# HYBRID MEETING TEST/ COWORK OPTIONS

## Configuration and Results & Cowork Suggestions

### Abstract

A test was conducted using the Zoom application to determine its effectiveness creating a hybrid meeting between an in-person setting and online with virtual users. We are also providing optional advice with a list of cowork companies for Toastmasters to analyze the process of setting up a hybrid meeting versus renting a space with online conference capabilities.

Nixon Augustin, Clyde Higaki, Deborah Littleton, Shyam Nath, Ann Owens, and Theo Pope

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# Introduction

An onsite hybrid meeting was set up by Theo Pope. The onsite location had a table, necessary equipment and participants (with the only participant being Theo). Five people participated online via Zoom namely, Clyde Higaki, Gene Dent, Deborah Littleton, Shyam Nath and Nixon Augustin. Our objective is to show the minimal equipment needed to have a hybrid meeting.

A hybrid meeting may have various participation configurations as shown in Figure 1. Essentially a hybrid meeting is a Toastmasters Club meeting in some location with other participants joining the meeting through Zoom. More specific definitions are given in the glossary to match the terminology used in this document.

# Point of Contact

For further information or suggestions for improvement please contact Theo Pope at theopope@gmail.com

# Executive Summary

## Minimal Equipment Needed

- Laptop, tablet, or iPad device with internal camera, microphone, speakers, and Wi-Fi included as part of the device.
- Location with Wi-Fi available or personal hotspot with a strong enough signal and enough bandwidth to allow all devices to work without interruption.

## Optional Equipment to Improve Hybrid Experience

- Large screen monitor
- Webcam
- Wireless mic
- External speakers
- Power outlet if laptop cannot handle 2 hours on battery.

## Video Showing Setup and Testing

Click here to view video

# Hybrid Meeting Options

We have provided suggestions to help you figure out your own setup. We are not advocating for any one product or brand. You may also consider asking a company that already has the equipment and space for your hybrid meeting. See our section on Cowork Options, which provides questions you may ask in considering their services. The following diagram provides a good overview. (See figure 1)

It gives you the overall picture of what is occurring, and how the set up may be done. Additional clubs may get involved, if the link is provided. This option is in the diagram of figure 1 in the panel on the right.

You will want to draft a team to help setup and tear down if using your own equipment. It may take about fifteen to twenty minutes before and after the meeting, so having more hands makes it happen faster.
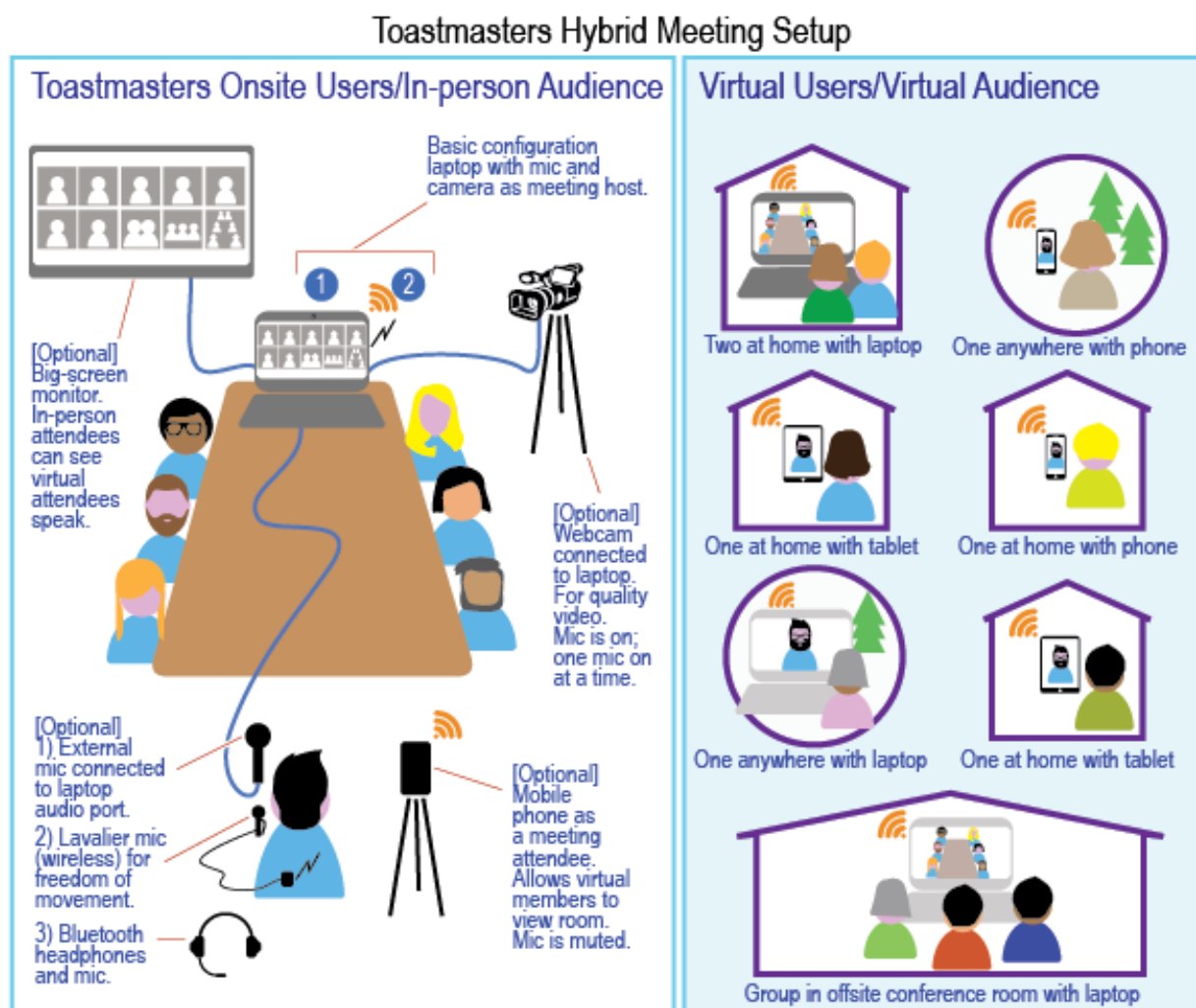


**Fig. 1**: Toastmasters hybrid meeting options may include additional clubs' onsite groups/virtual users.

# Minimal Equipment needed

A laptop, tablet, or iPad is the minimum large piece of equipment needed to bring to your onsite location (with an in-person audience) provided you have Wi-Fi available. You might need a power supply for your laptop if it has not been charged ahead of time. The Acer used in this test was on battery for 2 hours with no problems.

If the router is not strong or the bandwidth is not large enough on free Wi-Fi, you may need to try a personal hotspot. We cannot guarantee the hotspot signal will be strong. We suggest doing a test meeting with your club's leadership. Hotspot connectivity may depend upon the mobile device's network.

The laptop microphone in our test case was sufficient to pick up the speaker's voice at a distance of 6-feet. The laptop speakers were loud enough to hear the virtual audience participants and vice versa.

When speaking, the laptop onboard video camera would be facing the speaker and placed on the lectern or table closest to the speaker. This allows the speaker to see any virtual participants as well as those at the meeting table. When finished the laptop can be turned so everyone at the table can see the and hear the person online performing their role. If you set up an extra cell phone on a tripod, you may provide an audience image on the Zoom meeting.

If you only have one laptop in the meeting, you may choose to set it on a lazy-susan which is a kitchen tool that would provide a platform to turn the laptop smoothly in between speakers, meeting events, etc., to get a view of the audience members. See figure 2.



*Fig. 2: Lazy-susan revolving platform for laptop allows for smoothly turning laptop from speaker to audience views*

The main limitation of just using the laptop is muting and unmuting the virtual participants or making any adjustments to the zoom rooms during a presentation. When using Zoom, you can coach members to set up the short-cut in their "profile/settings", to use "Alt+A" to mute/unmute.

Another significant limitation with one laptop is the ability for those at the table to see any screen sharing by the speaker. You may have an external monitor that shows the shared screen or suggest that members in the corporate setting may log onto the Zoom meeting with their smartphones. Just make sure they silence their phones (not just mute) to eliminate feedback. You can mute phones with "*6" in the Zoom call screen (on the phone). Zoom will audibly say "You are un/muted". Please note that you will want to delay releasing the * while pressing the number 6. And if the speaker is using visuals such as flip charts, those who are virtual (a.k.a. remote) participants may be limited in seeing the flip charts based upon the placement of the onboard laptop camera. You may ask a member in the corporate setting to share their screen, capturing the images of the flip chart. Again, ask corporate attendees to silence their phones.

Sound may need to be amplified in the corporate meeting space. A Bluetooth® external speaker is an option. See figure 3. You can only connect one Bluetooth® device at a time connected to laptop or another device. That was not tested as the Bluetooth® headset was in use in our test. Virtual users will not be able to hear your Bluetooth® device.



*Fig 3: Altec Lansing Bluetooth® External Speaker*

You will need to run a sound check. You may end up getting a feedback loop if anyone is using a Bluetooth® device as a microphone in addition to a speaker. When you get feedback it means that the sound is competing by having the sound eminating from one device and going into the other. This is why you test the different scenarios before going live with the meeting. Feedback can be very chaotic during meetings. If you are close enough to the microphone on the laptop, see how it works with the Bluetooth® amplification sans mic. You may see if you keep the devices far enough apart, it may work out alright.

# Optional Equipment

During our testing, we did not have a lavalier wireless mic (i.e. a lapel mic) to test. See figure 4. This may include wireless body mic that have a small boom or arm with foam that mounts on the mic head or may have a tube-shaped mouthpiece that tapes to the cheek or jaw.

We did however have a Bluetooth headset. See figure 5. This can be used as a headset for the speaker as well as using the mic on the device. If anyone is set on using their own mic or amplification, you will need to disconnect other mics to eliminate feedback.

Other options used in our technical test included:
- External Samsung monitor to view other virtual participants (See figure 6)
- External audio-technica ATR2100-USB mic to hear speakers (See figure 7)



**Fig. 4:** A lavalier mic



**Fig. 5:** LG Stereo Bluetooth® Headset & mic



**Fig. 6:** External Samsung monitor



**Fig. 7:** External audio-technica ATR2100-USB mic

- Logitech C920 webcam to attach to a laptop or mount on a tripod (See figure 8)
- Samsung SM-G960U smartphone to set up a wide shot of audience vs. speaker (See figure 9)
- Logitech wireless keyboard and mouse to connect to laptop or the monitor (see figure 10)
- Two tripods for the Logitech C920 and the smartphone (See figure 11)



**Fig. 8:** Logitech C920 webcam



**Fig. 9:** Samsung SM-G960U smartphone



**Fig. 10:** Logitech wireless keyboard and mouse



**Fig. 11:** Tripods to mount external video camera and smartphone

# Configuration

The laptop was setup using the original battery fully charged before setup. Smartphones, and all devices should be fully charged as well so that they do not run out during the meeting.

Attached to the laptop was a Staples USB 4-port hub/USB extender to accommodate and connect the 4 devices. (See figure 12) The hub was necessary because laptop only had one USB port. The following were attached to the USB hub:



**Fig. 12:** Staples USB 4 port hub which allows more USB devices to be added

- External Logitech wireless USB receiver for the keyboard and mouse (See figure 10 above)
- C920 webcam (See figure 8 above)
- External Samsung monitor (See figure 6 above)
- audio-technica ATR2100 USB microphone (See figure 7 above)

While the passive hub worked in this case, it is recommended that a powered USB Hub 3.0 be used for data and power needs. Keyboards and mice that are low powered devices work well with passive USB

hubs, however webcams and flash drives need more power and may not function well. Note: some monitors have USB hubs built in.

- https://soundsupport.biz/2015/04/19/usb-hub-considerations-and-recommendations/
- https://smallbusiness.chron.com/difference-between-powered-nonpowered-usb-hubs-71272.html

The LG Bluetooth® headset and mic was connected to the laptop through the onboard Bluetooth receiver via Windows 10 operating software settings

The Samsung external monitor had a DVI output cable that required a Diamond USB to DVI adaptor to connect the Staples USB 4-port hub/USB extender connected to the laptop. See figure 13. The Zoom software automatically detects microphones and video devices attached to the laptop.

The smartphone (attached to a tripod) ran in the video mode to capture the in-person setup before the test meeting. The smartphone was then used to log into a Zoom meeting with Theo operating the in-person setting while the rest attended as virtual participants. (See figure 1, Toastmasters Hybrid Meeting Setup Drawing).

**Fig. 13:** Diamond USB to DVI Adaptor

The C920 webcam on a desktop tripod was placed at eye-level to show a more favorable view of the speaker than the laptop camera.

# Results

### Sound quality
The laptop sound quality was surprisingly good for our virtual participants. The Bluetooth headset had a somewhat tinny sound. The audio-technica was good but not to everyone. The C920 webcam picked up the sound well but had a different bass-type sound quality. We agreed that the laptop's sound quality was acceptable for group conversation.

### Video quality
The C920 camera had better video quality and a wider view. It has a glass lens and is 1080p (FHD or Full High-Density resolution) vs. all laptops, which are still at 720p (i.e. HD or HD Ready).

The larger monitor was helpful for the in-person participant to see everyone in the gallery mode from a longer distance. It was difficult even with the wireless keyboard and mouse to run the Zoom app from a 6-foot distance. Theo could see the controls in the large monitor (viewing in "mirror" option of the video controls) but a larger monitor (27-inch+) would have been optimal.

# Setup Scenarios

## In-person meeting view, listening to virtual speaker



This is the view captured by external smart phone camera. While virtual participant is speaking, the in-person audience participants would be sitting around the table, watching the monitor, laptop, or individual phones with sound off if screens are being shared.

**Fig. 14**

## In-person view with speaker presenting onsite
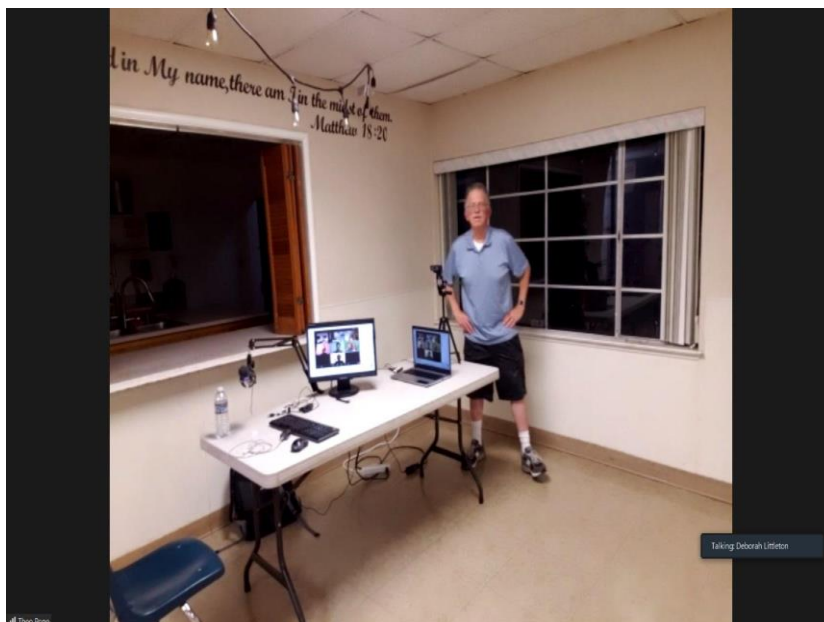


This view was captured by external smart phone camera. Theo as the onsite speaker is standing where the lectern will be placed. The onsite participants directly view the speaker, while the virtual participants view the speaker in gallery view on their own monitor.

**Fig. 15**

## In-person setting with speaker presenting onsite



It is same as previous view. Here the onsite speaker is presenting, and the laptop is turned toward him. The monitor or a second laptop is required for onsite participants to view the content of the presentation if screens are being shared. In actual case, the laptop will be placed on the lectern.

**Fig. 16**

## Virtual participants view onsite monitor
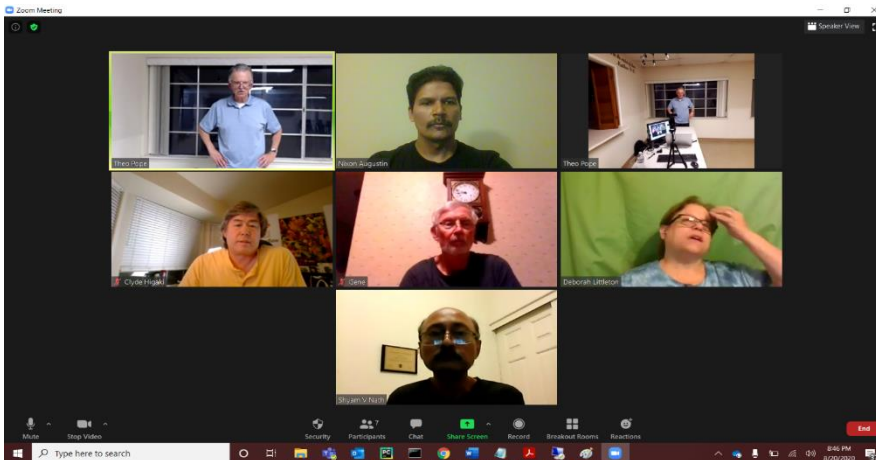


This is the gallery view of virtual participants along with the onsite (in-person) speaker. This is the same view for virtual participants if choosing the gallery view.

**Fig. 17**

# Cowork Options in District 39

Cowork companies provide a service and equipment for hybrid virtual meetings bringing more people into Toastmasters while allowing other members to meet, with social distancing measures. You never know what will bring a new member in—the ease of meeting online, or others wanting to be in a "permanent" space. Cowork companies may need to charge you to meet there, so you will need to see if it fits within your budget or you may find a donor. Toastmasters International is a nonprofit organization and has a donor letter entitled "Written Acknowledgment Letter" to allow for tax deductions.

Cowork companies may entertain the idea of having a Toastmasters club for free as a nonprofit in their site. This could also open up the idea to freelancers and telecommuters that want a local office away from home. Many of these coworking sites belong to other cowork networks, so you may find more than one route to any one cowork company.

# Other options

You can also check out other options in your local county seat, municipal facilities, or companies. Check with places such as city hall or other city buildings, companies such as grocery stores or malls with community rooms, chambers of commerce, houses of worship, etc. If you have a connection with a company like this that has teleconferencing equipment, it may be a natural symbiosis. These companies may have multiple options that can help you do your hybrid virtual meetings without having to purchase or procure items that may be at risk (i.e. theft or summer heat causing equipment malfunction) being stored in your vehicle if you have to go to work directly after your meeting.

# Information/Research

This list is informational only and not complete but developed to encourage you to start looking for sites in your own area. We started out by listing Division I, Areas 91 & 92 in San Joaquin County. The cowork/gig situation is like the wild west of the new kind of non-commuter or part time telecommuter workplace. The list is meant to inspire you to find a coworking site near you, and we are not recommending any one cowork company over another. Google "cowork" and your city. You will likely find some referral sites that list the same cowork site. See if you can find the cowork site's official website. You may get a discount by going through the site or vice versa, you may get a discount by pricing them through a networking site (like a travel agency vs. an airline company). Simply google your local resources and do your due diligence to research cowork locations.

We suggest that you call and find out what your options are. Ask them the following:

- Does the site have a conference room available?
- Do they have video conferencing equipment?
- Do they have a sound system?
- If so, do they have a soundboard (a.k.a. mixer if you have users who have their own mic pack or handheld mics) which may only be needed if you have more than one mic (and remember more than one mic may not work with the Zoom app)?

- Do they have microphones, or a central conferencing phone, and what are their options for optimal sound?
- More than one live mic likely will not work with Zoom as you will get feedback, so make sure to do a test run before having a meeting
- Do they clean their equipment regularly between meetings for COVID-19 concerns or require you to clean the equipment after use?
- Would they entertain an option to host your hour-long or 90-minute meeting for free or a discount for nonprofits like Toastmasters, with the option for advertising to the members?
- Do they offer a demo so you can check out how the virtual meetings work? Or maybe even an online example, testimonials from clients, etc.?

# Cowork  Companies

## Sacramento County

### Sacramento
**Conference Room 201**
Davinci Meeting & Workspaces
4701 24th Street 2nd floor
Sacramento, CA 95822
https://evenues.com/Meeting-Spaces/Lodi/California

**Conference Room 202**
Davinci Meeting & Workspaces
4701 24th Street 2nd floor
Sacramento, CA 95822
https://evenues.com/Meeting-Spaces/Lodi/California

## San Joaquin County

### Lodi
**station 20 Cowork**
400 East Kettleman Lane, 20
Lodi, CA 95240
https://liquidspace.com/us/ca/lodi/station-20

### Stockton
**Huddle Cowork/Huddle X Launch Pad**
110 N. San Joaquin St., 2nd Fl
Stockton, CA ???
Hours 8AM-?
huddlecowork.com (under construction)
https://lp.co/stockton/
(209) 323-4389

**Café Coop**
42 N. Sutter St., #406
Stockton, CA 95202
https://www.facebook.com/cafecoop/
https://www.downtownstockton.org/invest/downtown-work-space/
Contact: 209-420-0634

**Via Ventures**
509 E. Main St.
Stockton, CA 95202
https://yourvia.co/
https://www.facebook.com/yourvia.co
https://www.downtownstockton.org/invest/downtown-work-space/
team@yourvia.co
(209) 910-3130

**Tracy**
**WorkVine 209**
In Shops at Northgate Village
1005 E, Pescadero Ave. Unit #165 & #167
Tracy CA  95304
Hours 9AM-5PM (modified COVID hours 8a -5p)
https://www.workvine209.com/
(209) 650-6925


# Feedback/site suggestions welcomed

We appreciate any site suggestions you may have if you found them to be helpful and want to share the information with our other clubs in District 39. In the event that any of our clubs need to change meeting sites temporarily, this list would be helpful for our district. Contact.

# Glossary of Terms

This document contains some terms that may need some explaining as to how we are using them. If you have landed on this page by following a link, feel free to jump back to that point by clicking ALT+ ← (the back arrow).

| | |
|---|---|
| **Bandwidth:** | The amount of data that can be transmitted over the internet, which is dependent on the internet service provider. It is often confused with speed of transmission but is all about how many megabits of data per second (Mbps). If the bandwidth is not sufficient, users will experience spotty connections, especially if there are a lot of users using the same Wi-Fi connection. |
| **Cowork:** | This is the new industry term given to the business sites that are providing working space in a cooperative environment, where the site may offer amenities such as conference rooms, teleconferencing equipment, cubicles, offices, space to hold workshops etc. They are good for entrepreneurs, small business startups, or parttime or full-time telecommuters that need more options than they have in their home office. |
| **Hotspot:** | This is a physical connection to the internet typically done with Wi-Fi technology. Public hotspots may be provided by a company (coffee shops, hotels, etc.) for your connectivity, but may also be done via a cellular device on a personal hotspot. Personal hotspots are more secure that public hotspots if you don't have adequate firewalls. This means you could be hacked on an open/public Wi-Fi connection. |
| **Hybrid meeting:** | A meeting that is a cross between a grouping of members in the "In-Person Audience" versus the "Virtual Audience" of virtual users calling into the meeting. |
| **In-Person Audience:** | This is the grouping of members that are meeting in person, with social distancing during the pandemic, or without those limitations when it is safe to sit within a closer proximity. The club may choose to stay in the hybrid mode to incorporate users who have limited time for traveling to/from meetings. |
| **Onsite:** | This refers to the venue/grouping of members meeting in person. This may include the venue containing the grouping of members meeting in person, with social distancing during the pandemic, or without those limitations when it is safe to sit within a closer proximity. The club may choose to stay in the hybrid mode. |
| **Virtual Audience:** | These are the virtual users, calling into the meeting from home, office or elsewhere. |
| **Zoom:** | Zoom is an application or "app" which provides a platform for virtual meetings (a.k.a. Zoom meetings). Other apps which may be used include but are not limited to Cisco Webex, Google Meet, Microsoft Teams, etc. Zoom will need to be downloaded which is offered on first joining a meeting. Users can choose a free account which provides free 40-minute meetings on setting up the account. District 39 has Zoom masters with accounts clubs can use for free. Contact your division director to find out more information about Zoom Master program. |