

AI-Powered Customer Service: Does it Optimize Customer Experience?

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Abstract—Industrial Revolution 4.0 has created digital waves in the way organizations and customers transact businesses. Retaining customers through enhanced customer experience is the fundamental objectives of businesses. AI has empowered the service providers through multiple channels of reaching out and interacting with the target market. This innovative technology of customer interaction has benefitted organizations in minimizing cost and maximizing productivity. The customers are also benefitted through convenient mode of transactions and information availability. This qualitative study aims at gauging the impact of AI application in rendering customer service. While it explores the benefits of AI, it also identifies the challenges associated with AI driven customer service that critically impacts Customer Experience (CX). The study infers that digitized customer services makes it difficult to replicate human interaction and consumers perceive that organizations are struggling to create such digital pathways.

Keywords— Artificial Intelligence, Customer Relationship Management(CRM), Customer Service, Customer Experience (CX), Customer Communication Management (CCM)

I. INTRODUCTION

In the world of fiercer competition, retaining customers through great customer experience is the strategic objective of the organizations. Working on this fundamental axiom, the effort put into making a customer interaction and experience results in creating and retaining the customers. Optimum and satisfying customer experience is the main objective of every industry in the current market scenario. With increasing competition and market saturation, organizations have realized the necessity to draw in a niche in providing services and addressing the needs of customers. Customer Relationship Management (CRM) and Customer Communication Management (CCM) became the core techniques of customer service.

The Millennial customers are raised in the era of digital technology where they are flooded with abundant choices [1]. With the growing digitally literate consumer population, marketers are stressed by the need to strategize methods of interacting with customers in ways that are niche and convenient to both. The proliferation of smart phone increased the usage of mobile application [2]. Industrial revolution 4.0 has brought in Artificial Intelligence (AI) to smoothen the process of customer- driven manufacturing. The advent of digital solutions through Artificial Intelligence (AI) for accessibility of information and interaction with customers aims at an enhanced customer experience and thus retention. Reinforcing the significance of AI, Mark Cuban (an American investor and entrepreneur) opined that the first trillionaires of the world will be the ones who develops a high proficiency in AI and its effective application [3].

Customer interaction and communication has changed drastically with technological advancements. What used to be face-to-face communication as the primary mode of customer interaction, progressed to letters, telephone, internet, and now AI.

Customers are only as satisfied as their experiences with the organizations they deal with. Adapting to the technological developments is not a choice for organizations, but a necessity to keep up with trends, upgrade systems and catch up to the digitally literate consumer population. The methods and channels of customer interaction and communication have evolved, but at the core the customer satisfaction level over a grievance resolved with emotional and empathic communication with the Customer Service. While AI has enabled business to gain a wider reach and deeper permeability into consumers, at the same time it has empowered customers with choices, accessibility, convenience and personalized approach. As customers and organizations move towards a technologically driven era; still at the core of it all remains the need for the human touch of interaction. A communicative experience of empathetic and emotional intelligence. While marketers say that it is difficult to replicate personal human interaction with customers while using digital technologies, consumers feel that organizations are struggling in trying to create such experiences [4].

II. LITERATURE REVIEW

The significant impact of technology on the marketing activities has caught the attention of several researchers. Digital revolution, the journey from Digital 1.0 to Digital 3.0, dramatically altered the way marketers respond to the customers' needs. One such digital advancement is Artificial Intelligence (AI), a term used for the development of machines to execute complex tasks that would normally require human intelligence. AI relies on patterns and algorithms to take decisions instead of programming. An efficient algorithm which incorporates all these features is suggested and implemented in this study. One of the key objectives of AI is to equip machines with the ability to accomplish tasks with equal intelligence as humans [5]. Myriads studies have been conducted in the past on the role of digitalization and Artificial Intelligence (AI) in transforming the marketing strategies. Researchers have explored the role of AI in improvising the selling process and the sales of the companies [6]. The application of AI in market segmentation on the basis of predicting the social media behaviour of the consumers is also studied [7]. By 2020, 8 out of 10 companies are expected to implement some form of AI [8]. The proliferation of AI is expected to increase the automated customer interaction and technology

based approaches to develop better customer relationships [9].

Technological disruption combined with the rising customer expectations resulted in Customer Relationship Management (CRM) becoming the pivotal point for enhanced customer engagement. In the era of technological advancement, CRM has witnessed significant transition from traditionally dealing with the customers on one-on-one basis to direct response marketing (CRM1.0). Due to impersonalized nature of CRM 1.0 the focus shifted on the use of multichannel data (CRM 2.0) and finally there was paradigm shift to CRM 3.0 that endeavours to integrate Omni channel data to create real- time customer interaction [10] (Fig. 1). Moreover, the development of AI enables such interaction through advanced and personalized customer engagement [11].

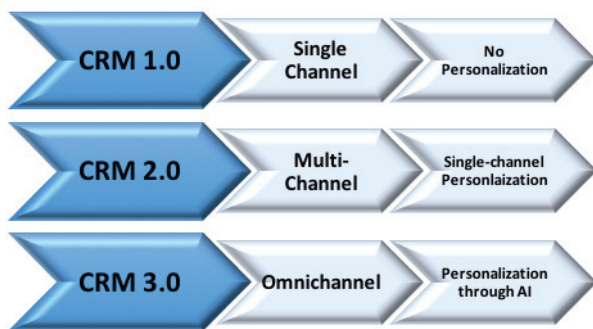


Fig. 1. AI and the Evolution of CRM

Another challenge faced by the companies is meeting the rising customer expectations in the dynamic market environment. Constant efforts have been by the researchers to identify the factors in customer-journey that propel the perception and satisfaction level of the consumers [12]. Despite taking all necessary measures, most companies still fail to create effective self-service systems and face a lot of complaints from the frustrated customers that stems from poor customer experience [13]. Customer Experience profoundly impacts the customer loyalty and absence of great customer experience alienates the consumer from the brand. To gauge the excellence level of the customer experience, KPMG in one of the surveys utilized Nunwood's Six Pillars framework encompassing key elements that drive customer experience namely personalization, empathy, integrity, time and effort, resolution and expectation [14]. These factors are considered critical for delivering world class customer experience. Hence, besides optimizing AI for improvising CRM process, companies also leverage AI technology for enhancing customer experience that drives majority of the customer's purchase decision.

Consumers demand greater customer expectation capabilities from the marketers that includes automated, day-long, convenient, highly- personalized and uninterrupted services from the service providers [15]. Web-based customer services that render greater convenience are becoming the name of the game. Responding to the ever increasing demands of digital savvy consumers and combating the fierce competition, marketers began channelizing their resources to integrate technology and analytics to render world class customer experience. Thus, digitalized customer experience became the focal point of achieving success for companies across industries.

Companies began embracing modern ways to interact with the customers. AI-powered marketing programs altered the landscape of customer interaction. Several contemporary customer engagement channels namely mobile application, self-service kiosks, virtual assistants and intelligent chat bots emerged [16]. According to the Aspect Consumer Experience Index (2016), approximately 70 per cent of the respondents preferred using Chatbots interface with the companies for reasonable transactions and interactions [17]. On Results of another survey conducted on 6000 adults revealed that 28 % of the respondents were not very comfortable with AI based interaction [19].

Despite AI being embraced by several companies, most of the companies have failed to reap all its benefits completely. It is incorrect to perceive that AI facilitates mere impersonal interactions as some of the machine learning technologies are able to recognize human emotions (Brynjolfsson & McAfee, 2017). The Global AI survey (2017) found that while interacting with the Chatbots, 2 two out of 3 customers fail to figure out that they were interacting with the Chatbots [19]. Conversely, the implementation of AI results in many operational complexities; hence it is imperative for the organizations to mitigate such complexities by training and developing the employees in order to equip them with the right sets of skills [20].

I. METHODOLOGY

This section discusses the methodology employed to conduct the study. The research was primarily carried out to meet three significant objectives.

- getting an insight into the digital revolution.
- impact of digital revolution, particularly AI, on the customer service is investigated.
- explore the effect of AI-powered services on the customer experience.

The research problem is investigated through a careful review and analysis of existing literature, thus, extensive use of secondary data is made. This study integrated academic research papers and company reports to create a conceptual framework that can be further tested through empirical study in the future. The findings of this qualitative research are based on responses from strategic decision-maker in the field of digital innovation and also recipients of AI-enabled customer services in response to semi-structured questionnaire and informal interviews.

Semi-structured interviews enabled to get deeper insights into the fundamental themes. Ten Service Providers (SP) were contacted for the interview out of which only six responded (Table 1). The service providers were selected mainly on the basis of the duration and effectiveness of AI implementation in their organization. The data was gathered from six leading organizations from the banking, education, fashion retail, restaurant and utility sectors in the UAE.

Opinion of the customers (Service Recipients- SR) who have had the experience of receiving services through the AI based tools like Virtual Assistant (VA) and Chatbots were collected through informal interviews and group discussions. The service recipients were mainly the students, faculty members and staff of an educational institute (Table 2). The information gathered from the semi-structured interview and discussion was categorized into two main sections –impact

and challenges associated with AI- based customer service and its impact on the customer experience. The findings of the study are presented through detailed discussion.

TABLE I. PROFILE OF THE INTERVIEWEES -SERVICE PROVIDERS (SP)

ID	Code	Role	Sector	Years of AI Implementation
1	A	Head Marketing	Banking	2016
2	B	Customer Care Officer	Telecom	2016
3	C	VP Marketing	Fast Fashion Retail	2015
4	D	Chief Innovation Officer	Transportation	2017
5	E	Chief Knowledge Officer	Utility Providers	2017
6	F	Director F&B	Japanese Restaurant	2018

TABLE II. PROFILE OF THE INTERVIEWEES - SERVICE RECIPIENTS (SR)

ID	Code	Status	Age	Frequency of AI Based Service Encounter
Group 1				
1	A	Student	21	Frequently
2	B	Staff	53	Occasionally
3	C	Faculty	41	Occasionally
4	D	Faculty	38	Frequently
5	E	Student	25	Rarely
Group 2				
6	F	Student	21	Frequently
7	G	Faculty	42	Frequently
8	H	Student	22	Frequently
9	I	Faculty	48	Occasionally
10	J	Staff	33	Occasionally

III. FINDINGS, DISCUSSION AND LIMITATIONS

The discussion with the customers and the service providers unraveled the key benefits and issues of AI implementation in the service delivery. All six participating organization agreed to have grappled to render great customer experience through cost effective ways. It was found that all the organizations interviewed for the purpose of this study were optimizing the use of AI in delivering the services to the customers.

A. Impact of AI-Enabled Customer Service

All the respondents (service providers) deliberated AI as a tool to maximize the organization's capability to serve its customers. In order to enhance the internal efficiency (6 SP) and drive self-service (6 SP), the service providers have increased their reliance on AI to deliver customer service. The discussion with leading service providers reinforced that the strategic reason behind deploying AI is to automate the customer service process that will result in the cost reduction and increased efficiency levels. It was highlighted by all the service providers that companies are maximizing the use of AI enabled techniques Chatbots, virtual voice assistants, Internet of Things (IoT) and other digital assets to interact with the customers and deliver quality customer service. These augmented tools are believed to enhance the ability of the marketer to provide prompt (6 SP), proactive (6 SP), better quality (4 SP) and personalized services (3 SP). Service provider D stated that "Our organization endeavors to implement AI in several key areas such as traffic

management, safety and security, customer experience, intelligent administration and knowledge and innovation management in order to deliver value to our customers".

As emphasized by the service provider C, "Our main focus is to collaborate with innovative companies in the world to provide the latest innovation rendering a seamless customer experience". AI automates the service delivery process thereby reducing the cost. The data-driven approach of AI-lead services helps the marketers to assess the need of the consumers (4 SP) thus delivering the desired service to the target consumers. Integrating AI in customer service also helps to mitigate the repetitive steps of service delivery (6 SP) which increases the operational efficiency (6 SP) and empowers the employees to utilize their potential and time in more creative and strategic capacities (3 SP). The increased level of service efficiencies leads to superior customer experiences. The respondents believed that AI drives holistic customer engagement that results in achieving customer loyalty.

The discussion with the customers revealed that they connected well with the brands that showcased empathy (8 SR) and provided them with prompt and customized services (10 SR). Most of the customers (8 SR) agreed to the fact that AI implementation has improved the agility of service delivery.

B. Challenges of AI Implementation

"It is very challenging to construct AI based smart innovative solutions that is cost effective and customer friendly" (Service provider B). Most of the service providers (4 SP) believed that the major challenge in implementation of AI as the main source of CCM is managing customer expectations. Though it provides many options for mobility and responsiveness, consumers want a personalized communication. Minimum time and optimum service is their motto. Despite numerous benefits, AI is highly confused and misunderstood by both the consumers and the decision-makers who lack thorough knowledge of its concepts. The discussion with the respondents highlighted that the service providers find it very challenging to assess when a customer prefers human interaction and in what situation the customer demands an AI driven service like Virtual Voice Assistant or Chatbots. The lack of proper escalation plan from AI to human intervention was considered to be one of the major reasons behind the service failure (5 SP). Automation of services through AI was believed to risk customer relationship building (3 SP).

All the customers interviewed (10 SR) demanded more personalized AI engagement across all the channels. "We definitely want quick, seamless and pleasant experience and that's what we expect AI to deliver" expresses service recipient A. All the service providers (6 SP) emphasized that customers have heightened and unrealistic expectations of the potential abilities and achievements of AI. As a matter of fact, more intelligent and personalized interactions through these AI-based interactions were expected by them. Recollecting the unpleasant experiences of digitalized customer services, the customers (7 SR) reported that the repetitive information provided by them to the multiple agents or bots while resolving an issue was a nerve-wrecking experience. "AI as the name suggests is 'Artificial Intelligence' that implies that it is definitely less than human intelligence. There is a fair chance that it may fail to comprehend the command and the frustrating fact is that it

mostly does” said service recipient I. Such situations sabotage the brand’s relationship with the customers and cannibalize its image. “While this digital pathway (AI) can substitute the human element in the customer interface but it cannot completely replace it. One still need to reach out to human for an empathetic conversation”-said the service recipient F.

Moreover, customer’s expectations vary from time to time and in each encounter. Failure to cater to this increased expectation resulted in dissatisfaction and frustration. “It is really frustrating when you urgently need to talk to customer care representative but the call gets directed to a virtual assistant that fails to provide personalized solution to your problem” stated service recipient E. Further, most of the customers (9 SR) believed that the absence of human involvement impersonalizes customer communication that disassociates them with the brand.

C. Optimizing Customer’s Experience through AI

It can be inferred from the discussion that while AI application ensures automated and efficient service delivery, great customer experience calls for human interface to maximize empathy and individualization of the the services rendered. Hence, it is imperative for the service providers to use the key factors of customer experience as the bedrock for designing the innovative approach and digital pathways. The digital essentials or the basic functional benefits of AI must include the trustworthiness, resolution, its ability to meet the customer expectations and higher efficiency levels. However, for optimizing customer experience, it is critical that organizations make strategic use of human intervention for better personalization and empathetic interaction. Hence, harnessing the best of both AI and human capabilities (Fig. 2) should be the pivotal axis of digitalization.

D. Limitations

The study relies on the data collected through unstructured survey and informal interviews. Thus, the findings of the research cannot be generalized to the larger population. Further, the research does not compare the difference in perceptions of interacting face-to-face with Customer Service Representative to the distanced AI usage. Hence the results cannot be completely validated through primary data gathered.

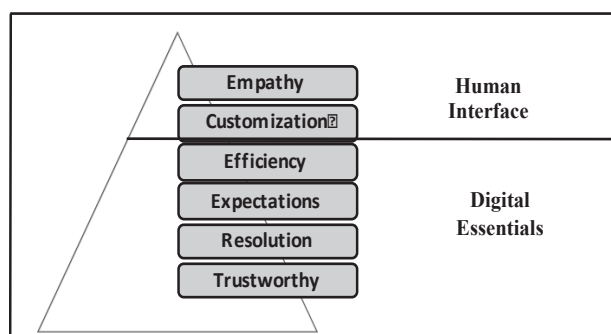


Fig. 2. Digital CX Pyramid

IV. CONCLUSION

Customer experience is shaping the journey of the customer, thus becoming a key factor for customer retention and sustainable business. Effective Customer Relationship Management and Customer Communication Management systems makes it possible for the marketers to achieve this

goal. Leveraging technological advancement and behaviour of digital consumers, several organizations have digitized their customer service. Rendering services through AI have become a popular practice across industries. Service providers, with an objective to deliver high quality customer service, are trying to maximize the use of AI enabled techniques that use various digital assets to interact with the customers. But unfortunately not many organizations have a clear path laid down for this digital revolution. While AI surely reduces cost to organization and streamlines its operation, it fails to provide personalized service which is critical to the customers. Most consumers believe that companies in their endeavour to keep up with the digital trend have offered so many communication channels that personalized communication has become a difficult task to achieve. Hence, AI powered customer service can succeed in optimizing customer experience only when it provides customized service like its human counterpart.

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