

Significant Developments Of Artificial Intelligence In Indian Ecommerce Industry In 2019

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Abstract: Artificial Intelligence shows a tremendous improvement in scaling up the ecommerce business globally. The investments made on research and development in Artificial Intelligence over the past few decades started reaping its rewards in the last few years. Most of the industries are facing problems in economic slowdown in recent days, but ecommerce industry stood tall due to its proper Supply and Demand predictions using AI concepts. The paper explains the recent developments of Artificial Intelligence in ecommerce Industry in 2019 in detail.

Index Terms: Artificial Intelligence, addressing schema, Chatbot, Customer Relationship Management, ecommerce, IoT, NLP

1 INTRODUCTION

The Indian e-commerce industry has been on an upward growth trajectory since last decade and it is expected to surpass the US ecommerce industry to become the second largest e-commerce market in the world by 2034. With growing internet penetration, internet users in India are expected to increase from 581 million as of December 2019 to 829 million by 2021. The Customer relationship Management plays a vital role for the success of e-commerce over traditional business in various segments. Companies that successfully implement CRM will reap the rewards in customer loyalty and long run profitability. Managing a successful CRM implementation requires an integrated and balanced approach to technology, process, and people. Ecommerce in global is now facing the saturated state in the implementation of traditional CRM methodologies. Saturated state implies the common catalog, payment landscape, security agreements, etc. This is the phase where CRM is going to evolve with the implementation of artificial intelligence in the areas of customer experience. From this year 2019, not only ecommerce most of the business will be scaled with the evolution of IoT, Machine learning and many artificial intelligence concepts like Chatbot.

2 ADDRESSING SCHEMA:

In India, most of the address is typically referred to the landmark that lies around 50 to 1500 meters. Since the Online time delivery has the huge impact on the customer service, the proper addressing schema plays a huge role in it. The IT application in ecommerce typically has addressing schemas in their delivery process. The functionality of the Addressing schema is to narrow down the most possible delivery address to the referred landmark. And also accuracy in finding geo location helps Delivery executive to provide emergency services for the customers.

According to the research conducted by Dr. Kabir Rustogi, the poor address cost Ecommerce business roughly costs \$10-14B annually, i.e. 0.5% of our GDP (1). To overcome the hurdle many systems are being development over the past few years. On the literacy study, It is observed that most of the Addressing schema falls under the following two categories.

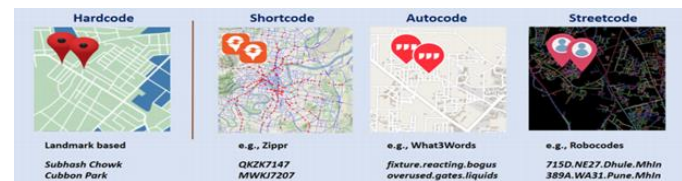


Figure 1: Evolution of Geocoding

HARD CODED ADDRESS:

Hard coded Address is referred to the structured format in the Addressing schema. It is being attributed by the format Door No, Flat/House Name, Street, District, State, Pin code. Hence the strings used in the Applications are very structured; the delivery time can be fine tuned with the integration of ecommerce with geo location applications like Google maps, MapMyIndia, etc. This approach is the old school methodology and yet more powerful to narrow down in finding the address. According to the research conducted by Rustogi, the hard coded addresses are being classified by the four attributes. I.e. Pin code Area, Population Density, Languages Used, Structured Address (2).

MACHINE CODED ADDRESS:

The Machine coded address is often referred to the most disruptive way in overcoming the challenges faced in hardcoded address. It uses the Machine generated code in finding the address. Machine code uses APIs for the data integration. It helps the ecommerce industry to propagate their delivery services to the unstructured address. The Machine codes are typically classified into three categories, i.e. Short-codes, Auto-codes and Robo-codes (3).

SHORT-CODES:

- The Unique address record in Short codes are achieved by manual surveying or crowd sourcing the location of each address. Examples: eLoc, Zippr, etc
- Auto-Codes:

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Auto codes follow a grip based approach, i.e. unique code generated using 3m x 3m imaginary grids created in the geo locations. Example: Plus Codes, What3Words (W3W), etc.

- Robo-codes:

Robo-codes often follow the street based approach. The system uses the existing street name, if it already exists and the system will automatically generate a unique street name for the geo location. According to the research conducted Dr. Ramesh Baskar, It is expected that by 2050 the population in urban areas will be more than in rural areas in India (4). Hence it leads to lot of Infrastructure development and creation of new address. As most of the Indian cities expand rapidly over the last few years, there will be huge dependency on machine code to capture newly emerging address. Ecommerce application which has more powerful machine code strategies will get beneficiary in the geo location changes.

<p><i>Pin code Area</i></p> <ul style="list-style-type: none"> • Median: 179 sq.km • High: 25,000 sq.km (Leh) 	<p><i>Population Density</i></p> <ul style="list-style-type: none"> • Median: 2000 person/sq.km • High: 21000 person/sq.km (Bangalore)
<p><i>Languages Used</i></p> <ul style="list-style-type: none"> • Median: 3 (English, Hindi, Local) • High: 17 (Kohima) 	<p><i>Structured Address</i></p> <ul style="list-style-type: none"> • Median: 10% • High: 60% (Chandigarh)

Table 1: Median distribution of Attributes in Hard coded address across India

satisfaction (a). Ecommerce customer holds the highest degree of Chatbot acceptance roughly around 35 % (b). 70% of global GDP is accounted by Service based Industry, out of which Ecommerce plays more than 15% (5). The sustainability of an ecommerce application lies with the proper service management with customer. In recent years Chatbot plays a vital role in providing instant services to the customers.

PREDICTIONS:

- K2 Digital Transformation Agency- By 2020, 50% of all online traffic that includes website browsing, publication of content, media playback or downloading files will be based on chat bots
- Gartner – By 2020, An average messenger user will more often talking to bots than to a partner every day, 85% of interactions between a brand and customer will not be based on a direct contact with human.
- Grand View Research – By 2025, global Chabot market value will be 1.25 billion dollars.

3x2 SUBJECT DESIGN

One of the most famous concept in Chatbox over the last year is 3x2 Subject design. It is proposed by Peter Daniel Lund Magnusson during his master studies in BI Norwegian Business School (6). The design involves both Human Interaction and Chatbot automation to handle the customer response. The Interactions are termed as Encounters.

		<i>Outcome of encounter</i>	
<i>Encounter</i>	<i>Human</i>	<i>Successful</i>	<i>Unsuccessful</i>
	<i>Chatbot</i>		
	<i>Chatbot + Human</i>		

Table 2: 3X2 Subject design in Ecommerce

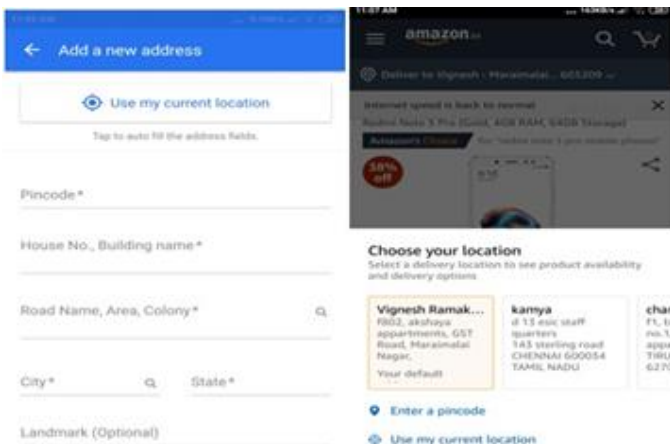


Figure 2: Addressing schema in Flipkart, Amazon India

3 CHATBOT

The Chatbot is designed using the Computer programming to understand the intent of user and provides the resolution by processing the data using various artificial intelligence concepts. With the help of Deep learning & Natural language processing (NLP), the chat bots is more reliable in chatting with customers. There is a series of algorithms powered by machine learning concepts provides solutions to various queries addressed by the customers. A recent survey says providing optimal solutions & minimizing the customer interaction time amplifies the customer

The design is widely adopted by most of the ecommerce applications all over the world. The popular ecommerce giants in India such as Swiggy and Zomato are adopting the application in the Chatbox design framework. The survey conducted by the Qualtrics team, a giant in Customer experience industry claims that 3X2 Design eradicated the errors completely in the Chatbox and increases the Customer experience significantly (7). Jarrahi's research concludes the complimentary of Humans and AI to make decisions in the business process which involves uncertainty, complexity as well as equivocality (8). Garry Kasparov, World Chess champion in 1997 was beaten by a machine - IBM Deep Blue (9). Kasparov mentioned the incident with his famous quote "If you can't beat them, join them". Jarrahi referred this incident with his research on collaborative work of Humans and AI robots. The success of every company lies with Customer satisfaction and most crucial part is loyalty. In Ecommerce, the usage of Chatbots stand are predicted for almost 85% of customer service interactions by 2020 (c). The 3x2 system design provides the reality concept of Human to Human Chat encounter to the customer. The application of complete Human to AI robot in traditional Chatbot is eradicated by the design and paves a significant improvement in the customer experience of an ecommerce application (10)

	Success rate	Unsuccessful rate
Chatbot	72	28
Human	51	49
Chatbot + Human	98	2

Table 3: Distribution of Success rate – results from Qualtrics (6)

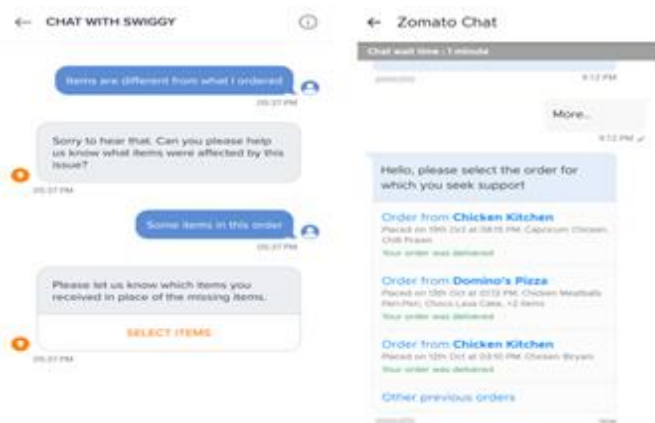


Figure 3: 3x2 Chatbox design in Zomato and Swiggy

App Name	Number of users	Rating out of 5
Amazon India	4807138	4.3
Flipkart	10228325	4.5
Myntra	2421669	4.3
Jabong	534980	4.2
Shopclues	546276	4.1
Swiggy	1232378	4.3
Zomato	3426382	4.2
Uber eats	1269815	4.2
Foodpanda	187254	3.4

Table 4: Data from Andriod app store dated on 30/10/2019

4 CONCLUSION

The research conducted by Bhumika Khatri shows that the Zomato app is being installed in 12% of Indian smartphones (d). Whereas the Online ecommerce food delivery services are available only in the top cities in every Indian state. The ecommerce platforms become one of the daily usage apps in the day to today life of most of the urban people. The above explained topics describes the recent developments that helps the ecommerce platforms to increase their customer experience in 2019. Indian ecommerce observed a tremendous increase in sales in 2019. There are various other factors like Indian government Digital India scheme helps to increase the number of internet users.

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