HEADSETS

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1   Introduction

Today, headsets have become indispensable tools. They are used for various purposes ranging from personal use to commercial use and even mission-critical applications such as air traffic control and 911 emergency services. Headsets come in various sizes and shapes. Depending on the features and compatibility, they can be classified as wireless headsets, corded headsets, cordless headsets, VoIP headsets, over-the-ear, and over-the-head headsets. The requirements of a headset vary with the nature of its use – a headset for an MP3 player may have very different requirements from that used in a NASA mission.

However, one of the most grueling environments for headsets is a contact center. Headsets are used by agents who are often located in close proximity to each other and are handling calls non-stop for hours. This environment can present unique technological and design challenges for headset manufacturers, and most reputed manufacturers now offer specialized headsets for contact center usage – keeping in mind the heavy, continuous use. Often poor productivity in a call center is caused due to faulty equipment rather than due to staffing and scheduling problems.

End-user devices are a critical piece in the overall communication solution in a contact center. Significant investments in the latest communications solutions may not generate the optimal returns if the right end-user devices and interfaces are not deployed. This is because the underlying infrastructure and applications are usually transparent to the end user. Agents' perceptions of the usability experience with the communication solutions and collaboration tools in the contact center are highly dependent on the quality and usability of their end-point devices. Most users are also extremely selective about the features, functionality, and design of their headsets.

The right choice of headsets is crucial for contact centers' voice-intensive applications because it not only improves agent productivity and customer satisfaction, but the comfortable work environment that noise cancellation features afford can help reduce agent attrition. Some of the key requirements for headsets used in contact centers include clarity, comfort, sound innovation, ease of use, compatibility, reliability, durability, cost-effectiveness, and value for money.

In this paper, various aspects of headsets will be discussed, along with their usage in contact center environments, factors to consider before choosing headsets, and the advantages of using good quality headsets.

2   The Advantages of Quality Headsets

Headsets are a key link between consumers and businesses, as most consumer-oriented businesses rely on contact centers to effectively manage their customer service interactions. This could be anything from answering queries to handling transactions to complaint resolution. Noise can negatively impact a call by lengthening call time, interrupting conversations and even cause incomplete or inaccurate transactions and potential loss of sales opportunities. High sound levels can also be hazardous for agents resulting in an increase in sick leaves and attrition levels. Thus, background noise and network disturbances can become a costly distraction that hinders overall productivity and profitability. Investing in the most advanced headset technology is the first step towards creating a more industrious and satisfying work environment.

One key feature of a well-manufactured headset is sound quality. It can be frustrating for callers to hear the background voices in the call center or the static crackles of a microphone during their call. Agents may also find it difficult to handle a call where they have to ask customers to repeat information due to poor sound quality. Frequently adjusting headsets for clarity can cause the agent to take a hand off the keyboard, leading to the possibility of input errors. Noise-cancelling microphones can ensure that the customer will only hear the agent's voice, resulting in an improved customer satisfaction and agent efficiency. As the need to repeat information is reduced, valuable seconds are saved in each call. Across a large call center, this translates to several hundred hours, which then contributes to dollar savings (by reducing payroll and infrastructure costs).

Another reason to opt for good quality headsets is safety. Unexpected noise bursts, known as acoustic shocks, caused by headsets that do not prevent spikes in sound can be harmful to hearing. Low-end headsets may have limited capacity to handle acoustic shocks, exposing agents to unsafe noise spikes. High-end headsets, though, will provide automatic protection against acoustic shocks by adjusting the sound levels when an unanticipated sound burst occurs. Investing in high-end solutions can reduce contact centers' liability arising from workers' compensation issues, and contribute to a healthier and more relaxed work environment.

Ergonomic design is also important for durability and reliability. Non-durable headsets add significantly to equipment repair and maintenance costs. If the headset is not comfortable to wear or if the cords become dislodged during a call, it can negatively affect agent morale and productivity. This can take time away from managers, who will waste hours on troubleshooting issues rather than focusing on agent training and monitoring. Therefore, it is essential for headsets to withstand wear and tear from constant use by multiple employees across shifts.

An added benefit of employing high-end headset models is that they can be easily integrated with contact center systems and advances in technology. Headsets that can connect directly to a variety of phone systems help to save on interface costs, and they typically come with a range of accessories that enable easy customization for users' needs. For example, a universal audio connector can make a headset compatible with most other contact center infrastructure. So when

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choosing the right headset for your business, careful research of both short and long-term ROI is a must.

2.1   An Array of Benefits

Improves Efficiency: The clear sound that upscale headsets provide leads to more efficient call handling, fewer misunderstandings, and fewer delays in service.

Superior Service: Faster and more precise customer interaction results in positive customer experiences across the board.

Multi-tasking: As the contact center environment becomes more intricate with multiple modes of communication and ever-demanding clients, agents require the best end-point device that can enable multi-tasking and quick problem resolution. With advances in multimedia communications and with the increasing adoption of Web collaboration tools, agents are no longer handling telephone conversations alone. Headsets can deliver amazing value to complex work environments where agents need to focus on the conversation while simultaneously e-mailing, chatting or sharing desktops.

Multi-device support: Most agents handle multiple communication devices such as a PC client, a desktop phone, and a headset. Contact center workspace design is such that agents often have dynamic seating, sharing desks during different shifts and occupying different desks on different days. Good quality headsets offer agents the convenience to use a single headset for multiple purposes, as they are versatile and compatible with desktop phones, soft phones and even mobile phones. Multi-device headsets eliminate the need to invest in multiple headsets for each user, thus allowing for equipment standardization and cost savings.

Mobile Productivity: Today, mobile communication is an inevitable extension of corporate communication. With remote workers becoming the norm rather than the exception, the mobile or home office has to be as equipped as the corporate office. Headsets that function well in noisy environments facilitate mobile productivity, at home and on the road. Most frequent business travelers have to answer calls in rental cars or airport terminals. Hands-free technology is a comfortable, practical means of communication. Using a Bluetooth enabled headset along with a softphone application on a laptop allows the user to not only efficiently communicate with customers, but also effectively access critical data for decision making and problem resolution.

Financial Viability: Well-designed headsets can be effortlessly integrated into leading telephony and unified communications systems. Working with equipment that is easy to handle and comfortable to wear increases end-user adoption and reduces training and deployment time. So, even though headsets form a significant portion of a contact center's expenses, the increase in agent productivity and performance resulting from the ergonomic, mobility and multi-tasking benefits of headsets combined with their contribution towards a safe and regulatory compliant work environment can

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generate a positive ROI. This improves communication infrastructure and voice based applications, empowering agents to make the best use of the technology that is available to them.

3   Headset Apps

Today, headset apps offer several features such as helping to track a misplaced headset, testing voice quality before making calls, and they even give tips and tricks on how to get the most out of the technology. Headset apps that assist with tracking work by sending a tone to the headset. This is called acoustic tracking. If the headset is out of the Bluetooth range or switched off, then activity logs in the app allows the user to trace the location where it was last used. Some headset apps also monitor battery life on the headset's mobile screen.

4 Criteria for Selecting the Right Headset

In order to achieve long-term growth, businesses have to focus on customer service and support as much as they focus on their core product. Many organizations have stopped looking at their contact centers as a cost center and are making major investments in technologies based on evolving customer needs and users' shifting demographic profiles, the main objective being to improve customer satisfaction.

Although forward-looking contact centers are adopting multiple modes of communication, voice still remains the most established and preferred method of interaction between call center agents and customers. As customers become more and more tech savvy, they are demanding prompt and flexible access to contact center agents through the communication mode and device of their choice. Simultaneously, the younger generation of agents who are well versed in email, social media, and Web chat are looking for opportunities to leverage these modes of communication and collaboration.

Nimble voice-centric call centers have evolved into multimedia contact centers to address the shifting needs of both callers and agents. However, often the technology investments made to enable this shift do not generate the anticipated returns due to reasons such as mismatch with the agent preferences and skills, improper or poorly planned implementations, and inadequate mapping of the customer communication process. The result is mismanaged customer experiences.

End-user devices are a critical element for agent adoption of the expanding array of communication hardware and applications in the contact center. As communication end-points become more diverse, deploying the right end-user devices has a key role in determining the ROI for the entire contact center technology landscape. A quality headset can ensure that agents are comfortable and confident while handling calls, directly affecting their productivity and ability to deliver good customer service.

Some of the key factors to keep in mind while selecting communication devices include the agents' roles and responsibilities, and the nature of work environment. For example, agents in multi-channel contact centers often multi-task and need to handle data applications while on a call. In such environments, ergonomically designed headsets, which allow agents to be hands-free, add a lot of value and enhance efficiency in the call handling process.

Features such as mobility and multi end-point integration are essential for headsets used in a unified communications environment. User-friendly equipment boosts agent utilization of all communication tools in the contact center. This enables businesses to fully leverage technology investments and gain a competitive advantage through better customer service and an agent friendly work environment.

Ultimately, agents' experience with the technology infrastructure and applications begins with end-point devices; hence, selecting the right headset is essential for cost-effective and efficient call center operation. Ideally, agent headsets should have noise-cancellation and binaural earpieces. It is

best to avoid products with in-line volume controls, as agents can get confused between the volume controls in the headset and the PC/softphone. It is also important that headsets be procured from a reputed manufacturer, to ensure adequate ongoing maintenance and support.

4.1   Device

High quality telephone headsets typically have the flexibility to be connected to either conventional telephones/POTS (Plain Old telephone Service), or computer based telephony systems (softphones) via a USB connector. When it comes to making a purchase, it is advisable to opt for cutting-edge technology and feature rich products. Analog headsets are best avoided, as they require separate headphone and microphone plugs, and in addition, they have poor audio quality.

When it comes to microphone sensitivity, it is necessary to strike a fine balance and select products designed specifically for call center use. Headset microphones that are too sensitive can pick up background noise, whereas models that are not sensitive enough can fail to transmit the full spectrum of human voice, thus affecting the intelligibility of voice transmission.

Some of the other fundamental factors to consider are listed below:

- **Ergonomics** – Since headsets are in constant use by the agents, it is necessary to consider ergonomic factors complement the nature of the agents' work. It should also be easy to switch between handset and headset modes. Headsets enable hands-free communication, allowing agents to maintain correct posture by taking the handset off their shoulder. Agents can also shift positions, sit, stand, or move around during a lengthy call. Ergonomically designed headsets allow more natural and less restricted movement, which offers health benefits such as improved circulation, and reduced muscle stiffness.

- **Mobility** – If the work requires agents to move away from their desk while being on call, then the headset should support this. Wireless headsets are ideal for this scenario. Agents can multitask, continuing with a call while retrieving files or consulting with managers. It is also useful for specialized product support agents who may want to simulate a scenario on sample equipment while troubleshooting a client's problems. Advanced models offer Bluetooth technology, pairing the headset with both the contact center and the agent's phones. This makes for truly portable communication.

- **Comfort and Durability** – These two factors are closely linked to each other, as an uncomfortable headset is likely to be adjusted frequently leading to more wear and tear. It is ideal to select headsets that are convertible so that agents can choose the wearing style that is most comfortable for them. Headsets should be comfortable and durable enough, increasing end-user satisfaction and sustaining agent retention.

- **Design** – Practically all headsets today come equipped with noise cancellation features; however, most manufacturers do not optimize all aspects of the headset to ensure optimal noise cancelling. Noise cancellation occurs in the microphone and is directly dependent on the quality of the microphone transmitter. The noise cancelling capability of a headset is

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directly proportional to the proximity of the microphone to the mouth. Therefore, the mechanical design aspects of the microphone such as the shape and flexibility of the boom arm and boom tip are key factors in headset selection.

4.2   Customization

While choosing a good quality headset, it is necessary to prioritize the feature requirements based on the contact center's characteristics. For example, even though noise cancellation is a must-have feature for a good quality headset, it may not be the most important feature for a contact center that has a sound-reducing floor plan and interiors made of sound dampening material. Similarly, an omni-directional microphone can deliver high quality clear sound, but may not be the right choice for a noisy work environment. Yet another consideration for choosing a headset is the wearing style of the microphone. Over-the head or over-the ear options are available and what is better is mostly a matter of personal choice. Therefore, it is best to opt for a convertible model. Over-the head models can be either monaural (covering one ear) or binaural (covering both ears). Monaural headsets allow agents to hear feedback from supervisors while being on a call, whereas binaural headsets allow agents to focus completely on the call without distractions.

4.3   Maintenance and Replacement

The vendor's maintenance and replacement policy must be evaluated in detail prior to finalizing the headset model. Most headsets will be covered by warranty, but some vendors will have more customer friendly policies such as advance replacements, where they would send a working headset prior to taking away the broken one for repair. This will ensure that call center operations are not hindered in the event of repairs. Preventive maintenance and proactive replacements are also necessary to ensure that the quality of transmission is maintained. It is also necessary to maintain an inventory of replaceable parts to enable quick fixes of delicate accessories such as microphone covers, voice tubes, and earpieces.

5   Deployment of Headsets in Contact Centers

IT departments in contact centers must consider the following when deploying headsets:

- The device selected must match the demographic profile and preferences of the agents. For example, in a contact center with remote agents, support for VoWLAN and DECT phones and wireless headsets is a must have.

- Headsets must be compatible with the advanced communication architecture deployed in the contact center. For example, unified communication architecture with next generation desktop clients and agent interfaces are best deployed with headsets delivering superior audio quality and hands-free operation, so as to derive the maximum benefits.

- The headsets chosen must comply with the relevant government and industry body regulations such as the noise at workplace regulations, which requires organizations such as contact centers to observe strict noise control requirements.

- Different office layouts and interior designs present different challenges when planning the deployment of wireless headsets that would be used simultaneously in a limited space. It is important to go for a vendor with sufficient experience and expertise in wireless solutions in similar organizations.

5.1   Common Issues

Although wireless headsets have several advantages such as freedom of movement that allows agents to not just multitask, but also move around during a conversation, they also have several issues that should be considered prior to use. If a large number of wireless headsets are used in a small space, the audio quality may not be optimal due to density or capacity issues.

There are space requirements for operating wireless headsets in order to achieve the optimal audio quality. The number of headsets that can be utilized in a limited area depends on several factors such as the headset size, distance between the wireless headset and the base unit, the presence of objects that may cause interference, and the available features and settings. There are several simple rules that can be followed when implementing wireless headsets. Consult the vendor's customer service team for advice and guidance regarding your specific situation.

5.2   Deployment Planning

Proper planning with the vendor and the contact center's IT department will help to define a headset deployment layout that ensures a signal-to-noise ratio that avoids radio interference and provides good audio quality. The average distance between headsets and the average area per headset should be clearly defined based on the technology, office area, and the approximate distance between units. The placement of large metallic or glass objects that can cause radio signal reflection must also be taken into consideration.

6 Use of Audio Processors to Improve ROI of Headset Investment

Although communications technology in general and headset technology in particular have seen several advances in the past decades, contact center managers are still concerned about the effects of sound disturbances, such as background noise and acoustic shocks, on agent productivity and well-being. In addition, there is constant pressure to manage costs and improve the ROI of resources and infrastructure that are already put in place. This is where audio processors come in. With the right set of features, audio processors can enhance the headsets' capabilities and deliver real business benefits in terms of increased productivity due to shorter calls and enhanced customer satisfaction. Greater comfort and safety may also reduce employee churn.

6.1 Benefits of Audio Processors in Headsets

6.1.1 Protection from Acoustic Shock

Agent well-being is a key consideration while selecting a headset. Sudden high pitched sounds from the telephone network or acoustic shocks, as they are known, can cause hearing damage or hearing loss. Safe quality sound enables a productive work environment for agents and audio processors play a key role in protecting agents from acoustic shock. Audio processors equipped with electronic peak control gateways prevent excessively loud sounds from passing to the ear, by removing sound spikes before they reach the headset speaker. The audio processor verifies the sound level and releases it only if it is within the safe range. As a result, the agent is not exposed to the full effect of the sound peak and thus the risk of harming the hearing is minimized.

6.1.2 Compliance to Occupational Health and Safety Norms

As governments across the globe focus on health and safety regulations for employees, it is imperative that contact centers strive to provide a safe and healthy work environment for agents to ensure compliance. Good quality audio processors exceed local compliance and legislation regulations such as the EU Noise at Work Directive (Directive 2003/10/EC) and leading US recommendations, which enforce an upper maximum exposure limit of 85 dB (time weighted average over a full working day).

6.1.3 Clear Sound

High-end audio processors use sophisticated digital signal processing (DSP) algorithms to improve the sound quality by filtering out background noise as well as automatic volume and tone adjustments. This helps to improve the intelligibility of the conversation, thus reducing misunderstandings and need for repetition which in turn reduces call handling time and improves call accuracy. Thus if the phone system provides a bad signal, the audio processor can remove the white noise, thus delivering a clear signal for the agent.

6.1.4 Dynamic Volume Control

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In a contact center where the agents are located in close proximity to each other, constant background noise is a challenge. Increasing the headset volume beyond a point can result in sound distortion and make it even more difficult to hear what is being said. The dynamic volume control offered by an audio processor adjusts call volume to an optimal level without causing any distortion, enabling agents to hear the caller without compromising on sound quality or safety.

6.1.5 Line Quieting

Apart from surrounding noise, network noise disturbances can also wreak havoc on agent productivity and comfort. White noise such as crackling or hissing over the phone line can decrease agent efficiency by distracting them from the call being handled. Line quieting improves the incoming signal by removing the incoming noise from the phone network with the help of DSP technology. This allows agents to handle calls with fewer distractions.

6.1.6 Enhanced Call Experience

As contact centers attempt to optimize operational costs by reducing office space, agents are crowded together in smaller office environments. If the headset microphone is not used properly, customers may hear other agents handling calls, thus negatively impacting service levels and the call experience. Audio processors with soft squelch capabilities can detect when the agent is not talking and automatically lower the microphone signal, thus reducing the transmission of background noise. The caller can thus experience a quiet pause rather than annoying background conversations leading to a better call experience.

7   Conclusion

Well-equipped agents and customer satisfaction are directly correlated with each other. As customers become increasingly knowledgeable and demanding, businesses have to strive to deliver superior customer service. Ongoing and well-planned investments in advanced technologies can help contact centers handle customers more efficiently. A key element in superior service delivery is the use of helpful end-user devices such as headsets. Today, headsets are an integral part of successful communication solution implementation. Headsets not only improve the call experience, but also enable optimal utilization of the entire communication infrastructure.

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