search through its database and give you the information you would be looking for. Retailers dream to personalize this automated response to customers; personalization possibilities are explored in the context of a conversation thread, persona of the identified customer, place/time of conversation.

It is not humanly possible for a retail assistant to remember each and every product and its location inside the store especially those low-selling, hard-to-find long tail products. Hence, a bot can be of assistance and ensure that customers successfully find each and every product in the store. Even products in stock but not on the shelf can be used to find products in stock.

> ## "Businesses will use messaging as the next platform to reach out to their customers. But to scale to a million customers, we would need to automate the same and chatbots are a potential solution."

Another phenomenon observed is – customers inside the store try to search more about the products on their mobile phones before making a purchase.
Retailers can use these insights to provide a platform to the shoppers and ensure customers are much more aware before buying.
Another aspect of the application of Bots is through its third party integrations which we will cover below:

**Self-Service Instore Assistance using Chatbots:**

In the typical retail customer journey, there is, without any doubt, a need for a quick and convenient way of interaction from finding a store till the payment process. And what can be quicker than a Bot assisting a customer all the way through the store – because bots are designed for one-to-one conversation, and can potentially provide greater convenience than apps and Web searches as it can understand natural speech patterns.

Smartphone users have proved that they are only willing to download and spend time on a limited number of apps. And messaging apps are among the few apps installed on most smartphones. Hence, a bot hosted on these messaging apps is the easiest way to connect with customers in the apps wherein they are already spending plenty of time.

**Features of the Self-Service Instore Assistance:**

Following are the features designed as part of Zensar's Zbot:

- Instore product locator – Locate products easily in a hassle-free way.
- Indoor Navigator – Integration with indoor navigation for the user who is led to the product after the search.
- Multi-Platform – The system could be accessed on different platforms like Webpage, Mobile App and for different messaging platforms like Facebook, WeChat, Kik etc.

- Recommendation System – Personalized recommendation suggestion of alternatives for out-of-stock items.
- Shopping registry – Add items to the shopping list and generate their location.
- Push notifications – Retail store can push any current offer running inside the store.
- Service related feedback – Customer feedback for a particular service or product or suggestions.

Retail analytics – Capture and Analyse search data to improve inventory, product placement and new offerings.
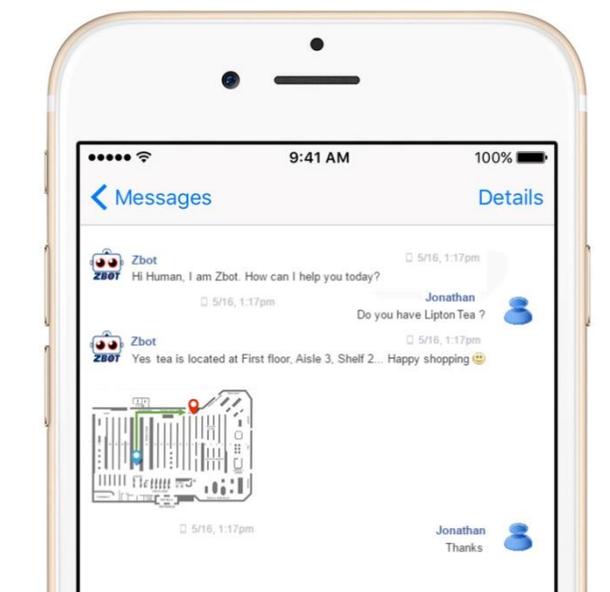


## Platform Components:

The self-service system needs the following minimum basic components:

1) *Messaging Interface/Platform*

   A messaging platform provides a front-end interface for the customer to converse with the system in natural language and also receive a response through the same interface.

2) *Natural Language Parser*

   Natural Language Parser identifies intent and objects related to the content to execute an action. For e.g.:- "Where is golden tea located?" Here, the intent is to search for an item while object is golden tea.

3) *Command Execution Middleware*

   After identifying intent and objects for execution, a middleware interacts with different retail systems to execute commands.

4) *Response Builder*

   Response needs to be built for different execution results and passed on to the customer. For e.g.: in case the customer asks for a product. The Response builder will generate different responses for different results of products found and products out-of-stock.

One of other salient characteristics of a self-service assistant is the ability of reusing deployed rich information services by consuming such services rather than building them. This way, if you already

have access to information, data, analytics services useful to your context, you can connect to those for contextual information and satisfy the customer's requirements better.

### Retail Analytics:

The system is incomplete without capturing and analysing customer interactions. The interactions can be easily captured in a structured form of intents and objects. Some of the ways retailers can use these are as follows:

1) Product Trends
2) Product Placement
3) Recommendations and their Acceptance Rate
4) Most Searched Items
5) NLP Classification Rate

Depending on different use cases and third party data we can capture, we can expect more insights from these trends.

### Third Party Integrations:

The most crucial part of the bot ecosystem is not just to respond to the shopper but also to execute actions based on their query or response. Here third party applications integration can enable the developers to provide a choice of functionality to the users.

A third party integrations and use case for bots would be integration with indoor navigation system that improves the product search feature inside the store by taking product search functionality to product locate functionality. Using GPS and indoor navigation functionality integration, we can easily use the bot to guide us to the product itself inside the store.

Zensar ZBot's Rest API allows easy third party integrations to ensure ZBot is not limited to a few technologies but acts as an open platform.

### Conclusion:

With the advent of pervasive technology in our lives, retail companies cannot overlook their potential to be both a threat and an opportunity. Over the last three or four years, a lot of retailers have realized that online and offline worlds are converging in a big way and retailers need to adopt technology to reach out to their consumers who are embracing the same.

With the Next-Gen shoppers and their ever-changing shopping journeys with all the new technology, it is becoming important to focus on optimizing a shopper's visit to the store.
Bots are a promising technology in this direction and can be used as a virtual instore assistant to enhance customer experience.

Rate of adoption of bots puts them as an emerging technology but with messaging being already adopted at a large scale among people, the customers would be open to such new experiences delivered over messaging.

**Request a ZBot Demo:**
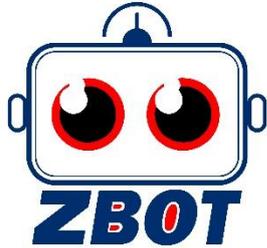


Please contact marcom@zensar.com for a Zbot demo.

**References:**

[1] Messaging Apps are bigger than Social Networks, March 2016, Business Insider, June 2016, http://www.businessinsider.com/the-messaging-app-report-2015-11?IR=T

[2] Why Millennials Prefer Text Over Talk, Open Market, http://www.openmarket.com/blog/millennials-prefer-text-over-talk/

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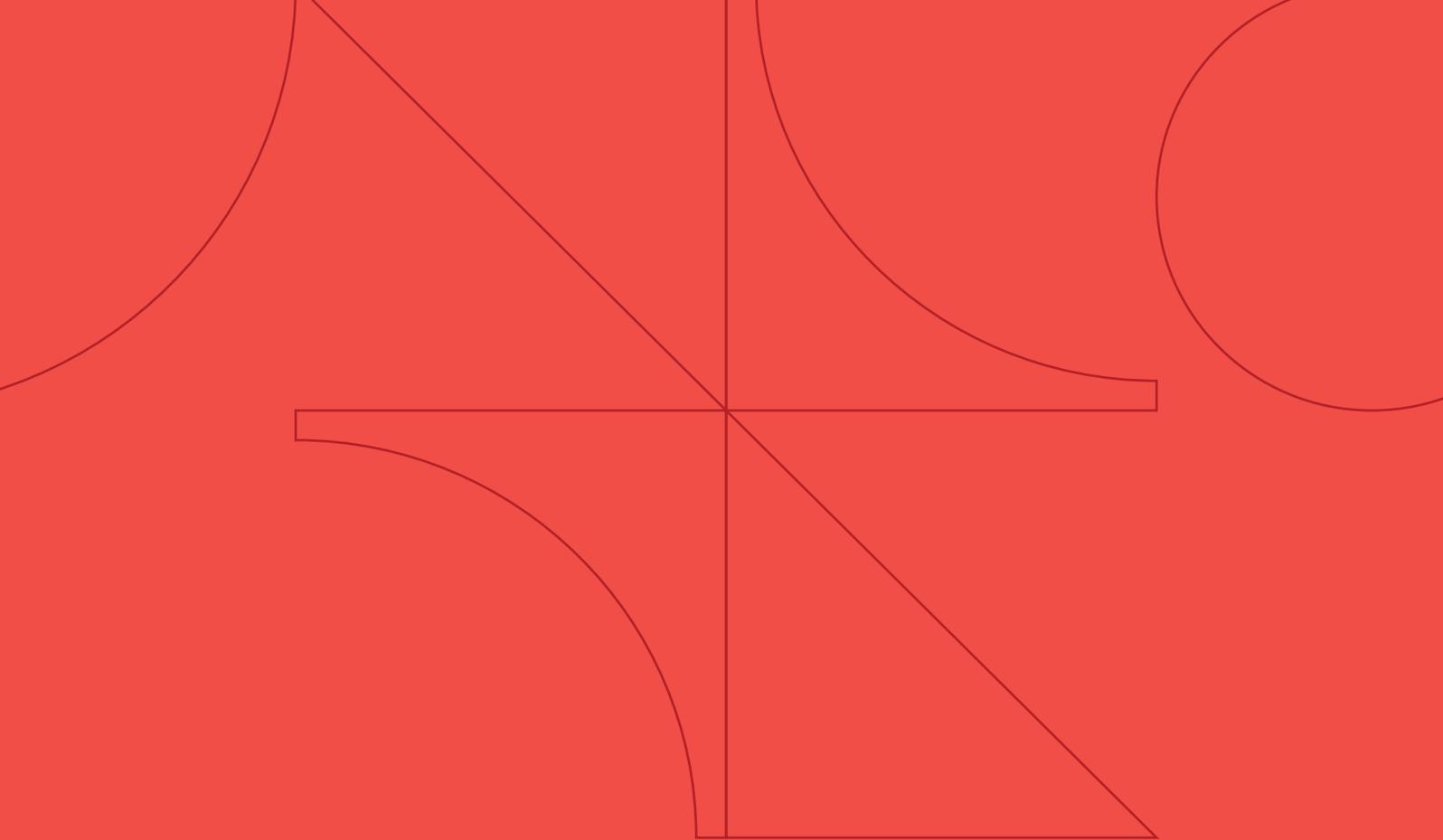
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