

# Church Tech Q&A Technical Notes

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**DISCLAIMER:** The info here is written by Christian volunteers who want to help church ministers. The info is at best of their knowledge and as accurate as the time of writing. If you find issue or error, please apply grace :) then email us at [info@illawarraprayerbreakfast.org](mailto:info@illawarraprayerbreakfast.org).

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## Engagement Types

From our observation, these are the 3 engagement types that churches here in the Illawarra are adopting.

- Audio only - Podcast (pre-recorded)
- Webinar - Live or pre-recorded (would include pre-recorded video in this option)
- Online meeting - Live

## Case Studies

### **Nathaniel Marsh - Awaken Church**

We decided to pre-record a weekly message with Ps Scott Hanzy, which is then uploaded across multiple platforms (YouTube, Facebook) & also posted to Instagram & the church's website & App. It is scheduled to 'go live' at 10am each Sunday (this creates a sense of it being 'live', & also gets people watching it around the same time, creating a greater sense of community) - You can view the 1st Awaken Church At Home video here:

<https://www.youtube.com/watch?v=5aX3YCBIFvE>

Awaken Church At Home is also supported by Praise & Worship playlists (YouTube & Spotify) curated by the creative (worship) team for people to join in at home, the church leadership team actively engaging with people via social media, emails, & good old fashioned phone calls. The original plan was to conduct home church in small groups or life/cell groups (which we did last Sunday, & it was fantastic), but with further restrictions now in place, people will participate each Sunday at home either in their (close) family group or as individuals. The good thing about this approach is that it is super easy for the end user, & it's scaleable.

**Technology:** The filming & editing (using professional equipment) was carried out by my team & I - Can supply more info on this if required. Have also briefly discussed with Hengki an option/approach in this regard for other Churches - Can discuss further...

**Lesson learned from last Sunday ( start, stop & continue ):** Overall, the approach has worked well. The coronavirus has forced us to re-think the way we 'do Church' (Our God is still on the Throne & His Kingdom is advancing!) If we approach this creatively, & work together, I believe these changes can actually strengthen the Church, & will advance God's Kingdom! Last Sunday we had the husband of a lady from our Canberra campus pray the salvation prayer with Ps Scott while watching the video - Praise God! He wouldn't (physically) go to a Church, but He would watch a video on YouTube that changed His life! :-) Also, a Pastor friend of Ps Scott's from Pakistan who runs a Christian TV Channel/Program over there (we're still finding out more info) saw the video on YouTube & (with Ps Scott's permission) has since downloaded the video from YouTube & broadcast it on His Channel/Program! These are some of the stories that we know of - God is so good, & His Gospel is still going to the ends of the Earth! If we (the Church) think creatively & strategically, with God's help, we can advance His Kingdom!

## **Adrian Thornton - Citylife Church**

### **How:**

Live Stream of Sunday Service to YouTube with comments enabled to encourage interaction (note: need a gmail account to comment) and a link to this page on the church's website. All communication/updates is through Faith Community Leaders direct messaging, Facebook and website. The church also has an audio recording (podcast) of the sermon available to download from the website. Youtube also saves each Sunday's live stream to create an "archive" of each Sunday that people can watch if they weren't able to tune in live. We don't broadcast to Facebook as we can only stream to one location at a time with our hardware/software configuration (re-streaming cloud services can do this, but for a fee). The service has been specifically targeted and adapted to an Online Presentation with kids items/object lessons, actions/dancing to songs, lyrics overlayed on the screen, as well as news and pastor titles. The sermon is direct to camera, with minimal people in the room.

### **Technology:**

#### **Main Video Signal Flow:**

Full HD **Sony camera** with "clean" HDMI output (mounted on tripod: medium shot of stage (worship) & "news presenter shot" of pastor)

--> HDMI cable --> **HDMI/SDI converter** --> SDI cable run to Tech Booth (FoH)

--> **Blackmagic ATEM Studio HD Video Switcher** (merges audio from sound desk into the SDI video stream) --> **BM Web Presenter (SDI capture card (720p only))** --> USB to PC running **OBS Studio (FREE Live Streaming Software)** --> Encodes to **YouTube** with unique streaming key.

### **Graphics & Overlays: (separate computers)**

**Pro Presenter 6 Software** (song lyrics, news headers, titles, sermon notes, bible scriptures, etc) --> HDMI input of BM ATEM video switcher --> Luma Key (remove black background) so this can be overlaid over the camera feed as a "lower third".

**Resolume Arena 6 Software** (additional graphics) --> SDI input of BM ATEM video switcher --> cut into video stream when required as additional visual aid.

### **Sound Signal Flow:**

Microphone / DI/ (band, pastors mic, vocalists) --> **Digital Stagebox** OR Audio over IP (**Dante**)--> **Allen & Health Digital Mixer ("Sound Desk" )** --> Dynamics/EQ/Volume processing --> Main LR output (Speakers in room) --> **"Post Fade" aux send** to XLR inputs of BM ATEM Video Switcher (merges audio from sound desk into the SDI video stream) --> **BM Web Presenter (SDI capture card (720p only))** --> USB to PC running **OBS Studio (FREE Live Streaming Software)** --> Encodes to **YouTube** with unique streaming key.

**Lighting:** Standard **LED** and **Halogen** stage lighting for front fill and effects controlled through **DMX** and **dimming**. Additional lighting for video includes **front fill on Pastor/Presenter** as well as **back lighting** so they stand out from the background and add depth to the video shot/frame.

**Website & Social Media:** Used to communicate updates as well as a place people can find information such as Banking Details for giving offering, Covid-19 policy response updates, service information, sermon downloads, etc)

**NOTE: Singing copyrighted songs requires a specific Streaming Licence from CCLI - around \$150-\$200 depending on congregation/viewer size.** YouTube may also auto-detect the songs played and give you a copyright infringement (remove your video/stream)

**NBN Connection:** 720p requires min 3Mbps Upload, 1080p requires min 5-6 Mbps

### **Lesson learned from last Sunday (start, stop & continue ):**

Improve the front fill lighting of the presenter who is speaking directly to the camera off-stage, and making the background "set design" more interesting/aesthetically pleasing. Hard to make it feel intimate and that the pastor is not speaking to nobody and has massive lights in their face.

Awkward to see & frame the projection on the screen behind speaker.

Limitation on colour correction and grading of camera feed (expensive).

May be benefited by 1080p feed instead of 720p feed to increase clarity, but this would involve additional financial investment.

Multi camera setup may increase flexibility and effectiveness of the presentation

Commenting was great - a must for interaction

Possibly using dedicated LCD TV instead of projection screen for visual aids.

### Some info on the gears and its pricing

- Blackmagic Video Switcher \$1000
- Full HD Camera with clean video output \$300 - \$3000
- HDMI/SDI converters \$100 each
- HDMI cables \$10 each
- SDI cabling \$50 - \$200 (depends on length)
- Blackmagic Web Presenter \$800
- PC with good video card \$2000
- **OBS studio (FREE!!!!)**
- Digital Sound Desk (with Aux out) ours is \$10,000 but Behringer X32 is \$3,000
- Mics/DIs/ instruments etc \$\$\$
- ProPresenter 6/7 \$1000 (with dedicated PC)
- Resolume Arena 6 \$1000 (same PC as OBS Studio)

**NOTE:** Buy what you need and build from there

## **Hengki Widjaja - Life Centre**

**How:** House2House gatherings. We want each house to contribute as part of Sunday service rather than sitting down and watch. Emphasise the journey and the learning. Encourage parents not to be distracted emotionally (angry/upset) with kids are making funny faces.

**Technology:** Zoom - up to 100 participants

### **Lesson learned from last Sunday ( start, stop & continue ):**

During singing, everyone need to mute - because of delay due to bandwidth.

Everyone need to carry/ responsible for the atmosphere on their own house.

## List of technologies

Name	Type	Equipments needed by church	Equipments needed by congregation	Estimated Cost for the church	Setup Complexity
Zoom Meeting	Online Meeting	Laptop with webcam, iPad	Laptop, iPad or tablet Smartphone Phone (Audio only)	Starting \$20.99/month 100 participants <a href="https://zoom.us/pricing">https://zoom.us/pricing</a>	Easy
Zoom Webinar	Webinar	Laptop with webcam, iPad	Laptop, iPad or tablet Smartphone Phone (Audio only)	\$64.17/month Include Zoom meetings <a href="https://zoom.us/buy?plan=pro&amp;from=webinar">https://zoom.us/buy?plan=pro&amp;from=webinar</a>	Medium
Skype	Meeting	Laptop with webcam, iPad	Laptop, iPad or tablet Smartphone	FREE as part of MS Office (to be confirmed)	Easy
Anchor.fm	Podcast	Smartphones (iPhone, Android)	Laptop, Smartphones	FREE <a href="https://anchor.fm/">https://anchor.fm/</a>	Easy
Jitsi	Meeting	Laptop with webcam	Laptop, smartphones Phone (US number)	FREE <a href="https://jitsi.org/">https://jitsi.org/</a>	Easy
Google Hangout	meeting	Laptop with webcam, iPad  Gmail account	Laptop, iPad or tablet Smartphone Phone  Gmail account	FREE with Gmail account	Easy

Name	Type	Equipments needed by church	Equipments needed by congregation	Estimated Cost for the church	Setup Complexity
YouTube	Webinar	Laptop with webcam, iPad	Laptop, iPad or tablet Smartphone Phone	Gmail account and subscribe to YouTube. Account needs to be activated for live	Medium/ Hard (depend on the setup) Medium => YouTube live with laptop

				streaming, takes 2 days to activate, so do it ASAP for this Sunday	Hard => Youtube live with dedicated video equipment
Facebook Live	Webinar	Laptop with webcam, iPad	Laptop, iPad or tablet Smartphone Phone	Need a Facebook account Account needs to be activated for live streaming, takes 2 days to activate, so do it ASAP for this Sunday	<b>Medium/Hard</b> Medium => YouTube live with laptop Hard => Youtube live with dedicated video equipment
Church Online Platform	Web interface to your online church	Laptop	Laptop, iPad or tablet Smartphone Phone	FREE <a href="https://churchonlineplatform.com/">https://churchonlineplatform.com/</a>	<b>Easy</b>
Streamyard	Livestream on FB	Laptop with webcam. FB or YouTube	Facebook.com or FB app	FREE (with logo) <a href="https://streamyard.com/">https://streamyard.com/</a>	<b>Easy</b>

## Tips

- Improve audio clarity and volume by using bluetooth earphones with microphones on them. Eg. AirPods
- Lighting, Make sure the room you are in is well lit.
- Most consumer cameras are going to be running in auto (exposure & focus) - try to ensure subject (person speaking to camera) is standing against a background that is darker than them, otherwise camera may focus on the background, not the subject
- Good quality audio is very very important (more important than good quality picture). 'Lightning is nothing without the thunder' - You can't underestimate the importance of good quality audio.
- Good shot or camera framing is important too - plenty of good (free) tutorials about this, & other things above, on YouTube

## Various Tips from community

- Speedify (<https://speedify.com/>) for internet stability tool
- Noise cancellation setting on iPhone

<https://support.apple.com/en-au/guide/iphone/iph3e2e2cdc/ios>

- Basics of Live Streaming Your Church Service to Facebook

<http://joshreidmedia.com/basics-of-live-streaming-your-church-service-to-facebook/>

- 7 Hints for speaking to camera

<https://vimeo.com/401232380>