

VIDEO CONFERENCING EVALUATION & PREPRATION

GUIDE



TABLE OF CONTENTS

- Introduction 3
- 1. What is video Conferencing? 4
- 2. Establishing Goals 5
- 3. about 3rd party device control 9
- 4. Types of VTC systems 10
- 5. Upgrading an existing system..... 14
- 6. Security Concerns..... 15
- 7. Conclusion..... 16
- Appendix A: 17
 - Businesses Using Video Conferencing .. 21
 - Video Conferencing Platforms Market Share Statistics 22
 - Zoom and Cisco Webex Statistics..... 23
 - The Future Of Video Conferencing..... 24
- Appendix B: Simplicity of Using Common VTC software 25



INTRODUCTION

The purpose of this guide is to provide the information needed to properly evaluate and use a video teleconference system. This guide will discuss the benefits and drawbacks of several approaches as well as some of the details of the system requirements. The desire is that this guide will provide the perspective needed to determine the best solution possible while providing a framework to help enhance the user experience. This is done by:

- Determining the problem or needs
- Establishing goals and expectations
- Explaining benefits and drawbacks to multiple approaches
- Properly preparing for deployment to increase adoption
- What to do with existing equipment
- Understanding potential security and network concerns
- Developing documents to properly support the systems and use

By following this guide users should be fully prepared to use a video conferencing system, but in addition, they should have all the tools needed to support the system for a proper user experience. This is intended to be best practices and will not apply to every situation. But if followed user should be confident and satisfied with their conference experience. This will also reduce the amount of wasted time and money by explaining the common pitfalls that arise when using a Video Tele-Conference (VTC) solution. But first we must ask, what is a Video Tele-conference



1. WHAT IS VIDEO CONFERENCING?

Let's start with the basics. A video teleconference (VTC) can be as simple as using a personal device or cellular phone to make a video call between two or more parties. However, the goal for most businesses is to leverage more powerful feature beyond a simple video call. This will allow VTC systems to be used as a tool for business by:

- allowing users share their screens and content for easy collaboration.
- giving remote control and access of a computer to a co-worker for assistance.
- providing chat or group rooms for team collaboration and record keeping.
- Allowing the easy exchange of files.
- using digital whiteboards to collaborate ideas in real time.
- broadcasting conferences or webinars to large groups of participants in multiple locations.
- recording for archival or absent meeting participants.
- having participant be asked questions or polled.



Additionally, video conference technologies and services can be utilized to increase productivity and safety with benefits including:

- Reduced travel costs and time
- Ability to connect anytime anywhere
- Visual aids and presentations
- Seeing traditionally missed non-verbal visual cues and body language
- The use of many different devices including smart phones, tablets, and computers.
- The recent desire for reduced viral and bacterial exposure

Video conferencing has improved by leaps and bounds in recent years and it will continue to do so. The ease of use and cost effectiveness of these systems will provide tools for collaboration instantly from anywhere. The importance of work/life balance and safety are also increasingly more important which video conferencing allows for .

2. ESTABLISHING GOALS

Over 50% of workers regularly use video conferencing and as expected age plays a part in use and adoption. Two-thirds of “millennials” vs less than 50% of “boomers” actually use conferencing and the majority will use “free” services vs paying for a “premium” service. This is due to a number of reasons with most being a lack of standards and policies within organizations. Over three-quarters of all video conference participants are more engaged versus audio only calls and opposite to the previous statistics older users are more engaged vs younger users. It is important to note that the vast majority of users across all ages and genders are preparing more for video conferencing calls. The first step to any successful VTC implementation and experience is to define goals. Additionally, there are many factors most do not realize are so important with a modern and successful use of VTC systems.

Some factors users will want to consider:

- How complex is the space and surroundings of the VTC system? Larger systems ask questions such as how users will control the AV and other devices in the room? Smaller systems minimize the complexity and are increasingly becoming more popular. This is especially true in a modern world where remote working and distant participants is more common and a part of everyday life. Having 10 remotes to work the lights, HVAC, projector, projection screen motor, shade motor, satellite receiver, Blu-ray Player, Sound system, Television/monitor, and other devices is not practical when a single user interface can be programmed to run all of the devices and more.
- Do users have access to comfort controls such as HVAC Lighting and shades? Ensuring the comfort of users, whether it's a single person in an office or a conference room full of people, will add to the experience and increase satisfaction, retainage of information, and usability of the systems.
- Are you experiencing proper echo cancelation or poor audio quality? The quality of the audio is most important and is as much about the room as it is the equipment you use. If you have ever received a phone call from someone standing in a tile room or using a cheap speaker phone, you already understand how important this is and how the room can affect the message being delivered.
- What is acceptable for call and video quality? Quality costs money and bandwidth, there is no reason to send super high-resolution video if no one you connect to will be able to see it in its native resolution. Quality can degrade for several reasons including available bandwidth of participants.
- How comfortable are presenters on a video conferencing call? Many people participate in meetings via video conferencing but without the video. This can be attributed to overall shyness or a fear of public speaking which cannot typically be combated or fixed. Addressing issues such as a poor internet connection or lighting and how it affects the

perception of appearance can go a long way to making people feel comfortable. How someone feels is as important to the overall experience as any other issue for successful video conferencing.

- How easy does the system need to be to use? This addresses what most think of as the “user experience” however that is a common misconception. The user experience is the relationship of all topic addresses within this section but simplicity in use often refers to the user interface. Technically savvy users can and will adapt to any solution however some users equate their use of technology to fitting square pegs into round holes, or they believe they will break a system by merely walking in the room. A well-developed system will have the following attributes:
 - **Consistency** – Words and actions should always produce the same results universally. Available controls such as volume appear in the same location on the screen regardless of the sub-system the user is accessing. All conference rooms have the same interface with sections greyed out if certain features are not available.
 - **Feedback** – A system needs to let the user know something has happened. This discourages repeat commands.
 - **Useful messages** - Dialog windows and error messages should only contain helpful and brief information.
 - **Clearly marked navigation** – Users should always be able to find how to back out of or access a section of the system.
 - **Usage documentation** – Users should be able to find instructions for use in the location where the system is installed.
 - **Layman’s terminology** – Technical jargon and slang should be absent from any user interface or system.



- **Aesthetic design** – While high contrast colors may make buttons obvious, users are going to stop using the system if they get eye strain looking at it. If pressing the screen causes a sound to play it should better be pleasant and extremely brief (useful when trying to enhance Feedback discussed earlier). Above all, users should enjoy using the system or it will not be adopted.
- **Fool proofing or simplicity** – For many systems this is crucial because if the user can break a system by pressing the wrong button, they will inevitably find that button. In almost all cases, less is more.
- How much training will it require to get employees to adopt a video conferencing system? In line with the last question, how much work is it going to take to get people using the system? Soft skills should be considered at any training. Something as simple as understanding the practical application of the mute button is often overlooked in training.
- What is proper video conferencing etiquette? It is vital to have all users of video conferencing system understand proper call etiquette. Technology will have its challenges and issues including things like at-home-bandwidth can cause buffering and delays causing clarity issues or participants to speak over each other. Etiquette tips include:
 - Testing of equipment prior to a meeting. This will help to eliminate the difficulty of starting a meeting. More meetings will start on time and this single point can have one of the largest impacts on any companies conferencing system return on investment (ROI). Lost salaries and time add up much faster than most realize, and many organizations will invest heavily in reducing that startup time.
 - Choose your meeting location wisely. If you are not in the office or a conference room always be aware of your surroundings. Video distractions, audio quality, background noise and so much more can disengage others from the message of the meeting.
 - Use the mute button. There are so many times that non-speaking or non-presenting users will have some type of background noise interrupt the meeting. These distractions can be anything from a cell phone ringing to a dog barking or car driving by. Contrary to this point, it is important to remember to unmute yourself when it is your turn to speak.
 - Cautiously Sharing Your Screen. Disable notifications and go on “Do Not Disturb” to avoid distractions and sharing sensitive or confidential information. Close all other documents to make sure the only document open is the one you plan to share. Clean up your desktop to avoid oversharing and a clutter background.
 - Identify yourself. It can be difficult to identify who is speaking in large meetings. When you start to speak a simple identification will go a long way.

- Be prepared. This is true of in-person or video conference meetings. Clear and concise information that sticks to an agenda will enable presenters to stay on track.
- What existing equipment can be implemented into the new system? Where can you save money? It is not often a solution requires entirely new equipment in every aspect however some older equipment can be difficult to use.
- How much demand is there for meeting spaces? If there is not much demand for meeting spaces simple cheap solutions will probably be best. In the case of higher demands setting up an enterprise level mixed solution will allow more efficient use of the spaces you have and give perspective on when new spaces may need to be added.
- How do you support the system after it is implemented? Do you have internal support or need a service level agreement with a solutions provider to make sure the system always has support? Is the system simple enough you can self-support? No system or computer works flawlessly 100% of the time and failure to plan for a problem is planning to fail twice.



3. ABOUT 3RD PARTY DEVICE CONTROL

if your system is going to include multiple devices from several manufacturers you will want to include some form of 3rd party control. Many devices accept remote commands through protocols such as RS232 or IP. Using a 3rd party controller can have several benefits:

- **Single point of control:** No need to keep track of remotes and keep batteries on hand
- **Uniform controls for all interfaces:** All interfaces for all systems can be made to look and work the same allowing for a form of enterprise standardization.
- **Process automation:** Rather than manually lowering the screen, turning on the projector routing video to it, starting the sound system, dimming the lights and lowering the shades. You can have the system set to do that on a single button press or scheduled to start up 1 minute before the meeting.
- **Do not need physical line of sight to send commands:** No need to hold a remote at a certain angle or make sure nothing is blocking the sensor. All commands are sent over a physical cable.
- **Custom branding:** Logos, splash screens, and even signage can be programmed into the system for a more professional look and feel.
- **Custom aesthetics:** Buttons, backgrounds, sounds and images for the displays can all be customized to taste.

Potential drawbacks to 3rd party device control:

- **Proprietary system:** often a finished system can only be supported by the company that installed it
- **Increased complexity:** troubleshooting can be more difficult as you now must determine if the 3rd party control is causing the issue or a device failure.
- **Pricing:** 3rd party control can be quite costly. It requires a fair amount of programming and research to integrate.
- **Obsolescence:** 3rd party control system support is at the discretion of the manufacturer if they discontinue a device or go out of business you may no longer have support at all.

4. TYPES OF VTC SYSTEMS

There are many types of systems however traditionally they will fall into two categories. Hardware and Software. Hardware VTC appliances or codecs can be either components that are a part of a larger system or an all-in-one conferencing solutions. Software solutions generally only require a pc with an attached camera, speakers, and microphone.

There are also mixed systems that will use specialized hardware and software to enhance the experience. A “Zoom Room” may be an example of this. Adding in specially programmed hardware allows software to expand available features such as whiteboarding or set reservations for meeting locations in a user-friendly package. Most laptop computers will come with everything needed for a basic VTC system and more and more manufacturers are offering all-in-one equipment that is supplementary to a computer software solution in order to enhance the overall experience. The software can often monitor how the hardware is being used and when something is wrong.

- **All in one Hardware (Codec based conference solutions)**
 - **Benefits**
 - Easy to setup: usually requiring only power, network, and phone programming
 - Easy to use: most functions are a single button on the main screen
 - Fast Setup: These are usually the most compatible systems designed to be plugged in and used right away.
 - **Drawbacks**
 - Inflexible: Normally does not have much available customization.
 - Lower quality: A well designed solution will provide a better experience
 - Compatibility: These systems are standards based and easily connect to other all in one solution but often require complex external solutions to work seamlessly with software only systems.
- **Custom Designed solution**
 - **Benefits**
 - Not self-install: A solutions provider or integrator will install, program and configure all devices for you. They will typically provide training to your staff.
 - Customization: completely customizable from function to aesthetics.
 - **Drawbacks**
 - Expensive: A custom system can cost 10's of thousands of dollars depending on design.
 - Proprietary: Most of the time the company that installed the system has to be the one to support it.

- **Software based solution**

- **Benefits**

- Expense: Much cheaper than most hardware solutions
- Portability: with a laptop your office can be anywhere with internet

- **Drawbacks**

- Quality: limited to the equipment you have at the time of the call, usually laptops have noisy fans and terrible sound
- Simplistic: without hardware the feature set is very limited
- Reliability: 100% dependent on both having internet and the service being active.

- **Mixed software hardware solution**

- **Benefits**

- Robust features: full feature set from hardware and software
- Enhanced reliability: some features may remain functional even if others stop working.

- **Drawbacks**

- Expense: can sometimes requires a large up-front purchase and a subscription
- Complexity: These systems will often require someone to work with the management software rather than management being handled by users

Choosing the proper system to meet the needs and requirements of the organization is crucial to creating a well-received and useful solution. Doing so ensures a faster return on investment and reduces the need for "tier 1" or common issues technical support. In more advanced solutions both hardware and software systems may utilize data analytics to provide statics on usage and cost or even remote monitoring and diagnosis in real-time across the enterprise or globe.

Checklist for Selecting the Right System

DESIGN

- 1. Does the system address the problem and provide the required services?
- 2. Is it within budget?
- 3. Is it operationally as simple as possible and unlikely to cause intermittent behavior?
- 4. If your system produces wireless signals, has a heat map been completed to determine the radio pollution of the area?
- 5. Have you contacted the IT department with the design to make sure it does not violate their procedures and protocols or pose a significant security risk?
- 6. Is there enough space to properly mount and vent heat from all devices?

EQUIPMENT

- 1. Will you be able to test new equipment without the existing equipment attached before deployment?
- 2. If PoE is required does the network switch have enough overhead for the new system including all currently attached devices? (maximum 10% under capacity)
- 3. Does the display meet standards for closest and furthest viewers?
- 4. Has any existing equipment been verified compatible with the new system?
- 5. Have the user manuals been made accessible to the installers?

- 6.** Have you planned for all required incoming and outgoing signal from equipment?
- 7.** Is the space appropriately designed for the system? (sound insulation/masking, seating, lighting)
- 8.** Is the system appropriately designed for the space? (Properly sized display, Proper sound system for the area, echo reduction/noise cancelation)

SUPPORT

- 1.** Will you train the employees who need the system?
- 2.** Will an outside vendor required to install jacks or run cable?
- 3.** Will there be a location to store the equipment while it is waiting to be deployed?
- 4.** Has documentation of the system been created and stored in the final intended configuration?
- 5.** Have you determined an acceptable return on investment and a way to measure it?
- 6.** Will anyone be designated to install or support the system?
- 7.** Will a document collating the warranties be created?
- 8.** Will the client be supported by you in case of an outage?

A word about appropriate design

A commonly used example for over designing a solution is when NASA spent millions of dollars on development of a pen that can write in space when the Russians simply used a pencil.

However, most who make that comparison do not realize there was a very good reason for this pen to exist. The Russians soon discovered that the unreliable nature of their equipment was due to the particles left over from writing with graphite on paper floating into the panels and circuitry, in the end the Russians purchased fisher space pens from NASA.

So remember, do not sell your organization a space pen if they are not going to space...but if they are going to space, do not take a pencil simply because "it works"

5. UPGRADING AN EXISTING SYSTEM

Many people will often start a project by asking “what can I keep?”

It can be tempting to buy a prebuilt system or hire someone to tear everything out of the room and replace it...however sometimes the best solution is adding a few pieces to an existing system. What problems are going to be solved or what complaints are being addressed? Cannot hear certain people on a call? You may just need to add a few microphones. Are attendees reporting that they cannot make out words on the screen. It may only require mounting the projector further, change the lensing to make the image larger, or add another display to increase the coverage. There is a terrible echo? Perhaps some sound masking panels and echo cancelation is required. The worst thing anyone can do is misunderstand the problem and completely replace the system with another that does not solve the underlying problem.

Chances are the meeting space has a good display. Perhaps even a sound system, motorized shades, and automated lighting. An entire system branded from a single manufacturer is not required to have a professional level conference room or VTC solution. Sometimes all you need is to smooth the rough edges of a functional system that is already there.

6. SECURITY CONCERNS

New systems, new vulnerabilities. The most important part of this process is ensuring the corporate network is not exposed to unnecessary risk. These systems are almost always connected to a larger network. Failure to properly secure devices can open vulnerabilities in security systems and procedures. Proper prevention requires:

- All device security settings have been changed from factory defaults
- All devices meet the security standards of the network they are being installed to
- Access is restricted to the device as much as functionality will allow
- Logging and error reports enabled to help track down problems and intrusions
- Available tools such as monitoring software used to notify in real time if something is abnormal
- Prevent toxic traffic floods from passing out of the system onto the larger network

Without proper consideration and configuration, one will inevitably create a system that could take down an entire network. It is nowhere near good enough to simply say, “it’s working. Many of these systems are resilient and may be covering a problem temporarily. Be certain everything is configured as it should be or call information technology technical support. Intermittent problems and access violations are often a configuration issue and can easily be switch/router configuration or a failure to setup proper security on each device.

7. CONCLUSION

In conclusion, video conferencing can be as simple as point to point video call on a personal device to larger meetings in a conference room and even presentations from one to hundreds of participants spread out across the globe. With many features designed for increased productivity, collaboration, and engagement this ever-evolving tool helps bring business into the 21st century.

By establishing clear objectives and goals for using a VTC system, users can enhance their overall experience. This enhanced user experience along with proper etiquette ultimately leads to adoption and standardization across the enterprise. All of this will lead to more comfort and expanded use of video conferencing systems among all demographics of workers. Ensuring that systems are well received by all within the organization whether using hardware, software, or a mixture of both is key. It is important to select the correct system addressing the problems of the organization and is within budget with a measurable ROI.

A very small fraction of the work that goes into a professional video conference system is the actual physical installation. Planning the system design out in detail ahead of time can help avoid common problems that potentially consume days of labor in an attempt to fix. Being efficient in the design process will save time and money. Having proper security settings, documentation, and a procedure for when the system is not working will help minimize negative impact on company operations.

APPENDIX A:



The video conferencing and collaboration market grew to well over \$6 billion in 2019
– Source: [Synergy Research](#)

Poor conference call practices can cost businesses up to \$34 billion each year through lost time and diminished productivity.
Source: [LoopUp](#)

Cisco has projected that more than 80% of all Internet traffic will be video by 2021. Globally, IP video traffic will be 82 percent of all IP traffic (both business and consumer) by 2022, up from 75 percent in 2017.
Source: [Cisco](#)

51% of the Fortune 1000, 58% of the Fortune 500, & 96% of Top US Universities use Zoom.
Source: [Zoom](#)

With 9 out of 10 people admitting that they daydream their way through most meetings
Source: [Dr Donald Wetmore](#)

The brain only retains 5 percent of what is stated in meetings
Source: [psychotactics.com](#)

Only 38% of companies can hold a video conference with their customer
47% prefer video conferencing when remote.
Source: THE STATE OF ENTERPRISE COMMUNICATIONS, Avaya

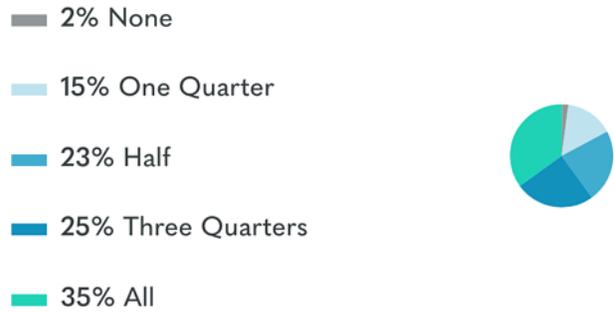
Real-time video such as live video, ambient video, and video calling has a peak-to-average ratio that is higher than on-demand video.
Source: [Cisco](#)

96% of respondents agree that video conferencing is effective for improving the connectedness of remote team members.

Almost All Respondents Agree That Video Conferencing Improves the Connectedness of Remote Team Members



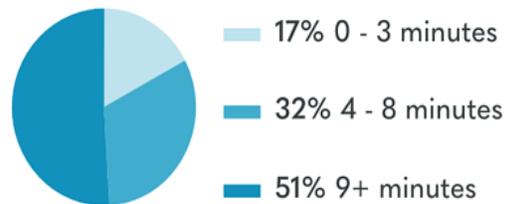
How many meeting rooms in your office location are equipped with a video conferencing system?



Nearly half (46%) of our respondents report that they're likely to switch to a different video conferencing software platform in the next 12 months. The most common reasons to consider switching are ease of use and cost.



How long does it take your team to set up and start meetings?



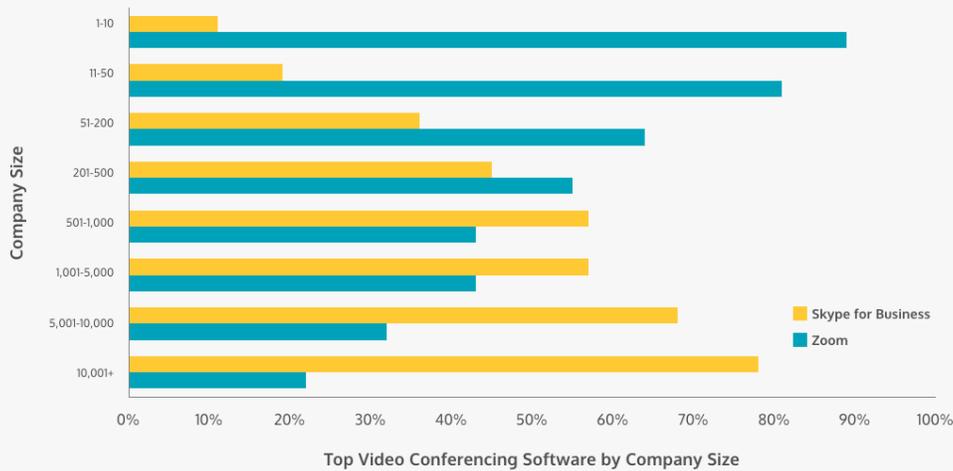
20% of respondents reported that their biggest challenge with their video conferencing camera is audio quality. ([Owl Labs](#))

At companies with 500+ employees, the top issue users reported with their video conferencing camera was its integration with other hardware and software. ([Owl Labs](#))

In 58% of organizations, executive influence was required when choosing a video conferencing solution. Even more surprising was the fact that the level of involvement remained incredibly consistent even as a company's employee size increased. Video conferencing is important enough to merit executive involvement no matter the stage of the company's growth. ([Owl Labs](#))

Zoom and Skype for Business were the most frequently used options, holding a combined 45% of the market. However, depending on your company size, one may be a better fit for you than the other. There was a clear divide on preference depending on an organization's number of employees. Specifically, 64% of companies with 500 or more employees tend to use Skype for Business, and 72% of companies with 500 or fewer use Zoom. ([Owl Labs](#))

64% of companies with 500 or more employees use Skype for Business. 72% of companies with 500 or fewer use Zoom.

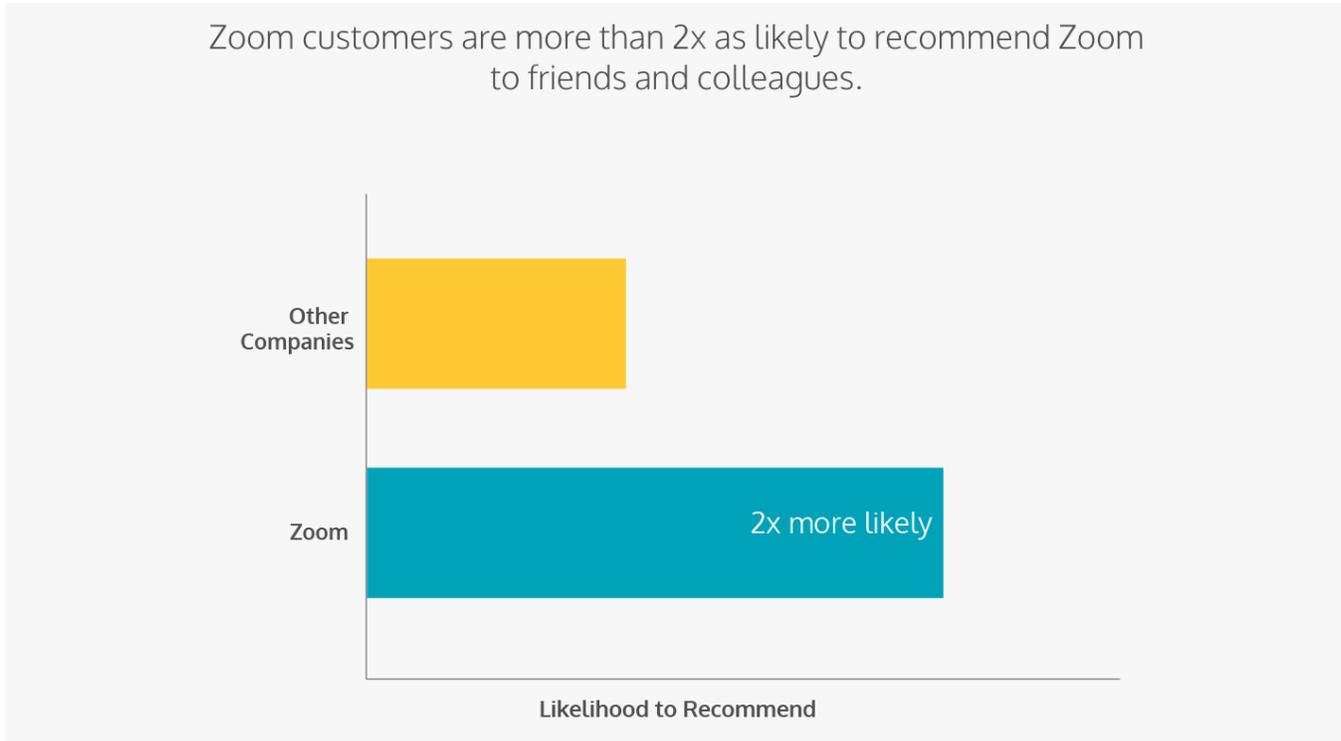


89% of companies use multiple [video conferencing](#) platforms, and on average a company regularly flip flops between 2-3 different conferencing solutions. ([Owl Labs](#))



45%
of companies chose their video conferencing solution based on its ease of use.

Zoom's conferencing capabilities significantly outperformed all other solutions. Zoom customers rate their solution more than 2X higher than the industry average. ([Owl Labs](#))



Video Conferencing Statistics (All you need to know) – Skillscouters 2020

The amount of remote workers telecommuting has increased by 115% in the last ten years and continues to rise.

Compared with just 2 years ago, 87% more people are choosing to use video conferencing currently.

The growth rate of video conferencing is going to be substantially affected by the COVID-19 pandemic with 2020 seeing an unprecedented amount of video conferencing usage than ever before.

The video conferencing platform Zoom has seen 200 million daily meeting participants on average at the beginning of 2020, which is compared to the average of 10 million participants in December 2019.

75% of CEOs predict that video conferencing will replace regular conference calls.

Around half of the world's employees are expected to take part in telecommunications like conferencing calling within the next decade.

By 2022, it is expected that internet video traffic and worldwide IP video traffic will increase by 4X from 2017.

Businesses Using Video Conferencing



54% of the workforce in the United States take part in video conferences frequently.

78% of corporate businesses use video conferencing to facilitate team meetings.

58% of businesses use video conferencing very regularly, having it as part of their daily operations.

Though video conferencing can hold hundreds of people, in the professional arena, more than 73% of video conferencing meetings are smaller, involving just two to four people.

One of the notable benefits of video conferencing for companies is the time saved by not commuting. Businesses can cut their travel costs by up to 30% when utilizing video conferencing.

56% of CFOs globally plan to invest in future video conferencing to lessen work-related travel (whether locally or internationally).

83% of large companies are very likely to purchase video collaboration software to use in their regular operations.

77.2% of people in business use video conferencing to connect with remote employees.

Businesses in the United States hold approx. 55 million video conferences on average each week.

89% of employees state that video conferences reduce the time it takes to complete projects.

22% of people using video conferencing in business record the video to share the recap with those who did and didn't attend the conference.

72% of employees remark that telecommunications in their work have a high impact on employee retention.

Companies that utilize remote working systems are 25% less likely to experience employee turnover.

Video Conferencing Platforms Market Share Statistics



Zoom is the number one video conferencing platform, at 40.49% market share.

Zoom has approximately 22,800 domains active.

GoToWebinar is the second video conferencing platform with a 19.82% market share.

GoToWebinar has approx. 11,200 active domains.

The third biggest platform by market share is Cisco Webex at 12.31%.

Cisco Webex has approx. 7000 active domains.

ON24 is the next biggest platform for video conferencing, with a 3.53% market share.

ON24 has approx. 2000 domains active.

The fifth-largest video conferencing platform is Adobe Connect, at 3.38% market share.

Adobe Connect is close to ON24 with its market share percentage and domain amount, at approx. 1900.

The next five platforms are GoToMeeting (3.17%), Tandberg Video Conferencing (2.62%), ClickMeeting (1.68%), TalkPoint Convey (1.38%), and Microsoft LiveMeeting coming in at number ten with 1.19% market share.

Zoom and Cisco Webex Statistics



As two of the top five video conferencing platforms, Zoom being number one and Cisco Webex number three, the following video conferencing statistics offer insight into their functions. Key trends and facts on the companies are detailed in the list below.

Zoom

- Zoom allows users to conduct audio and video meetings from 2 to hundreds of people.
- It's the most popular video conferencing platform, at 40.49% market share.
- Zoom was valued at \$16 billion USD from trading after it's the first day on the market.
- Headquartered in San Jose, California in the United States.
- Founded in 2011 and launched in 2013 by Eric Yuan, who was a former executive and engineer of Cisco Webex.
- The company went public in 2019.
- April 2020 saw massive growth in users due to the COVID-19 pandemic having businesses and individuals conduct communications on this platform.
- Users can host meetings of up to 100 people for less than 40 minutes for free.
- Paid subscriptions cost \$15-20 USD a month for regular conferences.
- For business conferences, Zoom Rooms is a higher-end function with monthly subscriptions available from \$50-100 USD.

Cisco Webex

- Similar to Zoom, Cisco Webex facilitates online meetings and video events and functions.
- Cisco Systems acquired Webex in 2007.
- It is headquartered in Milpitas, California in the United States.
- Cisco Webex is the third largest video conferencing platform by market share at 12.31%.
- For the free use of the platform, hosts can have up to 50 participants and 1GB of cloud storage. Meetings on the free plan have a 40-minute limit.
- For paid plans, there are three tiers – basic, pro, and business – which range from \$15-30 USD.

The Future Of Video Conferencing

As technology continues to advance rapidly, young professionals expect high-quality results, with 75% said that they wouldn't settle for low-quality video conferencing.

The small room segment of video conferencing is predicted to have the highest growth rate in the coming years, with the popularity due to the ease of use and cost-effectiveness (small rooms are easier to hold with free services).

The large enterprise segment of video conferencing users in business will also see the biggest growth, as there is a rising demand for conducting formal recruitment interviews and utilizing live training solutions for employees.

The key drivers of the growth of video conferencing in the future are globalization, with more remote employees, and the desire for improved productivity of business operations.

The healthcare sector is also going to see a rising trend in video conferencing usage, with the term 'telemedicine' becoming more widely used in the healthcare market.

The Asia-Pacific region is expected to dominate the market of worldwide video conferencing from 2020 to 2027.

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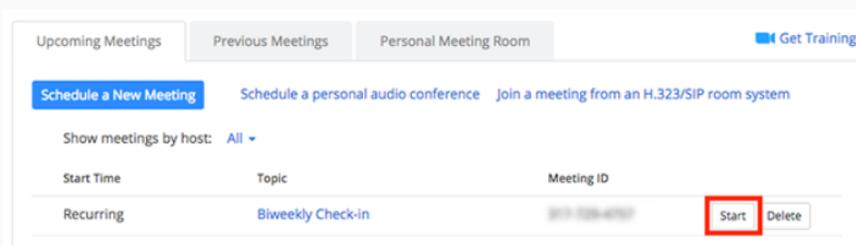
APPENDIX B: SIMPLICITY OF USING COMMON VTC SOFTWARE

Zoom meeting

Starting your first meeting as the host

As the meeting host, there are several ways you can [start your meeting](#). Your upcoming meetings will be listed in the Meetings tab of your Zoom desktop client or mobile app. You can click **Start** by the meeting name. You can also start your meetings from the Zoom web portal.

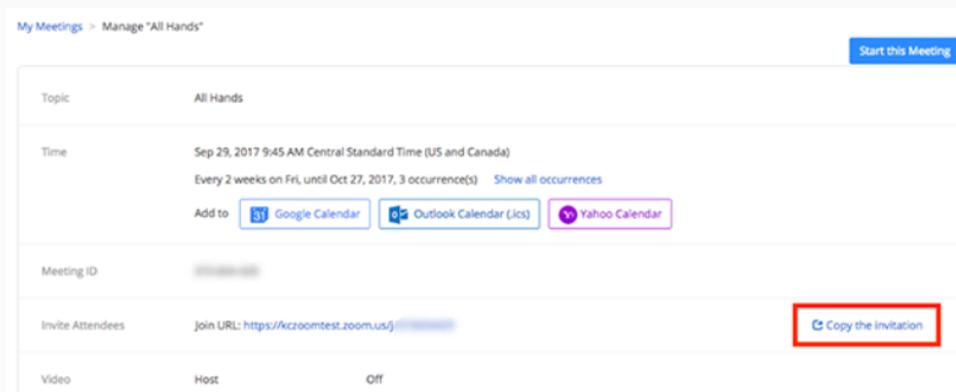
1. Login to [My Meetings](#).
2. Under **Upcoming Meetings**, click **Start** next to the meeting you want to start.



3. The Zoom client should launch automatically to start the meeting.

Inviting others to join your meeting

[Inviting others to join your meeting](#) is as simple as sharing the invitation or join link. You can do this after scheduling your meeting by clicking **Copy the Invitation**.



Joining another user's meeting

There are many ways to [join a meeting](#), but the easiest way is to click the join link that the meeting host provided. You can also click **Join** in your Zoom client and enter the meeting ID.

zoomrooms

Quick Start Guide to Meeting Controls

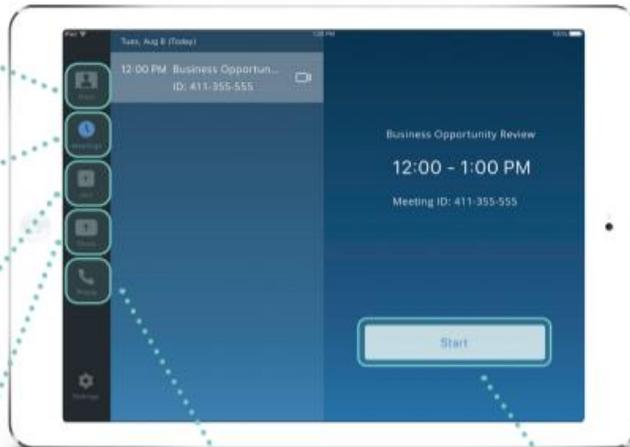
Start Meeting

Start an instant meeting by inviting others

Scheduled meetings for the room appear here

Join a Zoom meeting by entering a meeting ID

Share content from your laptop or mobile device



Make a phone call

One touch to start a scheduled meeting

Control Meeting

Mute/unmute room microphone

Change video display layout

Speaker view: displays active speaker

Gallery view: shows all attendees in grid

View and manage meeting participants



Share content from your laptop or mobile device

View meeting chat messages. You can even enable chat messages for the room display.

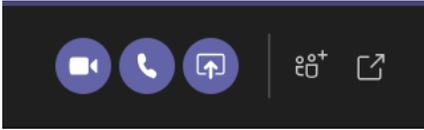
Start recording to the cloud. (Once the meeting is over, a link to your recording will be emailed to you.)

Leave the meeting or end the meeting if host

Invite others into the meeting

Teams Meeting

In a chat with a user click on any of the following purple buttons to start a meeting.



Go-to Meeting

Install GoToMeeting

Once installed, you can start and schedule meetings with just a couple clicks. You can install GoToMeeting on your Windows or Mac computer as well as your iOS or Android devices.

The GoToMeeting desktop application is used to host meetings. [Download GoToMeeting](#)

Start an instant "Meet Now" session

GoToMeeting is ready whenever you are! You can start an unscheduled meeting any time you want using the desktop app, web account or mobile apps – no notice needed. These instant meetings are also known as "Meet Now" sessions. [Learn more.](#)

Start a scheduled Meeting

You can schedule ahead of time using the desktop software, web account, or our mobile apps.

- [Start a Scheduled Meeting](#)
- [Edit a Scheduled Meeting](#)
- [How to Schedule a Meeting](#)

BlueJeans

Scheduling Meetings

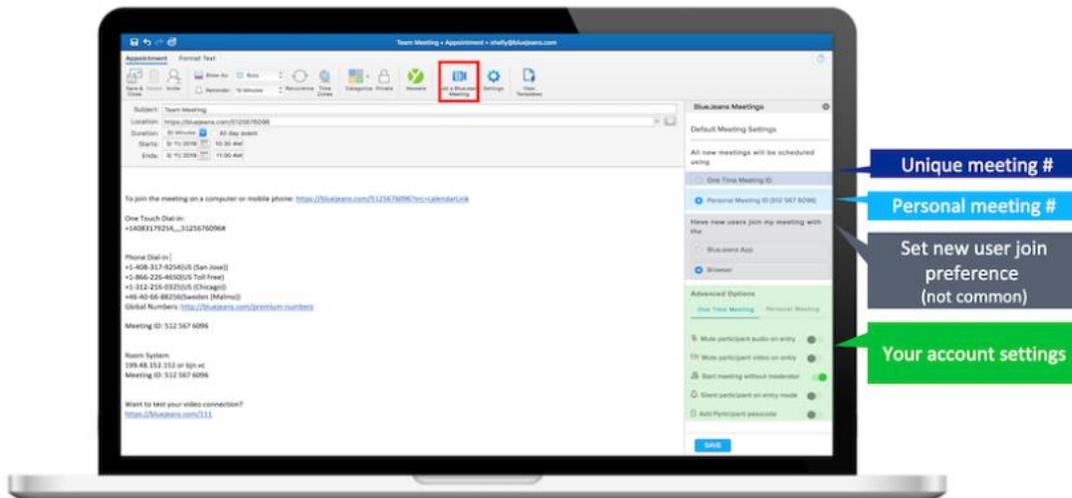
You can schedule BlueJeans meetings directly from your Office365 and Google calendars.

- [BlueJeans Outlook Add-in](#)
- [Google Calendar Add-on](#)

Schedule from Outlook Add-In

Click [here](#) to download

1. Click BlueJeans "Schedule" icon at the top to open a new appointment form
2. BlueJeans meeting details appear
3. Fill in event details:
 - a. Change Subject (if needed)
 - b. Enter date & time
 - c. Mark as Recurrence (if needed)
 - d. Add participant's e-mail address
 - e. Add attachment (if needed)
4. Compose your message. Scroll down through meeting details and add/edit text
5. Click Send



Google Meet

Google Meet cheat sheet

Want to get more out of Google apps at work or school? [Sign up for a free G Suite trial](#) 



Hold video meetings on the go, virtual training classes, remote interviews, and more.

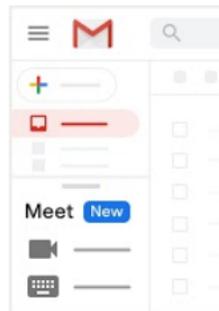
Get Meet: [Web \(meet.google.com\)](#) , [Android](#) , or [iOS](#) 

[Download Google Meet quick start \(PDF\)](#)

1. Schedule or start a video meeting

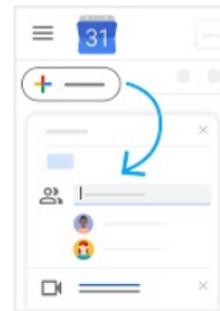
From [Gmail](#):

1. In the sidebar, click **Start a meeting**.
2. Click **Join now** for a video meeting, or click **Join and use a phone for audio** for an audio-only meeting.



From [Calendar](#):

1. Click **Create** .
2. Add your event details and guests.
3. Click **Add rooms, location, or conferencing**.
4. Click **Save**.

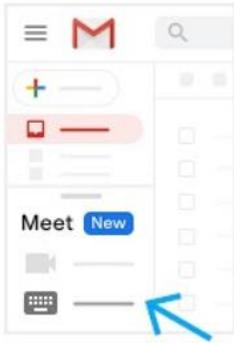


See other ways to [start a video meeting](#).

2. Join a video meeting

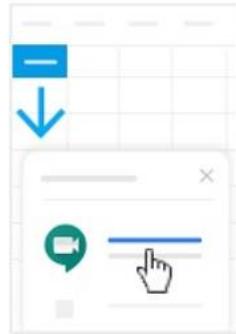
From [Gmail](#):

In the sidebar, click **Join a meeting** and enter a meeting code.



From [Calendar](#):

Click the event, then click **Join with Google Meet**.



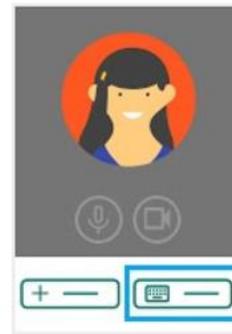
From [Meet](#):

Join a scheduled meeting or use a meeting code.



From mobile devices:

Open the [Android](#) or [Apple® iOS®](#) Meet app.



See other ways to [join a video meeting](#).

3. Customize video settings, interact with participants, or share your screen

