Church Livestreaming Session - PWC 2025

I. INTRODUCTION & PHILOSOPHY OF LIVE STREAMING

- **Philosophy of Livestreaming: Ministry First, Technology Second. Every decision we make should be funneled through this question: Is this helping build the viewer's relationship with Christ?**

- **Why Livestream?**

- **Testimony: The Boquecosas** family story - how our livestream brought them from Saskatchewan to Edmonton

    "As a believer in Christ, it is really hard for me to live in a city without going to church every Sunday and Wednesday

    Actually, before coming to Canada, I promised to myself to first find a church before anything else. So, in the city where we lived, we couldn't find a Bible Baptist Church believer. We found a Baptist Church nearby, but they're not using the King James version, and the doctrines are totally different compared to what we believe.

    Secondly, we wanted our daughter to be enrolled in a Christian school, too, but we can't find it there. So, to make the long story short, we've decided to search on YouTube, a church specifically in the Edmonton, Alberta area, and with God's guidance, we found and watched the live streaming Sunday service of Cornerstone Baptist Church.

    Of all the churches that we've watched, Cornerstone Baptist Church is our first choice to consider to be the spiritual home to visit just to strengthen our spiritual growth as a believer in Christ.

So, after going to church every Sundays and Wednesdays in less than a year, we've decided to be a member of the church just to show more support and be the blessing to others too."

- **Quick show of hands: Current livestream status of attendees**
  - Your church has no livestream
  - Your church has a basic livestream (phone on a tripod)
  - Your church has a livestream with more professional equipment (higher end cameras, broadcasting through a software, etc).
  - Your church has a very developed livestream.

- **Some common criticisms of livestream:** I have heard some say in regards to livestream "I don't want to make it so nice that people feel no need to come to church." "I don't want people to have the option to stay at home"

I feel the intent of these statements is innocent and reasonable. Christians should BE with other Christians. Christians should gather together. But that can't always happen for some of the following reasons:

- **Live** streaming isn't meant to replace in-person worship but to extend our ministry reach. Jesus met people where they were. We need to as well, whether that's someone recovering from surgery, a parent with a sick child, or someone exploring faith who isn't ready to visit yet.
- **Jesus** met people where they were - at wells, in homes, on mountainsides. Paul wrote letters to churches he couldn't visit in person. The church has used other available technology to reach people, from the printing press to radio to television."
- **If** someone chooses convenience over community consistently, that points to a deeper discipleship issue we should address through pastoral care, not by limiting access to God's word. We can't force genuine desire for fellowship - we need to cultivate it.
- **Streaming allows** us to minister to people we'd never reach otherwise - elderly members who can no longer drive, families with newborns, shift workers, people with disabilities, and those who are seeking but not ready to visit. Each represents a soul we're called to serve.
- **Streaming** is not in competition with in-person services. It is a compliment to it that allows us to do what in-person services cannot.
- **Livestream** provides an opportunity for continued discussion throughout the week. Even after the sermon is preached.

Who are we serving?

- Shut-ins
- Sick members
- Those on vacation or traveling
    - A livestream is better than no livestream.
- Seekers exploring your church before visiting
    - This is becoming more and more common for us. More and more people who attend our services are saying that they watched us online before coming to an in-person service. Having a good livestream helps in the decision process. Younger generations will make their decision about whether they will come after only a few seconds of watching your livestream.

Why invest in quality livestreaming?

- Excellence in ministry extends to digital outreach.
    - We have experienced the biggest shift in communication our world has not seen since over 500 years ago. We must adapt our outreach to account for this. When mass printing became affordable, churches eventually adapted and started producing print materials.
    - **1 Corinthians 10:31** *"Whether therefore ye eat, or drink, or whatsoever ye do, do all to the glory of God.*
- Poor production can hinder and distract from the Gospel message.
    - Poor livestream quality can distract from the message being preached. Especially for younger generations, which are more easily distracted on average, and have shorter attention spans.
    - **Colossians 3:23** *"And whatsoever ye do, do it heartily, as to the Lord, and not unto men;"*
- First impressions matter for seekers
    - Some may see a poorly produced livestream, and think "If that's the lack of attention to detail they have in their livestream, I wonder how well they will care for me."
- The proper use of technology can be very helpful in supporting existing ministry.
    - Slides reinforce the point being made.
    - One photo is a thousand words. - Illustration on teaching about Nebuchadnezzar's golden image - comparison on height.

II. THE FOUNDATION: VOLUNTEERS

"Basic equipment in the right hands is better than the best equipment in the wrong hands, or no hands at all."

The deciding factor on whether you livestream should be whether you have someone to care for it faithfully. (Even if your budget allows you to)

Volunteer Selection Strategy

- **Character over competence**: Choose faithful servants first.
  - It doesn't matter how good John is at livestream production if he's hardly there to serve.
- Look for detail-oriented, teachable people.
  - Someone who thinks they know it all, and aren't willing to change their approach will cause lots of friction in your livestream ministry.
- Consider technical aptitude but prioritize heart.
- It would be better to wait to start your livestream ministry until you have someone who is of good character, and teachable. Inconsistency in broadcasting will lead to lack of viewership. (If people don't know whether your service will be broadcasted, they probably won't check)

Training Timeline:

- **Month 1-3**: Shadow experienced volunteer. (The experienced volunteer may be you to begin with.
- **Month 4-6**: Run with supervision
- **Month 7**: Begin training someone else
- **Ongoing**: Regular skill development sessions

Sustainability Planning

- Build a team of 3-4 volunteers minimum
- Rotate responsibilities to prevent burnout
- Create written procedures and checklists.
- Plan for vacations, illness, and life changes.
- Assign "**total ownership**" of this ministry to someone. Partial ownership is no ownership. "I thought so-and-so would take care of it." Whoever you begin to train, hand them the responsibility of it to them completely.

III. SOFTWARE

We will begin with software, as this will affect a lot of our other purchase decisions.

Broadcasting Software Comparison

Software	Cost (CAD)	Platform
OBS	Free	Mac/Windows
Streamlabs	$12.45/month	Mac/Windows
vMix	$200-1200 one time	Windows only - MUST USE Nvidia Graphics Cards
ProPresenter	$289+ yearly subscription	Mac/Windows

Additional Software

- **Freeshow**:
  - FREE Handles lyrics, Bible verse overlays, sermon graphics and easily connects into broadcasting software via NDI output. Completely free and open source - great alternative to ProPresenter. Send overlay to Broadcast software using NDI.
- **BibleShow**
  - FREE Simple Bible verse overlay solution that runs on Windows. Send overlay to Broadcast software using NDI.
- **Powerpoint**
  - You will need a subscription to use this. ($79 yearly for one person)
    - A FREE alternative is Google Slides. There may be some layout issues, so you may want to convert your slides to jpegs before exporting the Google Slides Presentation as a .pptx file
- **Bitfocus Companion (HIGHLY RECOMMENDED)**
  - Bitfocus Companion allows churches to create customized control interfaces that can manage multiple aspects of their livestream production from a single streamlined dashboard, reducing the complexity of operating cameras, audio mixers, streaming software, and lighting systems during services. The software enables volunteer operators with varying technical skill levels to easily control professional-grade equipment through simple button presses and automated sequences, making it much easier to train and rotate technical volunteers. By automating routine tasks like camera switching, audio adjustments, and scene transitions, Companion helps ensure consistent, professional-quality streams while allowing the technical team to focus more on worship rather than constantly managing equipment.

- Did I mention it's completely FREE? (And open source) Creates custom control interfaces. Runs on Windows, Mac, Linux, Raspberry Pi and control from screen overlay, phones, tablets, stream decks. Any device on the local network can access control (be aware of this for shared wifi networks)
- Connections include broadcasting software, sound system hardware, lighting (smart home, dmx lighting software, etc), camera control, Google suite, other hardware on network such as tvs, camera switchers, other computers. Nearly 600 different products and software are currently supported, and more is added regularly.

IV. HARDWARE

Broadcast Computer

- **vMix reference systems**
  https://www.vmix.com/products/vmix-reference-systems.aspx

Our Computer specs:

https://pcpartpicker.com/list/9vhHDj

CPU: AMD Ryzen 9 5950X 16-Core Processor (3.40 GHz)

Motherboard: MSI X570S Edge Max Wifi

Graphics Card: Nvidia GeForce RTX 2060 with 12GB GDDR6 memory

RAM: 48 GB DDR4 (4 Dimms - 2 GSkill 8GB DDR4 - 2132 MHz, 2 Kingston 16GB DDR4) (Not Ideal, you really should use the same brand and capacity across all dimm slots.)

Storage: SSD* - Samsung 970 EVO 500 GB

*Use an SSD for faster load times for programs and assets.

Operating System: Windows 11 Pro

If we were to buy this exact system today, it would be about $1600 CAD. This is likely higher price than a comparable system as many of these components are 4-5 years old. I think you could get a comparable system for around $1000 CAD if you watch for sales.

The advantage of building a PC for your livestream computer is that you are able to upgrade over time as your needs change, and as hardware becomes more affordable.

Cameras

In our building we opted for PTZ cameras, as we don't have the space for a camera operator. PTZ give us the ability to have one person run the livestream as well.

NDI
NDI is a connection method that uses the network to send control signals and receive video feeds from the cameras on the network. It can also carry audio for local network streams. It does take a higher bandwidth on your network, so its recommended to separate your network from the public network people use for wifi.

Recommended NDI Solutions:

- **PTZ Cameras**: AIDA NDI PTZ x20, PTZ Optics
- **Fixed Cameras**: AIDA NDI fixed cameras
- **Resolution**: 1080p is sufficient (4K unnecessary for most churches)

Camera Placement

- Above the top of heads, eye level of the main subject on stage.
- Start with a center camera at the rear of the auditorium.
- Add additional cameras on sides, to fan the platform.
- Be mindful of where you mount your camera - vibrations, etc.

Camera Framing

Brady Shearer camera framing guide.

Network Infrastructure

- POE (Power over Ethernet) Gigabit switches for NDI cameras.
- Reliable internet with upload speed minimum 5Mbps per stream. Our internet service here has been 1 Gigabit for the last couple years with good service. We recently upgraded to 3 Gigabit because it was available from our new internet service provider

Control Solutions

Hardware Controllers:

- **AIDA CCU-IP**: Professional PTZ control ($791 CAD)

- **AIDA CCU-Mini**: Budget-friendly alternative ($425 CAD)
- **Stream Deck**: Physical button control (highly recommended)
- **Tablet with Companion**: Flexible, cost-effective option

Audio Priority

Remember: People forgive poor video, never poor audio

- Professional microphone setup
- Audio interface (your Steinberg UR22mkII example)
- Separate audio feed from house sound
- Monitor audio levels constantly

V. OUR CURRENT SETUP

Complete Signal Flow Demonstration

Camera Path: 5 Cameras (3 PTZ, 2 Fixed) → NDI over Ethernet → POE Switch → Windows PC → vMix → Streaming Platforms

Audio Path: Microphones → XLR → Behringer X32 → Steinberg UR22mkII USB 2.0 Audio Interface → USB → Windows PC

Graphics Path: vMix → Windows PC → HDMI Cable → HDMI Splitter → HDMI Cable → Black Magic HDMI to SDI converter → SDI cable → SDI to HDMI converter (Black Magic) → HDMI Cable → Televisions. (Split at the first HDMI to SDI converter via SDI to another converter)

Control Setup: Multiple Stream Deck 15 keys (3) and PTZ Controller for fine camera control.

Streaming Destinations:

- Facebook Live
- YouTube Live
- Rumble
- Local network stream for nurseries.

VII. ROADMAP

Phase 1: Getting Started ($625 total)

- **$500** Single camera (iPhone) (Example is refurbished, 2 years old) You may already have this.
- **$125** DJI clip on mic with receiver connected to phone
- Reliable internet/wifi network
- Broadcast to Facebook/Youtube only (1 at a time)

- One volunteer to ensure quality / set up stream before service.

Phase 2: Foundational System ($3,035 total, $2,910 in addition to previous setup)

- **$1145** Single NDI Camera - Preferably PTZ, but could just be fixed depending on volunteers.
- **$50** Small POE gigabit network switch.
- **$15** Ethernet cable (50ft for example)
- **$1700** Decently powerful Laptop running OBS (Free) or other streaming software - vMix is recommended, and they have discounts for churches, as well as a long free trial period. You may want to go straight to a desktop here depending on your space. Price will be similar.
- **$125** DJI clip on wireless mic, with receiver connected to computer.
- **Free** Broadcast to Facebook and Youtube simultaneously if computer/internet is capable.
- One volunteer to monitor stream and to adjust camera framing as needed.

Phase 3: Mid-Tier System ($5,279 total, $2,244 in addition to previous setup, minus sound system)

- **$1145** 2 NDI cameras - 1 more of previous example.
- **$960** vMix software - This price is for a higher end version, the basic version is $83. Discounts are available for churches/nonprofits
- **$140** Additional Monitors for laptop/computer (price per)
- **$6,250 - $9,100** Professional audio setup - Sound system with mixer, amps, power sequencer, multiple microphones, and control surface. Speak with Pastor Friesen for more specifics.
- One volunteer for video, one for audio.

Phase 4: Advanced System ($9,115 approx total, $5,755 in addition to previous setup, after selling older equipment)

- **$2089** 3 PTZ cameras, replace the main one with a higher quality camera.
  - This one is able to do auto tracking, freeing up your operator.
- **$450** or **$715** Dedicated PTZ controller - AIDA CCU-Mini or AIDI CCU-IP
- **$1000-$1600** Upgraded Desktop PC - see specs previous.
- **$130** Keyboard / Mouse
- **$280** 2 Additional monitors (to make 3 total)
- **$350** Stream Deck XL
- $700 Large TV for auditorium display.
- **$90** HDMI to SDI converter for longer video runs to TVS
- **$90** SDI to HDMI converter
- **$110** SDI Cable

- [$14](#) HDMI cable
- One volunteer to run cameras
- One volunteer to run slides/graphics
- One volunteer to run audio

Phase 5: Pro Tier System (No Prices, just future design)

- 3 NDI PTZ Cameras
- 2 NDI Fixed Cameras
- 2 TVs for Auditorium
- PTZ Controller and device to view PTZ camera feeds - small computer
- Computer for Camera Switching, Broadcasting - two monitors, keyboard and mouse.
- Computer for Graphics - two monitors, keyboard and mouse.
- Multiple Stream Deck Xls
- Necessary Cables
- Video recorders for archived footage
- Separate sound mixing for livestream.
- One volunteer to mix livestream sound
- One volunteer to mix house sound
- One volunteer to run graphics/slides/produce stream-switch cameras
- One volunteer to run cameras

Budgeting Wisdom

- Start small, grow with a roadmap. This will save you money in the long run.
- Invest in audio first, video second
- Buy quality that will last - (Buy once, cry once) Buy what will be reliable long term.

VIII. TIPS

The Three Rules of Livestreaming
Test, test, and test again.

1. **Test** before every service
2. **Test** your backup systems (multiple ways of doing things)
3. **Test** again (and document what works)

Operational Excellence

- Create pre-service checklists.
- Create standard practices - documented ways of doing things. Train your team regularly.
- Regular equipment maintenance (dusting, cleaning)
- Try to improve one thing every time you broadcast - seconds add up.

Learn your preacher's mannerisms and habits of movement. This will help you track him on camera.

The pace of what's happening on camera should affect the rate of switching cameras.

Transitions in auditorium discreetly - ie slides, lights. What we do in church media should support, not distract.

Always keep your subject in frame. This is one of the biggest distractions you can have.

Be mindful of not only the subject, but what's happening behind the subject. (Choir, musicians, etc.)

Look for sales on your equipment and don't be afraid to buy used equipment.

IX. Q&A

Hands-on Demonstrations

- Touring video booth after Q&A

Q&A