



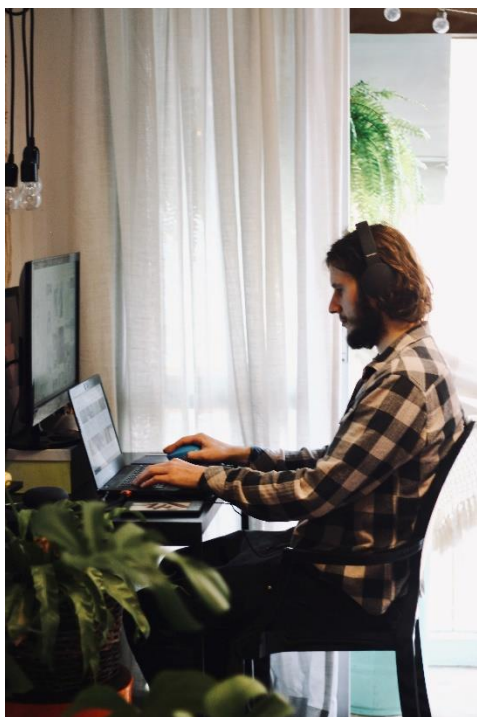
XOPNetworks

Work From Home Call Center - Role for an Audio Conference Bridge

An XOP Networks White Paper

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Work From Home Customer Support Agent

Executive Summary

The Covid-19 pandemic that started in the first quarter of 2020 has had a disastrous effect across the globe. Its impact has been broad, affecting the society, economy, culture, education, ecology and other areas. The call center industry faced the twin challenge of reduced capacity and increased volume of service requests.

The solution was to allow Customer Support Agents (CSA) to work from home. This Work-From-Home (WFH) model, that had been followed in a limited way by few companies, suddenly acquired a mission critical status. This model required an **additional leg of communication** between the Call Center offices and the CSA resulting in **higher cost of operations**.

XOP Networks Inc. has been at the forefront of manufacturing VoIP/SIP based Audio Conference bridges. Its leading conferencing platform is referred to as the Universal Services Node (USN). Several Call Center operators have deployed the USN in their call centers to facilitate WFH environment. This white paper describes, how by adding an audio conference bridge, a Call Center operator can significantly reduce the cost of WFH operation while improving the experience between a Caller and a CSA on a typical support call.

1 Introduction

The Covid-19 pandemic that started in the first quarter of 2020 has had a disastrous effect across the globe. Its impact has been broad, affecting the society, economy, culture, education, ecology and other areas. The need to control the spread of the disease led to complete or partial lockdown in different countries, temporarily shutting down business activities, social activities, sports events and educational institutions to name a few.

The call center industry was caught between a rock and a hard place. Its **effective capacity was reduced** whereas there was a **surge in the volume of calls**.



Figure 1: Typical Pre-Covid Call Center

Prior to pandemic, close to **85 % of the industry** had been operating with on-premise model. The Customer Support Agents (CSAs) worked from physical office locations. The lockdown scenario and social distancing norms created their own set of challenges as CSAs were forced to stay at home and there were restrictions on number of CSAs who could come to the physical location. This resulted in considerable reduction in the effective capacity of the Call Centers.

On the other hand, the demand on call centers increased. The airline industry alone is said to have a peak that was 199% higher than what it was experiencing in the pre-pandemic days. The restrictions on customers that prevented them from visiting service providers (Banks, insurance companies, etc.) resulted in higher demand on call centers from customers of almost all industries.

The solution was to allow CSAs to work from home. This Work-From-Home (WFH) model that had been followed in a limited way by few companies suddenly acquired a mission critical status. This model required an **additional leg of communication** between the Call Center offices and the CSA, resulting in **higher cost of operations**

The WFH model is here to stay as the companies come to term with new normal in the post pandemic era. This model is resulting in changes to various business processes such as recruitment, training and monitoring of agents. The technology is also evolving with remote connectivity and call distribution becoming the critical and driving factors in the success of companies in this business.

2 Call Center Architecture

There are multiple channels such as voice calls, chats, e-mails and portals through which a customer may request for support or information. The call centers address these needs by having set of CSAs who attend to customers over a telephone call. There are business circumstances that require information to be communicated to the customer. Here the calls are initiated at the call center.

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Thus, in terms of nature of service, there are two broad categories, inbound call centers and outbound call centers. In case of inbound, the initiator is the customer whereas in case of outbound, the initiator is the call center.

The interaction that the CSAs have with the customer can be enriched by making customer related information available to the CSA. Thus, the CSAs not only need connectivity, but also need access to customer/ product data. The telecommunications infrastructure and information systems play a very important role in ensuring effective and efficient delivery of services. The associated hardware and software components are integrated to define processes that provide a seamless workflow, starting with call initiation to call closure with required access to customer data during the call.

The technology that needs to be used for a Call centers keeps evolving and is governed by various factors such as nature of service (inbound / outbound), type of communication channels, agent location (single offices, distributed offices, Work From Home etc.) and information needs and data communication requirements.

The hardware normally required would include PBX, Automatic Call Distribution (ACD) systems, Networking hardware such as switches, routers, firewall. The software would include Agent Management System, CRM application, call routing, customer-agent pairing applications. The necessary servers, storage devices would need to be provided.

2.1 Traditional Call Center

In a traditional brick and mortar Call center, typically a PBX/IP PBX is deployed along with the ACD. Incoming calls are received by the PBX. The PBX then in conjunction with the ACD logic routes the Caller to an appropriate Customer Support Agent. Appropriate call metrics such as wait times, call duration etc. are tracked by the ACD/PBX software.

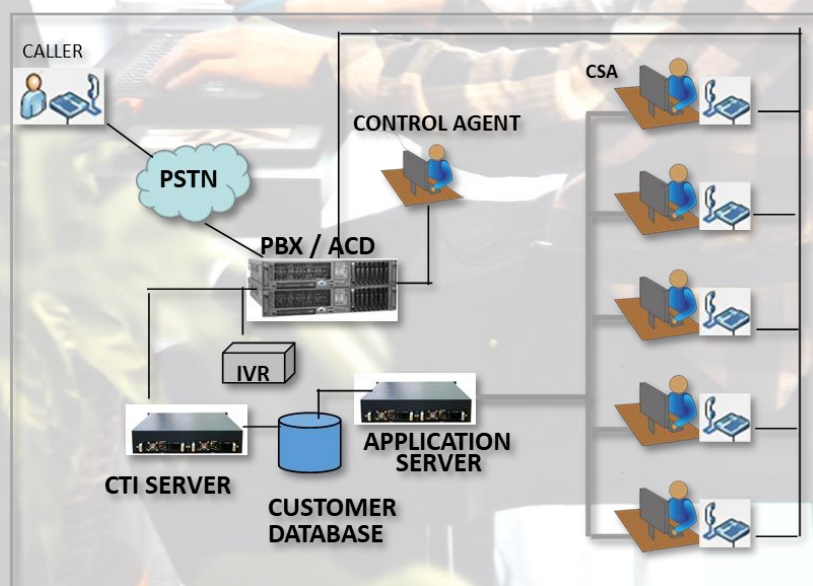


Figure 2: Traditional Brick and Mortar Call Center Architecture

In this case, since all the agents are within the confines of a call center, the calls are distributed to them as internal calls and therefore do not incur any additional call related expense.

The basic Call center process for an inbound customer call consists of the following steps:

- Incoming call is received on the PBX and transferred to ACD
- ACD identifies an available agent, based on pre-defined selection criterion, and tells the PBX to route the call to the identified agent
- The PBX makes an outbound call to the agent over the PSTN or over Internet
- The agent completes the customer interaction and closes the call.
- There are features available so that supervisors can monitor, “whisper” and intervene as and when necessary.

2.2 Work From Home Call Center

As agents can no longer be sitting next to each other due to pandemic related considerations, all call center operators (Hotels, Hospitals, etc.) are now forced to shift to Work From Home (WFH) Call Center approach. In this case, the call center operators provide phones to the agents that can be used from their homes.

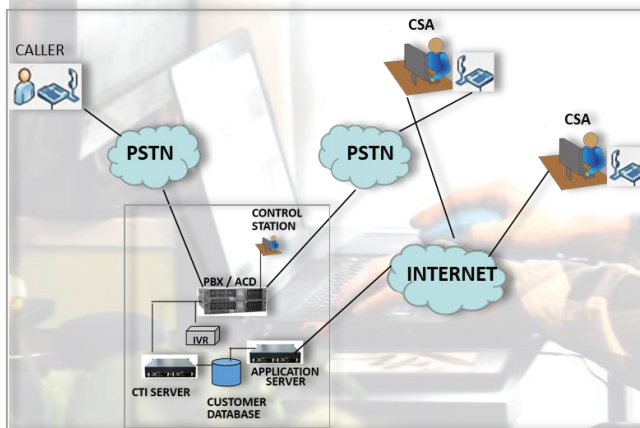


Figure 3:WFH Call Center Architecture

Based on the type of PBX in use, the agents receive calls either over the PSTN or over the Internet (VoIP). This arrangement has following drawbacks:

- The Call Center has to deploy additional trunks to allow routing of calls to agent’s homes.
- Since agents are now working from home it is very easy for them to get distracted thereby by leading to less than optimal experience for the Caller during a typical support call.

3 XOP Network’s Solution

XOP Networks has been at the forefront of manufacturing VoIP/SIP based Audio Conference bridges. Its leading conferencing platform is referred to as the Universal Services Node (USN). The USN is a robust, Linux based Audio Conference Bridge that is highly scalable, reliable and supports traditional TDM and SIP and WebRTC based trunks.

Several Call Center operators have deployed the USN in their call centers to facilitate Work From Home environment. The USN is typically deployed on the trunk side of the PBX. A large number of

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two-party conference rooms are then configured on the USN. For example, in case of a 500-seat call center, 1000 port USN will be deployed and will have 500 two party conference rooms configured.

The WFH call center agents dial into one leg of the conference room and stay connected throughout the entire duration of their assigned time window. As Callers looking for support call in, the PBX/ACD routes those calls automatically to an appropriate conference room where the Caller meets the CSA that is already waiting for the call.

Since the CSA dials into the conference bridge located at the call center, the onus for paying for that call now belongs to the Agent instead of the call center operator. As most people in US have unlimited long-distance plans on their PSTN landlines and cell phones, there is no additional per minute cost for the WFH agent for calling into the conference bridge. Thus, by simply adding a conference bridge in their network and allowing CSA to dial in into the conference (that does not cost them any extra amount) the call center is able to save significant sums of money that would otherwise be spent on outbound long-distance calls going to CSA's homes.

The XOP Networks USN also supports WebRTC based Click to Call application. This technology allows a computer's web browser to be used as a telephone. The agents simply click on a 'Call Now' button to make a free call into the USN over the public internet. The WebRTC calls are encrypted and hence are secure. These calls only take 10's of kilobytes per second worth of internet bandwidth and hence do not affect the operation of other devices connected to the Internet at the agent's home. The CSAs that may not have access to unlimited PSTN long distance accounts can leverage the WebRTC/Internet based access into the XOP conference bridge.

The diagram below shows the operation of a WFM call center that has deployed the XOP USN.

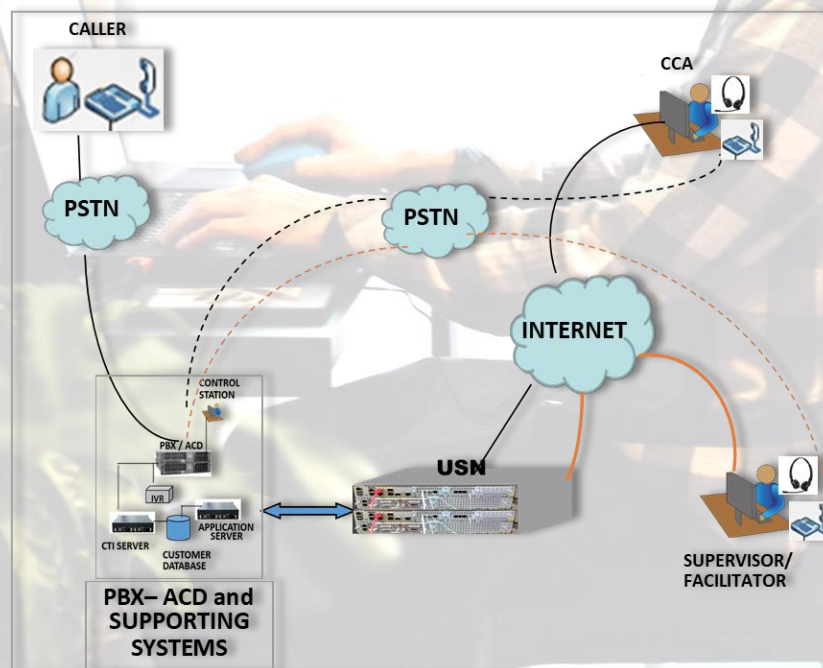


Figure 4: USN Based WFH Call Center Architecture

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Each CSA is assigned an Agent ID by the ACD system. The CSAs use the Agent ID for logging into the ACD portal. When a CSA is ready to take support calls, he/she logs into the ACD and acknowledges their availability. At this point the CSA also either dials into the conference bridge (using their unlimited PSTN long distance minutes) or uses XOP's WebRTC based Click to Call application to access the bridge. Either way, the CSA occupies one leg of a 2-party audio conference room. The CSA stays connected to this leg for the entire duration of their support time window. As a Caller looking for support calls the Call Center (e.g., 1-800-STAPLES), the Call Center PBX/ACD routes those callers to the 2nd leg of the conference room where they can now interact with the CSA that is waiting for such a call. After the support call is complete, the Caller hangs up and the PBX/ACD frees up the 2nd leg of the conference room for the next support call. This process continues for the entire duration for which the CSA has acknowledged his/her availability to the ACD.

An important aspect of a Call Center operation is the ability of a Supervisor to be able to monitor the interaction between the Caller and the CSA. As an audio conference bridge is now being used it becomes very easy for a Supervisor to join the conference (full duplex or simplex as needed) and be hear the ongoing conversation or 'whisper only' to the agent if needed.

The advantages of XOP Networks' approach are:

1. Since the CSA dials into the conference and is waiting for a call to arrive he/she is less likely to be distracted by the home environment thus leading to better overall experience for the Caller
2. Since CSAs are making inbound calls (using unlimited long distance or WebRTC/Internet) to the conference bridge, there is no additional communication expense on the call center side.
3. By deploying a conference bridge in the process there are additional benefits:
 - a. Agent supervisors can monitor the ongoing interaction between the caller and the CSA easily
 - b. All calls can be recorded for future analysis

4 Conclusion

The current pandemic has changed the way businesses operate. These changes are likely to stay even after the pandemic ends. One of the major changes has been the Work From Home culture. The Call center industry is in the process of adapting to this new reality with majority of companies focusing on remote connectivity.

Most of the current WFH solutions still require Call Centers to make outbound calls to Agent's homes. This requires significant expense in terms of long-distance calls and additional trunking required. By placing an audio conference bridge at the Call Center and then reversing the direction of the calls i.e.; CSA's dialing into the conference bridge using PSTN or WebRTC/Internet significant expense can be removed from the operation of the Call Center.

Besides Audio Conferencing, the XOP bridges also provide web collaboration (screen sharing, whiteboarding, video conferencing etc.). This capability can be leveraged by Call Centers for training and recruitment of agents.