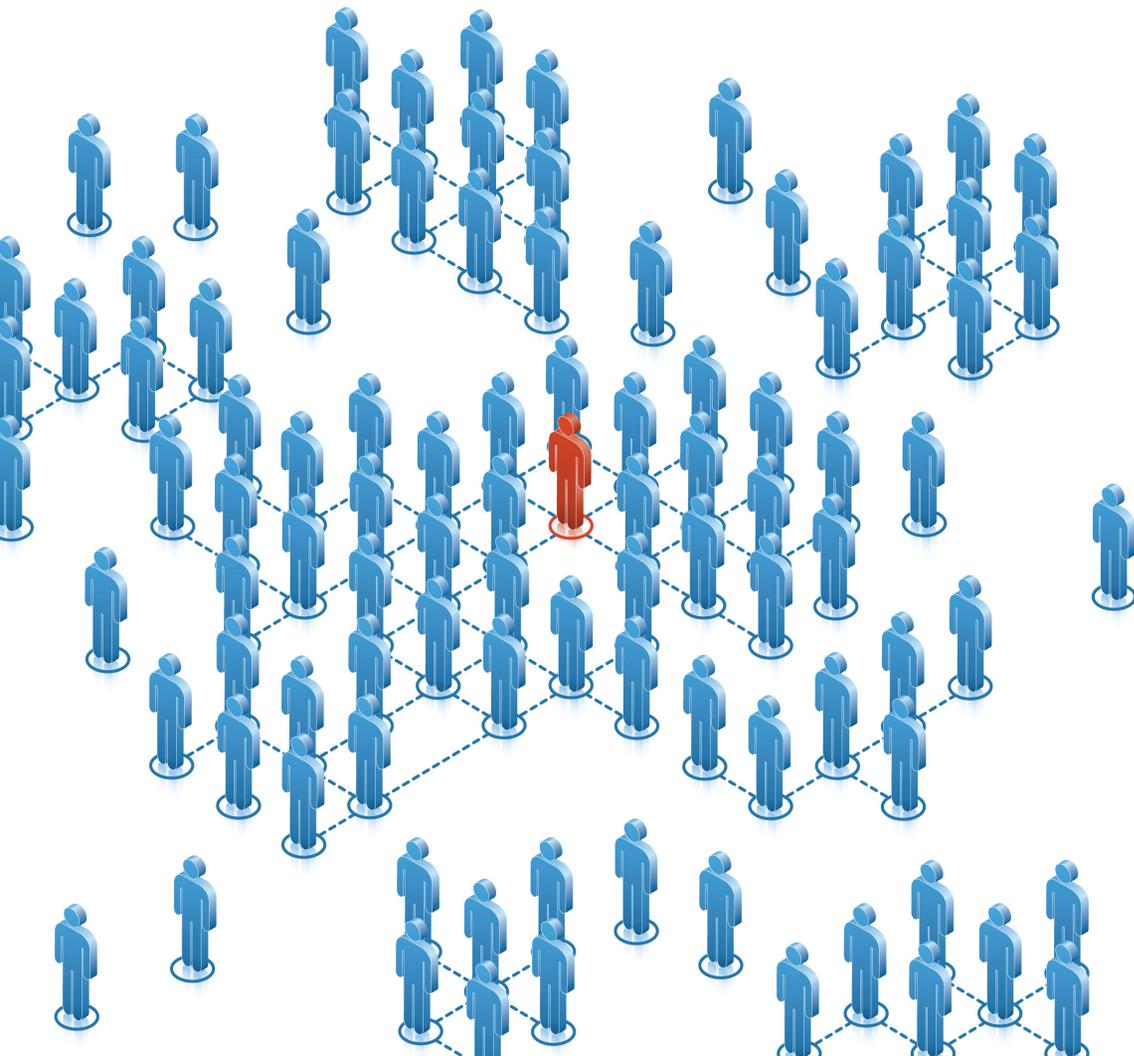


Successful Strategic Planning for Your Lecture Capture Initiative



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INTRODUCTION

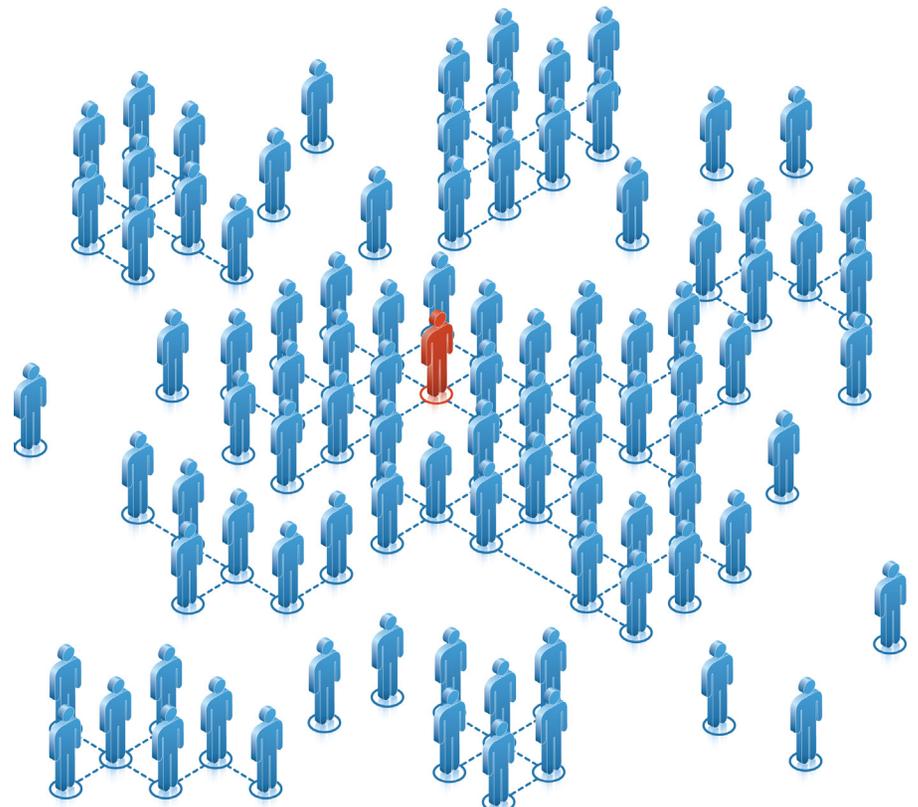
During the past year, I've learned a great deal about planning and implementing a lecture capture pilot program at the university level. During the course of the pilot, I developed a list of questions that helped me design, implement and support automated lecture capture technology in one of our large lecture halls at CU-Boulder.

Based on those experiences, I developed a list of questions for the lecture capture beginner – a technician, technologist, or project manager with a developing interest in the technology and its potential impacts on learning and retention.

This outline remains a work in progress, but by considering the list of questions before you start capturing lectures, you can accelerate and streamline a successful institutional deployment.

Special thanks to Chris Evans, Julian Kinsman, Mark Werner and my family for putting up with my obsession with automated lecture capture!

...by considering the list of questions before you start capturing lectures, you can accelerate and streamline a successful institutional deployment.



1. FACULTY & PEDAGOGY

Why it's important: Buy-in. If faculty concerns are not addressed, participation and adoption may suffer.

How will you communicate with faculty about the technology, its capabilities, and expectations?

How can you get faculty involved in your planning meetings?

Who will invite them to the table?

What questions and concerns do you anticipate from faculty, and how will you answer?

Have you reviewed available literature about lecture capture?

- Are you prepared to address faculty concerns related to this technology?
- When a faculty member asks “why?” it may help to have a peer reviewed answer to provide...

What are their fears?

- What will be the primary concerns of faculty and how will you address them?
- Examples of typical concerns: attendance will be affected, distract/detract from in-room instruction, intellectual property issues...

How can you get to know your customer?

- Outreach?
- Observation?

What do you assume your customers know about lecture capture technology?

- Are your assumptions correct?
- How can you test them?

How can you learn from faculty what they need from you?

Can you get into the classroom and see how they are teaching?

- Who can you observe in the classroom as they teach their class?

Who can you ask what their needs are?

How are you going to assess the technical savvy of your end user?

- Survey?
- Observation?

Looking at your assessment data, what were the lessons learned about what your customers need?

What is the teacher's point of view?

- How do instructors view the room?
- ...the technology?
- ...the end result?

How can you get to know the “other side” of lecture capture?

- If you are interested in the pedagogy of lecture capture, get to know the issues surrounding the technology behind lecture capture.
- If your primary interest is the technology, then get to know the issues surrounding its use in the classroom.

How are you going to know if what you're doing is in line with what users want?

How can you build faculty confidence in this technology?

How early can you brief/train faculty to give them plenty of time to be comfortable with the technology before they have to instruct or explain it to their students?

What information can you provide professors about the initiative if they ask for it?

Will you encounter faculty who haven't bought into “smart classrooms” in general?

How are you going to train the stakeholders?

How can you walk faculty through the basics?

- Video, audio and PowerPoint capture automation means the burden of recording is off of them.
- Distribution over the Internet via a secure connection...

How can you use the technology for professional development and supplemental online training?

- This can be useful to get the faculty exposed to the experience their students will have, training support staff and more.

What will you cover in formal training sessions?

What will you address in informal training?

What training should take place in groups, 1:1, online?

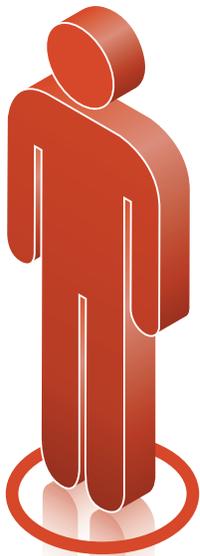
What opportunities do you have to show them what you are doing?

- Examples of the system interface?

2. LEADERSHIP, CHAMPIONS, STAKEHOLDERS

Why it's important: Finding an internal champion - someone who can lead and motivate the implementation team - is key. This person does not have to have a specific passion for lecture capture technology or online synchronous or asynchronous learning. He or she simply needs to be a respected "cheerleader" who can paint a picture that will stimulate interest and support amongst the potential stakeholders in your environment.

Who is the internal champion?



How can you align the mission of the lecture capture pilot with the larger mission of your institution?

Does content capture fit into any of your schools' mission statements?

- If so, how can you tie them together?

Who is the internal champion?

Who is going to lead the project?

Do they need to possess advanced technical skills?

Who do you think are the stakeholders?

Who might your customers and/or administration think are the stakeholders?

When can you identify and assemble a group of people with technical knowledge?

When can you identify and assemble a group of people with the knowledge and skills to empower the teachers?

When can you get both of these groups together?

3. MEASURING SUCCESS, SCALING LECTURE CAPTURE

Why it's important: Without knowing why you are undertaking lecture capture, you won't know what success will look like. Push yourself and your team to determine how you will quantify success before you begin: X percent faculty adoption, X percent student and/or faculty satisfaction, X views per class, X classes captured, X number of trained technicians, X special events captured, X downtime experienced, and the development of a scalable support process.

What are you trying to achieve?

What is your mission or goal?

What will success look like?

How are you going to measure that success?

How will you get there?

Who will evaluate if the system is working?

Are you going to ask the end users for feedback?

Will you conduct satisfaction surveys with faculty?

- Students?
- Staff?
- Administrators?

If the pilot/expansion is successful, how do you plan on scaling it to meet future needs?

How will you avoid biting off more than you can chew (resource management)?

How will you handle requests for course capture that fall outside of the initial project?

- If administrators see that students are benefitting from the technology, it may take off fast and furious... then what?

Have you thought about what services you are and/or aren't prepared to implement?

- Burning and/or distributing DVD copies?
- Touch panel camera presets?
- Automatic camera tracking?
- Special events?
- Requests from outside the campus community?
- If your customers see you recording class sessions, it's not a great leap to think that you may be enlisted to record the next distinguished lecture series event, or similar.

What reports or statistics will be made available to faculty?

- To administrators?
- Student specific viewing?
- Course viewing in aggregate?

How can you describe the data that will be available to evaluate?

- Example: here is the information you get when you run reports if you...
- ...Allow generic passwords.
- ...Use Active Directory/LDAP/single sign on.
- ...Integrate with your learning or course management system (LMS/CMS).

How will you find out what reports or other data administrators want to evaluate on an ongoing basis?

What are you trying to achieve?



4. COLLABORATION

Why it's important: Hundreds of universities and colleges have initiated, deployed and scaled successful lecture capture. With limited time and resources, tapping into their collective wisdom can provide further insight, lessons learned and a network of colleagues who together can share tested approaches.

With whom can you collaborate – both on-campus and off?

Who else is doing this on campus?

What other groups on campus can assist?

- University communications?
- Instructional technologists?

What other groups off campus might provide input, guidance, experiences, etc?

- Other schools?
- Who else is doing this in the state, region, country, world?

How can you reach out to other people who have already done it?

- Professional organizations?
- Social networking?
- Mediasite User Group?

What questions can you ask other schools/partners to explain how they deal with X (their policies, technology, support process, security, privacy, network security, legal releases, intellectual property/copyright...)?

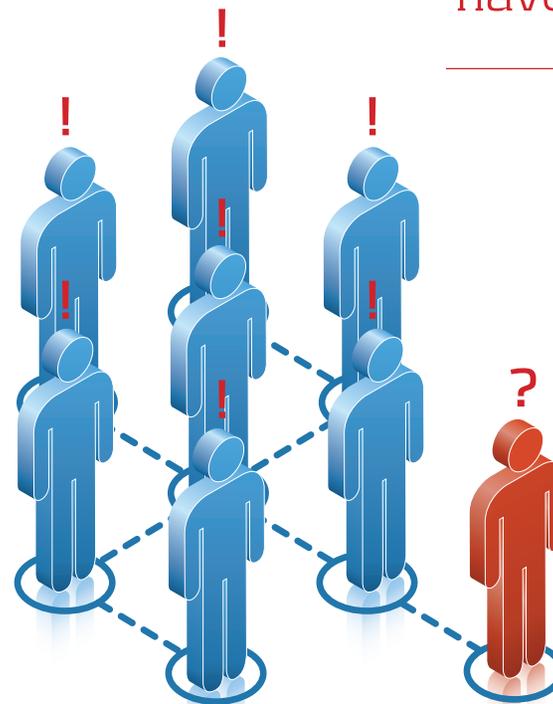
How can you leverage your Sonic Foundry sales engineer for technical support?

How will you leverage Sonic Foundry technical support?

- If you have a question, look it up briefly, and if you can't find the answer in ten minutes, call them...that's what they are there for...

How can you ensure you don't expend resources reinventing the wheel?

How can you reach out to other people who have already done it?



5. TECHNOLOGY AND ITS IMPACT ON LEARNING, INSTRUCTION AND TECHNICAL STAFF

Why it's important: Selecting a lecture capture platform necessitates thinking about what kinds of classroom content need to be recorded and available online, and how much interaction the students and faculty in the room have with the technology.

Audio is the most important element of the captured lecture; how will you capture the instructor's audio?

Do we need to capture student/audience comments and questions?

- If so, how?
- Is it feasible for the teachers to repeat student questions in order to get them onto the recording?
- If the teachers don't know they have to repeat the questions, they probably won't... and even if they know to repeat the questions, they may not...

Do you understand the potential challenges, advantages, disadvantages and sacrifices associated with using wireless lapel microphones in conjunction with other microphones, vs. only using wireless lapel microphones?

Do you have someone on staff that can configure a Digital Signal Processor matrix?

How much interaction do the students and faculty have with the technology?



How will you manage expectations regarding audio captured by ceiling microphones, boundary

microphones, or other audio deployment models?

What is the consequence if student questions aren't recorded?

- Is that even a problem for your needs?

Do you need to provide a service for captioning from the beginning?

How will you capture the instructor on video?

- Do you need to capture the audience/students on video?

Do you understand the pros and cons of video cameras with an operator vs. automatic pan, tilt, zoom (PTZ) cameras?

Do you have the personnel to support multiple recorders on campus?

How are you going to make the lecture capture technology easy to use for faculty?

- ...For students?
- How will you know if it is easy?

Are you planning to automate the capture of each course?

Can you afford to place a student or a staff member in the classroom for the duration of the class?

- If not, then you may want to focus more on automating the recordings.

Will you need to produce live broadcasts (whether for classes or for other campus events)?

How important is securing the content?

How important is identity management (single sign-on vs. generic passwords)?

Do you fully understand the impacts of your decisions on the project?

6. SUPPORT, OVERSIGHT & MANAGEMENT

Why it's important: While platforms like Mediasite can be entirely automated and allow remote administration, it is beneficial to consider how the system will be maintained, supported and monitored before you begin capturing lectures.

How are you going to support the technology?

How well do you think your support model will support automated lecture capture?

How will you handle support going forward?

- Distributed support or central?
- Does your support model match your intended goal?

How will you proactively and reactively support the capture?

Who will be responsible for troubleshooting?

Who will be responsible for system redundancy?

- How important is redundancy?
- Using series of distribution amplifiers, you can create a secondary system that goes directly into the Mediasite.

What happens when a capture fails due to technology or user error?

What are you going to tell faculty if a lecture fails to record and/or upload?

What happens when the general classroom technology dies?

- If the Crestron or AMX controller dies, does the Mediasite functionality have to suffer?

What type of notification will go out to faculty and/or students when there is a problem?

- Example: create a "Sorry for the inconvenience" template that lets them know about the failed recording.

How will you respond to a call from a professor when he/she says the recording failed?

Who will check microphone batteries daily?

- Who will respond when the microphone battery is dead?
- Remember the captured audio is the most important content...

If you have a student operator in the room, how will you support them when they have a problem?

What's your tolerance for downtime?

Do you need a backup plan?

What happens when we need to upgrade the Mediasite Recorders/Server Software?

- Is this handled by the same person who manages the project, one or more support technicians, or other?

What happens if the recorder needs to be replaced?

- Do you have a backup?
- If not, then it becomes even more crucial to clarify expectations in the beginning.

Is remote web-monitoring/confidence-monitoring available in the lecture capture system?

- Enables more efficiency through technician multitasking, proactive monitoring of class recordings, faster problem diagnoses = faster problem solving. Multiple technicians can also monitor the same room, without being physically present, and escalated support experts can diagnose and solve problems remotely.

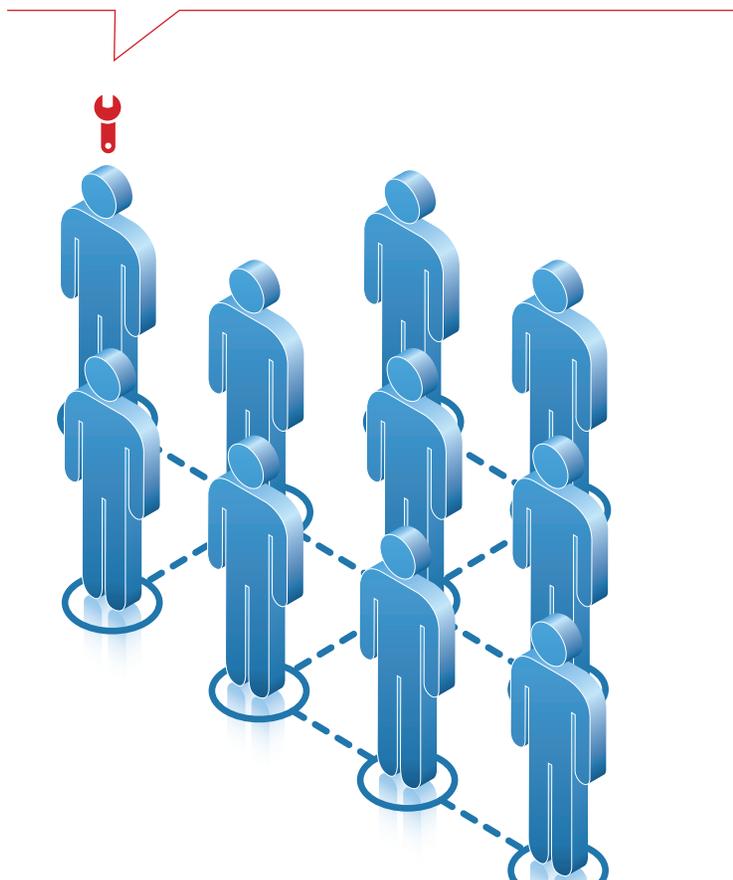
faster
problem
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= faster
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solving.



7. STAFF

Why it's important: Depending on the in-class experience and support model you desire, and the technical expertise of both your faculty and staff, you have many choices about how to deploy personnel resources to support course capture.

Who in your group is ultimately responsible for the technology?



Do you have the personnel resources available to support course capture without leveraging the automation capabilities of Mediasite?

- Can you afford to have someone – student or staff – transport, setup, configure, produce and record individual class sessions across campus?

Do your resources/personnel line up with your goals and expectations?

How many people can you realistically allocate to lecture capture?

- How many do you want to allocate?

Who in your group is ultimately responsible for the technology?

Who will assign roles and responsibilities?

Who is the lead technician?

Who is the lead on the instruction/faculty side?

What is the technician's role in an automated system?

- Preventive practices are encouraged, examples: check microphone batteries daily, check recordings via remote tools...

Who will maintain the recorders?

Who will maintain the server?

If you don't have a dedicated Server Administrator for the project, will you consider hosting with Sonic Foundry?

- If hosting with Sonic Foundry, who is the Server Administrator counterpart at your institution?

If you don't have a Crestron or AMX programmer, or a technician that can quickly solve control system issues, does it make sense to use a touch panel?

Who will provide training for support staff?

- Will you use recordings to meet this need?

Who will be responsible for developing and documenting policies and procedures?

8. COMMUNICATION

Why it's important: Relying on word of mouth or “campus awareness” is not a reliable way to disseminate accurate information about your lecture capture initiative. You should consider substantial proactive communication to stakeholders.

What is the frequency of lecture capture communication?

How will you define “on a regular basis”?

What is the system for faculty/technical communication?

- Will you want someone to write monthly “checking in to see how it’s going” emails to faculty?
- If so, who should that be?

How are you going to communicate with the end users (faculty, students) before the project begins?

- What about during the project?

Who is the individual or group assigned to communicate with faculty about the project?

- About the technology?
- About the pedagogy?
- Are they the same people or different?

How will legal housekeeping messages be delivered?

- Example: “if you are in the first three rows, you may be recorded”.

How will you share information when there are usage issues?

Are you advertising the service?

- If so, how?
- Will you let the media know about what you are doing?
- Who will handle that communication?
- What are the key messages you want the media to take away?

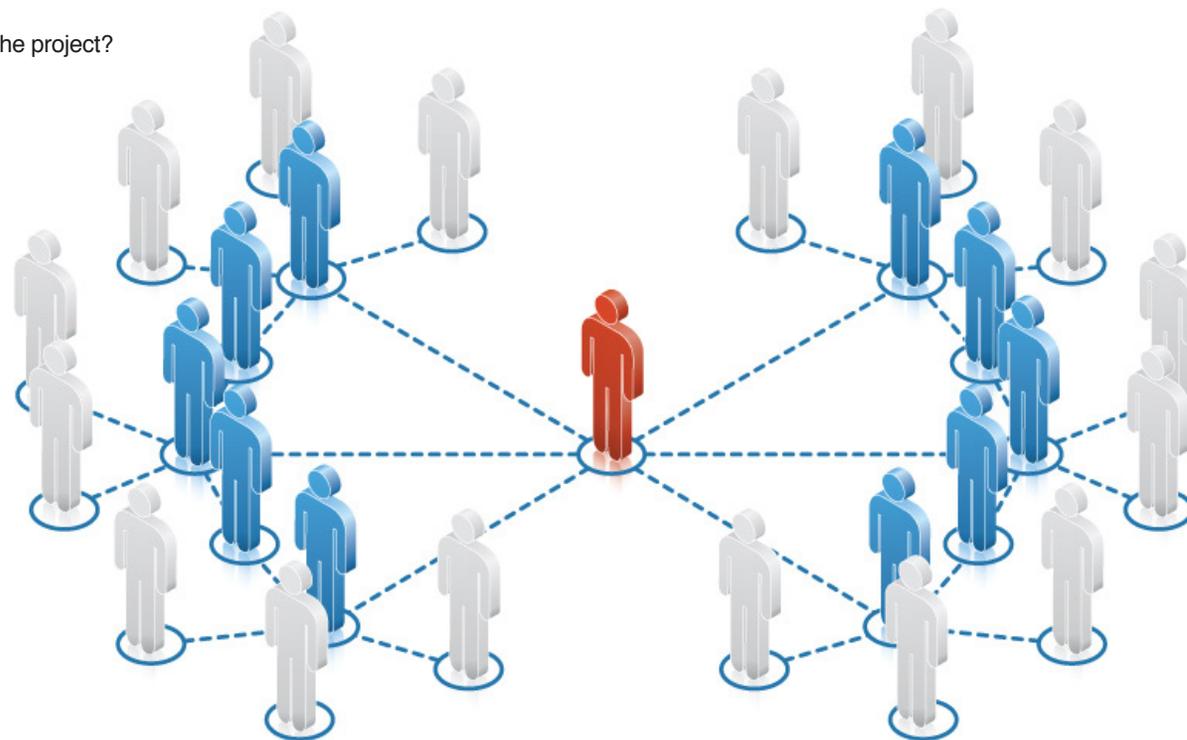
What other channels are available to you to promote the success /innovation of initiative?

- Examples: peer-reviewed journals, social media, traditional media, campus publications, blogs, EDUCAUSE, Mediasite User Conference, Rich Media Impact Awards, other awards projects, conference presentations/participation...

What are you taking for granted, if anything?

- If you perceive an assumption, you may need to ask questions.

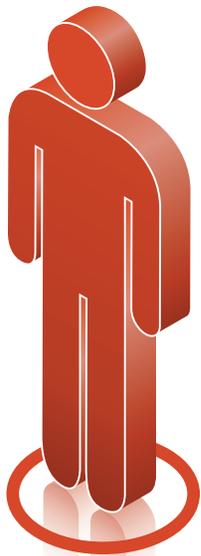
How will you share information?



9. TESTING, DOCUMENTATION & POLICY

Why it's important: Deploying lecture capture will trigger questions, particularly from faculty, about ownership and more customized usage beyond regular classes. Anticipating these questions and documenting team approved responses and practices will help standardize procedures that can continue to be tested, vetted and revised. If these questions can't be answered, adoption is going to be slower than if responses had been available right away.

How will you test the system?



What are the university's policies on copyright/intellectual property?

- Define how you will protect content this way.

What is the answer to the question "who owns the content of my lecture – me or the university?"

How will you set policies that don't promise the world?

- How can you set realistic expectations about response times "up-time", etc?

Who will document your responses to anticipated teacher requests?

- How will these talking points be reviewed, updated, vetted?
- Examples: student attendance concerns, requests for DVD copies, benefits of the technology, technology preset requests...

How will you test the system?

How can you use the technology to learn about yourself (Reflective Processing), so you can see how it feels to look at yourself speaking on camera?

Are there events you can or should capture before you begin the semester?

How will you document those successful practices for other members of your team?

How will you provide participants with documentation for accessing their catalog and making changes?

RESOURCES

The preceding questions were inspired in part by the following resources:

- Burdet, B., Bontron, C., Burgi P.Y. (2007). Lecture Capture: What Can Be Automated? *EDUCAUSE Quarterly*, 30 (2), 40-48.
- Chandra, S. (2007). *Lecture Video Capture for the Masses*. Paper presented at the Annual Joint Conference Integrating Technology into Computer Science Education, Dundee, Scotland.
- Cooperstock, J. R. (2005). *Intelligent Classrooms need Intelligent Interfaces: How to Build a High-Tech Teaching Environment that Teachers can use?* Retrieved February 27, 2009, from <http://www.cim.mcgill.ca/sre/publications/asee.pdf>
- Corbeil, J.R., Valdes-Corbeil, M.E. (2007). Are You Ready for Mobile Learning? *EDUCAUSE Quarterly*, 30 (2), 51-58.
- EDUCAUSE Learning Initiative. (2008). *7 Things You Should Know About... Lecture Capture*. Retrieved March 3, 2009 from the EDUCAUSE website: <http://net.educause.edu/ir/library/pdf/ELI7044.pdf>
- EDUCAUSE Learning Initiative. (2008). *DukeCapture: Automated Classroom Lecture Recording*. Retrieved March 3, 2009 from the EDUCAUSE website: <http://net.educause.edu/ir/library/pdf/ELI5011.pdf>
- Hilbert, D.M., Turner, T., Denoue, L., & Sankarapandian, K. (2008, July). *Autonomous Presentation Capture in Corporate and Educational Settings*. Paper presented at the meeting of the IADIS e-learning 2008, Amsterdam, The Netherlands.
- Kjorlien, Chad, Hermodson, Amy. (2007). "Mobile Learning Technologies: Aligning Mission with Innovation" *Educause Center for Applied Research Bulletin*. 2007 (8).
- Leoni, K., Lichti, S. (2009, October). *Lecture Capture Technology: A Look at Current Lecture Capture Usage in Higher Education – and How to Use it More Effectively*. Retrieved October 12, 2009 from <http://www.avtechnologyonline.com/article/35756.aspx>
- McClure, A. (2008). *Lecture Capture: A Fresh Look*. Retrieved February 27, 2009, from <http://www.universitybusiness.com/viewarticlepf.aspx?articleid=1043>
- Ritzer, G. (2005). The Weberian Theory of Rationalization and the McDonaldization of Contemporary Society. In Peter Kvisto (Ed.), *Illuminating Social Life: Contemporary Theory Revisited* (5th ed., pp. 38-58). Thousand Oaks, CA: Pine Forge Press.
- Rogers, Everett. (1995). *Diffusion of Innovations* (4th ed.). New York: The Free Press.
- Rogers, Everett. (2003). *Diffusion of Innovations* (5th ed.). New York: The Free Press.
- Rui, Y., Gupta, A., Grudin J., He, L. (2004). Automating Lecture Capture and Broadcast: Technology and Videography. *Multimedia Systems*, 10, 3-15.
- Schutt, R. K. (2006). *Investigating the Social World: The Process and Practice of Research*. (5th ed.). Thousand Oaks, CA: Sage Publications.
- Shi, Y., Xie, W., & Xu, G. (2003). The Smart Classroom: Merging Technologies for Seamless Tele-Education. *Pervasive Computing*. April-June.
- University of Colorado at Boulder. (2008). *CU-Boulder Named Second 'Greenest' School In The Nation By Sierra Magazine*. Retrieved May 12 2009, from the University of Colorado at Boulder's website: <http://www.colorado.edu/news/r/389c00342bb3223505562017f1cacd5e.html>
- University of Colorado at Boulder. (2008). *Flagship 2030 Strategic Plan: Serving Colorado Engaged in the World*. Retrieved May 12, 2009, from the University of Colorado at Boulder's website: <http://colorado.edu/flagship2030>
- Veeramani, R, Bradley, S. (2008). Insights Regarding Undergraduate Preference for Lecture Capture. Retrieved August 30, 2009, from the University of Wisconsin –Madison's website: <http://www.uwebi.org/news/uw-online-learning.pdf>
- Wainhouse Research (2008). Mediasite by Sonic Foundry for Distance Education and e-Learning (Publication No. RE-EDU-V2-REPR). *The Distance Education and e-Learning Landscape*, 2.
- Weber, Max. (1968). *Economy and Society* (G. Roth & C. Wittich, Eds.). New York: Bedminster Press.
- Whatley, J., Ahmad A. (2007). Using Video to Record Summary Lectures to Aid Students' Revision. *Interdisciplinary Journal of Knowledge and Learning Objects*, 3, 185-195

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Chris has been with Information Technology Services for over a decade. He served five years as the administrator of a cross-platform computer classroom facility, providing faculty and students with dedicated on-site support of workstations, servers, applications and more. Chris now manages the team responsible for oversight and coordination of IT/AV in campus construction projects and building renovations, classroom technology standards and upgrades, and core expert support of educational technologies.