

Virtual and Hybrid Studio Set-up and Equipment

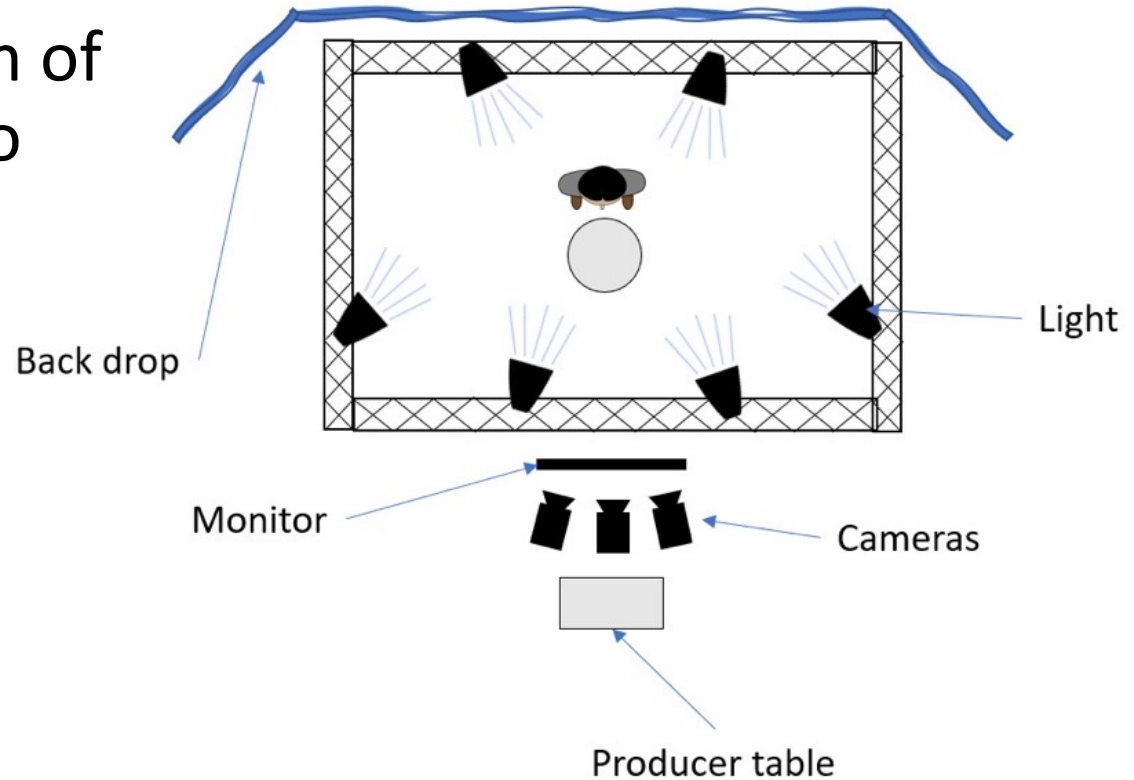


Introduction

- A studio for virtual webcasts, webinars, or as a node in a larger virtual conference can increase the energy and quality of your event.
- Studios do not need to be big, expensive, and equipped with advanced technology.
- One technician can often learn how to run simple broadcasts after a brief introduction to the studio.



Schematic Sketch of a Webcast Studio



Purpose of Your Studio

- Recording lectures?
- Conference contributions?
- Production of e-learning material?
- Television broadcasting?
- Etc.

Focus on the main purpose.



Mini Studio Concept

- A Mini Studio can be set up with a simple camera and a calm backdrop.
- Can be managed by yourself.
- Not a substitute for a full range studio but a better option than conducting webinars or participating remotely as a lecturer, using your computer with the built-in camera.



Mini Studio Camera

- Use a good quality webcam or even better, a video camera where you can control exposure, zoom, and focus.
- Positioning of the camera at eye level is all-important.



Mini Studio Lighting

- Use better lighting than in the typical office space.
- You can use regular home or office LED lighting with consistent colour temperature.
- The light source should preferably be positioned in front of you.
- A tail-light or a light directed towards the backdrop will make the presenter stand out from the background.



Mini Studio Microphone

- Either a gooseneck or broadcast microphone placed on the table.
- Or a standard USB or Bluetooth headset.



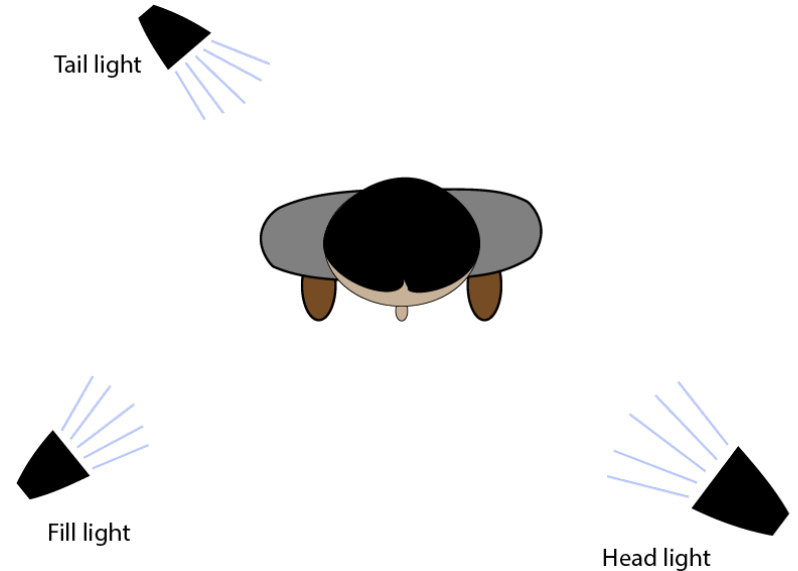
Lighting – part A

- Ordinary ceiling lightning can give a flickering effect in broadcasting and the colour temperature can not be controlled.
- A “truss” onto which lighting can be attached is often installed in the ceiling in a permanent studio.
- Textiles affects light reflection: a dark blue, black, or grey background generally works well.



Lighting – part B

- Simple three-point lighting is preferred:
 - One head light from the side.
 - Fill light from the other side.
 - Tail light from behind.
- Head light and fill light should be equally strong.
- Using a light mixer makes it easier to fine-tune the lighting during the production.

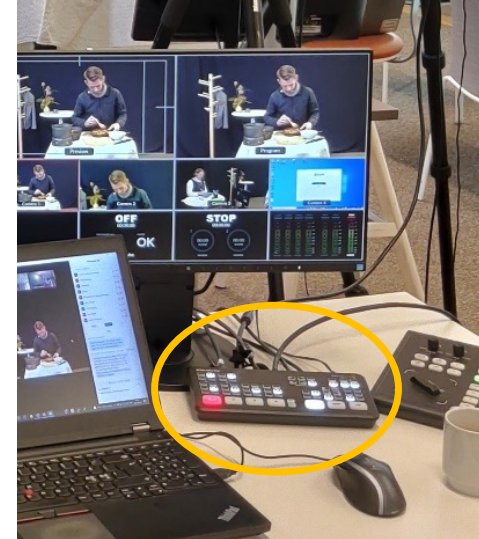


Camera

- An inexpensive camera will suffice to stream a video to YouTube. A more advanced camera is needed for professional-looking productions.
- PTZ cameras (Pan, Zoom, Tilt), are motorized and managed remotely from the production table.
- The camera should have an optical zoom suitable for the size of the studio, and it should also be simple to control the focus, exposure, and colour temperature on the camera.
- In broadcasting, resolutions up to 1080 most often suffice.

Video Mixer

- Use a video mixer to manage which camera's image you want to broadcast when.
- You can also use a video mixer to insert a video meeting presenter or show a pre-produced video in your webcast.
- When planning what mixer to invest in, you must determine the number of needed input. In most cases, four inputs are enough.



Example of video mixer

Sound – part A

- Avoid noise.
- We often have to accept minor sound disturbances – test if OK.
- If the ambition is to build a studio for sound recording, the requirements are higher.
- A curtain along the walls reduce noise and improve the acoustics. Heavy textiles reduce sound more.



Sound – part B

- The easiest and cheapest way to reduce the disturbing sound is to be as quiet as possible and use head microphones.
- A head mic is placed near the speaker's mouth and often used on stage.
- A separate control room is sometimes needed to reduce ambient noise.



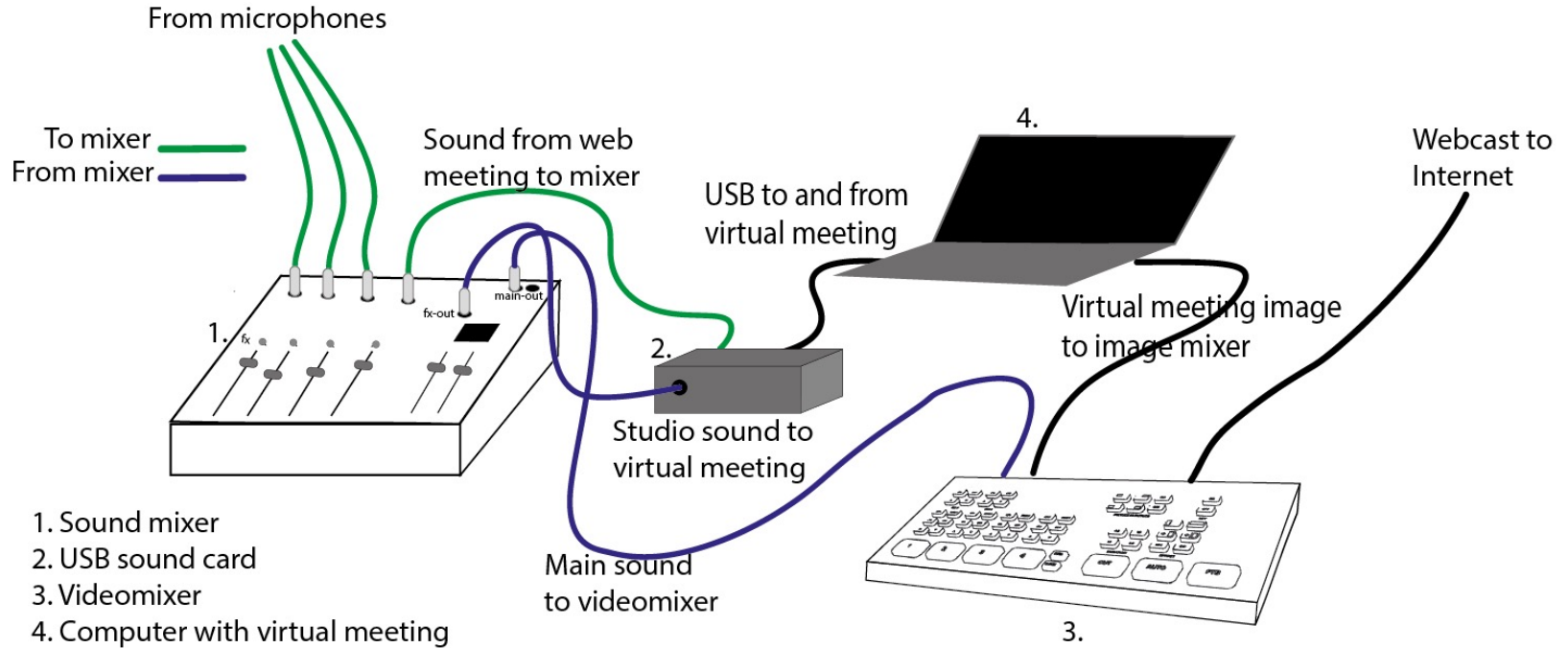
Sound – part C

- Sound from remote speakers and participants in the studio needs to be divided into groups.
- One way to divide the sound is to connect a USB sound card to the computer hosting the virtual meeting. The sound card gets all the sound from the studio via it's in-channel.
- The mixer, in turn, receives the sound from the virtual meeting via the USB sound card's out channel. Together, the sounds from both parties go to the mixer's main mix.



Example of USB sound card

Example of set-up



Staffing and roles – part A

- Virtual meeting manager:
 - Manages the virtual meeting, keeps track of lecturers, and reassures that the image shared on the image mixer is of good quality.
 - Should also go through the set-up with the moderators and speakers or lecturers on beforehand, so that they are comfortable with their roles also in the virtual part of the meeting.
- Image producer:
 - Decides which image will be sent and instructs the camera operator(s).

Staffing and roles – part B

- Camera operator:
 - Manages the camera or the control unit of the PTZ cameras.
- Sound manager:
 - Manages the sound mixer and makes sure that the right sound goes to the broadcast.
 - Is also responsible for sound checking, turning on the microphones, and placing them on participants in the webcast.
- All roles rarely have their own, dedicated person. More often, all technical roles in the studio are managed by one or two persons.

This presentation on Virtual and Hybrid Studio Set-up and Equipment is compiled in by the United Nations Environment Programme in collaboration with the Swedish Environmental Protection Agency and the REMM project (remm.se), run by the Swedish Transport Administration.

For more information, please contact Sustainable UN, UNEP, greeningtheblue@un.org.

