Video Conferencing

Shweta Saini

Abstract— **This paper will give a brief knowledge about the Video Conferencing in daily life and other few places like IMD etc. video conferencing is one of the main or major part in today's world not only in companies but also for an individual in personal life. The use of video conferencing is increasing day by day and you can just see the world changing. People use video conferencing to interact with friends, do business meeting and even to take interviews etc. The technology is being utilized in proper way.**

I. INTRODUCTION

Video conferencing (VC) or video teleconference by a set of telecommunication technologies that allows more locations to interact by each other simultaneous two-way video and audio transmissions. It has also known as visual collaboration.

Videoconferencing differs from videophone calls in that it's designed to serve a conference between different locations rather than individuals. Video conferencing is basically used by most of the population in today's world and its becoming an important part of our life. Video conferencing the name suggest that talking face to face to the people and expressing yourself. In way video conferencing is use worldwide for many different purpose. More than 80% of population uses this medium to communicate with each other.

This brought up a lot of change and future there might be some more technology that will make it more happening and good and more advance. This tell about few component study and many other thing.

II. DISCUSSION

Technology

The core technology used in a videoconferencing system is digital compression of audio and video streams in real time. The hardware or software that performs compression is called a codec (coder/decoder). Up to 1:500 Compression rates can be achieved. The resulting digital stream of 1s and 0s is subdivided into labeled packets, which are then transmitted through a digital network of some kind like ISDN or IP. The use of audio modems in the transmission line allow for the use of POTS, or the Plain Old Telephone System, in some low-speed applications, such as videotelephony, because they convert the digital pulses to/from analog waves in the audio spectrum range [11].

The other components required for a videoconferencing system include:

- **Video input**: video camera or webcam
- **Video output**: computer monitor, television or projector
- **Audio input**: microphones or any other source of Pre Amp audio outlet.
- **Audio output**: usually loudspeakers associated with the display device or telephone
- **Data transfer**: analog or digital telephone network, LAN or Internet
- **Computer**: a data processing unit that ties together the other components, does the compressing and decompressing, and initiates and maintains the data linkage via the network.

Conferencing layers

The components in Conferencing System are divided into different layers:

- User Interface
- Conference Control
- Control or Signal Plane
- Media Plane.

Videoconferencing User Interfaces (VUI) can be either graphical or voice responsive. Different industry uses different interfaces either graphical or either voice responsive. User interfaces have a number of uses; they are used for scheduling, setup, and making a video call. The user interface and administrator have right to control other three layers of the system also.

Conference Control allocation, management and routing of performance and resources. This layer along with the User Interface creates meetings (scheduled or unscheduled) by adding and removing participants in any conference.

Control Plane contains the stacks that signal different endpoints to create a call or a conference. Signals aren't limited to H.323 and Session Initiation Protocol These signals control incoming and outgoing connections of any conference.

The Media Plane controls the audio and video mixing and streaming. This layer manages Real-Time Transport Protocols User Datagram Packets and Real-Time Transport Control Protocol. The RTP and UDP normally carry information such the payload type which is the type of codec, frame rate, video size and many others. RTCP on the other hand acts as a quality control Protocol for detecting errors during streaming.

III. MULTIPOINT VIDEOCONFERENCING

Videoconferencing among three or more remote points is done by means of a Multipoint Control Unit (MCU). This is a bridge that interconnects calls from several sources. MCU are called the parties which are going to participate there. There are bridges for IP and ISDN-based videoconferencing. There many are pure software that are mixture of hardware and software. It is seen by the number of calls it can handle by anyone that are present. Multipoint video conferencing there

Manuscript received Oct 08, 2015

Shweta Saini, Student, Departnment Of Elecronic And Computer Science Engineering, Dronacharya College Of Engineering, Gurgoan

are 3 screen that are connected along with 3 mike and a a screen to share data while video conferencing that will help the people to interact more with each other as more easily.

Advantages:

1. Help to share data with anyone easily
2. More reliable
3. Video as well as audio is clear
4. This help 6 people to take part in the discussion that is there without any fail.

The MCU consists of two logical components:

1. A single multipoint controller (MC), and
2. Multipoint Processors (MP), sometimes referred to as the mixer.

Video conferencing modes

Videoconferencing systems use several common operating modes:

1. Voice-Activated Switch (VAS);
2. Continuous Presence.

VAS mode, the MCU switches with the endpoint that can be seen by the other endpoint or by the levels of the voice of individual. If there are limited people who are attending conference, then only one that will be seen in the conference is the one which is talking in the main part of the room with the loudest voice by the other participants.

Continuous Presence mode, displays multiple participants at the same time. The MP is a mode which takes all streams with different endpoints and combine them all together into a single video image so that we can see it as one. It work here as in frame and then those frame are combine together as we have frame in pictures. Same type of image is send by MCU to everyone. Typically these types of images are called "layouts" and depends on the number of participants in a particular conference.

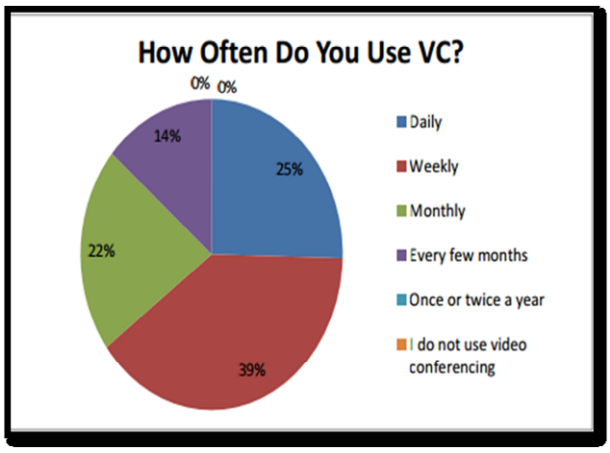
IV. ECHO CANCELLATION

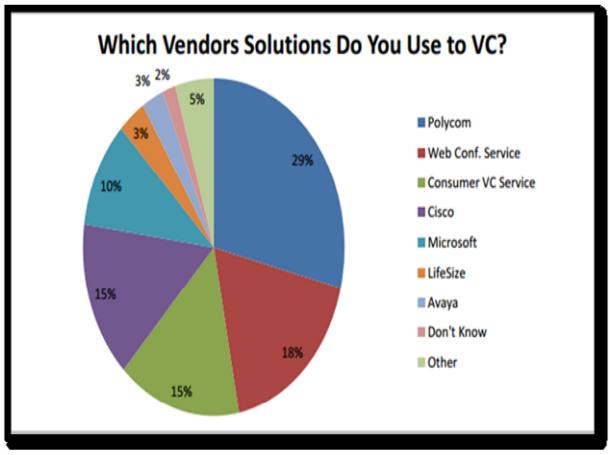
A fundamental feature of professional videoconferencing systems is Acoustic Echo Cancellation (AEC). Echo can be defined as the reflected source wave interference with new wave created by source. It is an algorithm that is able to detect the sounds or utterances reenter and the audio input of the videoconferencing codec, which came from the audio output of the same system, after some time delay. If unchecked, this can lead to several problems including:

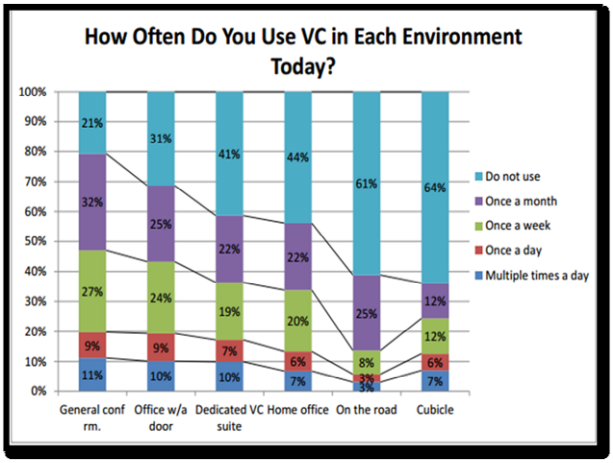
1. the remote party hearing their own voice coming back at them.
2. strong reverberation, which makes the voice channel useless, and
3. Howling created by feedback.

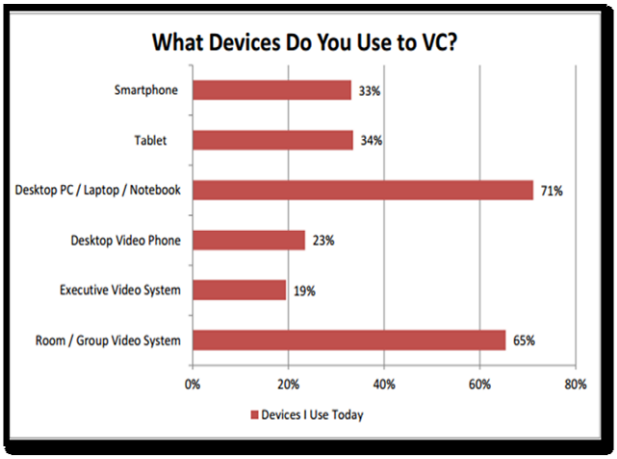
It remove any kind of delay that are caused in the conferencing with the other party.

V. ANALYSIS









We can conclude from the statics that are present how often video conferencing is making itself an important part of companies as well as people that are using it for personal use or small meeting from various part of world.

CONCLUSION

All the pros and cons of video conferencing change the quality of the video. Early the quality had uneven clarity of the audio and video broadcast. But now all these problems are finished and we can get a high quality of both audio and video. This is a big change and this is a big advantage as it improved the standard of video and audio, but still it has some flaws.

REFERANCES

[1] https://www.cisco.com/c/dam/en/us/td/docs/telepresence/endpoint/mxp-series/white_papers/white_paper_video_conferencing_standards.pdf
[2] http://searchmobilecomputing.techtarget.com/definition/videoconference
[3] http://www.webopedia.com/TERM/V/videoconferencing.html
[4] http://www.adventus.lv/en/about-adventus/News/video_collaboration_whitepaper
[5] http://www.wainhouse.com/files/papers/wr-navseadistedu.pdf
[6] http://www.wainhouse.com/files/papers/wr-bizcase4vc-v2.pdf
[7] https://education.alberta.ca/media/822749/vccopreport.pdf
[8] http://www.polycom.co.in/products-services/resources/white-paper.html
[9] www.byscholar.com/1078/multipoint-videoconference-control-unit.html
[10] http://videoconferencing36.blogspot.in/
[11] https://en.wikipedia.org/wiki/Videoconferencing
[12] http://www.live-conferencing.com/articles/video-conferencing.html
[13] http://videoconferencingworldmania.blogspot.in/