Many of you are asking about the particular cost and possibilities of digital worship after we fully return to church. Currently, many are using Facebook Live or YouTube Live, which happens with an iPhone, preferably situated on a tripod.

While this has been good in a pinch, we have all seen incredible interest in streaming during this time, and parishioners have indicated that these efforts should continue after we go to full in person worship again. In order to take next steps, I have gathered up various cost scenarios for the four basic steps of parish video. Most of the parishes in the diocese have begun using one or more of these tools. There is no single perfect way for this to work, but many options.

CAVEAT: While I have listed the types of equipment needed, this is not a must list. Instead, it aims to show options as you move up from basic streaming on a smart phone.

Basic Needs:

- **Bandwidth**: A Must! Hi-speed internet router to your church building. You can do some basic streaming with a smartphone, and your wireless service, but a high speed router ensures that there no glitches. And when parishioners need to use their own phones, having extra bandwidth is a necessity, particularly if Hymnals and Prayer Book are not in the pews.
- **Staff**: At least one dedicated person who can supervise the broadcast so that the priest is not distracted, and can make plans during the week for the broadcast.
- **Device**: You will need at least one iPad or iPhone for basic streaming. While a person can use their own, having a dedicated phone ensures that services are not interrupted by rings, etc. As you add equipment, you will still need a portable phone to monitor your stream, etc.
- **Desktop**: You will want to use a desktop to deal with files and uploads, if you have a lot of them. You need a desktop PC or Mac that is new, and connected to the Ethernet.
- **Sources**: B&H and Adorama are two online sources for video equipment. They have excellent sales staff, and can help you.
- **Other**: Once you have equipment, you need to put it on a surge protector, or even unplug when not in use if it is infrequent. Lightning!
- **Questions/Comments**: Please call or email Garland Pollard at the Diocese if you have questions, at 941-556-0315 or gpollard@episcopalswfl.org. I would also appreciate comments and additions.
Step 1: Streaming to YouTube or Facebook Live on iPhone or Android
Cost: $0, if you already have a decent iPhone or Android, or Zoom

In this scenario, you are using a newish iPhone or Android, or ipad, and streaming through a free account such as Facebook or Youtube live. You can also stream from Zoom, to Zoom and Facebook Live. The basics:

Needed/Ingredients

- Strong wifi in church, or decent cellphone signal
- iPhone or Android, fairly new
- Tripod or way of holding iPhone or Android, either floor or table
- YouTube account, and downloaded YouTube app on your smartphone

Cost Scenarios

- Use a regular iPhone
- $249 for a Bluetooth Microphone. One popular one is the Shure MOTIVE. Many options online for less
- $36 for Table Tripod

Step 2: Enhanced Streaming w/Better Microphone
Cost: $350 to Buy, $0 to $1,200 yearly

In this scenario, you are streaming with a smartphone, but doing so in an enhanced way, for instance with a Youtube or Vimeo account, a good microphone, and a good tripod. You are also streaming with a paid service, which will enable you to store and edit your videos, as well as stream to multiple platforms, simultaneously. For instance, with Boxcast you can stream from your iPhone simultaneously to YouTube, Periscope, Facebook, and your own website. This will vastly expand your audience.

Case Study: The Rev. Alexander Andujar at St. Vincent, St. Petersburg has achieved excellent results with a smartphone and a good Bluetooth microphone, and a focus on using professional tripods. These work both indoors and outside. Email fralexandujar@gmail.com

Needed/Ingredients

- Strong Wifi
- iPhone or Android
- Tripod or way of holding iPhone

Cost Scenarios, $350 to Buy, $900 to $1200 yearly
• $249 for a Bluetooth Microphone. One popular one is the Shure MOTIVE. Many options online for less
• $99 for a Joby Telepod Floor tripod
• $0 for streaming to Youtube, YouTube or Facebook Live. $75 Monthly for Vimeo Account, $99 for Boxcast Account. We recommend Boxcast, though have heard good results with others.
• Extras: Phone app for editing video, such as Adobe Rush.

Step 3: HD One Camera Streaming
Cost: $800 Capital, $1200 yearly

In this scenario, you use a service and transponder box modem to stream services through a service like Boxcast, Livestream or Vimeo. You use an HD camera, fixed, that you can zoom in or out with. For sound, you can use ambient sound from the camera (not so good) or you can directly connect your sound board to the Boxcast transponder box. This system is highly portable, and easy to use for a person who can handle the basics of a computer.

This is THE choice scenario if your church has a decent audio system already installed, where there are microphones and a sound board. This is also the easiest to manage, staff wise, and yet put on a professional product that will reflect well on your congregation.

Case Studies:

• The Cathedral in St. Petersburg has one a one camera stream, with a professional grade audio system so that the choir is highlighted. They use Boxcast encoder, with a Canon Vixia fixed mount camera in the back of the church. It streams to the parish website, as well as social media at the same time. Contact Hilary Peete, at hpeete@spcathedral.org
• St. Boniface also has experience in using Boxcast, with one camera, with excellent audio. Contact Vince Brennan at vhbrennan43@gmail.com
• St. Andrew, Boca Grande has been streaming for years. During the season of covid, they have been releasing pre-recorded worship, using the Adobe Rush app.

Needed/Ingredients

• A real movie camera tripod, non shaky, and not plastic
• Any HDMI video camera (we recommend Canon Vixia but many work well)
• Ethernet cable strung to your church building (no wifi!)
• A transponder or encoder box such as the one sold by Boxcast. NOTE: These are backordered as of May 15.
• A hard wired connector cable from your church sound board, either through headphone jack or external digital jack, to the Boxcast transponder modem.

Cost Scenarios, $800 capital one time, up to $1200 yearly
- $300 Canon Vixia Camera
- $1,200 cost for Streaming with Boxcast
- $399 Boxcast Transponder Modem
- Tripod (many brands, get a heavy one for over $100)

### Step 4: HD Multi Camera Streaming

**Cost: $600 to $1600 additional more, including switcher, two cameras, tripods**

In this scenario, you need to add a switcher and two cameras, to make the production more professional. For instance, you might want to have one camera as a wide shot, one camera on the choir and preaching, and another camera on the organist close up, to give variety to the video. Cameras can be permanently mounted, with mounts for some, and tripods for others.

#### Case Studies:

- Church of the Ascension, Clearwater, has this multi-camera system, that they have been using, and steadily upgrading in the last few years. As the system has grown, they have improved audio and video cameras, and added a BlackMagic hardware switcher, which makes the service video more interesting for viewers. Led by Parish Life Coordinator Alyce Goldsmith at alyceg@churchofascension.org/
- Church of the Redeemer, Sarasota, is expanding from a single camera Boxcast stream into a three camera operation. Contact Assistant Choirmaster Sam Nelson at samnelson@redeemersarasota.org

#### Needed/Ingredients

- Three cameras situated in the church. Perhaps one wide shot, one close up of altar, and one from behind organ, to catch the processional and organist. Note that there are wall mounts for cameras.
- A video switcher. This can be done by ipad, as software, or with a hardware switcher “board” that will enable you to press a button, and switch between cameras, or slides. It is easier with a hardware switcher, as you do not have to have a computer to run the switcher.

#### Cost Scenarios

- A hardware switcher. There are many options. The Blackmagic ATEM is an excellent product, and is $595, a basic version $295. Sling Studio is a $999 hardware switcher that is popular, but it requires an ipad for control. Another option is the Roland V1HD, a durable and professional product that is $995.
- There are many software switcher programs. OBS Studio is open source software. It is free, so try it out, though it requires a learning curve. However, with switching software, you need a fast, dedicated computer in the church to make it work.
• Additional HDMI cameras. Again, these are from $200 up. In addition, iPhones can be used as cameras with some software, but the safest route is to have cameras wired to a switcher.

Links

• Diocesan Streaming Page