TRUST WORTHINESS OF MICROPHONES

Mansi Sonawane*1

*1B.Sc. Information Technology, B.K. Birla College, Kalyan, Maharashtra, India.

ABSTRACT

Microphones are used everywhere. A microphone is built into many new devices so that they can be controlled by voice. Nowadays, microphones are the most important part of IOT devices. Microphones are used in voice assistant bars, smart watches, refrigerators, and many other devices. Microphones in some IOT devices work the entire time the device is running. Because it should cause a lot of data collection. This data is used for a better user experience. But is it safe to collect so much data from everyday life? As we get used to it widely and cover almost every aspect of our daily lives, are they considered trusted devices? Because we rely on them for many reasons, yet they are trusted by everyone? This research suggested opinions about the credibility of microphones and their use. Microphones are an important part of our daily life. So if it is believed to be credible how devices with built-in microphones should be secured and if it is not believed to be trusted how devices with built-in microphones should join these devices and spread awareness to support the privacy of people's microphones, this thing is also mentioned later in this research.

Keywords: IOT Devices, Trustworthiness, Built-In, Privacy.

I.   INTRODUCTION

A microphone is an input device, every day called a microphone or microphone, which is a transducer that converts sound into an electrical signal. Microphones are used in many applications such as telephones, gadgets, social public addresses for public events, presentations, live television shows, social media, audio recording, megaphones, radio, and television computers for recording voice, speech, and ultrasonic sensors. Some types of microphones are used in everyday life. Microphones are also getting used for security purpose.[1] The microphone converts the sound into a small electric current. Whenever a person speaks, sound waves enter the microphone; generate energy. When the sound waves are activated, they travel backward and forwards. The sound waves strike a thickness of softness that vibrates and moves a magnet near the coil. The coil is connected to the diaphragm, which also moves back and forth. In some embodiments, the coil moves around the magnet. Other microphones, such as condenser microphones, work on the capacitive principle. It can also convert electricity into a much louder sound. The first electronic microphone was a liquid-based machine that used a diaphragm to a current-charged needle in a dilute solution of sulfuric acid. This microphone was unable to reproduce a sharp declamation. A special material is used to produce the membrane film. This film is thin and strong to act as a valuable diaphragm material and sheet metal attached to the needle that transmitted the vibrations to the foil recording system. When the needle moved over the foil after drawing, the whole process was reversed and folded back. The rough carbon rod microphone was invented by David Edward Hughes in 1878 and developed as part of the telephone. Currently, microphone forensics is also getting evolved.[2] If we were starting over today - we buy all our microphones from the score - The reliability of the microphone pickup is very important to get the right data for a long time without any distortion. These microphones can provide incredible audio enjoyment and a stronger sound window.

A microphone is a device that converts sound vibrations in the air into electronic signals and records them on a recording medium or through a speaker. Microphones qualify many types of sound recording equipment as a foundation that includes communication of many kinds as well as vocalized music, speech, and sound recording. A microphone captures the sound and converts it into electrical energy, which can then be processed by electronic amplifiers and sound processing systems. A microphone is used in computers to record voice. It offers users the option of voice recognition. Computers allow users to record the sound of musical instruments. It allows users to chat online and with VoIP. It is also used for computer games.

After a few years, analog recordings have a noise floor of about 70dB, and the microphone's noise was no longer a major problem. At the same time, the increasing use of current-sized microphones for recording the track has

additionally illuminated the growing opportunities offered by the use of an enlarged and carefully maintained sonic window. So throughout the 1990s, we saw continuous improvement in microphone inherent noise. At the same time, all manufacturers began to say that "flat" was not necessarily "awesome", and this feature began to spread again to "brush microphones". This has resulted in a plethora of brand new contemporary "electron" and ribbon microphones whose purported virtues of warmth and musicality are superseded by their selling points of accuracy and flat frequency response. Microtec Gefell is any such microphone, as well as Octava microphones from Russia. These microphones are designed and manufactured using techniques and materials taken from the sixties. Buying an Octava is like buying a 1957 Chevy built in 1999 after it was in continuous production, but now not much development, for the remaining 40 years.

There seems to be an attempt these days by condenser mic manufacturers to make their mics deliver impressive features at very low signal levels.

And we didn't give up on over-stressing the sound, so we needed to develop microphones with some undoubtedly stellar dynamic stages ultimately 130dB, which is almost the same as the human ear can perceive. Premium directional microphones have gotten much better at achieving premium off-axis frequency response. These consequences greatly improved stereo and surround recordings and imaging, in addition to overall performance stability.

II.   METHODOLOGY

For checking the trustworthiness of microphones, the questionnaire is created and spread on social sites for getting responses as possible. These responses will give a brief idea about the trustworthiness of microphones. As well as the questionnaire will also provide details about how much people are being part of cyberspace using microphones.

Questionnaire

The questionnaire method is used for generating survey reports for research.

Analysis

For analysis, statistical as well as quantitative methods are used for getting a better understanding of data. Data will be shown in the format of diagrams and charts. And those diagrams and charts will be used for further analysis of the survey report generated through the questionnaire.

Result and Discussion, Conclusion

Based on the analysis, the output of the analysis will be discussed in the result and discussion step and the conclusion of that discussion will be considered at the end which is considered the conclusion.

III.   MODELING AND ANALYSIS

The questionnaire was shared on social media and 57 responses were collected. In this questionnaire, the first question is about how many people have recently used the microphone.
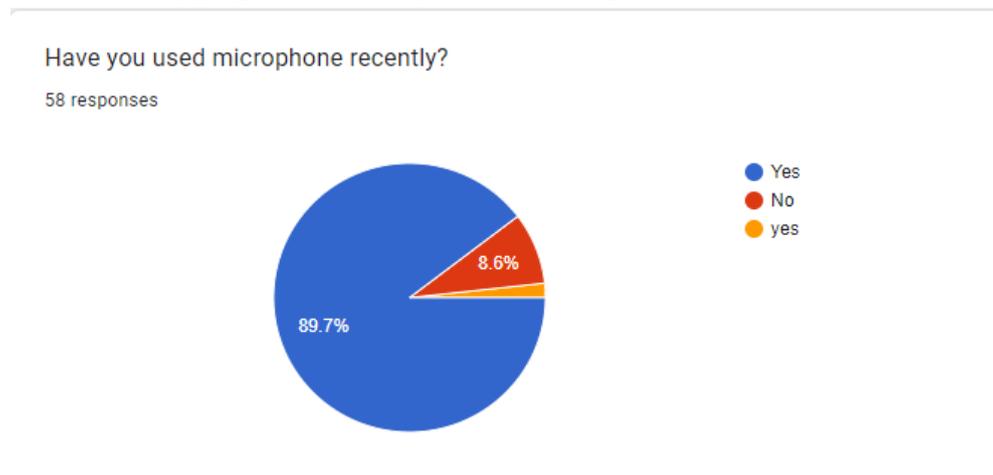

Figure 1

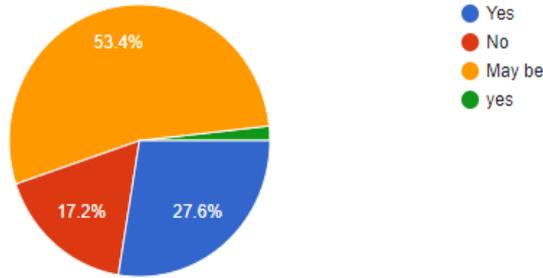Do you think, microphones collect your data?

58 responses

Figure 2

According to you, microphones are secured ?   Copy

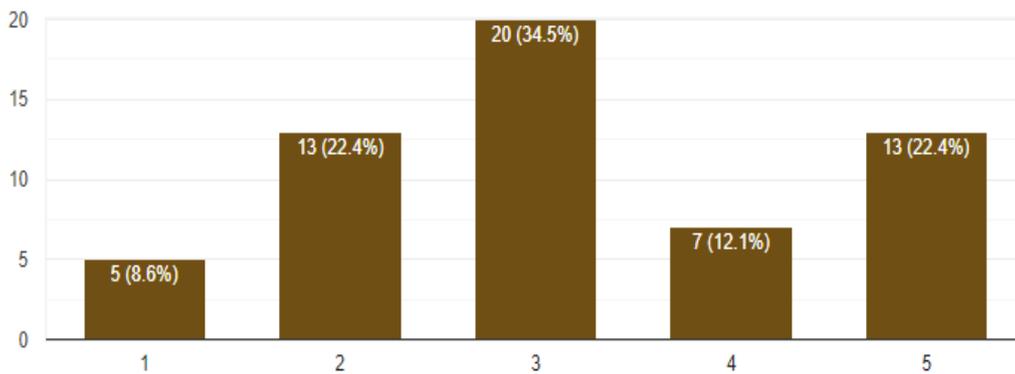58 responses

Figure 3

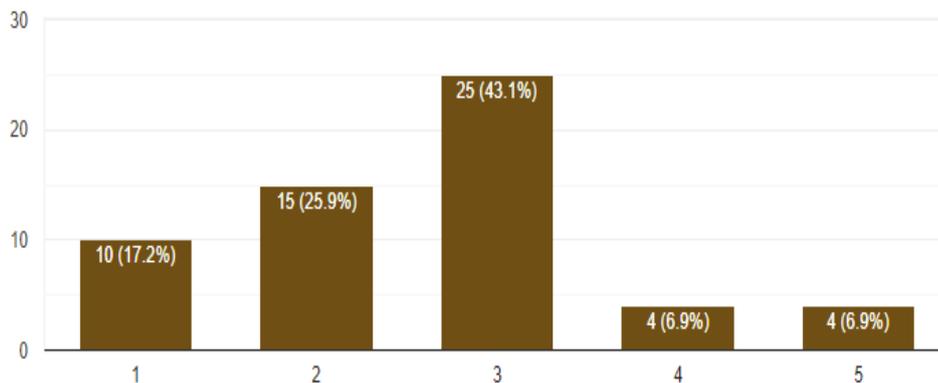Are microphones harming your privacy?   Copy
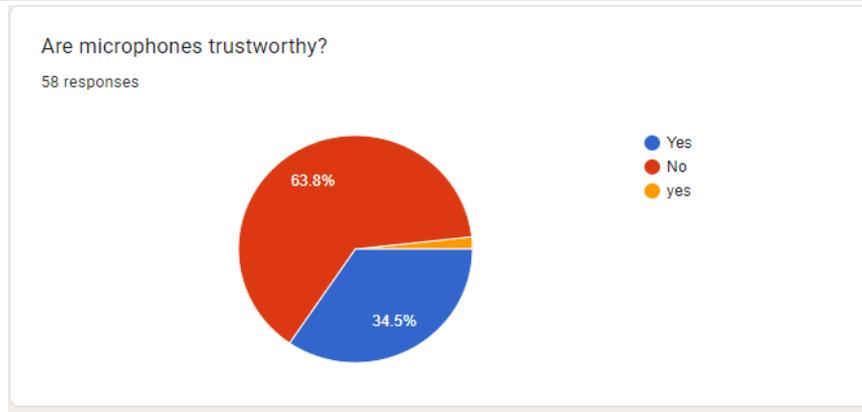
58 responses

Figure 4

Figure 5

From figure 1, As the pie chart above shows, 89.7% of people have recently used of microphone and therefore 89.7% of people are using the microphone.

Figure 2 shows data on how people think about collecting the data from the microphone. 53.4% of people are says no to the microphone collecting the data. While 27.6% agree with the microphone collecting the data from us. 17.2% of people say the microphone not collecting the data.

Figure 3 shows data on the security of the microphone. This question uses a Likert scale where a value of 1 is assigned to Strongly Disagree and a value of 5 to Strongly Agree. 22.4% of people strongly disagree that microphones are secure, while 12.1% disagree that microphones are not secure. 34.5% of people neither agree nor disagree with the security of the microphone. 22.4% agree with the microphone is secure and 8.6% of people strongly agree with the microphone is secure.

Figure 4 shows data on the security of the microphone. This question uses a Likert scale where a value of 1 is assigned to Strongly Disagree and a value of 5 to Strongly Agree. 6.9% of people strongly disagree that microphones are harming our privacy, while 6.9% disagree that microphones are not harmful to our privacy. 43.1% of people neither agree nor disagree with the microphone are harm our privacy. 25.9% agree that microphones are harming privacy and 17.2% of people strongly agree with microphones are harming our privacy.

From Figure 5, 34.5% of people think, that microphones are trustworthy. 63.8% are not sure about the trustworthiness of the microphone and 1.7% only people think trustworthy microphone and consider the microphone are secure device.

IV.   RESULT AND DISCUSSION

As figure 1 suggests, 89.7% of people have used a microphone recently which shows that most people are being part of cyberspace through microphones in a frequent manner. Furthly, figure 2 represents that most people are not sure about data collection through microphones, and in the remaining more than half of people which is around 30% people think that microphones collect their data and 17.2% of people don't think that microphones are collecting their data. Now figure 3 suggests that 8.6% of people consider strongly that microphones are secured which makes it clear that the security features of microphones and the security of microphones are reliable to people. In figure IV, the opinion pole or Likert scale suggests that very few people think that microphones are harming their privacy. And last, more than 60% of people consider the microphone a trustworthy device. That means lots of people are considering microphones as reliable and secured devices and to maintain this trust microphones should include some more rules for the privacy policy regarding data collection through it which will increase their trustworthiness.

V.   CONCLUSION

As the result and discussion, suggests, most people consider microphones reliable and it's security. But to increase the percentage of people who trusts microphones, the microphone manufacturer should add a feature in the microphone which will make it turn off when not in use and turn on when required only. We can conclude that microphones are trustworthy and secure as per public opinion.

ACKNOWLEDGMENT

VI.   REFERENCES

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