

Chatbot: The leading edge of Tech-era, its Objectives and Application in Farming

Priya Dutt M D

*Department of Information Science Engineering
The National Institute of Engineering
Mysuru, INDIA
priyaduttmd909@gmail.com*

Pushya R

*Department of Information Science Engineering
The National Institute of Engineering
Mysuru, INDIA
pushya9697@gmail.com*

Abstract- “We value time over human interactions.” Gary ve, an entrepreneur put the aspect of every automation this way. In this regard, Chatbots are definitely the new face of technology making tasks still faster, more accurate and more automated. Chatbots aren’t new. The idea that they can do everything is new. Because of its exceptional ability to converse with humans which makes them hard to believe it isn’t real, chatbot advancement began.

Here we present an idea how these chatbots can be used in agricultural sector, to solve one of the major issues of farmers and consumers i.e. marketing the agricultural produce without involving APMC’s and middlemen. This is an analysis of how best a chatbot can resolve this marketing issue and what makes it better than existing applications and other marketing platforms.

Key words: Artificial Intelligence, Parsing process.

I.INTRODUCTION

Well, look at the world around us! We live in a place surrounded by computers, machines, softwares, or mixture of these. As we have moved to a world brimmed with Artificial Intelligence, there is a rapid increase of companies and

platforms that use AI, to enhance its applications further. *Chatbots*, are one such famed, trending application of AI. Chatbots are in news every now and then. It’s because today it is used by almost every firm, big or small, as virtual assistant for their use. Companies are transforming their on track applications into chatbots. Then what exactly are chatbots? These are automatic conversation machines, designed to interact with people in a human-like way via text or speech or both. It is a computer program which is able to imitate human conversation with people. It is built so well that is so hard to distinguish from actual human conversing. No bot has completely been able to imitate different tinges of human communication, but no doubt they will be able to do that in near future. According to the recent survey by Oracle, “80% of businesses want chatbots by 2020”.

Considering the above, we introduce a chatbot which can work as bridge between farmers and consumers eliminating the problems and hassles of agricultural marketing. There are so many platforms which work on this regard. We show how best a chatbot can make it still simpler. It’s a detailed analysis of chatbot applications in agricultural sector.

II.CHATBOT APPLICATIONS AND MARKETING

A. Applications of chatbot:

"You may not realize it, but artificial intelligence is all around us"- Judy Woodruff. Chatbots are almost endless in their capabilities. It includes HR and staffing, IT help desk, recruitment, customer service, ecommerce, news, media and events, banking, virtual assistant and many more. Let's analyse where we can see the fastest growth of chatbots.

1) *Customer Service*: There was a time, when we used to hold the phone and wait for the customer representative to answer the question. Chatbots by replacing costly human labour reduces business cost by more than 30%. \$23 billion is being saved by chatbots, by replacement of agents.

2) *Airlines*: Airline industry is one of the early adopters of chatbots. Colombian airline recently introduced the Avianca bot and Alaska Airlines - 'Ask Jenn'.

3) *Food and Restaurants*: Dominos, Taco Bell were the early adopters of chatbots. It is a quick, easy way to order what you want.

4) *Healthcare*: The individuals can ask health questions and able to receive answers. HealthTap built a HealthTapchatbot on Facebook Messenger for health service.

5) *Banking and Finance*: HDFC Bank is using 'Eva', an AI chatbot which has successfully addressed over 2.75 million customer queries in 6 months and became India's largest banking chatbot. State Bank of India's launched SIA and ICICI Bank's iPal chatbot for the same purpose.

B. Chatbot Marketing

Chatbots answers instantly and increased customer satisfaction. They are capable of analysing the customer data; this analysis helps the marketers to decide their drawbacks in products and its marketing. Hence Chatbot replaces an 'analyst'. *44% of US customers have customer service through chatbots.*

In 2017 there has been a widespread adoption of chatbots and in 2018; the trend is developing even

further. The chatbot marketing is expected to grow at 38% CAGR in next 3 years. It is adopted by various industries from Marvel to UNICEF. Why market is hot for chatbots? One of the primary reasons is that people might be fed up of installing unnecessary apps; they can achieve same thing using chatbots. Because of the factors like speed, convenience chatbots are ruling over regular technology.

Chatbot market is expected to reach roughly \$1.2 billion on a global scale, according to recent Grand View Research report in less than 10 years. It's predicted that the compound annual growth of a market will grow at a rate more than 24%. Around 45% of end users prefer chatbots as the primary mode of communication for customer service.

III.CHATBOTS IN AGRICULTURAL SECTOR

A. *Indian Agricultural issues and reasons*: Agriculture is one of the oldest practices and the history of Indian Agriculture dates back to Indus Valley civilization. India ranks second in the world for its farm output, yet there are so many hassles in the agricultural systems and marketing. Over last 15 years, economy of India has increased rapidly, so has our incomes and our per capita income has risen three times since 2000 but we still want our potatoes, tomatoes and onions to cost us less than 20 Rs per kg. The tolerance for any rise in the prices of agricultural products and goods is zero and the worst part is, out of 20 Rs, not more than 5-6 rupees go to the actual farmer. The rest is enmarked by the traders who utilize their storage facilities and capital to make profits. When farmers are not able to gain at least the money they spent on cultivating by marketing the goods, obviously they lose interest and start quitting farming as there is no value for their hard work. Currently agricultural sector share in economy is 6.1%; industry sector share 31% and service sector share 60%. At the time of independence agricultural sector shared 50-

55%. This is reducing continuously and if the problems aren't solved, it's predicted that by 2035, it's going to be only 4.2%. Farmers go to the APMC's nearby, and sell their goods; middlemen exploit farmers by purchasing the produce for lower rates and they exploit customers by demanding higher prices. The grain of the farmer is weighed according to the traders using fault techniques. In APMC's farmers are entangled in exploitation. There are so many technologies adopted to help farmers in getting reasonable price for their goods and abolish the middlemen. There are so many platforms being created online in which farmers upload the quantity of produce and the associated organisation can help them in marketing. **Truce, Kisan point** are some of the online websites and apps which market the farmer's produce efficiently standardizing the price.

These platforms can be more advanced by adopting new technologies and eliminate the problems in a better way. The technologies implemented should be easy to operate and understandable to farmers and effective too. The farmers should be able to use it without any guidance each time. And the consumers using it on the other side should be satisfied too. One such platform can be created by using the Chatbots. Here we present the idea through which farmer's produce is sold to the customers efficiently using Chatbots.

B. Implementing chatbots to resolve this issue:

Most of the farm producers may not be aware of the existing technology. They might not be familiar in using apps, filling up details and other technical things. In order to make their work simple and easier, we can use chatbots. Chatbots helps wholesalers who buy produce from farmers. You can communicate with chatbot through speech too. Chatbots can be categorised into two ways. One which uses hardcoded questions /answers or a

database. The other which uses AI (Artificial intelligence). The first one answers to you only if the question asked was loaded in prior. The questions have to be specific. Otherwise it will just reply with a common message saying it was unable to understand the question. The second one uses AI. It understands the language, meaning of commands we give. We need not be specific in our questions as we have to be in the first one. A chatbot records all the previous conversation logs so that if the same question arrives later in a slightly different manner it can be answered by looking into the previous log history. Farmers need not select options, make entries and submit their data. They can just communicate with the chatbot through orally and upload their details. Anybody, even illiterates can use this system. With the proposed new system, the producer begins his conversation with the chatbot.

First it identifies whether the user is a consumer or producer by questioning. Chatbots process the text by the user (parsing process) using complex algorithms that interpret and finds out what user said and determine a series of appropriate responses based on the information. Later it continues its questions based on the type of user. If the user is a producer, and using for the first time it ask him name and his resident details and give him a registration id which helps him when he use second time. He has to upload the details of his produce, like type, grade, and quantity. The farmer can even upload his location and the time and date in which he is available to meet the customers. Or he can just give details about the place of storage of the produce, so that the customers can sometimes choose the product based on the location if it's nearby, or else door delivery of products can also be provided. On the other end the customer can also use chatbot and tell the chatbot about his interests so that the chatbot tells him or displays the available products based on his interests. Chatbot lists all the available items or products requested along with the

details of the owner who has uploaded that particular product. The details of the owner include their phone no, email-id, location and other details if available. All these details are given to the customers by the chatbot. Buyer makes suitable choice of the product and the owner based on details. He can even talk to the owners or producers through call and negotiate with them. Finally after selection, he does the payment accordingly either prior to delivery or after delivery depending on the conditions listed by the producers. In this way the business is carried out in a smooth and easy way using a chatbot just like a conversation between two human beings. There is no problem of middlemen too.

C. Demonstration of Chatbot

Case 1: Producer updating the details of his produce to market.



Okay. We'll inform you as soon as we find a customer for your products

Thank you. Have a nice day

Fig 1: Conversation between seller and chatbot

Case 2: The buyer request for the produce. The chatbot get the details from buyer and store it.

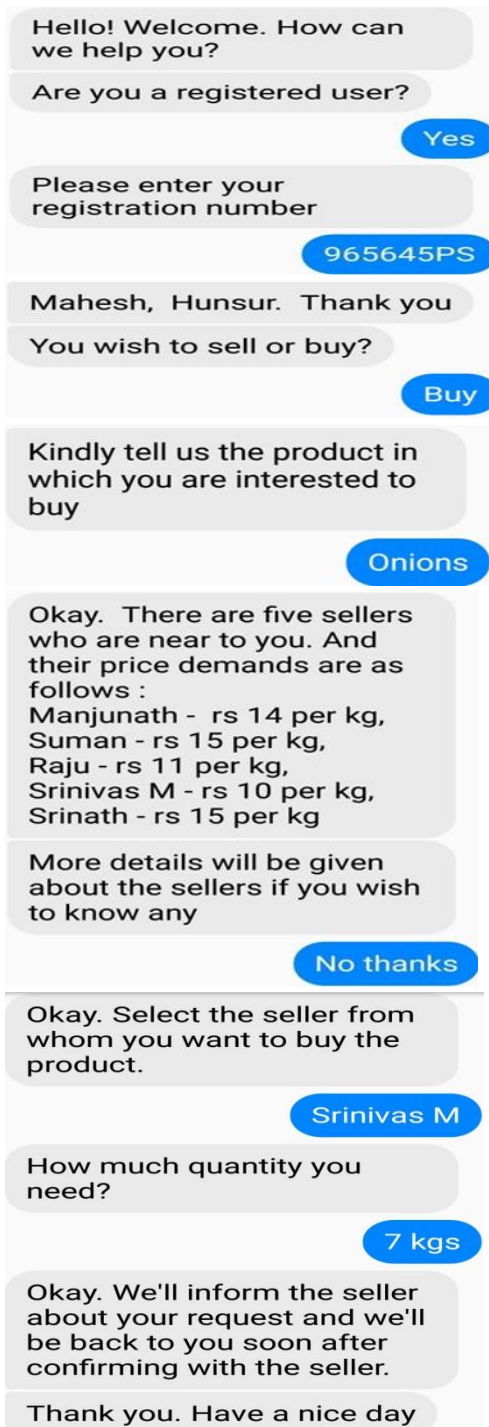


Fig 2: Conversation of buyer and chatbot

Case 3: Soon after getting request from the buyer, the chatbot analyse the requirement and availability with producer. Later it informs the producer about the order.

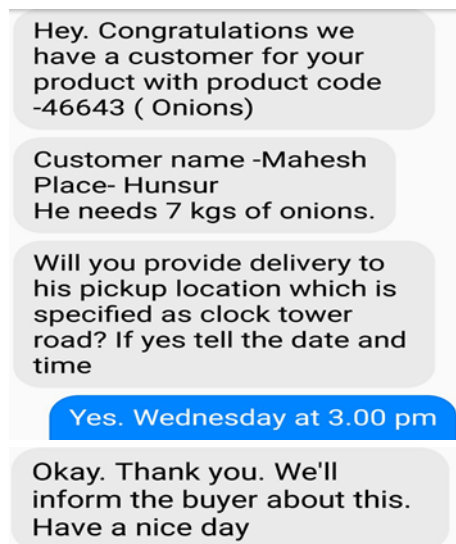


Fig 3: Conversation of Chabot and seller

IV.CONCLUSION

Building a chatbot is not like setting up a slack of a company. It takes time and the right technology and a design expertise to build something that actually works. Adoption of any new technology depends on growing demand, lower costs and improved technology. If it's implemented considering these factors, it's fruitful.

The biggest reason for the belief that chatbots will be the next paradigm shift is that people are already spending so much of time in messaging apps. Within Indian context there is only one messaging app that matters today i.e. WhatsApp. It's building a platform tools to enable businesses to seamlessly interact with users on WhatsApp. Local players such as Hike, Paytm, Jio and others have also expressed their interest to turn their apps into chat-based platforms. Chatbots are 24/7,365 buddy!

Success of the chatbot depends on the success of conversation. Chatbot firms are working with linguists developing verticalised vernacular conversations. 'TalktoSpot' a chatbot, holds up and support the sexually abused people. Chatbots has its upper hand, right from the beginning of customer service up to sexual assault therapist. With the increasing advances in AI, bots provides leverages of advanced technologies to the companies. With the advent of deep-learning and machine learning, services are becoming more contextually aware.

It's predicted that in future year's people use chatbots as virtual partner for sharing their emotions and feelings. A ton of companies like LinkedIn, British airways, Starbucks, Microsoft and Apple have announced their support for the development of chatbots. The chatbot industry is expected to reach over \$1billion dollars by 2025.No doubt this trend continuous for years and we should keep a close eye on Chatbots in 2018 if we want to get our hands on our own bots in the next few years.

ACKNOWLEDGEMENT

We would like to thank all our lecturers for expert advice and encouragement throughout our work.

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