Tunes, Tubes and Clouds: Getting Your In-House Talent Out of the House and Online. Part 1: Production

Abstract: In his first of two articles, Daniel Bates explains the process for creating high quality audio and video recordings to capture knowledge or experience in your organisation, either for internal or external consumption. The article arises from a paper delivered at the 2015 BIALL Conference. The second article will consider the online platforms which are available to host and promote such content.

Keywords: multimedia; video; audio; recording; streaming; knowledge capture; online learning; VLE

INTRODUCTION

In addition to teaching legal research at the University of Cambridge, I have become increasingly involved with audio and video recording of activities at the Faculty of Law. In the last decade, the expectations of producing video recordings of major events, short op-ed items, teaching content and promotional slots has exploded. I have been involved with the production and posting of over 1,000 media items, and those items have had over 1.5million unique views across all platforms on the internet.

Capturing audio-visual materials is an excellent method for mining the knowledge and experience in an organisation. Distributing such content in various ways online can provide a very high level of engagement.

In the academic environment, there is now a great deal of pressure to actively promote academic work through many different channels, increasing the opportunities to enhance the wider societal impact of the research and teaching practice in the Faculty. Capturing the audio or video output of academic work, as a complement to the traditional text-based publishing, is becoming increasingly common.

In the academic market-place, there are also a wide range of opportunities to use audio or video recordings for teaching or training. Academics are increasingly examining the pedagogical benefits of flipping the classroom for some teaching – providing recorded teaching content which students can scrutinse before attending lectures or tutorials, allowing for more in depth discussion of the issues in a face-to-face environment. In a library, information services, or research education context, students can find introductions to the collections, services, or the legal databases, easy to understand and retain in multimedia formats.

In the legal practice sphere, audio-visual material can be used either externally or internally. In the external

sphere, how much more engaging is a client note about a recent regulatory development if it also contains a link to the leading experts in your organisation talking about their recent experiences negotiating those changes? A PDF can include embedded videos or links. If a client can see your experts in this way, how much more likely are they to engage with that person, trust their expertise, and potentially want to appoint them to undertake their work?

Internally, legal practitioners have been developing larger and more advanced KM databases to capture and then disseminate knowledge, techniques and methods. A great deal of investment in large organisations goes into assisting employees to uncover institutional knowledge and experience on a particular topic. Imagine if the bibles for a large transaction were also accompanied by an interview with the partner who had led the negotiations, explaining why the deal had been structured in that way.

In this article, I hope I can de-mystify the process of going from knowledge to recording. I hope to show you that it is possible to get an extremely creditable result without investing in a large amount of expensive equipment or expertise: a recording studio, a cameraman, a sound engineer, a colourist, a stylist, hair dresser, or a make-up artist.

METHODS OF AUDIO RECORDING

The key to getting a great audio recording is to use a good quality recording device, and to get the device as close to the speaker as possible. It obviously helps if you can record in an environment where there is as little background noise as possible. It is possible to use a lavalier microphone, which is a small microphone which clips onto the clothing. However, I have found that these tend

not to offer very good quality unless you spend quite a lot of money, and you are always at risk of having clothing rustling against the microphone, or breathing, affecting the recording. I have also found that having a microphone attached to the clothing can make some speakers extremely self-conscious, and also that although they are small, and people are accustomed to seeing them on television presenters, they will still be visible on the video, and can therefore be somewhat intrusive.

For all these reasons, I would recommend a separate recorder, set up out of shot if you're using video, but as close to the speaker as possible.

There are a range of recorders on the market, many of which are good quality and inexpensive. I often recommend the Zoom H1[1], which offers several benefits: The Zoom is cheap (approximately £80) but offers good sound quality, is small and light, provides for attachment to a tripod, and is very simple to use. Zoom also offer an accessory pack, which includes a small tripod, which can make it easy to stand the recorder near to the speaker.

Recorders like the Zoom record to a solid-state Micro SD card, and can then be attached to a computer via USB for transfer of the audio file.

METHODS OF VIDEO RECORDING

When considering what makes a really good, watchable video, most people will suggest lighting, angles, or other visual things. Of course, all of these aspects are extremely important. However, I have found over time that the ultimate key to video that people can engage with, is good quality audio.

In *The Media Equation*[2], the authors make some profound and non-intuitive assertions about the ways in which people relate to computers and TVs. Among these are the following:

1. Audio fidelity will attract attention to media;
2. Audio fidelity will affect people's memory for audio information;
3. People will evaluate good audio fidelity differently from poorer audio fidelity.

I won't go into detail about the experiments that they conducted, but I thoroughly recommend the book to anyone creating this sort of content. What we can say for certain is that audio fidelity is a key issue. In an age in which it is increasingly easy to communicate using audio (podcasts, adding narration to screen capture movies, presentations, videos, etc.), and in which communication is more rapid and spontaneous, we might be tempted to allow audio quality to become less important, recording using poor quality equipment and with little care. If Reeves and Nass are right, the resulting content will be making a poorer impression and have less impact.

This means that when shooting video, unless absolutely unavoidable, the microphone built into a camera, or phone should not be used for the final production. Quite simply, these microphones are invariably cheap,

tiny, and bundled extremely close to a large amount of other electronic equipment (it wasn't so long ago that microphones on cameras were picking up the whirring of the motors of the tape being used for the recording! Even now, they can still detect mechanical noises from things like autofocus).

So I refer you back to the guidance on recording audio-only. Use a dedicated audio recorder and concentrate on getting it close to the speaker. Depending on the hardware (discussed later) this might either be attached to the camera via a cable, or recorded separately. If you record video and audio separately, it is relatively easy to marry this back with the video footage at a later stage in most digital editing platforms. A demonstration of the difference between an on-camera microphone and a dedicated unit is available in a demonstration with footage from the Faculty's *Law in Focus* series[3].

HARDWARE

It is very possible to make decent quality basic recordings without needing a film studio and thousands of pounds for film equipment.

Camera

The initial decision to make is whether to use a dedicated video camera or a digital stills camera with video capabilities. A video camera usually offers easier operation but the results tend to be softer-looking, and you typically have less control over the final look of the recording. Many DSLR (digital single-lens reflex) and even mirrorless compact stills cameras now offer an alternative, as they can record excellent video in addition to taking photographs. Using a DSLR offers the option of using different lenses, typically produces a very crisp image and provides a wide range of settings to affect the nature and quality of the image captured.

A camera which will do a good job of recording does not necessarily require significant expenditure. For example, a basic quality Nikon D3300 costs approximately £300. At the Faculty of Law we use a Canon 700D, which is an excellent camera costing around £400. The Canon offers several features that are extremely helpful: an articulated screen, a touchscreen allowing control of video settings with a live view, and an external microphone input.

Lens

A discussion of lenses could fill several weeks of a photography or videography course. If you choose a DSLR, the key function that lens control provides is the ability to control the aperture.

The aperture is the number, expressed on all lenses usually prefixed with an 'f', which is the mechanical equivalent of the pupil in an eye, because it governs how much light is entering the lens. At its most simple, a

larger aperture (which, just to complicate matters is reflected in a lower number) means the background of an image can be blurred. This is referred to as 'depth of field' or 'depth of focus'.

This is an important consideration for this kind of production, and a blurred background is usually considered more 'filmic'. It separates the speaker out from their surroundings, and allows the viewer to focus on the face of the person without being distracted by the background.

Many of the *Law in Focus* videos have been shot with a Canon 85 mm lens. This has a largest aperture of f/1.8, compared to the kit lens (supplied with the camera), which provides between f/3.5–5.6 depending on the zoom used. While it is not necessary to use anything other than the default lens, changing this obviously provides more aperture options. The 85 mm also allows recording from further away from the speaker, but it costs around £250. If you're happy to be closer, it's possible use a 50 mm lens, which are less expensive – approximately £80 for the Canon, and £135 for the Nikon.

On the camera, you can control which aperture to use by selecting the 'aperture priority' or 'manual' settings. The Canon is very powerful in manual mode, because it is possible to set the camera to manual, switch to video mode, and then you can set the aperture (and other settings) via the touchscreen and control wheel, and you can see the result immediately on the screen.

I'm not suggesting that you use the lowest aperture you can. The problem is that people's faces aren't flat! This means that if your depth of field is too shallow, their features can result in a situation where although the eyes are in focus, the tip of the nose isn't. The aperture should be set to balance getting the whole face in focus, but still getting a gently blurred backdrop. Having the speaker sit with a little distance between themselves and whatever surface is behind them can also contribute to this effect.

Another consideration is autofocus. This is a reassuring security blanket for a beginner, but is probably always best avoided. Using autofocus can mean that the camera 'hunts' (focuses in and out repeatedly) if a person moves. Also with many camera and lens combinations, any adjustment of the focus can make a noise which can be audible on the soundtrack.

The detail on which to fix the focus is the eyes. There is usually a button with a 'plus' or 'magnify' symbol, which allows you to zoom into the image. Get the subject to sit comfortably in the position they will adopt when they speak, then zoom in on an eye and adjust the focus until the eye lashes are crisp and clear. This should result in an excellent shot, where the viewer can engage with the speaker. It is important to monitor the position of the subject and check the focus just before you start – they often shift in their seat just before they speak, and this can mean it needs adjusting.

COMPOSING THE SHOT

For the type of recording used in education or promotion, there are several creative choices available, and it will be necessary to consider what suits the situation best:

- Direct to camera;
- Interview (without an interviewer, or adding the interviewer as a second person);
- Group discussion.

For the *Law in Focus* current affairs series, we use an interview shot which is called the 'Long Sided Interview'. It seemed most suitable because long sided interview shots look, literally, as if the subject is being interviewed. It is also shot relatively close up – head and shoulders only – so the viewer can engage even more with the subject.

Compare this to a direct to camera piece, which is as if the speaker is having a one-to-one conversation with the viewer. This is also called a 'center composed interview'. It helps the viewer make a strong emotional connection to the speaker. You often see interview subjects 'center composed' in reality TV shows or news reporters in the field and in situations where the subject is delivering a very direct message to the viewer. I didn't feel this matched our particular circumstances for *Law in Focus*, but it may be suitable for your material (for example a tutorial on a specific issue).

Another well-known guideline for composition in photography and video work (first written down by John Thomas Smith in his book *Remarks on Rural Scenery* in 1797) is something called the 'rule of thirds'. The idea behind this is that the frame can be divided into thirds using both horizontal and vertical lines. This gives you four lines along which the interest within the frame should ideally line up, and the subject is best shot in line with these guides. This fits perfectly with the long sided interview which places the subject on either the left or right third line, and the head and shoulders shot tends to put their eye line around the top horizontal guide.

Once you are aware of these guidelines, you will notice how much it is used in both video and photography.

There is also a very practical benefit to using the long sided interview format for *Law in Focus*, and that is that it
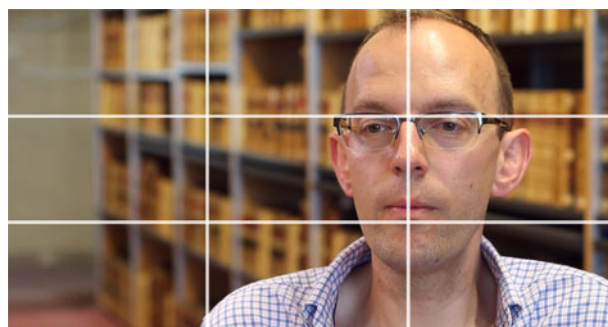

Figure 1: The 'rule of thirds' applied to Law in Focus.

makes it easy to offer the option of using an autocue if the speaker prefers.

SCRIPT

I have found that lawyers tend to prefer to work from a script. While some of our other media output, such as the *Eminent Scholars Archive*, are more discussion or interview pieces, with *Law in Focus* our experts are trying to cover as much technical information, as concisely as possible.

It was Mark Twain who said "*I didn't have time to write a short letter, so I wrote a long one instead.*", and writing concisely remains one of the greatest skills for trainee lawyers to acquire. For detailed legal content, a script is often helpful. Around fifty percent of my *Law in Focus* speakers use either a script or at least detailed notes.

In addition to providing the speaker with confidence, having a script offers two other significant benefits:

Autocue

If you are working from a script, or even notes, this allows for the option of using an autocue. Again, an autocue sounds like something you would find in a film studio, yet any laptop can be easily used. I have been employing a retired laptop, and a free piece of software called Mirrorscript Pro[4].

This is a very simple application, into which you paste the text. You can adjust various settings such as font size and line width, and when you click on 'start' you get a black screen with the script scrolling upwards. Progress of the text is managed with keyboard controls. This can be unwieldy if you are using the screen of the laptop, so you may wish to attach a separate monitor (so both speaker and recorder can see the content), or more simply you can use an additional keyboard with a long cable, or even better a Bluetooth keyboard, so you can control the speed to match the speaker.

If you have a tablet such as an iPad, there are apps which perform the same role. These applications are normally offered on the 'freemium' basis, whereby you can get a free trial, and then fully featured software is around £5–10. One which I have not yet tested is PromptSmart Pro[5], which claims to use voice recognition to move the script on by itself!

Finally, it is possible to purchase a full iPad-based professional autocue very affordably now. This employs a bracket to hold the iPad at the front, and the words reflect up onto a glass plate, with the camera being mounted behind this. The price of these is around £550, excluding the iPad and camera of course. This would facilitate the use of an autocue in direct to camera pieces, allowing you to achieve those very personal, engaging shots, but still have a script for the speaker.

Captions

The second benefit to having a script is that it can provide the basis for a transcript, and potentially captions. Many online streaming platforms provide functionality to display closed captioning alongside or over a recording. YouTube even provides their own automated captions from voice recognition, although even with a good quality recording of someone speaking clearly, the results are often laughable.

Providing a transcript or captions serves a number of very valuable purposes. If the transcript is on the same page as your recording, the words can be indexed in search engines. This means anyone searching for words or references in your content will be more likely to find it, in a way they may not if the key words were only available in a multimedia stream.

Having the text of the recording is also an important benefit from an accessibility perspective. If users are deaf, or hard of hearing, having a transcript can obviously be vital to their ability to access the content.

Finally, closed captions can be useful if content is being utilised in environments where audio is not suitable. For example, I often see students using captions on computers in the Squire Law Library. This also provides another option if referring to a training or KM video in a shared or open-plan office.

COMBINATION AND EDITING

Assuming you have now captured some great video footage and you have also recorded the entire event with a top quality audio recorder, and hopefully have the text of a corresponding script, what do you do next?

If you are producing simple talking heads footage for promotional or training or teaching purposes, then it is not necessary to have any advanced editing skills, or expensive software. Many consumer-level editing packages are available that will produce a creditable output with little effort. Many come with trial packages, so that you can get accustomed to the basic functionality before committing to a purchase. Some of the leaders in the market are Adobe Premiere Elements[6] (also for Mac), Sony Movie Studio[7], Pinnacle Studio[8] and Cyberlink PowerDirector[9].

It would be impractical to give detailed guidance for editing with any of these packages individually. The edits required for this sort of material are typically simple cutting at the start and end of each section, and basic transitions, for example to fade in or out, and are all extremely basic. In fact, you can almost certainly learn how to do it on your chosen platform in ten minutes from YouTube itself.

Almost invariably, the editors will have separate tracks for different feeds of audio and video. You need to import your video, and if you recorded the audio separately your additional audio files, into the software. If you used separate tracks, the first task before any editing takes place is to ensure that both audio tracks are

47

synchronised. This involves finding a point at which you can identify a specific word or sound, and then lining up the tracks so that this occurs at the same time.

It is important to ensure that the audio is correctly synchronised. There is nothing more disconcerting than watching a video where the lips don't precisely match the words being spoken. The easiest way to check you have done this correctly is to play the video with both the original audio, and the separate audio, running at the same time. If you have them synchronised correctly, there should not be any clashing, or echoing. Once this is done, there will be a simple way of either muting, or removing the original audio, leaving the separate audio track as the one for the final output.

Once you have the audio synchronised, then you can start editing the footage to remove any unwanted footage at the beginning and end and any sections where the speaker made errors. You may also wish to add titles, and a fade at the beginning and end.

Once you have a video clip you are satisfied with, you will need to export this to produce the final video file. It is best to have the resolution and quality settings as high as they can be at this stage as any online delivery method will almost always diminish quality, so it is best to start with the highest standard footage you can.

DISTRIBUTION

You should now be able to use this footage, either on your own intranet, your VLE, or via any of the many online platforms.

The second article in this series will examine some of the key platforms currently available, and provide advice on getting the most out of them.

Footnotes

[1] https://zoom-na.com/products/field-video-recording/field-recording/zoom-h1-handy-recorder

[2] Byron Reeves and Clifford Nass, The Media Equation: How People Treat Computers, Television, and New Media like Real People and Places (Center for the Study of Language and Information Publication Lecture Notes, Cambridge University Press, 1996).

[3] Law in Focus extract: https://www.youtube.com/watch?v=BTbEzf7WhZ0&feature=youtu.be

[4] http://mirrorscript-pro.software.informer.com/

[5] https://itunes.apple.com/gb/app/promptsmart-pro-smartest-teleprompter/id894811756?mt=8

[6] http://www.adobe.com/uk/products/premiere-elements.html

[7] http://www.sonycreativesoftware.com/homestudio

[8] http://www.pinnaclesys.com/PublicSite/us/Products/studio/

[9] http://www.cyberlink.com/products/creative-director-family/creative-director-family_en_GB.html

Biography

Daniel Bates trained and practiced as a solicitor at Hogan Lovells, before taking his position as Legal IT Teaching and Development Officer at the Faculty of Law at the University of Cambridge. He is responsible for delivering legal research teaching for students and staff at the Faculty as well as from other departments where students need legal research skills. He is also the Communications Officer responsible for the Faculty's institutional publications, VLE, websites and multimedia output. The Faculty has a thriving online presence, and recently overhauled King's College in the University media statistics!