Video Conferencing and Live Streaming Options
Closed to the Public and Working from Home

There are many tools out there you can use for remote collaboration and public outreach that don't require much in the way of specialized training or IT expertise. Whether you need to remotely collaborate with a few colleagues, or stream educational content or exhibitions to the general public via social media, this guide will attempt to cover the ways you can go about it.

Technical Requirements

Regardless of the platform or application you choose to work with, there are a few common suggested technical requirements we recommend to ensure the quality of your event.

Network
Have a "good" internet connection. The best connection you can have is in front of a computer, directly wired into whatever device you get your internet access from. A very close runner up is a 5ghz wifi connection, also known as 802.11ac. The 5ghz spectrum is much faster and less crowded than the old 2.4ghz standards, and if your home router was manufactured in the last five years, chances are it supports the 5ghz frequencies. The same goes with the device you are connecting with, whether it be a laptop, a phone, or a tablet.
There are no hard requirements on network speeds, but the faster the better. Most applications are surprisingly resilient with slow network connections these days, but at minimum you're probably going to want at least a 2mbps upload speed.
Most LTE data plans for your smart device are also plenty fast enough to support video conferencing or live streaming, but unless you have an Unlimited data plan we don't recommend using that to broadcast with, as you'll quickly accumulate data usage fees.

Camera/Mic
The camera is arguably the least important aspect of video conferencing. Literally any integrated camera or USB camera for your device is perfectly acceptable. But if your participants/viewers cannot hear you, then a crisp image isn't going to do them any good. To that end, a standard pair of earbuds with a TRRS plug and a compatible device (all phones/tablets and most laptops support this these days) will do you wonders to increase the audio quality of your events. Most of these earbuds have a built-in microphone, and having the mic closer to your face eliminates background noise in your location and allows your voice to transmit much cleaner. Wireless earbuds are also a great option as long as they support the latest Bluetooth 5.0 standard, such as the Apple AirPods and equivalent products. If you're on a laptop or desktop computer, a USB headset is also a perfectly fine alternative, but we previously emphasized the earbuds since it's likely most people already own a pair.

Remote Collaboration

Aka video conferencing, for when you want to meet face-to-face with a group of people without actually being physically present in the same location. "Skyping" or "Facetime" has become the generic term for all video conferencing these days, but those are technically only two of the app options out there you have available for you to connect with others.

Skype

Pros:
- Arguably the most popular service, so many people are familiar with its use.
- Supported on a wide range of devices.
- Recording calls is supported on most devices.
- Easy to message people.

Cons:
- Connection method is based on adding other people as "contacts", which is fine if you think of Skype as a phone service, and you're adding known people to your contact list, but is troublesome if you're connecting with a lot of unknowns.
- Least professional interface out of almost all video conferencing services. App has ads, and is trying to pass itself off as a social network.
- Group calling is clunky, again because of the "Contact"-based method of finding people.
- No pre-scheduled meetings option.
- Participants must have a Skype account.

Skype for Business

Pros:
- Included as part of the Office 365 service.
- Integrates natively with Outlook, so you can schedule meetings on your Outlook calendar, add the video conferencing element to the meeting, and invite everyone you want to participate.
- Easy to connect: people with the meeting invite just click on the link in either their email or calendar event, and it will automatically launch the application and connect them to the meeting.
- Allows inviting of guests from outside the state network / Office 365 sphere.
- Can message other users that are signed into it that are in the Office 365 system.

Cons
- Bad name. Many people confuse Skype and Skype for Business, though they are two distinct applications.
- Support on non-Windows devices is lacking and features are missing. (Recording is only supported on Windows, if enabled)
- Calendar scheduling is not very intuitive and doesn't provide the invitees with meeting details or connection info...it's just a link.

Zoom

Pros:

- Very intuitive to connect with others. Works very much like a phone conference call….simple give the people you want to connect with your conference code, and they can connect with you by inputting it on their end, or clicking the supplied link.
- Allows you to schedule meetings ahead of time within Zoom's own calendar system and copy the connection info to send out to others.
- Allows recording.
- Supports phone bridging, meaning not everyone has to be on a computer or smart device in order to participate. You can set up an alternative 800-number they can call on their phone if they want to participate via voice-only.
- Participants do not need a Zoom account...only the host.

Cons:
- Group calls are limited to 40 minutes for free accounts. One-on-one calls are unlimited.
- When first connecting, people may be confused by a prompt to "Connect to Audio via Computer or Telephone" since Zoom gives users the option. We recommend to always use "Connect Using Computer Audio". Until the user selects their option, they WILL NOT be able to hear anybody else on the call.

Google Hangouts

Pros:
- Allows you to schedule video meetings via Google Calendar just like Skype for Business. Just "add conferencing" when creating your event, and invite everyone you want to participate. Upon clicking on the link, they will automatically connect to the call.

Cons
- No recording
- Limit of 10 people on video at one time.
- Application is barely supported, as Google is planning to phase it out in favor of "Hangouts Meet", which is a successor product only currently available to GSuite subscribers.
- Requires user to have a Google account in order to participate.

Facetime

- Since Facetime is limited to Apple devices and directly tied with your personal phone number and email account, we don't recommend its use for any DNCR business.

Live Streaming

With your sites closed to the public, the only option out there is to bring your site to the people! Live streaming is a great way to interact with your community and fans.

Guidelines

- Keep streams to 30 minutes or less if it's a formal presentation. Any longer than this and you'll start to lose people. Make sure you build in a buffer for Q+A from your audience.
- For longer streams, workshop-related content would be a great idea. People love watching other people make or fix stuff.
- Have your presenter or another staff member logging questions from the audience that may be commenting in the chat. You can answer the questions as they come in on-air, or answer them all at once towards the end of your event. The appeal of live streaming from a viewer perspective is that they feel like they are participating in the event...make sure to interact with them!
- Practice good stage etiquette. Be professional. Know when you're live, and don't make any off-camera or off-topic comments.
- Be prepared for going live. As soon as you hit that "Go Live" button, stay in character and maintain your persona until the stream ends. Even if you're just "being yourself", the last thing people want to see is your presenter squinting into your device asking "are we live yet?", "is it working?".
- Have your presenter wear earbuds if streaming without a professional microphone.
- If you can, have your device mounted on a tripod or stable surface. Shaky video can make people nauseous.

Streaming Applications

Facebook

- Facebook supports live streaming directly from their app or their website if you're using a browser. No additional tools needed.
- For better or worse, many people will be glued to their devices during this time, and Facebook live streams will probably garner you a lot of views and interaction.
- Facebook does not let you edit your recorded video after it has gone live. Make sure you are on point at the beginning of the video, otherwise your errors will live in perpetuity.
- Facebook live streams can be scheduled ahead of time to give people notice.
- Streaming within the Facebook website/app is strictly "camera and mic only"

YouTube

- YouTube supports live streaming within their YouTube Studio page or the YouTube Studio app.
- YouTube live streams can be scheduled ahead of time to give people notice.
- The share link can be sent out for anyone to watch your stream regardless of whether they have a Google account.
- Only viewers with a Google account can comment or chat.
- YouTube videos can be edited after they have gone live.
- Streaming within the YouTube website/app is strictly "camera and mic only".

OBS Studio

- Open Broadcaster Software is an application that will allow you to stream to Facebook, YouTube, Twitch, or any other streaming service.
- Runs on a desktop or laptop computer and gives you powerful tools to customize your stream.
- Allows you to add slides and other media to your streams. For instance, you can start your stream on a holding graphic before cutting to your camera, just like they do on TV.
- OBS supports local recording for editing later.

Live:Air Solo

- Similar features to OBS, but runs on an iPad. Gives you powerful tools to customize your stream. Will allow you to stream to Facebook, YouTube, Twitch, or any other streaming service.
- Allows you to add slides and other media to your streams. For instance, you can start your stream on a holding graphic before cutting to your camera, just like they do on TV.
- Can use the iPad's integrated camera, or connect "remote" cameras that run on separate iPhones to use as your video/audio source if you're connecting all devices through a wifi network.