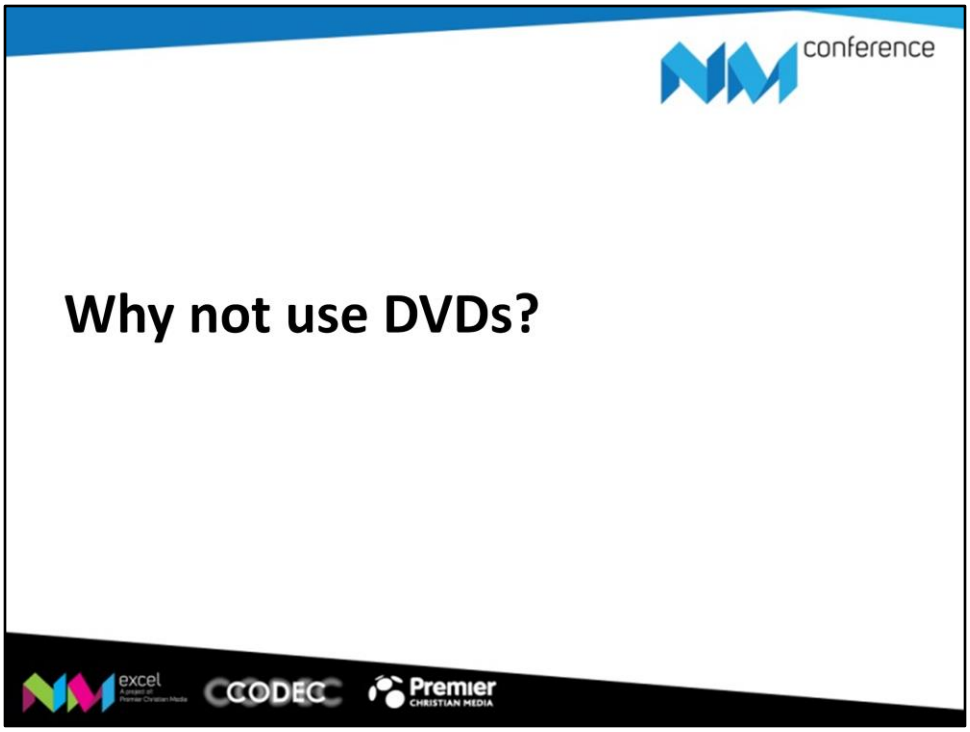
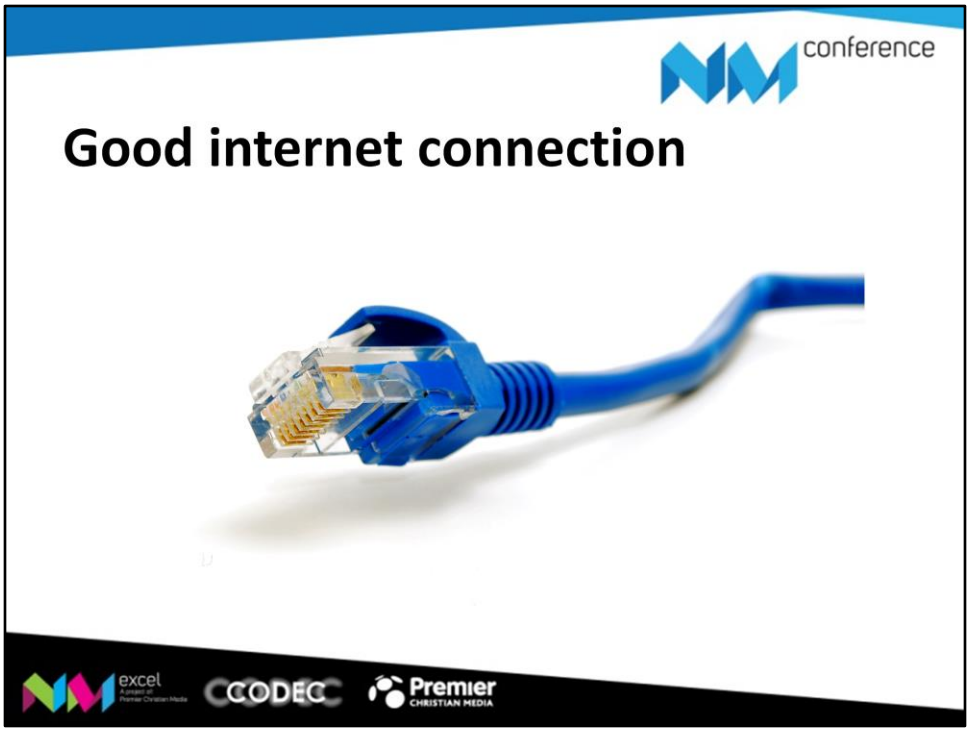

conference
Video Streaming:
What you need to
know
David Heys
@dnheys
excel
A project of:
Premier Christian Media
CODEC
Premier
CHRISTIAN MEDIA

•People who can't make it to the service - Shut-ins; parents of young children; people who are ill.
•Remote people - Family members for weddings/baptisms; people away on holiday
•You have access to a potential worldwide audience
•You're creating content that is easily shared with others by social media - A simple URL
•An entry point for people before they step foot in the door.
- Many visitors that I speak to watched online first



•DVDs/CDs are great for the teaching/sermon series.
•People who watch live feel much more part of the worship service than when watching a whole service on DVD.
•If you already do DVDs, great news! You're already well on your way to live streaming.

What will you need?



- You really need a *wired* connection.
- When streaming, you're *sending* data - *Upload* speed is important
- You'll need at least 1Mbps upload for adequate quality
- Maximum streaming rate is typically half your upload rate.
- A truly unrestricted account may be necessary - you don't want to be throttled for using up all your allocated bandwidth.
- Dedicated internet, or certainly no one else using it while you are.

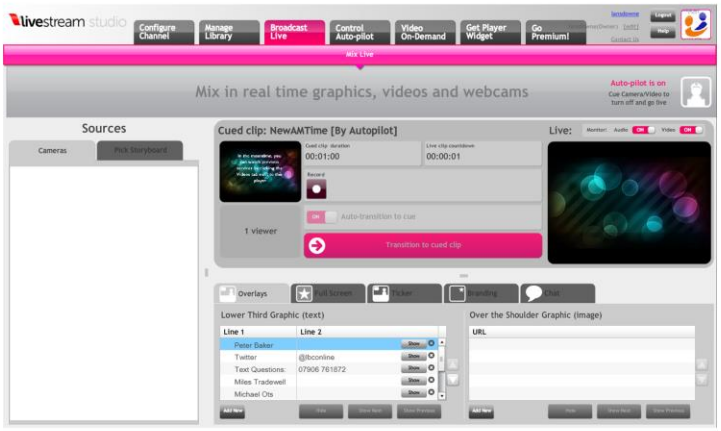
- The better the camera, the better your source image
- A “Prosumer” camera will have a larger lens, so will cope well in low light
- Think about how the camera has to connect with the rest of your equipment:
    1. Analogue: Composite video (yellow connector)
    2. Analogue: S-Video (multi-pin)
    3. Digital: USB/Firewire
    4. Digital: HDMI
    5. Digital: SDI
- You could start with something as simple as a good quality webcam.
- REMEMBER: The quality of the video IS the experience you’re providing. Lipsync - low frame rate.

- The mic on the camera will not sound as good as a feed from your audio desk.
- Take a feed from one of the AUX outputs and use this to feed into your live stream.
- If you're already recording your service audio (podcasts) then use a split off this feed.
- The video may be the experience, but the audio is the message.
- Distracting or poor audio disconnects your audience. Watch out for distortion during singing.
- If your sound board allows - you ideally want a different mix for recording than what you have for live sound (house mix).
- REMEMBER: Nobody probably wants to hear you or your service leader singing during the hymns

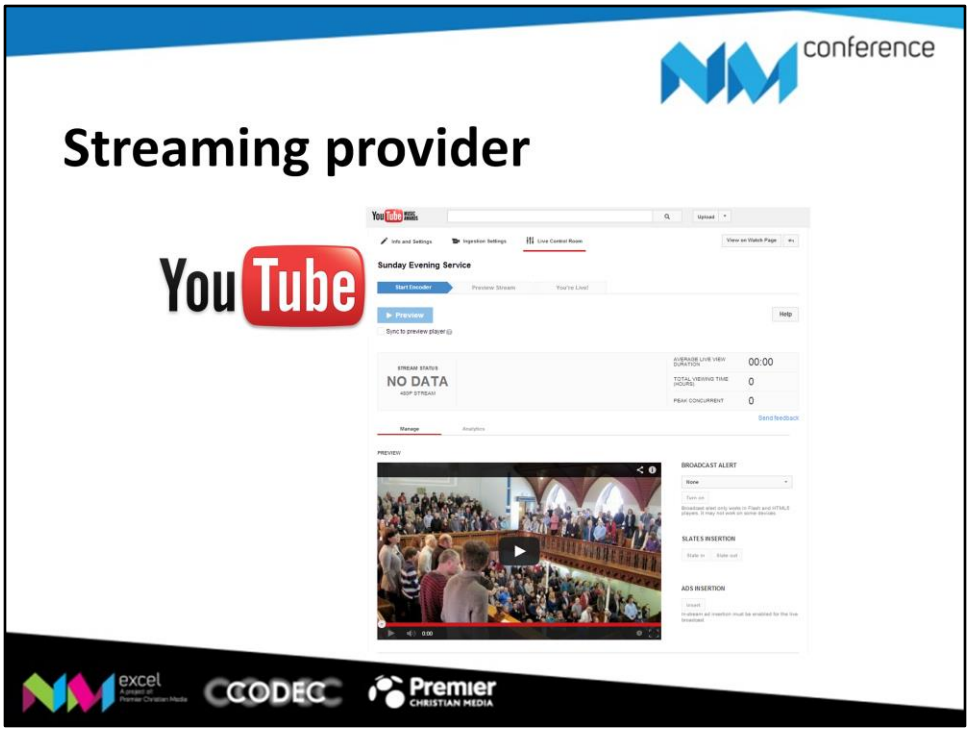
- This can be a laptop or a desktop but it will have to do some reasonably heavy lifting and be stable.
- This takes the video and audio and combines them (encodes) into a format that can be streamed.
- DEDICATED machine - when streaming, it must do nothing else.
- Don’t skimp here and use an old PC from the loft!

- Connectivity is important - A video/audio capture card/Firewire/USB input is essential.
- HDMI or SDI will provide really good video - expensive cameras and distribution equipment.
- Analogue inputs will suffer from signal loss but are a cost effective starting point (and longer cable runs).
- If you're using a webcam, you simply plug it into the USB.
- You can get a simple USB audio/video input for around £25.

Streaming provider



- They're needed because you don't have the bandwidth to support lots of users.
- You send them a live stream of data and their network handles the re-distribution to however many people want to watch simultaneously.
- Many have a free option (ad supported) so live with this or try it for size and pay a monthly fee to remove ads.



- Examples: Livestream; Ustream; YouTube; Google+ Hangouts.
- They provide software (or a web plug-in) to do the encoding and handle the stream.
- Some provide chat windows and embedding features.
- Try out various providers - sometimes the advertising may not be suitable for your environment.
- Always provide a disclaimer - just in case.

•Try out some practice live streams to see what settings give the best experience
•Try to achieve a good frame rate (approaching 25 fps).
•Don't try to send full 1080p HD on your first attempt - you will exceed your upload bandwidth and drop frames.
•Start with a 640x480 sized output and make incremental improvements.
•Don't bother with stereo sound either - mono will be fine.
•Adobe Flash Media Encoder 3 is easy to use and gives good results.
•YouTube channel with >100 subscribers = live streaming to a potentially massive audience across many devices
•Beg or borrow (don't steal!) as much as you can before spending lots of money on equipment.
•Ebay is your friend.

•Will it impact my live attendance? Unlikely - those who attend want to attend. We have had people move town because they first watched online.
•Leaders: Pressure - once it's out there - it's out there! No time to edit.
•Sensitive ministries - missionaries. You need both audio and video switch-aways.
•Do you plan well? Everything is more complicated when you stream.
•Mics for everyone.
•Can you get everything on camera?
•Lighting good enough?
•Copyright - The world is watching. CCLI website.
•Consider quality - be engaging to your online audience.


conference
The next level
excel
CODEC
Premier
CHRISTIAN MEDIA

•Multi-camera

- If you're using the composite video output from the camera as the input to your computer, then you can easily add more cameras or video feeds by using a video switcher.
- This will allow you to select from a number of video feeds (e.g. three cameras and a feed from a DVD player) and mix between them.
- As you add cameras though you're going to need to preview their shot before you switch to them.
- Pass-through black and white monitors can be used for this (and bought second-hand on eBay quite cheaply). They sit between the camera and the video switcher and provide the director with a preview of the camera's shot.
- Without this, you're effectively switching blind and have to accept whatever comes up!

- Once you have more than one camera you'll need some way of communicating with your operators.
- This presents two problems: 1) As a director you'll need to be somewhere where your directions cannot be heard by the congregation; 2) You need some form of communication.
- The first problem is resolved by extending the cabling to an adjacent room or soundproof area nearby.
- The second problem can be easily solved using a cheap walkie-talkie system with suitable headsets/earpieces.

- Adding an AV distribution box enables you to send your mixed output to multiple destinations.
- For example, a five-way AV distribution box could feed your Webcast PC, a TV screen in the creche, a DVD recorder and a projector in an overflow lounge.
- Having the DVD recording opens the way to get services to people who don't have internet connections and you can also rip the audio to make an MP3 podcast of the sermon.

- A “genlock” box enables you to combine two video feeds into one output, allowing you to overlay your main mixed output with song words from another computer.
- Using presentation or open source worship software you can easily add subtitles (preacher’s name etc.) and song words to enable people to really engage with your webcast and feel part of the service.

- Using the DVD recording you can rip the sermon section of the service (via free software) and make this available online via YouTube or Vimeo.
- This creates a “watch-again” or catch-up system that can be linked to your website.
- You can even collate the sermons into series or books of the Bible as required (using playlists) and makes the building of a media library reasonably simple.

•ATEM Television Studio:
http://www.blackmagicdesign.com/uk/products/atemtelevisionstudio

- 4 x HDMI inputs; 4 x SDI inputs; H.264 to computer via USB; 3 x SD/HD-SDI outputs; 2 x HDMI outputs.
- Multi-view monitor output - Single computer can control the system via Ethernet link.

Watch this: http://www.youtube.com/watch?v=XQ0gOKlkqSg

Digital Equipment

conference

Digital Equipment

excel
A project of Premier Christian Media
CODEC
Premier CHRISTIAN MEDIA