VIRTUAL QUEUING

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1 Introduction

Virtual queuing is a relatively new concept in the world of contact centers and has been around for less than a couple of decades. It addresses an age-old problem in contact centers – callers waiting endlessly to talk to an agent. Studies have shown that high hold times lead to poor brand loyalty, low re-purchase rates, and high customer attrition.

Virtual queuing is a strategy used in inbound call centers to reduce the hold time for callers while reducing trunk costs for the contact center. Incoming calls to a call center are queued against agents or agent groups using an Automatic Call Distributor (ACD). Queues are handled in a First In, First Out (FIFO) order. After being placed in a queue, callers have two options – either to remain in queue or to abandon the call and try later. Studies have shown that waiting in a long queue leads to abandoned calls and repeat attempts resulting in a perception of poor customer service. With virtual queuing, when hold times are likely to be long, customers can opt to receive a callback from the agent instead of waiting in a queue. According to a Forrester Research study conducted in 2006, 50% of all customers who were presented with this virtual hold option accepted it. The call back can either be scheduled at a time that is convenient for the customer or the customer can be placed in a virtual queue and the system can initiate a call back at the same time that the call would have been answered by the agent. Companies that employ a virtual queue allow their customers to hang up the phone and do whatever it was they were doing before they placed the call, while their place in queue is maintained to trigger an outbound call from the call center.

In this paper, we will look at the evolution of virtual queues, the technology behind them, and the benefits of implementing virtual queuing strategies in contact centers.

2 History

Virtual queuing is similar to the 'fast lane' option used at amusement parks for rides that have long queues, where a computerized system allows visitors to secure their place in a 'virtual queue' instead of waiting in a physical queue. They are then free to explore other attractions in the park and return to the ride at a specified later time when they can bypass the queue and directly enter the ride. The most popular among virtual queues in the brick and mortar world has been the 'FASTPASS,' which has been used in Disney Parks successfully since 1999. Today, even small businesses make use of virtual queuing systems either through SMS notifications or through device-based apps that provide a notification and a queue status update.

Voicemail based call back systems were the early precursors to virtual queuing systems. The IVR system would request that callers leave a message and telephone number and respond that their call will be returned shortly, without specifying an exact callback time. Typically, the callback would happen within a few hours. However, customer satisfaction was low with these systems as the reconnection rates were often poor. The system also had the drawback of poor agent productivity, as agents would spend time listening to the recorded customer messages and attempting multiple callbacks to reach the caller again.

Later models involved agent-reserved callbacks where the system saves a customer's place in the queue and a screen pop with the customer's details is presented to the agent who is then prompted to initiate a callback at the time the customer's call would have been answered had he remained in queue. However, even in these systems, the time taken for the agent to preview the customer information and dial the number are both considered as talk time, thus reducing the agent productivity.

A FIFO callback, which enables callers to receive a callback in the same time interval as they would have spoken to an agent had they been in queue, is often preferred by callers because of shorter wait times and predictable callbacks.

2.1 Disadvantages of a Traditional Queuing System

The customer experience in a traditional queuing system is generally bad when compared to a virtual queuing system. In the traditional queuing system, when the caller is connected to an agent after a long wait time, he typically spends the first few moments of the call complaining about the time spent in queue. Several callers may also choose to abandon the call and try again later, thereby incurring additional telecom costs for the contact center, not to mention the negative impact on call center metrics.

On the other hand, in a virtual queuing system, a caller listens to an automated message that informs him of the estimated wait time and the option for a callback. Even if the caller now chooses to remain in queue, he is unlikely to complain about the long wait time as he was given alternate options as well as information about how long he will have to remain in queue. This helps to save precious call time and improves call center metrics. Call abandonment rate is also likely to be lesser as the caller has

made a conscious decision to remain in queue. If the caller opts for a callback, then the caller's phone number and name are captured by the system and a virtual placeholder holds his place in the queue. This 'virtual queue' saves inbound telecom costs, saves the caller's time, and changes the customer's perception about the quality of the call. The use of automatic callback systems helps to increase agent productivity, and boosts call center metrics.

3 Types of Virtual Queues

Broadly, virtual queues can be classified into two types: First In, First Out (FIFO); and Scheduled.

3.1 FIFO Model

In a FIFO system, callers are allowed to maintain their position in the queue even after they hang up, and they receive a callback approximately at the same time that an agent would have answered their call had they remained on queue. This model of virtual placeholders maintains the integrity of the queue while providing additional convenience to callers.

With FIFO, the system constantly monitors the queue characteristics to estimate the potential wait time for each new caller entering the queue. When the Estimated Wait Time (EWT) exceeds a predefined threshold, the virtual queue system intercepts all future incoming calls before placing them on queue and informs the caller about the EWT and offers an option of receiving a callback in the same time as they would have to wait on hold.

If the caller wishes to remain in queue, the call is routed to the queue. Callers who opt for callback are prompted to enter their contact number and hang up. A 'virtual placeholder' maintains the caller's position in the queue as the ACD routes the other calls. The virtual queuing system monitors the progress rate of the calls in queue and automatically places an outbound call, moments before the caller's virtual placeholder reaches the front of the queue. When the callback is answered, an IVR system verifies the phone number and makes certain that the caller is on line and ready to speak to an agent. Once the caller confirms these details, the system routes the call to the relevant agent based on the routing rules configuration, and the agent answers the call as any other normal inbound call.

This 'virtual queue' time is not measured as 'queue time,' as both the caller and the agent are free to pursue other activities during the 'virtual hold' period. The voice circuit between the ACD and the telecommunications network is also released, ensuring that no telecom charges are incurred during this time.

3.2 Scheduled Systems

Scheduled systems on the other hand do not let callers maintain their place in the queue and instead offer a callback at a future time, typically later than when their call would have been answered had they remained on hold. Thus, although scheduled systems offer the same convenience as a FIFO, they may not be the solution for an urgent call. The advantage of a scheduled system is that it offers more flexibility for the call center to initiate the callback during lean periods. There are different types of scheduled callback systems, some of which are described below:

3.2.1 Datebook-Type Scheduling

In this system, callers are allowed to schedule a call back appointment for up to a pre-defined number of days in the future. Peak call volume times are generally blocked, and the number of appointments offered is limited based on the number of agents who are likely to be free during any given period,

and the estimated length of the call. These systems also offer the convenience of 24/7 operations, so that callers reaching the contact center beyond standard business hours have the option to schedule a callback during normal operating hours.

3.2.2 Timer Scheduling

In a timer scheduling system, a callback is scheduled in a preset amount of time. The callback is initiated regardless of queue conditions and inbound call traffic. This is a superior system from a caller's perspective as he can receive an on-time callback. However, this can create bottlenecks in the call center's operations in the event of a surge in call volume or a reduction in the staff availability. This can have a negative impact on wait times for other customers in the queue.

3.2.3 Forecast-Based Scheduling

In a forecast-based callback system, appointments are only scheduled during lean periods. The queuing system works closely with the workforce planning system, using the demand forecasting outputs for scheduling callbacks. This system may not work if the forecasting system is not robust enough and the anticipated lean period does not occur. It can also be inconvenient for the caller, if the suggested callback time is not preferable.

While both FIFO and scheduled queuing can provide significant benefits to the call center, some virtual queuing solutions only offer scheduled callbacks. This can limit the call center's ability to provide superior customer service, and reliance on other technologies such as countdown timers and forecasting tools can negatively impact call center operations. In addition, the bottlenecks caused in a timer-based or forecast-based scheduling system can lead to a spiraling effect, further crumbling call center operations.

3.3 Innovative Uses of Virtual Queues

Instead of opting for a FIFO or a schedule callback strategy, call centers can evolve new ways of prioritizing the virtual queues to obtain further improvements in operational efficiencies and increased profitability.

For example, some businesses may choose to serve their high value customers faster. In this case, callbacks are scheduled based on the customer's information, and at what time they were placed in queue.

Another strategy is to prioritize callbacks based on the expected nature of transactions. For example, in the case of a business that has followed up with customers for collections and the customer is calling back to lodge a complaint (most likely), then it is best to de-prioritize this call as compared to a call from a customer with a good transaction history. This would help to keep the average customer satisfaction levels higher because the caller who calls in response to a collection call is not likely to have a positive experience, no matter how quickly it is answered. The strategy that is used here is to reprioritize calls with customers who have the potential to be pleased over those who do not. The virtual queue script is then used to inform low priority customers that due to high call volumes, their

call will be returned after a few hours. This strategy can help to improve the satisfaction scores among valuable customers without significantly affecting the dissatisfaction levels among the high risk and delinquent customers.

Virtual queues can also be used to mitigate the impact of seasonal surges in call volume, especially if they are predictable – such as a tax season or post-Christmas returns. Although predictive modeling can help to better plan the workforce in such circumstances, the call volume still needs to be managed effectively and this can be done by pushing the non-urgent calls to a virtual queue. The calls in the virtual queue can then be processed during off-peak days.

A good virtual queuing solution should offer both FIFO-based queuing as well as scheduled callbacks, and should easily fit into any contact center architecture. It should also be highly customizable depending on the contact center's specific needs, and have the provision to inform callers about the approximate wait time.

An ideal virtual queuing solution is one that can be integrated with other call center technologies such as the workforce management tool, the routing infrastructure, CTI, and skills-based routing applications, so as to generate a comprehensive queue management strategy that can optimize call center metrics and is beneficial to all stakeholders – customers, callers, agents and call center managers.

4 The Need for Virtual Queues in Contact Centers

Several studies of customer behavior in contact center queues have indicated that callers hate waiting on hold. Long wait times lead to high abandon rates, irate customers, increased call-handling time, and lost opportunities for cross sales and upsales.

In the early days of callbacks and virtual queuing, the solutions in the market were expensive and complicated to implement, leading to poor adoption rates among contact centers. However, as the technology has matured, costs have come down and contact centers are increasingly incorporating virtual queuing into their scheduling and workforce management strategies.

Today, cloud-based solutions allow contact centers to add virtual queuing capabilities with minimal effort, regardless of the existing legacy infrastructure. With the vendor handling queuing and callback scheduling, contact centers can almost incorporate hosted virtual queuing as a 'plug and play' solution. In this way, contact center managers can reap the benefits of reduced hold times, more fluid call traffic, and reduced costs without having to worry about expensive installations and complicated integrations. In fact, several vendors offer a trial subscription whereby contact centers can test the benefits offered by virtual queuing before fully committing to the solution.

Deploying a virtual queue solution is a technically challenging task. The system should have the ability to monitor the call flow on a real-time basis, interface with the workforce management tool to anticipate agent availability on a skill basis, and interface with other telecom infrastructure to collect CTI information. However, once deployed, these underlying complexities are usually transparent to call center managers who can effectively use it to schedule callbacks and manage queue lengths.

5 Benefits of Virtual Queuing

5.1 Impact of Virtual Queues on Call Center Metrics

Aside from stronger call center metrics, virtual queuing delivers several advantages:

Improved ASA: Queue times are normally measured as Average Speed to Answer (ASA). In a virtual queue system, nearly 50% of callers who are offered a callback accept it. Now, assuming that the threshold for offering a callback has an EWT of 5 minutes or more, then with a virtual queue, the ASA of 50% of calls can be reduced to about 10-15 seconds.

Reduced Abandon Rates: Since call abandonment is not possible in a virtual queue, that metric also improves. Typical abandon rates in a reasonably sized call center range from 1 to 5 percent and every abandoned call is a sign of customer dissatisfaction. Virtual queuing helps to reduce abandon rates by 25 to 50%.

Improved Customer Satisfaction: In addition, the overall customer satisfaction rates also improve, though measuring it objectively could be a challenge. Waiting on hold is a major source of frustration for callers and studies have shown that callers who are made to wait in a call center queue feel that the company does not respect their time. Virtual queuing eliminates this frustration by giving callers the freedom to go about their day while they wait to be connected to an agent.

Improved Cost Savings: Contact centers deploying virtual queuing solutions have reported a 10% increase in service levels during peak call volumes. Virtual queuing allows call centers to handle higher call volumes without having to increase the number of agents. It also reduces repeat calls, which in turn reduces trunking and toll costs. Even assuming a toll cost of two cents per minute, the cost savings can be significant, and may be in the range of $5,000-$10,000 for a mid-sized call center.

Reduced Talk Time: Due to reduced customer venting, the average call duration is reduced and the timesaving per call is typically in the range off 5 to 10 seconds. As a result, there is greater agent efficiency.

Virtual queuing can benefit all stakeholders in a positive manner and results in better customer experiences and improved contact center operations.

5.2 Benefits for Call Center Managers

Virtual queuing allows call center managers to effectively manage the dynamic nature of call traffic and agent availability. Depending on the availability of the agents, IT systems, and the call volumes, queue lengths could be too long or too short – both of which need to be proactively managed. Too long a call queue can lead to customer dissatisfaction, whereas too short a call queue may mean that agents remain idle and the call center infrastructure is not fully utilized.

Virtual queuing helps to even out the call traffic by scheduling callbacks during periods of low call volume, and automatically shifting customers to virtual queues when queue lengths cross a certain

threshold. Thus, every day changes in the contact center can be handled smoothly to maintain the targeted metrics.

5.3 Benefits for Agents

Virtual queues help to reduce the number of irate customers on the line, ensuring that agents have to deal with far less negativity during the workday. They also enable agents to manage their time well, so that even during low staff periods (such as holidays), those who are present are not handling calls without a break.

5.4 Benefits for Callers

For callers on mobile phones, the biggest benefit is the savings on call charges that they would have incurred if they were to hold the line. The caller also saves time as they are immediately connected to an agent in the event of a call back. Overall, virtual queues enable a contact center to have stress-free customers.

Apart from the benefits of not having to wait in queues, callers also talk about the great service they receive when they get a callback without having to wait in queue. This positive word of mouth augurs well for the business and in turn boosts the call center revenue. A callback is usually a good time to attempt a cross sale or an up sale to a customer as they usually have a better perception about service quality when they receive a callback than when they hold the line. With social media spreading extensively, call centers cannot afford to ignore customer feedback and having to remain in queue for a long period can cause customers to rant about poor service levels.

6 Implementation

Implementing a virtual queue system is more complicated than implementing a plain callback system. The virtual queuing system must be integrated with other elements of contact center technology such as the CTI system and the workforce management system to guarantee seamless call flow and to enable a superior customer experience. A smartly implemented virtual queuing solution not only helps to protect the investments made in other technologies, but also helps to leverage the best from the technology investments. Thus, virtual queuing should be able to enhance load balancing and skill-based routing, and improve the accuracy of the workforce management tools (due to decrease in abandonments and improvements in First Call Resolution rates) in the call center. A good solution will also carry the CRM data forward during a callback and provide decision-making dashboards with statistical data and key metrics for both the live and virtual queues for agents and managers. An ideal virtual queuing solution should offer flexibility to the call center manager to adjust the parameters by himself without having to rely on a support executive.

Today, with the evolution of enterprise routers, workforce management tools, and the emergence of APIs and adapters for a wide range of ACDs, virtual queue implementation has become less tedious and more acceptable. Some service providers treat customer requests from multiple channels such as the web, voice and email as a single integrated queue, and manage virtual queues in an integrated fashion.

Prior to configuring a virtual queue solution, the contact center will need to analyze the switch data (for customer wait times) and the customer satisfaction survey results. Analyzing these data points will reveal the degradation in customer satisfaction, brand perception, and call quality perception with every additional minute of hold time. More importantly, it will also reveal the point of diminishing return – the point beyond which customer satisfaction will not improve even if the agent was available sooner. For example, with a point of diminishing return calculated as 1 minute, the virtual queue trigger can be set for 1 minute of wait time. Faster call answering will not improve customer satisfaction levels and hence customers with a predicted wait time of less than a minute can be allowed to remain in the normal queue. Since the impact of wait time on customer satisfaction and the point of diminishing return will vary significantly from industry to industry and call center to call center, it is necessary to analyze data at a business account level and customer type level before configuring the virtual queue system. Without this analysis, when the virtual queue trigger message should be activated will be a guessing game, which will not only reduce the ROI of the virtual queue application, but also unduly put pressure on the other resources in the call center.

As call centers are under pressure to cut costs without affecting service levels, virtual queuing is increasingly seen as a must-have tool. However, virtual queuing also has its set of drawbacks. The implementation will not be successful unless an effective analysis of past customer behavior has been performed and the results are used to plan the virtual queue strategy.

There are also security challenges in virtual queuing. If the original customer does not answer the call during a callback, they will still be able to communicate to the agent along with the original customer's data, thus creating the possibility for identity theft. This is especially significant in

industries such as financial services and healthcare. In order to overcome this challenge, all callbacks need to start with a re-authentication process, which could be irritating for a genuine customer who would have authenticated himself during the initial call. Newer technologies such as voice biometrics are now being explored to address this issue, but these are still very nascent.

Virtual queuing may not be the ideal solution for all types of contact centers. Call centers with less variability in call volume may not benefit from virtual queues as they can plan staffing based on average call volumes. Similarly, sales-focused inbound call centers such as catalog retail sales may prefer to answer every call without keeping the caller on hold. Such call centers prefer to over staff, as the cost of a lost sale is much higher than the associated agent costs for ensuring a 100% service level. When opting for a virtual queue, the main consideration is to analyze the impact of unpredictable call volumes on operations and customer satisfaction, and measure the perceived benefits of introducing this system.

Today, virtual queuing technology has reached a tipping point with factors such as increased industry focus, improved product offerings from major call center software vendors, focused research on new models and techniques, and growing pressure from customers all contributing to its growth and adaption in call centers.

7 Conclusion

Just as any other contact center technology, virtual queuing has its pros and cons. However, most large contact centers have adopted this technology today in response to the growing pressure to contain costs and deliver superior customer service with the minimum number of agents and resources. Virtual queuing may not be the right answer for all contact center woes, though, and it may do more harm than good if it is not configured and used judiciously. It is essential to do a detailed planning and impact study prior to implementing virtual queuing in a contact center.

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