

ONLINE TRAVEL COMPANIES AND CONSUMER ENGAGEMENT IN THE ERA OF ARTIFICIAL INTELLIGENCE

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Abstract

Unlike past generations, the digital natives of a modern generation are remodelling the system through which new technologies are dispensed and democratized, to change how the next generation benefits the merits of developing technologies quickly, it offers an inclusive space. AI is disrupting many industries including the travel industry. AI analyses the searching patterns of the consumer and then accurately examines these patterns to forecast consumer requirements. Based on these predictions, AI technology facilitates the travel companies to offer relevant suggestions to its consumers making it accelerated than ever before to organise a trip. Companies are seeking customer engagement with their brands. This paper addresses the Customer engagement process in online travel companies and suggests the use of AI technology to enhance the user experience and further increase customer engagement and retention.

Key words: Artificial Intelligence, online travel companies, consumer engagement, chatbots, user experience, travel experience

Introduction

Customer Engagement is an emotional connection between a consumer and the brand. In 2011, customer engagement was defined as "the measure of a customer's cognitive, emotional and behavioural speculation in particular brand interactions," and recognizes the three customer engagement dimensions of immersion (cognitive), passion (emotional) and activation (behavioural) [1]. Providing a high-quality customer experience is significant in a customer engagement strategy. The various used cases of AI in the travel sector have been analysed in this paper for better customer engagement. From data processing to improved customer service, there are lots that this technology can bring out. AI can be used in channels like social media inquiries, organizing email inquiries, etc. The stateliest use for artificial intelligence is providing customer support online. AI is replacing human customer service, a Tata Consultancy Services survey of executives around the world found that AI in customer service are currently used by 31.7 percent of the major companies.

Online travel companies are the cyber-space marketplace which enables consumers to research and book travel products and services, including flights, hotels, cars, tours, cruises, activities and more, right away with travel suppliers. In 1995, the first airline ticket was sold via the World Wide Web by the Internet Travel Network. The first large online travel agency Expedia.com funded by Microsoft was launched In October 1996. An online travel company/agency (OTA) sets out and sells housing rooms, voyage, transportation and expeditions on an online forum for travellers. They are mediators who sell services on behalf of other organization. A few examples of such online travel companies are Booking.com, Expedia, makemytrip, Trivago, and Goibibo, etc. Usually, these otas propose many advantages with added benefits with more of a customer-operated approach. They also comprise of an integrated booking system which allows immediate bookings.

In this fast-paced environment, users browse those sites which provide them quick, convenient, and frictionless service. By the virtue of virtual travel representative, data analytics assists the customers to prefer better choices. Also, certain digital applications apply Artificial Intelligence to automate repeated tasks via chatbot application providing support to the customers. The overall process seems like a personal assistant to usher the user in the booking process. Technology has slowly made footway for itself in the tourism sector and decreased the actions that are implemented physically. Always being the earliest to embrace technology, tourism sector has greeted

artificial intelligence with open arms [2]. Artificial intelligence is being executed in the travel sector for varied reasons like personalization level improvement, customizing the suggestions for the customers and even in the absence of staff it assures immediate responses. The existence of artificial intelligence is being deployed to facilitate and affiliate with the customers and thereby foster the level of involvement [3]

Objective

To understand the role of AI in consumer engagement in online travel companies. The different means which can aid customer engagement in travel companies using AI. And implementation of technologies which can help travel companies during Covid-19 crisis.

Literature Review

The information-accelerated necessity of the tourism industry and persistent quality service is provided which is nurtured by the high customer contact levels inside the travel sector. The disposition of artificial intelligence has vast capacity for the tourism sector, provide better understanding of customers' behaviour prior, during, and post trips and significantly it can give comprehension. Consistent, personalized quality service are underlined by recognizing these behaviours. Despite of the recent magnification in adaptation of robotics and artificial intelligence, the scholastic literature stays very restricted [4]. That being so, the aspect of artificial intelligence on the customer satisfaction and procedure of organization continues to be uncertain. Correspondingly, from the tourism outlook, the purpose of this conceptual study are:

User Experience

User experience is defined as an individual's sentiments and perspective about using a certain product, process or service. It includes the empirical, observational, emotional, relevant and worthy aspects of human-computer communication and product ownership. Tourism and travel can be very sentimental yet fulfilling. As customers are becoming insistent, application providers are looked upon to satisfy the rising requirements through improvement in experiences of customers. Therefore, user experience (UX) is regarded the construction and harmonizing components that influence the way consumers get involved with a certain company with the purpose to impact their interpretation and behaviour [5]. UX can be studied to be pivotal at various association points, inside the viewpoint of tourism, starting from the reservation for hotel room and the services offered at the hotel to coming back to the original location. Examining with reference to user interface (UI) usually happens in three key matters: online booking websites, self-service technologies (SST) [6] and intercommunication between human and robot [7].

User Interface (UI)

A user interface (UI) is the space where machine and humans can interact. This interaction allows control and functional working of the device from the user's end, meanwhile, to aids the operators' supervising procedure the machine concurrently responds the information. The ease with which the person is able to interact with the device and the way it surrounds the physical aspect of the device is the reason UI interface is frequently examined parallelly with UX [8]. Generally, these kinds of intercommunication can prove complex, and they are becoming more comprehensive and elaborate. For example, reservations can be made on handsets, and self-service technologies are used for check-ins and mechanized assistance. During all these, through an interlink the end user links to the technology, that is a segment of the device and its software which user can touch, view, listen, interact or understand or command to" [9]. In general, an aggregated content customer experience is brought out through combining UX and UI. CX intellects hypothesize that it incorporates manifold construct which encloses the reasoning, behavioural, receptive, inner, and public elements of the utilization session [10]. Thus, [11] assert that contentment, assistance quality, compatible, consumer inclination, and consumers are the condemning forerunner of CX. Initially, customer intercommunication with the interface should be cleared, and all the required details for using the interface should be communicated for the customer assistance. Say for example, although Facebook utilizes natural language processing (NLP) for promotion of chatbots, experts

advocate a much easier natural language understanding (NLU) that can showcase a much brilliant CX via voice interaction and have criticized the use of NLP [10]. Another, hi-tech characteristic which permits language identification and operations can carry out much compounded work. The interlink can vigorously operate every work on basis of the consumer's requirements with personalized information [7].

Personalised pricing

Another such function is personalization marketing, it refers to a strategy where promotional content is conveyed on a more individual basis. This is generally attained via collecting data and mechanised programmed algorithms, this permits content to be given to user, who have certain concerns and searching pattern, or who has certain specific demographics. AI-powered travel support in the coming future will be deployed with intelligent reminders and analytical capabilities to examine and add improvements to travel arrangements on the go. Developing on the constructive segmentation, taking into contemplation earlier engagement and personal situation a distinctive and customized pricing can be provided to individual customers. The kind of pricing technique adopted could magnify traveller's experience and stimulate their loyalty as selling price is a critical feature of tourism sector [12]. Customised pricing or dynamic pricing is orderly arranged as per time and intended style of life. It might show low at dawn and increased at noon or inverse and its applicability is expanding in tourism sector. Artificial intelligence can raise the urge of customized charges through price differentiation between low and high rates (rate match). Rate parity is the dynamic rate match computation system that reveals the most suitable rate to the travellers. Real-time rate judgement will facilitate the travellers and the travel booking experience is impacted conclusively and excellently [7].

Dynamic rate differentiation can browse the website and collect the intelligence regarding costs of facilities provided by competitors and subsequently displaying the consumer a dynamic cost that shows commitment to the company. Additionally, customized deals and offer can be provided through artificially intelligent-recommender systems, thus escalating the profits from every customer [7].

For decades, the five-stage model has influenced the marketing compositions [13] which are- problem recognition, information search, evaluation of alternatives, purchase decision, and post-purchase decision. At the problem recognition stage, the consumer acknowledges a demand propelled by internal or external prompt. The consumer then moves to the succeeding stage with the intention of fulfilling the requirement. The source of findings comprises of individuals (e.g., family and friends), profit-oriented (e.g., firm's promotional advertisements), general (e.g., mass media), and experiential (e.g., individual link with the company or service). Although, a few scholars have asserted that this procedure is dependent [14] with discrete features, societal impact, circumstances and economic factors, and condemnatory, the online environment regulating every utilization incident. For revitalizing the five-stage process model, scholars have asserted the attention, interest, desire, and action model [15]. The model suggests that awareness is gained through marketing messages and thus develops interest regarding the product. The customer then takes a step ahead to aspire the product as he finds that the product or that service satisfies their requirements. This procedure then results into purchasing of the product.

Travel Search

The fundamental step of a traveller's itinerary is a travel search and is explicitly important in hospitality and tourism industry as it would be pointless if any failures are initiated in this phase of the proposed plan. Broadly, tourism requires considerable thought because of its epicurean nature, it is a highly indulging category, that is, the customer desires to get the best results out of the decision. For that reason, the consumer makes effort to involve in an intensive knowledge search regarding the entire trip. Convenient sources of findings comprise of family, friends, audio-visual media, social media channels, and firms' promotional communication. Through this detail the customers get acknowledged regarding the price of the travel services and certain activities offered by the company. Furthermore, the customer might want to discover more information relating to the destination such as the difference in time zone, weather, visa requirements, competitive offers from other websites, mode of travel, and the multiple-destination transportation system. Moving to the next stage the

customer wishes it to be the best travel experience. This stage is eminent as in this stage the customer gets emotionally connected to their desired tour location. Correspondingly, intellectuals have noted how certain tour incidents call attention to activities the traveller gets involved in the destinations and the essential commodities required [4]

Time Invested

Generally, travellers do not have the time to go roundabout the travel site to end up without any outcome. The artificial intelligence algorithm merges different options based on the desired travel location and their past behaviour which makes it easy for an uncomplicated tour plan. More search matter and filtering is required to amplify the experience. On the basis of hotel ratings, prices and other search results it facilitates the consumer to shortlist the options and then take a steady decision. A smart search interface is used for uncomplicated travel search uses with improved machine learning regarding the choice of destination it extracts all the information relating to hotel, flights, tourist locations, and provides caution regarding all the possible situations at the destination. Conversational search is the most exceptional and remarkable feature of simplified travel search. A voice chatbot proves to be helpful in searching for information regarding a business travel, or tourist journey. Using the voice chatbot enables the traveller to have a real-time search conversation without the weariness of typing and brain storming.

Simplified Travel Booking

While making reservations for a group or multiple location voyage, travel reservations can become a mammoth task. The arbitration of artificial intelligence for solving such issues to simplify travel reservation is quite unusual. Artificial intelligence has the perspective to ease the process for travellers in making reservations and make exploration of website timely and appropriate. Bot engine is the new focus in the tourism sector now, contrary to the typical search engine. The online booking process has been incredibly impacted by artificial intelligence, to integrate analytics in channel management and metasearch which would be helpful for both customer as well as business websites. Artificial intelligence makes traveller personalization easier. For the tension-free travel booking experience of the travellers in future this is a leap in innovation. Many of the airlines have now instituted a new feature for travel reservations with the conversational chatbot. Here, a traveller specifies the details such as location(return), date, time, cost, and value-added services without any cumbersome typing and navigation [16]

As per a prediction by [17], the businesses which are deploying artificial intelligence across different industries will encounter a surge of around \$1.2 trillion in only a year in comparison to other less understood competitor in 2020 [17]. Which is now even more significant in the times of pandemic like Covid-19. AI has captured the travel sector, and in the dynamic market it is useful to enhance and get a competitive edge.

Companies including Tata Consultancy Services, Google Travel, Trip Advisor, etc ran a few researches lately on the application of artificial intelligence [18]. These researches disclosed a few significant discoveries that are helpful to the online travel companies. The use of Artificial intelligence in businesses are now deployed by 85 per cent of the travel companies, this was shown in a report by Tata Consultancy Services (TCS) [1]. The exponential rise in digital travel sales may be one of the reasons, as it is forecasted to reach \$800 billion in year 2022 [20]. 74 per cent of the users plan their trip through online websites under which more than 45 per cent of the consumers navigate through mobile smart handsets [21]. Other studies recommend that 85 per cent of customers take decision regarding their travel pursuit, after arriving at their destination [21]. Interactive booking option is preferred by 36 per cent of the customers and self-serving technology is chosen over traditional services by 80 per cent of them [21]. And 90 per cent of the users contemplate required details about the tour at the time they reach to the desired location [22].

The findings of the above report not only reveal the consumer disposition and bend towards technology but also the “Timeliness” feature attached to it. Consumers are now very specific regarding timeliness of the facilities provided [6]. Most of the users expect the facilities to be provided at the time of journey are not prepared to

receive the services before the trip. These self-assisted mechanisms are to a great extent possible, by the utilization of Artificial Intelligence [23] [24].

Chatbots

Chatbots have become a feasible resource for companies. The important aspect on which the decision of a user of remaining on the website or abandoning it is how long does it take. A customer's questions can be answered immediately by a chatbot. Allowing people to make payments via chatbot which heightens the possibility that users will make a larger amount of purchases due to the ease of making transactions. Recently the job of a professional has been switched to perform by chatbots with live chat support and customer service representative through calls. To accumulate the analytical data, now the GUI chatbot platforms have the ability. And for monitoring the chatbot analytics, tools are available like Google's chatbase. Apart from speaking various languages chatbots are now capable of understanding different voice accents over automated calls. In past few years, there has been significant advancement in voice recognition technology and for live chat it has become easier to type in different languages. [25]

While the chatbot is communicating with customers, it can acquire beneficial information that can help brands advertise to the appropriate demographics. Companies are now capable of designing attractive and varied packages for consumers based on their budget and pre-defined requirements, which would be based on the customer's past search results. Through channels like social media, text or email auto-generated reminders regarding the reservation can be sent after the consumer places a booking on the website or mobile app. While on the trip, the bot can get involved in conversation with the consumers to check if there are any issues and record responses.

Language translators

Currently there are some software applications which explicate a speech into another foreign language. For travellers who visit different locations across the globe encounter unknown languages such applications prove helpful. Such issues arise when there are barriers while visiting a foreign country. Earlier such issues could only be addressed through a local guide for translating the local language into their own language. But intelligent software applications are now enabled of translating foreign language into a known language which eliminates the need for local guide. Some applications expressly "Google Translate" would execute such tasks. Often travellers face problem reading sign boards and hotel menus in a distant location with unknown language. "Camera Integration" feature can be utilized to explicate these. This application allows translation using the phone camera to translate into a specific language[2]

Google Maps

With the use of GPS technology, Google maps oblige the travellers by keeping them acquainted of the directions. Google Maps keeps the user informed and instructs about traffic updates and accidents. This leads to the user leading in a completely wrong direction (Samala,2019). Even though, Google Maps helps locating the right directions, travellers often face similar issues. This encounter brings a lot of uncertainty & annoyance to travellers. To ease the travel journey, Google Maps solved the issue by deploying Visual Positioning System (VPS). Contrary to the Global Positioning System (GPS), Visual Positioning System (VPS) is a new version. The Visual Positioning System shows functional view of the actual world and visual display of critical indicators to the user with the support of artificial intelligence

Optimization services

Improved services can be provided with the combination of Artificial Intelligence and Maximum Likelihood algorithm, the assistance providers can implement the improved services. The likelihood values of the prices are estimated through Maximum Likelihood Algorithm by application of the historic data [26]. This algorithm would indicate the schedule at which the prices get raised & the timings at which the rates reduce [27][28]. Thus, with respect to price, this algorithm suggests the most appropriate timings. Otas can enable their customers using this technology to book hotels, flights, or cab services and can also monitor the price drop [29]

Facial recognition

Application and significance of facial Recognition is increasing for numerous purposes across varied industries as an application of artificial intelligence. Travel and tourism industry are also adapting facial Recognition on a large scale. For example, for examination of travel documents by different authority, travellers need to undertake a series of complex process of verification like immigration and customs etc. Which is a cumbersome process. As the process requires a lot of time, it annoys the travellers. For dropping this bothersome process facial recognition technique can be deployed. This mechanism examines the facial profile of the travellers, matches it with the face in the form and issues trouble free uncomplicated check-ins.

To detect and track individuals with fever computer vision empowered infrared camera technologies are another full stack deep learning solution. This enables staff to execute body temperature screening with no physical contact, thus reducing probability of contamination. Which can prove beneficial during pandemics like Covid-19 as it allows non-contacted and seamless procedures [30]

Automation

According to a prediction by Gartner by 2024 “through integrating hyper-automation mechanism with restructuring functional processes organizations will lower operational costs by 30 percent”, so during the current scenario organizations will try hard to cut operational costs, and automation proves to be the best way.

The combination of enterprise-grade Robotic Process Automation with advance analytics and intelligent data capture artificial intelligence could be a solution. Before automating corresponding processes, this can convert handwritten, semi-structured and unstructured into structured data [31].

Conclusion

The technology is disrupting so many industries. Now every aspect of the travel industry is infiltrated by Artificial Intelligence from simple travel booking to implementation and varied applications of chatbot, optimization services and customized pricing. Intelligent and personalized travel solution can be customized according to user's need through prediction system, managing user experience, recommender system, sales optimization and identifying fraud etc. In a situation like today for a non-contact service infrared camera empowered with computer observation mechanism for speedy installation at airports and subway stations to trace and record people with fever. Reducing substantial overload on airlines call centres by improving streamline passenger's re-schedule and reimburse procedure. To make certain high customer and agent contentment in difficult times artificial intelligence can mechanize and amplify the work of human agents.

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