# Blended Learning Technology: Navigating the Challenges of Large-Scale Adoption

**Aligning Lecture Capture with Strategic Organizational Goals**

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## Executive Summary

A blended learning solution often calls for a platform for capturing in-class and out-of-class activities and content, and delivering it live or on demand to students. In just a few short years, colleges and universities have come to understand the many benefits of blended learning, from pedagogical to administrative. Lecture capture is one method of achieving blended learning.

In many institutions, introducing technology into the classroom presents opportunities – and obstacles to overcome. The introduction of any new technology – no matter how transparent or easy to use – requires changed behaviors. In education, the challenges can be grouped into three key areas: cultural, process, and academic. Any of these can hinder achieving return on investment and the ability to leverage – and scale – blended learning technologies. While the benefits of these technologies are many, identifying and building on them requires strategy and preparation.

This white paper, based on interviews with five universities as well as Wainhouse Research's observations of best practices, identifies five compelling lessons about how to best drive adoption of lecture capture. The lessons include:

- Business value
- Inter-departmental cooperation
- Academic quality
- Student satisfaction
- Champions

The paper examines the five universities in detail, describing how each has found its own unique path to successful adoption of blended learning technologies. The paper also offers ten specific steps to overcome cultural, process, or academic obstacles. These are, in short:

1. Understand adoption cycles
2. Involve the right people
3. Clone your champions
4. Identify benefits to your overall institution & map goals of deployment
5. Plan extensively while remaining flexible and open to revising those plans
6. Create a consistent service model
7. Design sustainable policies
8. Create substantive processes for measurement
9. Encourage peer review
10. Leverage best of breed capture and delivery mechanisms

The paper also offers a number of suggestions for addressing the issue of policy, which is so important in academic settings. Understanding how best to create policy can enable colleges and universities to harness and maximize the return on current or future investments in blending learning technologies.

## Methodology

Wainhouse Research interviewed five universities that have healthy adoptions of lecture capture underway, and combined that research with past findings from surveys, presentations, and other sources concerning best practices for driving adoption of a blended learning solution. Specific individuals and organizations interviewed for this paper are distributed across the globe, and include:

- John Arpino, Assistant Director of Engineering Research and Development, Academic Technologies, The George Washington University, Washington, D.C., USA
- Janette Burke, Director Central Services and University Copyright Officer, Monash University, Clayton, Victoria, Australia
- Dr. Peter Jewesson, Professor and Dean, College of Pharmacy, Qatar University, Qatar
- Dr. John Mitchell, Senior Lecturer, Department of Electronic and Electrical Engineering, University College London, UK
- Dr. Sandra Yee, Dean of the Library System, and Joseph Sawasky, CIO and Associate Vice President for Computing and Information Technology, Wayne State University, Detroit, Michigan, USA

By interviewing a cross-section of types of institutions based in different geographies, the goal has been to identify many different factors that can support adoption.

## Why Paths to Campus-Wide Adoption Matter

A blended learning solution offers a platform for capturing audio, video, in-class and out-of-class interactions, and data such as curricular content and delivering it real-time and – more importantly – on demand to students. It incorporates the best of lecture capture, video streaming, multimedia, archival, search, and social media to enhance learning. In just a few short years, colleges and universities have come to understand the many benefits of the technology, including:

- Enhanced recruitment and retention of students
- Opportunities for new programs
- Opportunities for new revenue streams
- The ability to address millennial students' expectations and demand for enhanced technologies in the classroom (student satisfaction)
- Improved instructor effectiveness
- In many but not all cases, improved grades

Lecture capture is an ideal tool for delivering blended learning – learning *that is facilitated by the effective combination of different modes of delivery and models of teaching and styles of learning…*[1] As a result, it has found a home in both traditional brick-and-mortar institutions seeking to improve their offerings to local learners through the on-demand archival of classes, as well as distance learning or online programs that reach remote students via real-time or on demand technologies.

Why is it so important that adoption be pervasive and that the ability exists to introduce it to an entire organization?

First and foremost, the best way to optimize return on investment is to maximize usage. This is a given in organizations that pay attention to total cost of ownership and how they leverage investments in technology.  The average cost of deploying decreases as an organization leverages technology investments, infrastructure, and support / training time.  Yet increasing usage through IT is not always a clear-cut proposition: adding software, appliances, equipment and routers, and other infrastructure does not in itself grow usage.

Secondly, an institution considering deployment of lecture capture must consider the issue of scalability. Scalability is the ability of a system, network, or process, to handle growing amounts of work in a graceful manner or its ability to easily adapt to accommodate that growth.[2]  Yet as scalable a system or technology solution may be, growth-impeding obstacles can interfere *even as* the adoption of a technology is set to take off.  This paper serves as a set of guidelines for driving adoption.

A more scalable blended learning platform results in:

- Greater ROI
- Greater ability to meet the mission of the organization
- Enhanced harmony and satisfied faculty
- Greater ability to serve students

## Why Driving Adoption is Challenging

In many institutions, the introduction of technology into the classroom presents several obstacles to overcome. Chief among these is that adoption of any new technology – no matter how transparent or easy to use it may be – requires changed behaviors.  And every educational institution has its own unique DNA leading to its degree of willingness to embrace new technologies. The challenges can be grouped into three key areas, and are somewhat simple to identify, though not always easy to address:

- Cultural – What is the blend of attitudes towards technology and pedagogy?

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[1] Heinze and Procter

[2] André B. Bondi, 'Characteristics of scalability and their impact on performance', *Proceedings of the 2nd International Workshop on Software and Performance,* Ottawa, Ontario, Canada, 2000, ISBN 1-58113-195-X, pages 195 - 203

- Process – In what ways can an organization best address workflow to ensure seamless adoption?
- Academic – How does lecture capture fit into the pedagogical goals of a college or university, and how can it be seen as an effective academic tool that enhances an educator's ability to engage with students?

It is not unusual for institutions to face challenges and decision points that can influence successful deployment:

- **How to deploy technology**.  Should it be hosted on premises (onsite and within an organization's campus firewalls)?  In the Cloud?  Or employ a hybrid model?
- **Staffing.**  Who "owns" the responsibility of ensuring that everything works?  How much staff time will it require?
- **Instructor resistance.**  How can you get faculty to accept the new and novel?  How do you create policies that ensure acceptance?
- **Funding.**  Where is the money coming from: grants? Student fees? Endowment or capital expenditure reserves?
- **Fears about policy, privacy and copyright issues.**  Instructors may resist or fear mandated behaviors or policies over which they feel they lack control.  Similarly, who "owns" the content once it is recorded, and how does that content interplay with an educator's own intellectual property?
- **Lack of understanding concerning efficacy.**  Is this technology improving grades? Or is that the proper metric for measurement?

The realities concerning which type of program or area of study may readily adopt lecture capture can sometimes go against the grain of conventional wisdom.  Where hard sciences, medical, and business schools were among the earliest adopters of lecture capture, many organizations find other pockets of acceptance.  At George Washington University for example, the Humanities are major users of lecture capture.

> *"For lecture capture to be embraced by academics, the university needs to understand and articulate the educational rationale for the service."*
>
> Janette Burke, Monash University

Successfully deploying lecture capture takes work.  It requires inter-departmental and inter-functional area cooperation (process), combined with openness to technology (the cultural) and appreciation of new pedagogical approaches (the academic).  Fortunately, lessons in successfully deploying lecture capture can be learned from several institutions that have paved the way.

# Five Successful Deployments

Each of the five successful deployments described in this paper offers its own compelling lesson – with a key takeaway – about how to best drive adoption of lecture capture.  Figure 1 summarizes key elements / situational criteria that help drive adoption.



**Figure 1. Five Key Elements to Driving Adoption**

## George Washington University – The Mission Critical

The largest institution of higher education in the District of Columbia (with 20,000 FTE students), GWU is comprised of three major campuses and several graduate education centers located in the D.C. area.

 Since 2006, GWU has introduced lecture capture into 32 classrooms across two campuses, and is seeking to expand to another campus in 2012.  Many established programs have integrated lecture capture, and the university – like many others – publishes availability of captured classes to iTunes University and Blackboard.  **Key Takeaway: Business value.** GWU views lecture capture as *mission critical* in an environment where high-profile programs in foreign affairs, business, government, and political science hold sway, but the technology has been equally adopted by other areas.

> *"Adoption has been driven mostly by faculty and students, along with the support of our administration, so we have seen demand from everyone."*
>
> John Arpino, George Washington University

## Wayne State University – Piloting, Partnerships, and Business Process Re-Engineering

With almost 32,000 students participating in more than 400 academic programs, WSU's main campus in Detroit comprises 100 buildings over nearly 200 acres. In addition, five extension centers offer higher education to students throughout southeast Michigan.  After the entire organization displayed strong interest in lecture capture, WSU's Dean of the University's Library System and its Chief Information Officer teamed to establish a large pilot running in 47 classrooms, combining a mix of rich media lecture capture with more limited audio/data capture.  **Key Takeaway: Inter-departmental cooperation.**  Eighteen months of planning *prior to the pilot* – which involved collaboration between many different elements of the university system – and project management helped lead to a very successful program.

> *"The bang you get for the buck from this kind of technology is not indirect. It is immediate and realizable for students and faculty."*
>
> Joe Sawasky, Wayne State University

## Qatar University – Innovations in Teaching and Learning in the Midst of the Arab Spring

Established in 1973 as its country's first national school of education, Qatar University has evolved into the country's sole publicly funded university, serving more than 7,000 male and female students.

Its seven colleges offer a total of 60 specializations. Lecture capture has been introduced to the students and instructors of the university's College of Pharmacy in a new light: as a means of improving teaching first and foremost. Policies on peer mentoring and faculty review of *other academics* take on a whole new slant on this almost paperless campus. The number of classes captured and made available, attitudes about openness of content, student-centered access, and even approaches to testing are influenced by the desire to improve teaching. The result has been a remarkable multi-year program that teaches students fundamental concepts today and how they will be applied when making life and death decisions on behalf of their patients in the future. **Key Takeaway: Focus on academic quality and challenging cultural assumptions.** Policy can be mandated based on "newness" of programs but it helps to integrate that policy with other factors, such as organizational mission. At Qatar University, improvements in teaching and learning are the focus. Qatar University's goal is to become a leading teaching university with an emphasis on establishing a reputation as a modern, paperless and technologically-driven university. Students can look forward at courses to be offered in the future and revisit anything from the past. About 80% of the college's learning resources are electronic. "This has a profound impact on how we deliver education. Suppose we find a mistake that affects test outcomes; it's an excellent way to be proactive and encourage students to question everything. There is a reason our region is going through the Arab Spring. We want students to challenge everything. We champion evidence-based decision making."

> *"We are trying to establish a culture of accountability and transparency and we are delivering a progressive North American pharmacy curriculum in a part of the world where pharmacy education tends to lag behind. We are educating students whose first language is Arabic. All of our content is English. Add a third, professional language, 'Pharmacese' and you can appreciate the challenges this poses for a pharmacy student in Qatar. We know students struggle when they hear rapid speech, variable accents, colloquialisms, and slang and we strive to avoid this. Lecture capture serves multiple purposes (for our students.) by permitting them to revisit the instruction and discussion in the classroom whenever, wherever and as often as they want before graduation."*
>
> Dr. Peter Jewesson, Qatar University

## Monash University – Student Demand and the University Mission

Australia's Monash University has used lecture capture since the 1990's, starting with its own homegrown technology. The university is quite familiar with the benefits of lecture capture and has expanded its use, with all six of its Australian campuses using the technology and two international campuses trialing the service. On average 1,032 lectures are recorded in 101 theaters equipped with Echo360. Many of the 62,550 students demand lecture capture: viral demand began in the late 1990's and shows no sign of abating. The university has navigated the need to match its deployment with the organization's overall mission, and the library provides leadership of the service. Not all programs are appropriate for lecture capture, based on privacy or cultural reasons, and a number of academic steering committees

> *"We know from students' perspectives that they value the service and are using it in droves. They do not see lecture capture as an optional extra, but as an essential learning tool."*
>
> Janette Burke, Monash University

create appropriate policy around implementation of lecture capture, taking into consideration copyright, privacy, intellectual property, national laws and cultural norms.  Monash also has a tiered (or graded) system of high tech lecture theatres, standard and studio rooms that determine where the technology will be placed, in conjunction with the teaching methods and pedagogical goals of the academics and faculty instructors.  **Key Takeaway: Student demand and satisfaction can be integral to adoption.**  Monash University established an approach to placing recordings in one centralized location so that they could conveniently be managed.  This improved turnaround time from recording to availability. And "with consistent access points, the user experience is much better."

### University College London – Finding Champions, Evolving Applications

Ranked seventh among the world's top ten universities by QS Work University Rankings, UCL wanted to get serious about a more structured approach to lecture capture.  Their initial experience with technology saw various groups within the university "doing their own thing" with podcasting, YouTube, and other recording mechanisms UCL had been providing utilizing roll-about trolleys.  Seeking a more scalable solution, UCL deployed a 22-room pilot across the campus, which has grown to more than 50 classrooms.  More than 40% of its 24,000 student body is engaged in graduate studies, with the medical school, Economics, and Engineering all relying heavily on lecture capture for post graduate education. **Key Takeaway: Find Champions.**  UCL's approach was to make lecture capture ubiquitous where possible and then identify champions who could illustrate the benefits to other programs. Those champions are essential in helping to identify and articulate specific performance improvements.

> *"We see lecture capture as contributing to the reinvention of the student as learner, giving flexibility, which is a big deal at the moment. We have an obligation to work to that, and from the student feedback it's clear they like it, and think it has helped."*
>
> Dr. John Mitchell, University College London

## How Organizations Can Drive Adoption

Successful adoption and scale calls for an understanding of a number of factors that address the three challenges described earlier – cultural, process, and academic – and taking steps to accommodate these factors.

Ten "advisory approaches" will be useful to many organizations.  Table 1 highlights our advisories and where they touch on the three major obstacles.  Taking these steps to address the cultural, process, or academic obstacles will help your organization successfully drive adoption.

- **Understand the cycles that drive adoption.**  They can be top down, bottom up, or across the board.  At Wayne State University, lecture capture became a natural add-on to an existing podcasting capability.  In addition, the library system became interested in moving to a standardized approach to lecture capture that integrates with its existing support infrastructure, which includes Blackboard and media services support and the Office for Teaching and Learning.

|  | Cultural | Process | Academic |
|---|:---:|:---:|:---:|
| Understand adoption cycles / drivers | √ | √ | √ |
| Involve the right people | √ | √ | √ |
| Clone your champions |  |  | √ |
| Identify benefits to your overall institution & map goals of deployment | √ | √ | √ |
| Plan extensively while remaining flexible and open to revising those plans | √ | √ | √ |
| Create a consistent service model |  | √ | √ |
| Design sustainable policies | √ | √ | √ |
| Create substantive processes for measurement |  | √ | √ |
| Encourage peer communication | √ |  | √ |
| Have best of breed capture and delivery mechanisms |  | √ | √ |

**Table 1  Ten Advisory Actions and Their Impact on Obstacles**

- **Find opportunities to identify demand – who needs or wants it and why.**  Qatar University is branching out to use lecture capture for professional development, capturing College of Pharmacy Professional Development events and research seminars and making them available to anyone (inside or outside the university) who may be interested.  For example, there is demand inside Qatar and elsewhere – and even some non-middle-eastern pharmacists have been accessing its PD content.

- **Involve the right people.** Every single successful organization appears to include multiple functional areas that work together to help lecture capture become rooted in the institution.  At Wayne State, it is IT and library services (along with the academic technology advisory group, with IT staff and teachers from each school and college advising the central IT group and library services).  According to Wayne State's Sawasky, "It helped maintain momentum, with IT sharing governance. We weren't just focusing on faculty or technologists, but involved both groups." The resulting team understood that "we need to involve the academics. We set up a steering committee, which is still running and which will work on our next level of adoption of lecture capture as well as other opportunities for new software and functionality."

- **Clone your champions.**  University College London initially focused on engaging with likely champions and then built upon those successes to find other opportunities. Those champions are actively seeking to identify the pedagogical impact of blended learning to support further adoption.

- **Identify benefits** unique to your institution and **map the goals** of a lecture capture deployment to the goals of the university (whether financial, pedagogical, or overall mission).   Wayne State

University saw both the academic and business benefits, and was very interested, according to Joe Sawasky, in the "ability to scale. If it is reliable enough and scalable enough to do a lot more with only a few additional systems, in the end it will help us contain and avoid significant increases in operational expenses."

- **Plan extensively while remaining flexible and open to revising those plans.** Every organization interviewed planned extensively with inter-departmental organizations. Wayne State spent 18 months, achieving buy-in from many different departments and committees and ensuring that policies were sufficient to promote adoption, not inhibit it.

- **Create a consistent service model.** Wayne State University took a minimal cost and ease of access approach to its centralized services. There are no charge backs to individual departments unless they wish to buy extra equipment beyond that which was supplied through an initial purchase fund comprised of student fees. Dr. Sandra Yee and Joe Sawasky agree: "The notion of providing low cost or free service to departments helps shape behaviors and provides a real benefit. It is hard to refuse something that is free or low cost. And we offer significant storage space (not without some limits) and are here to help everyone with scheduling, which has resulted in an easy and predictable pathway for our internal users."

> *"We had strong partners in this project. The partnership aspect is the most compelling part of our approach. It was an 18-month process to plan for this and we sought buy-in from many different departments. Faculty members were interested in making students able to review content even if they were coming to all classes "*
>
> Dr. Sandra Yee, Wayne State University

- **Create sustainable policies** (retention of content, management of content, security, opt-in or opt-out) that address faculty fears, e.g., that students will stop coming to class. Some universities face privacy issues and literally are unable to record certain programs. Monash University created an academic steering committee with representation from IT, Library and student services that established policies regarding the use of lecture capture, particularly addressing copyright and privacy concerns. The steering committee literally drove the implementation process at Monash. Policies concerning retention of content can actually support the process of encouraging faculty adoption based on how they are structured.

- **Create measurements**. Scores, retention rates, recruitment numbers, student surveys, faculty performance, and review measurements (monitoring how often and when students review content) are all methods of measuring the impact of blended learning. Each year, George Washington University produces a report required by its funding mechanism that measures areas like numbers of course captures, downloads and streams of actual content, how many courses are included in the program, and any unique faculty behaviors. Many of the organizations interviewed for this paper have ambitious plans to begin measuring these areas in the coming years.

- **Encourage peer communication** to build a holistic educational program. This is a relatively novel concept in most colleges and universities, where academics are comfortable with peer research paper review but less accustomed to the authorized access to peer instructional content,

including lecture capture. At Qatar University, Dr. Jewesson states "A professor teaching therapeutics will be a subject matter expert in this area, but may benefit from a refresher on the underlying pathophysiology of the disease in question.  By reviewing a fellow faculty member's related pathophysiology lectures, they can get an update, enter the classroom and say, 'I know Professor X delivered this last week. I know exactly what he/she said so now we'll build on that.'" As the pharmacy curriculum is heavy, the college rule is to avoid delivering redundant or conflicting material.  "If you inadvertently deliver anything that has already been taught, it means you haven't determined the student's learning needs before stepping into the classroom. You are potentially wasting a student's time and you can expect students to challenge you in this regard. This changes the dynamic in the relationship between student and faculty significantly, and adds a heightened level of accountability." Lecture capture also produces archived content that provides a quality assurance mechanism, presenting an opportunity for peer assessment of teaching for improvement and academic promotion purposes, and it contributes to the creation of a comprehensive record of the instruction provided.  This record is critical when developing learning assessment instruments, and Dr. Jewesson states "students are encouraged to respectfully challenge the professor if there is any discrepancy between the content delivered and the assessments undertaken.  Once again, this is accountability and transparency in action."

- **Have best of breed capture and delivery mechanisms.**  Simple tools that date back to the early days of podcasting, iTunes University, and YouTube are a far cry from a university-based, enterprise-wide approach to course capture and management. "Standardization, in terms of support, has been helpful.  (Library services) supports classroom technology and IT provides the back end 'wires.'  By standardizing on this equipment, we can provide better support," says Wayne State University's Dr. Yee.

## Policy

In the course of speaking with many involved with lecture capture deployment, Wainhouse Research has identified what is arguably the single biggest impediment to successful adoption: uncertainty concerning policy.  Many organizations attempt to achieve academic approval and acceptance by creating policies that are designed to play to educator comfort levels. When politics are at play, it may seem that the path of least resistance is the safest route.  Thus we have seen some of the following policies at various universities:

- Opt-out, where the educator may decide he/she may not be recorded
- Opt-in, where the educator decides if he/she is willing to be recorded and if recordings may be released
- Record and opt-in, where the educator is required to be recorded but has the option of deciding if recordings may be released
- Record, no questions asked, where the educator is recorded and must participate and use the technology, but where limits may be set on who gets to view the recordings.

- Record, no questions asked, where the content is made available to the entire world, as is the case at some high-profile institutions like MIT.

Policies also vary concerning whether or not students may be recorded, how long recordings are maintained, and types of courses that are appropriate and preferred for capture. Among the institutions interviewed for this paper, most of the organizations have some type of policy:

- George Washington University has Echo360, iTunes University, and Blackboard policies, and they tie together. The university keeps the course archives but after the semester has concluded, students no longer have access. Faculty can review their captured courses for two years after the end of semester, and then the course is retired.
- Qatar University College of Pharmacy mandates recording and availability of captured lectures – but unless the material is specifically for professional development / continuing education, only faculty and registered students are allowed to review degree program lectures. In a Middle Eastern country where being recorded on camera might be unwelcome and where cultural norms limit gender mixing, these issues need to be addressed before lecture capture is introduced.
- Monash University keeps access within its security wall to minimize any copyright and privacy concerns related to material that might be captured.[3] To be certain that guest lecturers may feel comfortable being frank, sometimes these captured lectures are edited.
- Wayne State University has an opt-in policy, but had to quickly address a rumor that faculty were going to be automatically recorded and that the recordings would be made public. Some faculty members were concerned about the reuse of intellectual property. Wayne State determined that its existing policies already addressed these issues and no new policies were required.
- University College London has created its own set of takedown, archiving, and retention policies. Concerns existed regarding what would happen if material was stolen and could possibly re-appear years later. Digital watermarking became an important element of ensuring that control is maintained over their content. As many as 10 to 12 diverse groups within the university were responsible for developing the language in the final policy documents.

These examples speak to the need for an institution to market and evangelize. A significant amount of communicating is necessary, especially surrounding intellectual property rights.

## Five Summary Tips for Driving Adoption

With as much diversity as exists among the colleges and universities interviewed for this paper, nonetheless several aspects are common across the board. These five behaviors can be found to varying degrees at all five organizations:

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[3] Some universities alternatively make all captured courses universally available. Again, this relates to the mission and culture of each particular university.

- Creation of solid inter-departmental / inter-functional partnerships
- Understanding of academic / pedagogical implications / goals and how to tie them into the overall organizational goals
- Creation of unique policies appropriate for the specific organization
- Understanding of the importance of measurement and assessment
- Deployment of technology that is scalable, sustainable, rock solid, easy-to-use and well supported.

*"We're great believers that access to relevant content by the right people at the right time is a good thing. It's part of our culture to also make learning resources freely available to our clinical affiliates. We are also using lecture capture for continuing pharmacists' professional development events. They can't all be here for these events, so we make the content of the sessions freely available to them on our website, and to anyone in the world for that matter."*

Dr. Peter Jewesson, Qatar University

Many technology champions often have the drive necessary to foster adoption, yet "flying solo" has its consequences. Of all lessons, perhaps the greatest observation that can be made is that lecture capture – like many other collaborative technologies – requires its share of co-pilots, navigators, and others to help steer and drive adoption.

For many in higher education, lecture capture is becoming central to a strategy for digital education, wherein it is one of multiple tools that will help post-secondary education rise to the task of improving its ability to educate learners in a digital age. Adopting the approaches discussed in this paper will help many organizations get beyond the pilot phase and truly embed the technology in their organizational DNA, as is being accomplished at the five organizations described here.

Monash University knows from the measurements it has created that "students love and demand lecture capture, and they like the flexibility. However, deployment simply as a response to student or faculty demand is not enough. Optimal deployment— and utilization—without overwhelming faculty and students, requires that colleges and universities carefully consider the steps and tips offered in this paper.

## About the Author

**Alan D. Greenberg** is Senior Analyst & Partner at Wainhouse Research, with special expertise in distance education and e-Learning. Alan is co-lead analyst on WR's WebMetrics web conferencing survey program. He has conducted research into dozens of distance learning networks and e-learning users, was product marketing manager for a set of turnkey classroom packages, and has led a number of educational and training initiatives. Most recently he authored the three-volume segment report *The Distance Education and e-Learning Landscape* and authored numerous white papers and reports on lecture capture, web conferencing, videoconferencing, and interactive whiteboards as applied for education and e-Learning. He also has consulted to many states, universities, and regional educational consortia on distance education strategies, and received the *2010 Outstanding Leadership by an Individual in the Field of Distance Learning* award from the U.S. Distance Learning Association. Alan holds an M.A. from the University of Texas at Austin and a B.A. from Hampshire College. He can be reached at agreenberg@wainhouse.com.

## About Wainhouse Research

Wainhouse Research, www.wainhouse.com, is an independent market research firm hat focuses on critical issues in the Unified Communications and rich media conferencing fields, including applications like distance education. The company conducts multi-client and custom research studies, consults with end users on key implementation issues, publishes white papers and market statistics, and delivers public and private seminars as well as speaker presentations at industry group meetings. Wainhouse Research publishes a variety of reports that cover all aspects of rich media conferencing, and the free newsletter, *The Wainhouse Research Bulletin*.

## About Echo360

As a global leader in blended learning and lecture capture products, Echo360 helps higher education institutions keep pace with modern students' learning needs through products that digitally record and upload learning content. Echo360 has been recognized with a Product Line Strategy of the Year Award from Frost & Sullivan and named a Visionary Vendor in Educational Technology by IT research firm Basex. Echo360's products facilitate better instruction for large collections of students, lower costs and enrich learning experiences by enabling students to easily access and share multimedia content. Through Echo360's platform, students can replay recorded sessions and review information from instructors online, at their convenience and across various devices. Echo360's products are used by 500 institutions in 28 countries.