Growing Programs in the Distance Learning Greenhouse: How Producing Distance Learning CLE Differs From Traditional CLE – Parts 1 and 2

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SECTION 1: INTRODUCTION

According to the all-knowing Wikipedia:

Distance education dates to at least as early as 1728, when "an advertisement in the Boston Gazette... [named] 'Caleb Phillips, Teacher of the new method of Short Hand" was seeking students for lessons to be sent weekly."

Personally, I believe a strong case can be made that distance learning’s history goes back to the first writing where humans put down in symbols their knowledge, so it could be passed on to others outside of the oral tradition.

Our modern conception of distance learning dates back to the reliability of 19th century post offices which made the correspondence course a feasible teaching model. Today, we think of it largely as a phenomenon of modern technologies from the telephone, to television, to the Internet. The common thread is that distance learning can make use of whatever technology is available for connecting teachers to learners (and, importantly, learners to learners). As it seems quite likely that the world will become even more “wired” in the future; it seems likely that the future of distance learning is bright.

Distance learning has many advantages, among them:

- Increased access to instruction for those with
  - Geographical challenges
  - Life challenges – e.g. working parents, those with disabilities
- Decreased need for brick and mortar teaching infrastructure.
- Potential to build highly stimulating, multi-media teaching environment.
- Increased access to the best teachers.
- Increased access to a broader array of courses.
- Self-paced learning – recognizing that not all individuals learn at the same pace.
- Decreasing the cost of educating

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Distance learning is not without its detractors and certainly not a perfect solution to all teaching situations. Done poorly, it can create a detached, impersonal learning environment, and many of today’s teachers are ill-equipped to meet the challenges of creating distance learning courses and will need specific retraining. It requires an up-front investment in infrastructure and training by an institution. It puts a considerable burden on the student to be dedicated and self-directed, which is not a good learning environment for some. It requires more computer savvy than some learners possess. It requires a modern technological infrastructure, particularly broadband access, which may be unavailable to some students. Though not without their merits, most of the criticisms of distance learning fall into the category “this isn’t for everybody.”

Whatever the criticisms, there is little doubt that distance learning is not only here to stay, it is going to be a growing part of the future of education. If history is any guide, distance learning will continue to evolve and grow with improvements in technology and infrastructure.

SECTION 2: AVAILABLE DISTANCE LEARNING ALTERNATIVES

Webcasting

Essentially webcasting is broadcasting over the Internet. The audio and video are captured with cameras and microphones. The output from the cameras and microphones is captured and routed to an encoder. Generally the presenters will be using a PowerPoint presentation which is captured via the VGA port and routed to the encoder. The encoder is just a computer dedicated to taking the audio and video and turning into an Internet streaming video compatible format (e.g. WindowsMedia, H.264,
Real) and then synchronizes the video and the PowerPoint. The encoded stream is then sent to a server, often over the Internet to a server farm vendor – though servers can be managed in house. Viewers then receive the stream from the server and can view the webcast in a place of their choosing. While oversimplified, that is the basic structure of the webcast process.

The Minnesota CLE Webcast Studio is a good example of a high-end webcast studio setup:

The Webcast Studio is dedicated to the production of video educational products. The
vast majority of those are our webcast CLEs. You may see an example of a typical program by clicking on the link below:

http://www.minncle.org/webcasts/ondemand/175011201/#

The studio is, however, also used for other purposes such as recording short non-credit programs, vignettes for live programs, and is occasionally rented out to other organizations.

Technology of note in the studio proper includes:

- **Sony BRC300 Cameras** – The studio is a three camera shoot. Two of the cameras are mounted on tripods and can be moved freely within the studio. The third is mounted on the wall in the back of the studio and provides excellent establishing shots. All of the cameras are controlled remotely from the control booth in the studio.

- **Audio-Technica Wireless Lavalier Microphones** – We mic with lavaliers rather than boom or standing microphones. We tend to have fewer mic’ing problems using the lavaliers, given proper placement, because they are more discrete to the individual presenter and pick up less ambient noise. That said, we have also installed an auto-gate to minimize cross-talk between presenter’s microphones. We can mic up to eight, though we rarely have a panel of more than four.

- **Studio Lighting** – We are using fluorescent studio lighting that is white-balanced to provide good color (particularly skin tone) reproduction. The fluorescent lights are far more energy efficient and put off far less extraneous heat than traditional studio lighting. You can see the fluorescent lights at the top of panoramic photo above hanging from the ceiling.

- **Chroma-key** – The back wall of the studio is painted bright “chroma-key” green. Combined with the chroma-key generator in the Control Booth of the studio, we can create life-like backgrounds for videos. We have used this extensively for creating vignettes for programs. We are looking at adding tracking technology in the studio that will allow the backgrounds to automatically scale to camera angle so that we can more easily do multi-camera chroma-key shoots.

- **Sound Dampening** – One wants a studio to be fairly “dead.” That is, one does not want a lot of reverberation in the room. Our studio is part of our
greater Conference Center and located in a commercial building (our next door neighbor is Target Corporation). To both control sound within the studio and insulate from noise without, we have placed acoustic dampening panels on the wall of the studio, carpeted the studio, and sprayed acoustic dampening foam on the ceiling.

The brain of the Webcast Studio is in the Webcast Control Booth:

![Webcast Control Booth](image)

The two racks house:

- **Audio-Technica Wireless Receivers** – 8 wireless channels that work with the lavalier microphones mentioned earlier. This is the audio input for the Webcasts.

- **Panasonic DVD Recorder** – This allows up to record a program on the fly.

- **SonicFoundry Mediasite Encoder** – A specialized PC that runs the Mediasite Webcast Encoding software. It takes the Video, Audio, feeds and encodes them in the Windows Media format and syncs the VGA feed (typically PowerPoint) so that the program can be streamed over the Internet. It also records the programs for later playback. After encoding, the signal is sent to a server farm for streaming to customers.
• **2 Crown Power Amps** – These power two sets of speakers, one in the Control Booth and one in the Webcast Studio itself. The Control Booth speakers are typically on during a program so the AV Tech can hear the program. The speakers in the Webcast Studio are typically off as they would be distracting at best and cause feedback at worst. They are used when webcast faculty are using video clips so they can hear the clip as it is played and know when it is over and time for them to present again.

• **Switchers** – All of the different pieces of equipment in the studio are plugged into the switcher. This allows a great deal of flexibility as to how one connects the devices. It is handy because depending on what the studio is being used for one may want different combinations of equipment. This allows switching with a press of a few buttons rather than rewiring.

• **Sony DVD/VHS Player** – Some faculty bring in teaching aids such as vignettes or video clips. They can be played on the DVD/VHS player. We try to get them prior to the program so they can be recorded from the DVD/VHS player to the Turbo Hard Drive Recorder.

• **Grass Valley Turbo Recorder** – A hard drive recorder. Since it has a faster response time than the DVD/VHS player we prefer to record vignettes and video clips to it as this makes the AV Tech’s job easier and smoother.

• **2 Niagara Encoders** – The original encoders that we used, now superseded by the PolyCom Capture Station. They do, however, provide a backup encoder.

• **Networked Computer** – A basic PC so that the AV Tech is connected to the company network and email. An important part of communication between the Tech, the Floor Director, and the Program Attorney. Typically use Email and Instant Messaging.

• **Metro Optical Ethernet Internet Access** – The encoded webcasts are sent to a server farm to be streamed to customers via a 7 Mbps Metro Ethernet connection.
On the table are the basic tools the AV Tech needs to run the webcast or recording in the studio:

- **Leviton Light Controller** – Slider controls for controlling the intensity of the Fluorescent Studio Lights.

- **dbx Autogate** – Audio from the microphones comes into the autogate which senses levels. Lower gain sound is not let through the gate. This controls feedback and cross-talk between the mics. Thus when one faculty member is talking, sound picked up on the other’s mic (e.g. breathing, the other speaker’s voice) is not audible.

- **Soundcraft Audio Mixer** – After the Autogate, the feed from the microphones goes to the mixer. The mixer controls levels, so that if one person has a softer voice, we can boost it relative to a louder speaker’s voice. The mixer also allows EQing of the voices – that is adding or subtracting bass, midrange, or treble as needed to make the speaker sound their best.

- **Sony Cameral Controller** – A joystick controller. With it, the AV Tech can turn and zoom each of the three cameras. It has presets built into it.
Using the presets with the three cameras effectively gives the AV Tech six different shots at the touch of a button.

- **Sony Anycast** – The Anycast is used as the switcher. The video signal comes to the Anycast from the Camera Controller and then is sent to the Accordent Capture Station for encoding. The AV Tech uses it to choose camera views and fade between them when cutting. It also contains a text generator for creating lower-thirds that we use to identify speakers.

- **Keyboard, Mouse, & Switcher** – The AV Tech needs to access the Networked Computer, Turbo, and the PolyCom Capture Station. Rather than having a keyboard & mouse for each, there is one keyboard with a switcher that toggles the keyboard connection between the three.

- **Ultramatte dv** – The Ultramatte dv controls the Chroma Key. With it we can substitute an image for the green screen background and give the appearance

- **Monitors** – The four monitors can be switched for whatever devices are needed in the Control Room. Typically they show, from left to right, 1 – the feed from the Anycast to the Capture Station, 2 – the Networked Computer, 3 – the Turbo, and 4 – the Accordent Capture Station.

### Webinars – Mixed Media Programs

“Webinars” are often confused with webcasts. In this paper, webinars are programs where the audience listens to speaker audio over their telephones and view synchronous presentation graphics (almost always PowerPoint slides) over the Internet. Webinars involve no video of the speakers – only speaker audio and accompanying slides. Webinars are unique in that they are mixed media programs, involving “old media” telephony and “new media” graphics on the Internet. Webinars are also getting rapidly outmoded. Convenience, ease, reliability and universal accessibility suggest use of teleseminars. Full sensory engagement – sight and sound – suggest video webcasts, TV over the Internet, essentially.
Webinars are increasingly used outside of CLE for sales training and product demonstrations. Because of the pervasive use of video webcasting in CLE, and the comparative ease and universality of teleseminars, Webinars are probably the least common media type used in the CLE industry. They also take a heroic effort to make work – both in training speakers and in providing customer support to CLE consumers.

**Audio Programming – Teleseminars and Audio Webcasts**

There are two types of audio programs teleseminars and audio webcasts. Audio webcasts frequently piggyback on teleseminars. If video webcasts are CLE on the Internet, teleseminars are CLE radio over the phone and audio webcasts are CLE radio over the Internet. Teleseminars use “old technology,” the telephone, and reach wide audiences because of the ubiquity of technology, its ease of use and convenience. Audio webcasts are often simulcasts of teleseminars – speakers are on their handsets or headsets in one or more location and the audio signal is picked up and broadcast over the Internet, allowing end users to listen to CLE radio over the phone or over the Internet.

In a teleseminar, written material is often distributed separately via email and referred to by speakers during their presentation. Teleseminars, in and of themselves, do not have an Internet component. Unlike webinars, CLE consumers are not viewing presentation graphics on the Internet. They use only one medium – telephony – to listen to a program. In webinars, CLE consumers view slides over the Internet. In teleseminars, they view them as hard copies that were previously emailed to them. In audio webcasts, slides or other material may be viewed online or as downloads. Audio webcasts differ from teleseminars in that everything – audio and material download or
viewing of slides – is online. Audio webcasts differ from webinars in that in audio webcasts audio is steamed online.

**COMPARISON TABLE:**

<table>
<thead>
<tr>
<th></th>
<th>Video Webcast</th>
<th>Teleseminar</th>
<th>Audio Webcast</th>
<th>Webinar</th>
</tr>
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<tbody>
<tr>
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<td>Telephone</td>
<td>Online</td>
<td>Telephone</td>
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<tr>
<td><strong>Material</strong></td>
<td>Online</td>
<td>Email</td>
<td>Email or download</td>
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*Interactive Learning*

Everything we know about adult learning these days indicates that interactivity increases learning dramatically. We remember:

![Diagram showing retention percentages](image)

The more interactive the experience, the more retain. Indeed, this seems even more pronounced in adult learners, like our constituency. The question is, how do you build interactivity into what is often an asynchronous learning experience and where even in a synchronous experience, latency and distance inhibit interaction.

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Let us first take the synchronous distance learning experience. In a live webcast there is certainly opportunity for interactivity. The most basic forms, and widely used, are emailing questions and audience response systems (ARS). For both the Polycom [Accordent] Capture Station and the Mediasite Player, emailing of questions is built into the system. Turning Technologies\(^2\) has a web and mobile app based audience response system that will work with webcast programs.

The Mediasite Player includes a ARS polling feature standard; the Capture Station as an add-in module. The picture below shows the Mediasite viewer interface. Circled in the lower right are the interactive components:

\(^2\) http://www.turningtechnologies.com/
Though email and ARS are good and effective ways of building interactivity into webcasts, that fact that there is generally 30 seconds to over a minute of latency in the system inhibits that interactivity. The latency results from the normal process of webcasting. It is a combination of the time it takes in the studio to route and encode the video and audio signals, the time it takes to transmit the files to the server, the time it takes the server to process and then stream the information, and the time it takes at the viewers end to buffer and then play the program. While this is not an issue to one simply viewing a webcast, it creates a barrier to interactivity. The time it takes to think of, type in and send an email question combined with that latency means that often the presenters have moved on from the topic. Most speakers handle this by either waiting for a convenient break in their presentation or until the end of the presentation to handle the question. More problematic is polling the audience with an ARS system. That minute or more of response time, plus latency, is interminable and interrupts the flow and the rhythm while one waits for audience members to respond. The prime solution would be to reduce the latency; however, that is an infrastructure problem beyond our control. Short of reducing latency, one is left with doing something of a presentational tap dance while waiting for responses to be tallied in sufficient numbers to present a reasonable ARS sample.

Archived webcasts are, almost by definition, non-interactive. One can use them as a teaching tool within an otherwise interactive learning environment. For example, Minnesota CLE is working on a project with William Mitchell College of Law to create an online class for students. The class as a whole will have many interactive components. It is built in the Learning Management System (LMS) Blackboard with allows
considerable interactivity between student to faculty and student to student. A number of archived CLE programs will be used as assignments for the students to view. After viewing they will have the opportunity to discuss what they learned from the viewings with faculty and amongst themselves.

The example above points to a brave new future where distance learning is not red-headed cousin of the classroom but recognized for the rich learning environment it is. This is a future where the full potential of distance learning is harnessed to create a content rich, multi-media learning environment. Teachers have so many more options in the distance learning environment and students have so many more opportunities to learn as they learn best. We will speak more about that potential below in “E-learning.”

**E-learning**

From K-12 to college and graduate level education to corporate education, e-learning is on the rise. As a recent BBC report noted in, “Top US Universities Put Their Reputations Online,”3 online education is now in the mainstream and has a secure future of education. CLE is only scratching the surface of the e-learning movement.

There is no single structure for providing e-learning, but there are some paradigms. The typical model is built around the Sharable Content Object Reference Model (SCORM)4 standard. SCORM is a set of technical standards for e-learning software products. SCORM tells programmers how to write their code so that it can “play well” with other e-learning software. It is the de facto industry standard for e-learning interoperability. Specifically, SCORM governs how online learning content and

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Learning Management Systems (LMSs) communicate with each other. SCORM does not speak to instructional design or any other pedagogical concern. SCORM is purely a technical standard.

The heart of an e-learning system is the Learning Management System (LMS). It is, in essence, the online classroom. The learner accesses e-learning through the LMS and the LMS tracks the learners progress and compliance. The teacher creates learning content. In SCORM terms, the Shareable Content Object (SCO) is the lowest level of granularity of a learning resource that an LMS tracks. SCOs are, simply, the web-based content used by the teacher to build the course. The LMS typically facilitates communication and feedback to students through message boards and private communications between faculty and students.

The two leading LMS programs are Blackboard and Moodle. Blackboard is a proprietary platform that is generally considered the state of the art for LMS. Its Web 2.0 interface makes it easy for educators to navigate when adding content to an online course and for students to navigate when accessing course content. It also includes course wikis, blogs and journals that stimulate conversation and reflection on a course,
and group tools that facilitate group collaboration and communication. The latest version incorporates Blackboard Connect (at an additional cost), which alerts students to deadlines, due dates and academic priorities within a course. As with most Cadillac-type systems, Blackboard is not cheap. Pricing is dependent upon the size of the institution but apparently starts in the neighborhood of $10,000 a year for the software, hosting, training, and support for a small institution. If you are in a University or Law School, you likely have access to Blackboard already.

Moodle is Open Source and thus freely downloadable. Unlike most Open Source software, though, you are not necessarily on your own for install, setup, support and hosting. Moodle is popular enough a small industry has developed around its support and hosting with companies like Moodlerooms\textsuperscript{7} and Remote-Learner\textsuperscript{8}.

The fact of the matter is, however, few of any CLE providers are using e-learning in this way. In part, it may be because of the dictates of credit hours in most mandatory systems. We typically are not working from overarching curriculum of courses meant to teach the length and breadth of a topic over as semester. We are typically creating courses by the hour with discreet and separate learning objectives. Thus, there has not been a perceived need for SCORM compliant LMS managed education in the CLE field.

\textsuperscript{7} http://www.moodlerooms.com/home.
\textsuperscript{8} http://www.remote-learner.net/.
We are missing out. That LMS managed world is developing into a rich-content, multi-media world of connectivity and collaboration. It allows learners to learn at their own pace. It allows assessment and feedback. Not every feature in the LMS is needed in our continuing education world, but the flexibility and richness of the learning environment that it fosters could be harnessed to increase learning and retention and create a better online experience for our customers.


**Gaming Models**

Orson Scott Card’s classic sci-fi novel *Ender’s Game* posits a world united against a hostile, alien foe. The best and brightest young tactical minds are taken to a Battle School where one of the chief teaching tools is a complex, interactive game played on an iPad like tablet computer. Though the children think of it as after-hours relaxation, it was designed to challenge, teach, and rank them through the many levels of the game.
But this is not really fiction; it is actually science. Gaming has found a place in modern educational thought since UC Santa Barbara professor John Paul Gee’s *What Video Games Have to Teach Us about Learning and Literacy*\(^9\) where he posited that computer games might not just be just that intellectual sucking sound you heard when the kids are playing a first-person-shooter but actually incorporated solid learning principles and was an environment rich with opportunity for building high level learning environments.

If education is only scratching the surface of the potential of gaming as an learning tool, CLE has not even taken the wrapper off the box. Jim Hilbert\(^10\) of William Mitchell College of Law’s “Center for Negotiation and Justice” has done some experimenting with using Second Life’s virtual world for teaching and evaluating negotiating skills. His thought was that by creating virtual negotiation space and using avatars, negotiation students from around the world could gather, conduct mock (virtual) negotiations, and then be evaluated. While this has not, as of yet, been implemented, it is an example of how creatively modern gaming technology can provide an educational platform where none existed before.

Mindy Thomas-Fulks from Tennessee Bar CLE has been in the forefront of experimenting with gaming in CLE. She has presented at ACLEA on the topic. Her materials from her ACLEA Boston presentation, “*Playing to Learn: Game Theory in CLE,*” can be found on the ACLEA website: [http://bit.ly/LnaYJm](http://bit.ly/LnaYJm). She will be presenting

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on the topic, “CLE Gamification in Action,” at this conference in Breakout Session I (Tuesday July 31, 2012, 3:00pm – 4:00pm).

**Mobile Learning**

At the ACLEA in Hawaii in 2006, I spent some time with an in-house lawyer from the Motorola Corporation who happened to be at the hotel and on vacation with his family. When he found out I worked in CLE, he was surprised we weren’t doing more in the way of providing education to mobile devices. Granted, he may have had a vested interest in the technology, but he explained how much of their corporate education process was handled through mobile devices and it made sense why he was surprised. Indeed, the corporate world has been way ahead of the CLE world in using mobile devices as a learning platform.

The big wrench thrown into the mobile learning side of things is the ubiquity of Apple’s iPad and its incompatibility with both Flash and Silverlight. It has been a struggle for the last several years to have a webcasting system that manages both computer and mobile viewing. The solution that has percolated to the surface has been adaptive bitrate streaming\(^\text{11}\) like the Smooth Streaming protocol.\(^\text{12}\) Equipment manufacturers understand that more and more of our viewers would like the option to view programs on their mobile devices, thus, they have been upgrading their systems to accommodate. Currently, Smooth Streaming is available as an add-in module with the Polycom Capture Station and is built into Sonic Foundry’s Mediasite. It will also require

\[^{11}\text{http://en.wikipedia.org/wiki/Adaptive bitrate streaming}\]

installation of the Smooth Streaming server on whatever server or service you use for streaming video.

SECTION 3: WHAT TYPE OF CONTENT WORKS IN DIFFERENT FORMATS?

When considering content, the most important thing to remember is that you are using a different medium from the traditional in-class CLE. Think of the early days of television. If those early television executives had said, “Well, this is a lot like Broadway plays, let’s just set up a camera on a tripod in the back of a Broadway theater and shoot over the heads of the crowd,” they probably would have had a short career in television. While Broadway and television are similar, they are not the same. They are different mediums and require different programming. Get away from thinking “How can we webcast the classroom?” and start thinking “How can we create online learning experiences that work for people?"

Creating the best online experience requires understanding the characteristics and limitations of medium. Online education is characterized by:

- The choice of being able to do live or recorded programs.
- The viewers typically see the video in a small window.
- Quality is dependent on bandwidth.
- Multimedia tools are available.
- Live programs will have a certain amount of latency.
- Requires an up-front investment in technology.
- Interactivity is easier to build into an on-demand than a live program.
The beauty of the online environment is that you can create a rich, deep learning experience. You are freed from the restrictions of the classroom. You can build courses that layer considerable depths of information, present it in creative ways, use videos and e-learning modules, link to relevant source and secondary material, allow for different styles and rates of learning, allow students to pinpoint the information they need when they need it.

This does not mean, that distance learning is the best or even a good platform for every sort of learning. They require more immediate interpersonal communication than either distance learning formats can easily accommodate or the audience is comfortable using.

ADR programs, which involve mediators or facilitators leading mock mediation sessions with people around a table or in a room, are an archetype of this type of programming. In the context of an audio conference, there is certainly interaction but without the visual clues of knowing when someone is about to speak, it can easily devolve into a babble of voices and defeat the essential purpose of the program – teaching attorneys who to pick up on visual and aural clues from the other side and work toward a mediated resolution of a dispute. In video programming you can see the reactions of other parties, but it is artificial, it is distant, and you lose many of the intuitive “tells” that you would otherwise discern and adapt to in a live setting.

In the same way, skills-based training sessions – particularly in the litigation context – are difficult in a distance learning context. In a program on Winning Closing Arguments, you want to experience the full performance of the instructor – not merely hear what he or she says, but see how they move across the room, the physical
accents they use to accentuate their argumentation, how the putative jury reacts, how it all fits together in three-dimensions, not one. There can be little substitute for sitting in the room and experiencing the performance. Though distance learning technology has advanced dramatically, they are not equivalent to the vibrant experience of live television or of filmed content. Watching an instructor deliver a closing argument in a video webcast is not the equivalent of watching Gregory Peck do the same thing in “To Kill A Mockingbird,” as produced by a Hollywood studio.

Law and Literature courses can be excellent learning experiences. They depend upon a great deal of interactivity between all of attendees – indeed, the best of them are an open, frank, and free-wheeling discussions between all in the room. This is difficult to replicate in a recorded, asynchronous online course – not impossible, but you lose a lot of the energy in the room. Even in a live, synchronous online course, the latency and bandwidth limitations tend to throttle the conversation between parties. There is just something about people being in the same room, looking into each others’ eyes, and having a discussion that works beautifully in a law and literature course, but is lost online.

**Length**

The iTunes revolution has permeated CLE. Once, you’d go to a record store and buy something called an “album,” a collection of songs from an artist assembled by the record label. Three or four of the ten or twelve tracks in the bundle, the album, may have been appealing to you. The rest? Not so much. But we lived in a bundled universe. No more. Everything is now disaggregated. You have an endless menu of options – items are purchased ala carte. You go onto iTunes and buy precisely the
tracks you want – sure, you pay more for what you want, on a unit basis, than if you bought the bundle, but you get a concentrated experience. You get what you want, when you want it now.

Attorneys in their capacity as consumers bring the very same expectations to CLE. They want precisely what they want – concentrated, disaggregated learning – NOW. Many do not want to sit through four or six or eight hour programs at a fixed location, focusing on the few hours within the tidal wave of words that they need most for their practice. They are willing to pay more a shorter unit of learning that less for much more.

In distance learning, this generally means less is more – shorter programs are preferred over longer. Sixty, 90 or 120 minutes on seller reps and warranties in a UCC 2A compliant product supply contract versus eight hours in an overarching program on the UCC from secured transactions to equipment leases. The concentrated nature of the learning provides practical value to the audience and helps overcome some of the deficiencies of distance learning in complex topics.

By parity of logic – longer, whole-day or multiple-day programs tend not to be ideally suited to distance learning, at least not in full flourish in a live context. Watching television or listening to the radio without a substantial break for six or eight hours is wearisome. Yet that's the experience of a viewer or listener, sitting alone in their office, watching or listening to a video or audio distance learning program, respectively. Even when breaks are strategically programmed in, it takes immense discipline to remain attentive to the speaker and process the information he or she is communicating for that
period of time. Add in the distractions of practice – client calls and emails and mobile phones beeping incessantly – and the challenge grows.

Portions of these longer programs, however, are ideal for on-demand programming. Take the two hours on UCC 2A/Sales out of the larger two-day program on the UCC from A to Z and make the two hour segment one or more on-demand segments. That’s ideal both for the consumer and for your organization. You get to repurpose longer programs that have consumed financial resources and staff time into building your online catalog. You get a higher price (see above) for the concentrated learning. The consumer gets precisely the content they want, when they want it.

**Interaction**

Attorneys are reticent to interact in distant learning formats. They frequently do not know who else is listening or watching. Even when they “know” in some sense – e.g., in a video webcast where everyone’s names are listed in a chat box – they are reluctant to make a statement or ask a question because they cannot gauge the temper or reaction of the audience. They’re sending a statement or question into the black box and have none of the security of being able to gauge risk.

In certain types of programs – e.g., those involving ethics or professional responsibility topics – there is substantial reluctance to ask a question in the breach for fear of it being personally identifiable or having real-world consequences. In these instances, it is important to provide viewers or listeners of distance learning programs alternatives for asking their questions in a private form – by providing speaker telephone numbers or email addresses. Though these alternative forms of communication will not
satisfy many, if any, accreditation standards, they provide substantial value to the consumer and will satisfy the ultimate learning objective of the program.

For more information generally on the topic, Jennifer Flynn from the Legal Education Society of Alberta spoke to the format issue on a broader scale in her presentation for San Francisco ACLEA, “The Medium is the Message” and her materials can be found on the ACLEA website.\(^\text{13}\)

**Graphics**

Graphics are a double-edged sword in distance learning. The technology has the promise of providing brilliant images – rich graphics and photographic images. And it does that well. Graphics represented in PowerPoint slides have become ubiquitous. Seemingly every slide is resplendent in colors and logos and stick figures and other symbols. All these graphical elements have some educational value but not nearly as much spreadsheets captured on slides (for business programs), the surveys, charts and maps (for real estate programs), the drawings and engineering renderings (for patent prosecution programs). When the latter forms of graphics are represented in PowerPoint slides, they tend to be much more difficult to view, much more difficult to discern the details – e.g., the numbers on a balance sheet or the functionality in a patent drawing.

In these instances, distance learning is not a disadvantage to traditional CLE. In the same way that it is difficult to discern these details on a computer screen, it is difficult to see them in a classroom setting, viewing the details at a distance on a slide projected on a screen. The difficulty is overcome by allowing consumers of distance

learning to download the relevant document – the spreadsheet, the map or the drawing from their desktop.

SECTION 4: WHAT ARE THE PRODUCTION CHALLENGES?

Remote Video Webcasts/Simulcasts

Remote video webcasts occur at hotel ballrooms or other offsite conference facilities where an organization is sponsoring a traditional CLE program with people in chairs or at tables, a podium with speaker up front with PowerPoint slides on a projector. The traditional program is “simulcast” online with one or more video cameras in the back of the room. In some instances, only the audio is captured, making the simulcast an audio webcast.

Programs of this type are popular because they allow the sponsoring organization to repurpose content by sharing, in real time or asynchronously, with three audiences: First, the audience in the room; second, in real-time with those watching or listening over the Internet; and third, asynchronously, to on-demand consumers of all or pieces of the larger/longer original program.

These programs are fraught with production challenges:

- **Bandwidth**: Your webcast is contingent first on having a reliable and robust bandwidth connection out of the facility’s ballroom. These connections, particularly in older facilities and in smaller cities, tend to be shared connections. The hotel's voice traffic – i.e., in-bound calls to the reservation desk, outbound calls by guests, intra-facility calls among staff – and data traffic – i.e., email and other Internet surfing by guests and staff
— tend to share the same connection. At peak usage hours and sometimes at unpredictable periods, bandwidth is drawn down by voice traffic, which always takes priority over data, and the bandwidth you need to push out your stream is compromised.

Best practices are to have a dedicated line to support your stream — to the extent it is available at the facility. These dedicated lines can be extremely costly and frequently CLE organizations opt to avoid the cost and take the risks inherent in streaming over a shared line. In this instance, we strongly recommend that you have a backup channel to push out your video, specifically a wireless connection entirely independent of the hotel’s infrastructure. The wireless connection will generally not support a quality video stream but it is can either push out a lower-quality video stream or at least an audio stream of the program in an emergency and save your organization the customer service problem of having dozens or hundreds of viewers/listeners sitting angrily in front of their computers with no stimulus whatsoever.

- **Network Security and Firewalls**: Every hotel has firewalls and other network security measures to prevent unauthorized access to the hotel’s servers. Intended to protect against hacking and other in-bound penetration, these measures also prevent your stream from leaving the facility. It is not enough to test a hotel’s bandwidth and judge it adequate or inadequate. It may be perfectly adequate and it may be even be dedicated bandwidth without the risk of unpredictable spikes in usage.
But you need to run a test stream the day before your program to ensure that you’ve identified any network security/firewall issues. Frequently, you will need to identify specific ports that need to be opened in order for the stream to be reliably transmitted. Hotels have become more aggressive in trying to charge for pre-program day access to the facility and to charge for hotel engineering staff time to test bandwidth and to ensure there are no unexpected firewall issues.

- **Hotel Staff**: Many hotels do not have engineering staffs per se. They have audiovisual teams and sometimes IT support. As simulcasting from hotel ballrooms becomes more commonplace, these staffs gain more experience and sophistication, but they remain fairly inexperienced presently. You need to go into a hotel aware of this — and come with a checklist of specific concerns — e.g., size of bandwidth connection, dedicated v. shared lines, network security/firewall issues, and availability of staff before and during a program’s broadcast. Do not rely on the hotel staff to save the day. Furthermore, frequently these departments of the hotel — particularly IT — do no start the day as early as your CLE team is onsite. If you have a CLE program that starts at 8:00 or 8:30 a.m. local time, your CLE team is probably there well before 7:00 a.m. local time. The IT staff or engineering staff, in our experience, will not arrive until hours later.

As noted above, you need to test bandwidth and probe for security issues at the very least the day before the program, on the site of the program. You need to have
back-up systems in place. You need to have emergency contact information for hotel AV, IT and engineering staff. You need to take ownership of the solution from beginning to end. It can be hard to motivate hotel staff at 7:30 a.m. about the urgency of a program.

**Studio broadcasts**

You will find a considerable amount of material above in the “Available Distance Learning Alternatives: Webcasting” section of these materials. The initial, and often the biggest challenge for an organization, is the upfront costs of building a studio. While it can be attempted for cheaper, one is likely to be spending in excess of $500,000 on build out, cameras, lights, microphones, encoders, monitors, speakers and all the other elements that go into a studio.

Once one gets of the up front costs, there are continuing expenses for rent, internet connectivity, software licensing, server space, and likely personnel costs, just to name several of the more obvious.

The staff to operate the studio and create the programming is a particular point where one should focus. This is different from traditional programming and it requires staffs who understand the differences. Likely this means the expense of hiring additional staff with expertise in webcasting and online education. At the very least, it will require training or programmers self-motivated enough to educate themselves about how webcasting and online education works.

Technology is what makes webcasting possible and it has also been a hurdle. Fortunately, it is less of a hurdle now than in the past. The technology for streaming is
getting better and less expensive. Viewers now typically have adequate broadband connections.

In the final analysis, the question is the typical business question: return on investment. While the upfront and ongoing costs are not insignificant, they must be balanced against the revenues they will generate. As more and more customers desire the convenience and efficiency of online education and as online education is increasingly seen for the rich educational environment it can be, it will be more imperative than ever to understand where the revenue streams can be found that justify the investment.

**Webinar challenges**

In a webinar, you are mixing media – consumers listen to the audio over their telephones and view presentation graphics over the Internet. Whenever you mix your media, you have speaker-side issues and consumer-side issues.

On the speaker side, you need to train your speakers to control their slides in real-time environment while speaking on the phone – headset, handset or speakerphone. The slides frequently have a lag, such that when a speaker pushes a button for a slide to advance, it takes a few seconds for the advancement to be displayed on the consumer’s screen. Thinking about the substance of their presentation while controlling slides and/or speaking into an unfamiliar apparatus (e.g., a headset) challenges many speakers. You can script presentations, as WebCredenza does for all of its programs, and have someone else advance speaker slides, but your speaker needs to be disciplined enough to stick to script and have firmly in mind when the slides will
advance. Intonations of "advance the slide" by the speaker to a supporting techie on your team is a distraction from the content of the program and should be avoided.

On the consumer side, the production challenge is not so much in producing the program as supporting it through customer service. Educating your consumers will be your task. You will receive many calls from people who will need the link to access the presentation graphics, help downloading the necessary software (e.g., Windows Silverlight), and an explanation of how they get the audio not over the Internet but through an entirely different medium (the phone). Training busy and harried lawyers, particularly in high tide of compliance season, on how to manage two media will be a challenge. In our experience, they will ask why you are tying up their phone line and their Internet connection. Be prepared to explain why you opted for a webinar or opt instead for a teleseminar or an audio webcast.

**Audio challenges**

Telephony is "old technology" but with the advent of VOIP (voice over Internet protocol) and a complex mesh of inter-carrier networking, it has also become far more complex than one would imagine thinking about the old world of twist copper pair wiring, handsets and reliable and clear signals. Among the challenges of audio production are these:

- **Speaker equipment**: There is no substitute for the handset. Even the most expensive and supposedly sophisticated speaker phones pale in comparison to holding a (corded!) handset to your ear and mouth. Headsets vary widely in quality and cannot be universally judged as reliable and clear or not because their signal ultimately depend on how
they are connected to the base unit, the carrier/network connections that
the speaker’s law firm is using, and how the speaker positions the
microphone of the headset.

Sometimes speakers will want to do your program from home or
from a hotel room where they are staying on business. Be wary of
cordless phones. Nothing substitutes for even the most inexpensive
corded phone connecting the handset to the base unit. At home, cordless
phones are universal. Most hotels now have cordless phones. The radio
connection between the handset and the base unit, particularly when the
distance between the two is farther than that of a cord, becomes weak and
unreliable. Also, keep batteries in mind – handsets have batteries that
wear down, unexpectedly fast, even when fully charged, Ensure that your
speaker’s cordless headset, if he or she insists on using it, is fully
charged.

You must also have backups. If a speaker is working from home or
a hotel room, or even in their office, make sure you have mobile phone
information for the speaker. If their cordless phone dies, you need to be
able to reach them on a mobile phone. Ask your speaker to have the
mobile phone set to vibrate and have it in front of them. When their
principal phone fails, they frequently do not know it and continue talking to
dead air. You must have a way of reaching them. In the same way, if
they are speaking from their office, have the contact information for their
assistant(s) and ask that those assistants be available during the program.
• **Background Noise**: If you allow your speakers to use a speakerphone, be aware that most sophisticated versions are sensitive enough to pick up the ebbs and flows of the law firm’s HVAC system. You will hear a low buzz or period “whooshes” as the HVAC system cycles through the speakerphone’s sensitive electronics. Your speaker, accustomed to hearing it in the background as much as they are accustomed to breathing out and breathing in, will not notice it but your audience will and it will be a distraction.

• **PowerPoint Issues**: There are two sets of issues with PowerPoint slides: First, ensuring you get them in enough time to either process and upload them for a video webcast or webinar, or distribute them via email ahead of a teleseminar; and second, size.

There is nothing unique to distance learning in getting speaker material on a timely basis. All the techniques you use to obtain material on a timely basis for your other programs, should also be used to obtain PowerPoint slides, but with the proviso that speakers should be aware that processing slides and making them available, in their full graphical splendor, takes time. There can be no last-hour tinkering.

The larger challenge is the massive size to which PowerPoint slides, once text on a white canvass, have grown. Speakers have come to routinely insert rich graphics and pictures into most of their slides. When these slides are converted into Adobe Acrobat (PDF) format, the slides become graphics files of enormous size. The very large file sizes (10MB or more) become very difficult to email to consumers of CLE programming or to download. Occasionally, too, speakers include audio clips or animations in slides
that are impossible to replicate in PDF format. You need to be aggressive in pruning graphics and pictures, not to mention animation and audio files, from PowerPoint slides to make them more manageable in size.

**Audience response**

Audience response is the most common form of building interactivity into programming. The staple in the area has been Turning Technologies\(^\text{14}\) ARS system which provides small click pads to be handed out to the audience and a tallying unit using PowerPoint for presenting the audience answers. While that works fine in a live in-class program, the inherent latency in live webcasts makes using ARS difficult, though not impossible. This was discussed as some length above in the “Available Distance Learning Alternatives: Interactive Learning” section above.

In asynchronous e-learning programs audience response is often a part of the process either as polling or testing. Again, this was discussed in the “Available Learning Alternatives: E-Learning” section above.

**Mobile production**

Mobile production, as noted above in the “Available Distance Learning Alternatives: Mobile Learning” section, has been a challenge generally. These have been largely technical challenges dealing with compatibility of content with mobile operating systems. With the advent of Smooth Streaming, those challenges are far easier to overcome these days. The important points in this area are that the demand for mobile access is increasing and will only continue to increase. Recognizing this, the providers of webcasting and e-learning tools are building compatibility with mobile

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\(^{14}\) [http://www.turningtechnologies.com/](http://www.turningtechnologies.com/)
platforms into their systems. We can expect the production challenges to decrease with time as we go forward.

SECTION 5: STRATEGIC DECISIONS

When does it make sense for a bar association or other CLE organization to take the technology functions of distance learning – the hosting and streaming of content, the customer service and e-commerce functionality – in-house or outsource to a third-party provider? In our view, it is a function of organizational culture and size, and opportunity cost. There is no universally valid answer. It is a matter of weighing resources against opportunities and competencies. It is also a matter of taking a realistic view of an organization’s position on the competitive landscape and strategically plan to maximize its resources. None of this is possible without first reviewing briefly the development of distance learning technologies in the CLE industry.

Development

In the early days of distance learning in CLE – before 2000 – bar associations and other CLE organizations that wanted to tap the then-new technologies of distance learning had three substantial risks:

- **Regulatory Risk:** Would accreditation bureaus allow attorneys to earn credit by watching a video webcast or webinar or listen to a teleseminar? This was very much an open question for most states where CLE regulations were adapted to the traditional modes of learning and had never anticipated the adaptation of distance learning technologies to CLE.
Not until recent years could an organization confidently predict that basic distance learning programs – interactive video webcasts and teleseminars – would be accredited in most states. Earlier, however, there could be no assurance that an attorney who participated in one of these programs could get the benefit of their bargain – learning with credit attached.

- **Technology Risk**: Today, we routinely listen to news and sports programming online or watch YouTube or on-demand repeats of our favorite entertainment programming. It has become part of our basic expectations that we can easily consume online audio and video without too much hassle. The days of dialup and long downloads is over. Here too, attorneys have brought their basic consumer expectations into CLE. But there was time when the technology was at the “bleeding edge,” unreliable and not universally available or feasible for most users. They may not have had a robust bandwidth connection – dialup ruled the day. They may not have had easy access to the software. They may not have been trouble-shooting the experience. In an industry that values customer service, CLE organizations could not risk distributing their product over unreliable technology and risk the backlash.

- **Market Risk**: So, if the technology worked and credit is awarded, would anyone buy? Today, the answer is a resounding yes, but that’s only after a decade of marketing and educating our customers about the technology and how it works; it’s a decade after a massive cultural shift in the United States and Canada where everyday use of the Internet in all aspects of life
has become commonplace. But a decade ago it was not clear whether attorneys would trust the Internet to deliver CLE – information vital to their practices and essential to maintaining their licenses. The risk of the market not adopting the technology – or at least attorneys not adopting it in sufficient number – was substantial.

This troika of risks – regulatory, technology and market – in combination led to prudent decisions, almost universally among the bar associations, to outsource the technology functions to third-party technology providers who had the competence to manage the technology and who would shoulder much of the risk. The bars could offer distance learning on a provisional basis with little risk. If the gamble paid off – as it did – the bars would fill a need but without excessive downside risk. Because of these early bargains, the CLE industry advanced much earlier down road of distance learning. Many other industries – continuing medical education, continuing professional education (accounting), etc. – are only now reaching levels of distance learning penetration that CLE obtained many years ago.

**Organizational Size and Culture:**

In determining whether to take distance learning technology functions in-house, an organization needs to consider its current and future projected size (in staff and competencies) and culture. Among the questions to ask are:

- Do we have sufficient staff to manage the planning of offsite and onsite distance learning programs? Do we have the staff to maintain servers and other equipment to host and stream programming over time? Do we have
support staff to field calls and email from our customers who have questions about accessing our programs?

• New staff can be hired if the initial and ongoing operational costs can be justified by market potential. The larger question is one of organizational culture. Does the organization have a culture of being a technologically integrated customer service organization? If not, is it willing to make the necessary staffing and competency changes to grow into that type of organization over time? Has the organization assessed what that means in terms of hiring and training – and risk?

**Opportunity Cost:**

Scarcity is the prime criteria in most decision-making. What will the benefit be of this particular cost (allocation of resource)? Does it make more sense for us to use our resources – staff time and money – in developing these organizational priorities (e.g., skills-based training programs, document drafting classes, mediation training) versus devoting those resources to developing in-house competencies with respect to distance learning technology? How much revenue can we keep in-house over time that we would otherwise pay to a third-party provider? Is that revenue equal to or greater than the revenue we could generate by devoting our resources to other member-benefit or initiatives?