

# The Future Contact Center

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**Abstract—** Contact Centers are at a crossroad today. While they are the first and foremost point of contact for customers, expectations of customers are rapidly growing. Numerous studies have shown that majority of customers will move their business to a competitor after just a couple of average or negative experiences. Thus, enterprises face a difficult challenge –how can they delight and retain the loyalty of their customers through multiple customer experience cycles while managing costs? In the evolving customer care minefield, what next generation ideas can enterprises utilize to restore Customer Care in a continuing equilibrium? In this paper we focus on the various customer-focused services available today to help Contact Center Managers achieve lowest costs and the best outcome for customers and the Contact Center alike.

**Keywords-**customer experience;customer care;contact center;self-service;future contact center.

## I. INTRODUCTION

Contact Centers play a pivotal role in customer service and are the first line of communication between businesses and its customers. Companies all over the world over rely on their Contact Centers for providing a range of services to callers, for instance providing information, solving issues, assisting sales, capturing data and researching innovative ways to better serve new and existing customers. The Contact Center therefore influences the customer experience in a big way and in fact provides a “moment of truth” to any customer interacting with the business. Hence, if the Contact Center is unable to meet customer expectations or meet their ever-changing needs, it can impact customer loyalty and ultimately the enterprise’s business interests.

While the principles of customer service are unchanging, the same cannot be said about customer expectations. With the rapid growth of digital technologies, customer behavior and expectations are evolving rapidly. This paper aims to identify how these changes impact Contact Centers and provides recommendations for Future Contact Center technology and design considerations while providing optimal services at manageable costs.

Led by innovations and improvements in telecom technologies and discovery of newer media for the Contact Centers, the performance of individual services has been continuously improving by leaps and bounds each year. Research outcomes till now attests only to this fact [5], so also on customer experience [2][8] and omni-channel operations [3], etc.

On the other hand, we have researched the set of new age services available for Contact Centers today. Further we

have identified those services that make the Contact Center much more valuable to the customer, the enterprise, and the managers thus achieving the lowest average cost per transaction with the customer yet delivering the highest problem resolution rate for the enterprise. We recognize that Contact Center performance is based on two sets of services for customers: (1) self-services on the one hand and (2) access to CSRs on the other. Self-services, as the name implies, presents methods for customers to interact with an enterprise’s information systems directly, accessing information and logging their service requests among others. Interactive Voice Response (IVR) systems are the age-old and predominant tool for doing this. On the other hand, access to CSRs has been considered as the most effective tool for customers to resolve their queries, and problems. This is based on the belief that all problems are the same, and all problems require the same solution. When one digs deep however, a customer asking for the validity of his /her maintenance contract is simple, where as a customer who received a faulty product is more complex. Through new-age solutions, the first set of problems can be addressed by low-cost ChatBOTS, but the second probably requires connect with a CSR. This is not a one size fits all problem, and we have acted upon these differences in our paper. Thus our conclusions make Contact Centers more usable for the readers than the previous and pre-existing research.

Section II discusses the ways in which customers are demanding superior service now more than ever. Section III introduces customer experiences, the challenges for an enterprise, and how every customer is now demanding a perfect experience. Section III also touches upon a fact that is becoming increasingly evident, that empowered Customer Service Representatives, also called agents (CSRs) deliver a better experience to customers. Section IV introduces the next generation contact center (we call it the Future Contact Center), and the services that are missing in Contact Centers today. Finally, it is important to manage operational costs while providing great experience to customers. Section IV presents ideas for this. In conclusion, enterprises must recognize that the age of dictating to customers is long gone. In the current market scenario, customers are more likely to buy from the company with the best product, the cheapest price and the best interaction with him / her at that magic moment of purchase.

## II. EVOLVING CUSTOMER EXPECTATIONS

The rise of Internet technologies, Wi-Fi, social media, smart phones, E-commerce and ubiquitous Internet access

has created a hyper connected world which has ramifications on how customers connect with businesses, react to service failures and how they access information on products and services. The key changes in customer expectations can be summarized as follows:

1. Access to competing products / services is growing. With most businesses investing heavily in e-commerce and digital marketing, customers have enormous opportunities to review, research and move to alternate products / services.
2. Speed of Service. In today's world, people spend roughly 20-25 hours of their time online per week for various needs and are constantly being bombarded with information, live updates, news and social messages. People expect speedy responses to queries and service requests and surveys estimate that 66% customers today expect a response to their query on the *same day*, and over 40% expect a reply *within the hour*. Further, customers expect 24x7 service.
3. Multiple communication channels. In today's connected world, different communication channels jostle for the customer's attention via email, SMS, Whatsapp, social media portals, Chat, Applications on Smartphone (Apps) etc. The customer's preference is purely personal choice and – hence, customers today expect an omnichannel experience.
4. Customers are empowered. With the rise of social media, it is very easy to share views with a large audience quickly. Everyone feels a sense of empowered to have a voice and as they articulate their views, their friends and family form opinions about a product or service of a business. Without even realizing it, the brand quality of a business can be damaged in no time. A customer therefore expects to be viewed as an individual and anticipates that businesses constantly monitor all available media for any mentions and respond to them.
5. Personalized service. The advancement of analytics (the processing, power, storage capacities and algorithms) has given rise to increasing personalization and customer service needs to cater to this by mining all available customer data and identifying their preferences [7].
6. Self-Services are growing. Today's customers are more than willing to solve their problems themselves. Self Service options are also beneficial to a business as they help in reducing and optimising time spent by a Customer Service Representative (CSR).

It is evident that given the changing techno social environment, customer service has moved from being an event at a point in time to being a complete experience. 'Customer Experience (CX)' [8] is the term coined to define the outcome of the customer's interaction with the enterprise over the duration of their relationship. The term encompasses all touchpoints the customer has with the business right from the point of being a potential customer

to becoming one and continuing to be loyal to the brand. Since in all likelihood the Contact Center is the only point of contact for the customer to the enterprise, Contact Centers therefore have an important role to play in contributing to customer experience and hence, by design itself, a Contact Center must be able to deliver a perfect experience. Another term, User Experience (UX) is also commonly used to describe experiences of customers and prospects with the enterprise. UX is the set of experiences that a customer has with the *digital* products of an enterprise, for instance the web portal [9]. However, CX and UX are incomplete by themselves without considering Agent's Experience (AX) in the Contact Center. Empowering CSRs in meeting customer expectations helps them service them in a holistic manner. AX is therefore the outcome of the CSR's experience with the Contact Center design and technology in this context. A Contact Center, which empowers a CSR with access to enterprise information systems, easy analytics of customer behavior and past interactions, and corporate knowledge reserves to troubleshoot issues serves to provide a superior experience which in turn impacts customer's experience in a positive way. It is then that the journey of the customer is made satisfactory.

In well-designed Contact Centers, good quality agent desktop software / systems provides CSRs access to multiple enterprise information systems of the enterprise. While access is provided, ease of use is often missing. In large Contact Centers, there may well be over a hundred separate enterprise information applications that CSRs need to navigate individually to locate answers to customer queries. This causes frustration, and depletes the CSR's ability to effectively engage with the customer.

Statistics in a Contact Center provides methods to gauge the overall performance and experience provided to the customer. First generation linear Contact Center performance statistics included simple items like successful calls, averaged call length, average call holding time. Then came along complex first generation statistics that measured first call problem resolution (FCR). Today's highly competitive market scenario has made it necessary for companies to adopt a more holistic approach to weed out inefficiencies in their Contact Centers. Many touchpoints are used in a Contact Center to gather usage statistics, and the data thus generated has increased exponentially. Thus, by choosing from a variety of analytics tool, each for specific touchpoint, the managers have an opportunity to provide superior experiences to customers (e.g., Journey Analytics for overall customer experience, Self-service Analytics helps optimized efficiency of self-services, desktop analytics to understand experience of CSRs on phone and so on). Under the old way of measuring, many opportunities for improvement would be lost. Version 2 of

Contact Center statistics presents an Analytics based approach [10].

### III. THE FUTURE CONTACT CENTER

The Future Contact Center aims to deliver a superior customer experience and keep up with growing customer expectations. Contact Centers today fall short when it comes to enhancing customer experience as they rely on archaic customer service principles and are based on options set in place many years previously. In this section, we explore the changes that should be made in the future vis-à-vis the current.

#### 1. Self-services:

Contact centers of today provide limited options consisting mainly of voice only Interactive Voice Response (IVR), with unchanged menus for a long time. Improved options for the future are discussed next:

- i. **BOTs, chatBOTs, AutoBOTs - BOTs** are computer programs with or without artificial intelligence that engage with a customer through text (chat) or audio (voice call) [1]. A session with a chatBOT is started on request by the end customer. Normally the customer is unaware that they are engaging with an automated entity rather than a human, but that is fine since the customers only want an acceptable experience. a single instance of a BOT program can engage with hundreds, even thousands of customers simultaneously without compromising security or context of any. The performance of newer BOTs is quite lifelike today and early adopters in more and more industries are relying on them as the first line service to their customers. It has been found that chatBOTs save 30-40% in costs in attending to and resolving Level 1 (L1) issues in a Contact Center.
- ii. **Speech recognition:** Callers do not need to take their phone off-ear to type digits in an IVR call anymore. Rather, callers can simply *speak* their options, from numbers to words to phrases to natural language sentences. The computer program or service processing their call converts the voice of the caller to numbers and text to take it further.
- iii. **Secure transactions with Biometrics:** As automation grows, customers get further and further away from human-to-human interactions. Verification of customer’s identity has become important for prevention of fraudulent transactions. Usually this is done through multiple menus in the IVR, or through text based multi-factor authentication [11], where callers / customers are prompted to dial or enter a bunch of digits to confirm their identity. With enablement of Voice Biometrics, a caller only speaks a voice based *passphrase* that they set earlier. With surprising

accuracy, identity is now secured in a few seconds compared to much longer before.

- iv. **Apps for the smartphone.** The exciting next generation automated service option, where the customer downloads an app / program on their smartphone to access their account or use services offered by the business. Further enhancement could be apps v2.0 that enable customers to contact CSRs through a voice, video and chat / call over the Internet in a cheap and reliable manner through the app itself. All communication is over the cheap IP / VoIP-SIP link.
- 2. **Omni Channel Access.** Most Contact Centers today operate on voice / email / chat options for contacting a CSR and do not incorporate new age channels for customer contact. As shown in Figure 1, the media options preferred by callers are evolving. Almost a quarter now represent next generation media options, including video, web chat and smartphone apps. Usage of individual next generation services is small today, but is growing rapidly [5], while reliance on plain voice calls and IVR is progressively reducing.

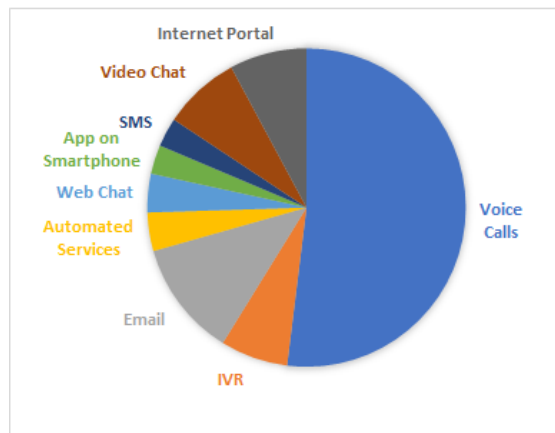


Figure 1. Media Options Preferred by Customers

To cater to this change, Contact Centers of the future can provide:

- 1. **Omni-channel Access:** Access to CSRs transcended from voice-only option and now includes multiple media options like text-chats, video calls or even a unified multimedia call with voice, chat and video options. WebRTC is the leading browser based technology that makes this happen.
- 2. **Virtual Queue** is the option that offers to call a customer back when an CSR is available rather than making the customer wait on hold for tens of minutes.
- 3. **Personalization:** IVR menus today offer standard menus for all callers. Future Contact Centers should record preferences of individual customers and use it to customize service offerings for them. Personalizing the call queue for customers using web-based editors makes it easy to set up menus, queue priorities,

different announcements and music based upon number dialed or the person who is calling.

4. Intelligent Systems. While enterprises are a treasure trove of information for problem resolution, CSRs generally do not have the requisite access to the Information Technology (IT) systems therein. Access to the enterprise’s overall knowledge base enables CSRs provide the best help to customers [4]. Also, Contact Center software of most Contact Centers today lacks integration with customer information through Customer Relationship Management (CRM) systems, analytics on customer behavior or access to a smart knowledge base.

To empower the CSR with complete caller information, future Contact Centers must adopt:

- a. Integrated CRM with screen software on CSR desktops, laptops, tablets and smartphones to ensure that CSRs have caller’s history at their fingertips so they can demonstrate a keen understanding of the customer’s needs. Further CSRs can be provided with smart analytics on customer’s past behaviour and predictions of expectations so that they can anticipate and attend to their needs.
  - b. Improved Contact Center Analytics: Reliance on just the Supervisor for manually sifting through logs to determine performance of the Contact Center is insufficient for there is too much data to manually look through. Sophisticated data analytics tools enable the Contact Center Managers to understand current performance in detail. Further, customer analytics can provide in-depth information about customer preferences, past behaviour and predict future needs. This is an early stage technology, and improvements are expected to follow. As is indicated in [7] telecom call loads are massive, and only effective big data analytics can help analyse and summarize call SMS arrival patterns.
  - c. Intelligent Call Routing. With intelligent call routing, contact Centers can route the call through to the CSR last spoken to or to the CSR who is handling their current query. This helps retain context for the caller and provides accurate assistance to them.
5. Consolidate Infrastructure. As operational cost increases, Contact Center Managers must review all areas to optimize cost. The following methods can be adopted for addressing infrastructure optimization:
    - a. Cloud Adoption. In the past, Contact Center infrastructure was premise based, making it difficult to manage and service availability across geographies. Reliable public Cloud infrastructure is now available in a cost competitive manner, with near real-time provisioning options simpler than even before. With this an “always available”

and “access from anywhere” service Contact Center is now both affordable and valuable.

- b. Remote call agents / CSRs. There has been a steady increase in the number of CSRs working remotely, from outside office. There is a significant cost saving in terms of office seating space, flexible shift times and travel time saving. This option makes quite profitable for the enterprise – more agents in the same cost. Of course, extra security and access control infrastructure is needed to enable these CSRs, but that is a small cost compared to the benefits.

Clearly all processes of a Future Contact Center must be finetuned for serving a customer in the best manner possible. A set of libraries called the Information Technology Infrastructure Libraries (ITIL) have evolved to include functions and processes that a Future Contact Center needs to service customers in a productive manner [12].

#### IV. OPTIMIZING CONTACT CENTER COSTS

Optimizing costs of Contact Center Operations has always remained one of the key objectives in Contact Center Management. The improved features in the future Contact Center support this objective as follows:

1. Optimising CSR Headcount through Self Service  
A self-service call generally lasts 60sec, while calls with a CSR take 4 times longer, or about 250 sec. Hence, it is appropriate for a Contact Center to offer the best services to customers through self-service options, to save the extra 150sec spent with CSRs. From a Contact Center operation point of view of view, 250 or more CSRs are needed to service just 20,000 calls per day [Table 1]. As you browse through these calculations, do keep in mind the Erlang Ratio [6].  
An average customer calls a Contact Center once in every 60 days, therefore, 20,000 inbound calls into a Contact Center equates to about 120,000 total customers. Even small businesses have more customers / subscribers, and this is what makes operations of a Contact Center difficult.  
At the same time, CSRs are expensive resources – almost 50% of the cost of a phone call to attend to one customer is spent on CSR compensation. This leads to the unsolved quagmire for businesses – “who to provide access to CSRs to”?  
Further, in an optimum Contact Center today, 60% calls are managed by self-service processes, leaving fewer calls for CSR. Based on this premise, in the above example, the required CSR count reduces to 100. In an ideal world, 90% or more calls are managed through self-services, leaving just 10% for CSRs requiring just 25 agents in the above example.
2. Also, note that call arrival into the Contact Center is a stochastic or Poisson process, meaning that exact

arrival time of each call is unpredictable [6]. It is also memoryless, meaning that historical data for predicting call arrival can at-best provide estimates but no more. All calls may arrive at the same time, or arrive one after another in perfect synchronization. Call load measurements and predictions are estimates, not exact. It is best to pessimistically estimate call load in line with business growth and with the above unpredictability.

TABLE 1. LOAD ESTIMATES IN A CONTACT CENTER

Contact Center Entity	Value
Shift of a CSR (hours) [assumption]	8
Time spent by agent on a call (secs)	250 secs
Total time spent by a CSR answering calls	8 * (3,600 secs per hour)
Number of daily inbound calls [assumption]	20,000
Number of CSRs needed [in this scenario]	= 20,000* 250 / ((0.7 Erlang Ratio) *(60 min per hour) *(60 sec per min) *(8 hours per shift per CSR))
	= 248

- Therefore, our recommendation is to provide the best possible experience to callers through self-services. And if the problem remains unresolved, then an even better experience when the CSR is online with the caller
- Using a part of CSR’s time with the customer to introduce / sell products & Services. Traditionally, Contact Centers have been viewed as a service for customers to resolve their queries and problems. Contribution to the revenue of the enterprise has been indirect at best. An alternate view is that a Contact Center should also be used to present products and services to the caller.

It is time to evolve that view, and utilize customer care as another channel for selling as well as resolving queries. For instance, a few seconds of time of a CSRs time in a call can be effectively utilized to introduce new products and services offered by the enterprise.

- Optimizing customer’s time. Customers do not like repeating previous conversations they had in a Contact Center or with self-service for the same issue. They consider it the Contact Center’s duty to remember and faithfully transfer the conversations they have had. Also, expect seamless integration with CRM, readily available analysis of historical data and data analytics

of customer behavior to shall enable optimizing time used to present and decipher the issue while enhancing customer experience.

- Recycle Options: Take down aging customer care options used by less than 5% of customer base reduces costs to maintain them.
- More interactions per unit time: Voice and video calls are the only elements that lock down an agent to a single customer during an interaction. The goal is to reduce that reliance on this expensive resource and aim for more customer interactions per unit time through other options e.g., BOTs, artificial intelligence.
- Outbound Services: The same Contact Center infrastructure can also be used for outbound communication with the customer to optimize use of infrastructure. There are many attractive use cases, and include proactive notification of impending service downtime, pending payment reminders, etc.
- Communication Costs can be a large portion of costs in servicing customers. Much cheaper options are available today through the low-cost options offered by the Internet for backhaul. Drastic reductions can be achieved to the cost of voice, email and SMS communications through Internet and Voice-over-Internet (VoIP).

We have witnessed some businesses (especially from the banking and financial services sectors) cautiously moving to newer next generation services like chatBOTs for aiding Customer Experience. If successful on a large scale, this move would mark real progress in serving customers effectively.

Business growth in this hyperactive customer oriented environment requires a renewed focus on delighting customers. The age of dictating to customers is long gone; in this new age customers use what they like or take their business elsewhere.

## V. CONCLUSION

It has been reported that the customer care industry spends upwards of US\$300 billion annually to provide Contact Center services to customers. Some of it is surely wasteful spending; some could be realigned for creation of newer service options as per recommendations herein for the consumers [5].

The exact moment when a customer triggers a purchase is unknown. It may be from the comfort of his or her home, work place, from a restaurant, etc. Further, the trigger could be from a smartphone, laptop, phone or one of many other devices. But what is known is that the customer or prospect will choose to buy from the company with the best product, the cheapest price and the best interaction with him / her at that magic moment of purchase.

Research is recommended in each service area (e.g., self-services, time with CSR) for suggested improvements backed with experimental data.

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