

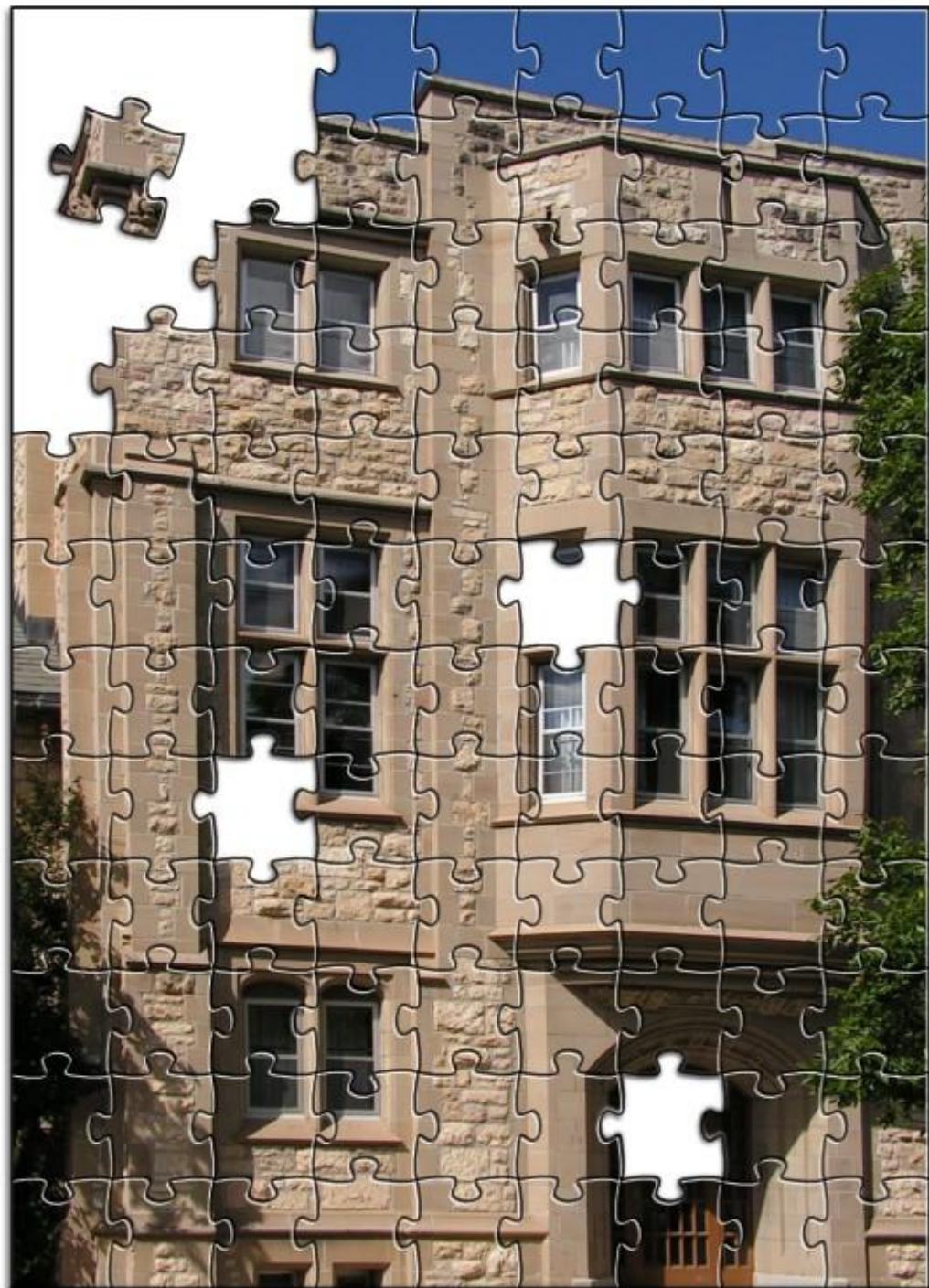


Deploying the Opencast Matterhorn Lecture Capture Solution

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Background on Lecture Capture

- Recording the classroom experience
 - The good, the bad, the ugly
 - Enabling different learning strategies, supporting anywhere/anytime learning
- E-learning at UofS
 - Long DE tradition, but late with e-learning strategy
 - E-learning came first into classrooms
 - No single home for e-learning
 - Continuing and Distance Ed
 - central IT
 - media unit (formerly A/V)
 - learning centre
 - some colleges



A Hive of Activity, c2005

- Non homogenous environment
 - Many overlapping solutions in use, Echo360, Camtasia etc., Recollect (custom research), podcasting, web and videoconferencing, studio recordings
 - Split in strategy depending on need and academic unit
 - podcasting versus video • homemade vs. recollect/echo
 - live versus recorded • conferencing vs. lecture capture
 - Different units hosting, supporting, innovating

Positive pressure to coordinate and reduce costs for end-users (faculty & departments)

At this time, our “home brew” system was graduating and joining with opencast...



- 13 Higher Ed Institutions
- \$1.5M Mellon & Hewlett grant
- \$2M Contributed resources
- A community of institutions interested in media
- Goal: Build an open source, enterprise ready, scalable lecture capture and rich media system



User-Generated Content
Production Video

Icons representing user-generated content and production video, including a video camera, a CD/DVD, and a film strip.

Lecture Capture & Administration

Automated Capture

Icons for automated capture, including a computer monitor, a video camera, and a microphone.

Scheduler

Icon for a scheduler, showing a calendar with the number 23 and a clock.

Ingest & Processing

Media Analysis
Slide OCR

Icon for media analysis and slide OCR, showing a document with a magnifying glass.

Workflow
Encoding

Icon for workflow encoding, showing two interlocking gears.

Branding
Captioning

Icon for branding and captioning, showing a classical building and a Creative Commons (CC) logo.

Distribution Management

Local Storage
Distribution Servers

Icon for local storage and distribution servers, showing two server racks.

Public Channels

Icon for public channels, showing a laptop with YouTube, a music note, and a mobile device.

Sakai
RSS integration to local LMS/CMS

Icon for Sakai and RSS integration, showing the Sakai logo, a Bb logo, and an RSS feed icon.

Engage Tools

Embeddable Player

Icon for an embeddable player, showing a video player interface with social media icons for Facebook and WordPress.

Accessible Interface

Icon for an accessible interface, showing a keyboard and a Creative Commons (CC) logo.

Bookmark Annotate

Icon for bookmarking and annotating, showing a paperclip and a speech bubble.

Searchable Content

Icon for searchable content, showing a magnifying glass over a document.

Fast forward to 2010

- Developing an institutional strategy formed on local partners working closely together
- There is an e-learning strategy proposed in the Provost office.
- Most colleges incorporating e-learning into normal planning (not just add-on)

Pilot Matterhorn to understand it better,
and create a central scalable lecture
capture offering based on experiences



2010 Deployment

- Capture agents in 11 classrooms of varying size, and recorded 32 courses
- 2,800 students watched 1,544 days of content (around 13 hours each, a third of a course)
- Customized Matterhorn for “self signup”
 - Flexible REST-based API’s meant this was prototyped in a couple of days, wrapped up in a week
 - Tied to legacy system for playback (Recollect) with custom processing instructions

Questions we asked them...



- Cohort of 2nd year chem students, both users and non-users (n≈250)
 - Would you pay \$25/class for this? **46% yes**
 - Would you consider using this for online courses if you couldn't take it face to face? **67% yes**
 - Did this lower your attendance? **7% yes**
 - Did this lower other students attendance? **56% yes**

Challenges

HOWTIME

RESEARCH VS PRODUCTION

HOW

ETON
ange

- Risk is good, it leads to novelty and opportunity
- Timelines are flexible, follow the paths we uncover
- Continual improvements
- Budgets are shoestring; whatever works, do it
- Verbs: cutting-edge, new, novel, unique, innovative

- Mitigating risk is important, people depend on results
- Predictability in deployments is good
- No changes preferred; or rare & scheduled changes
- Budgets are reasonable
- Verbs: reliable, predictable, robust, dependable, innovative

VR
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Strengthening Partnerships

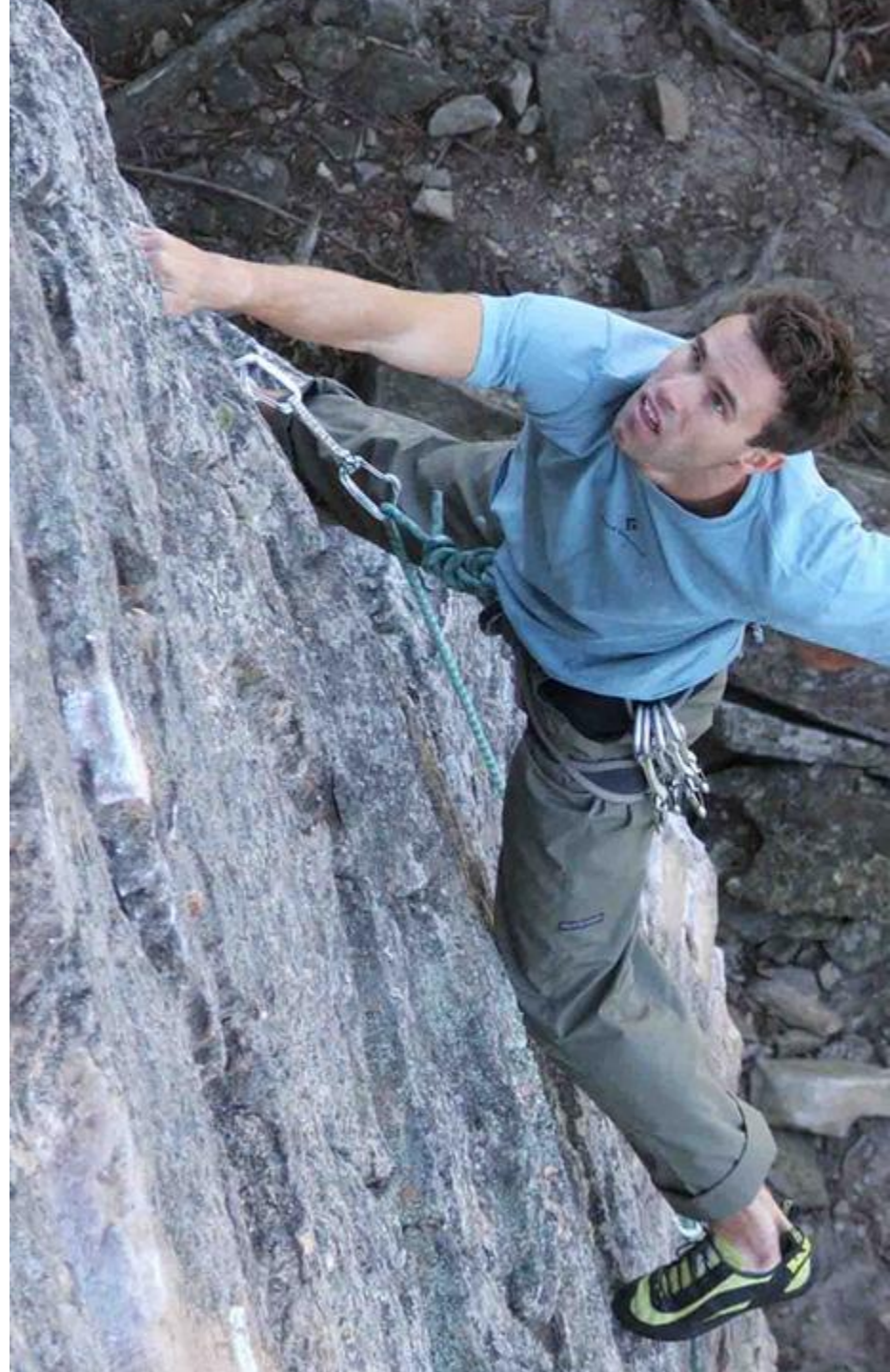
A photograph of four people in winter gear climbing a snowy mountain peak. They are holding hands for support, and one person is using an ice axe. The scene is bright and snowy, with a clear blue sky in the background.

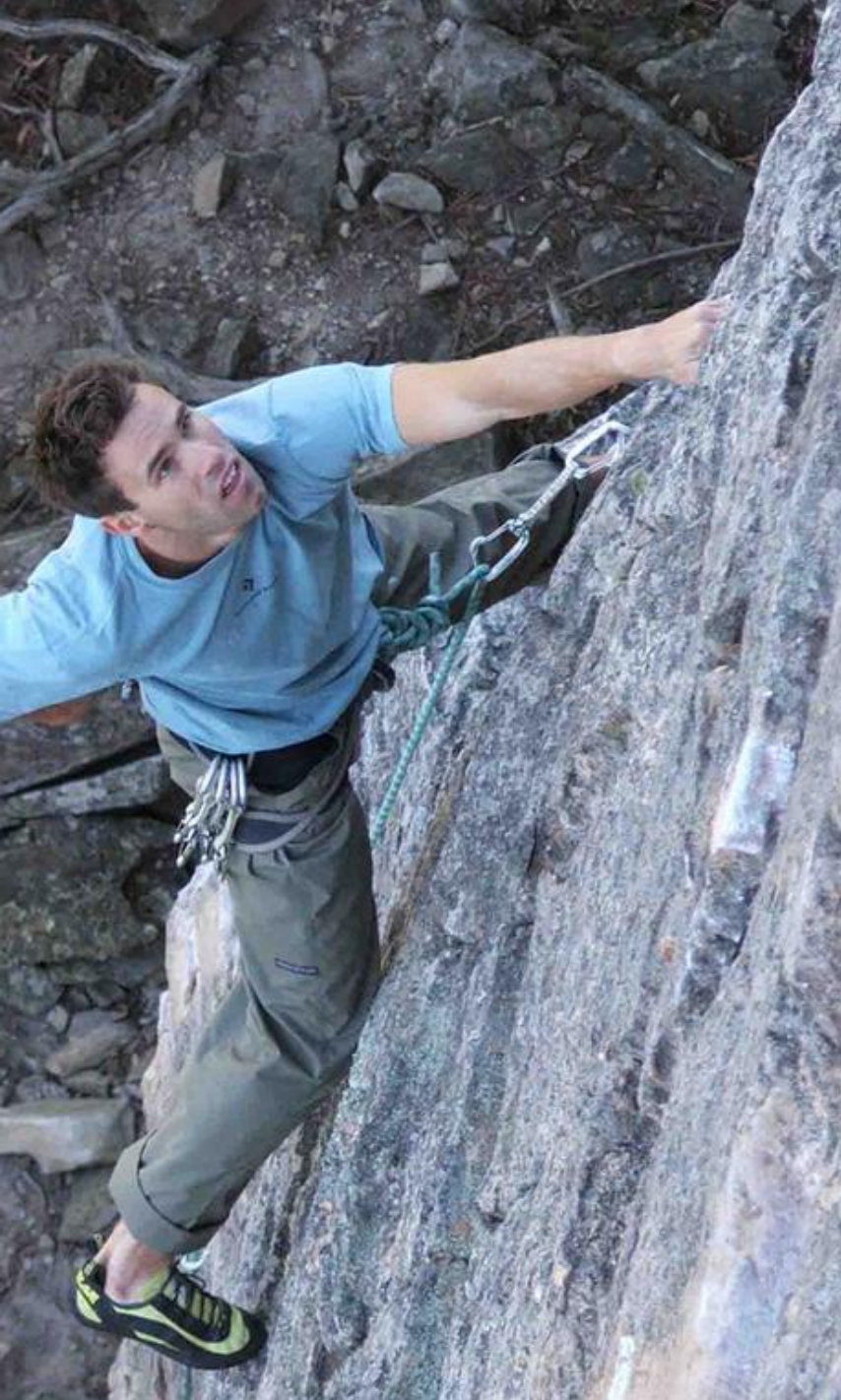
- Learning to trust one another
 - Grassroots working committee: classroom technologies, central IT, learning centre, ARIES Laboratory (computer science department)
- Joint work to define a university production lecture capture service
 - IT running test and production MH servers and application
 - Media group installing new MH capture agents in classrooms
 - New (joint) phone number to expedite in-class assistance and troubleshooting
 - MH developer being brought into IT shop to bridge cultures and transfer knowledge
- Introducing service management (i.e., change management) that span four units
- Helping one another to understand “innovation”
- Leveraging partnerships in opencast
 - Using local requirements to drive contributions to the greater good to sustain the community
 - Prototype next-generation hardware for recording
 - HD capture, codec improvements, new distribution channels...
 - Mobile technologies for interacting with lecture video

Opportunities

Use Matterhorn for unique situations where off the shelf solutions won't do...

- Low cost breadth deployment across the institution; large number of teaching spaces
- Super high definition & immersive environments
- Use the Matterhorn processing core and playback to aggregate media from “non lecture” sources
 - Library archives, vcu's, web conferences, student produced content, etc.
- Integrate without lock-in using open standards
 - RSS, REST-endpoints, LTI, etc.





Challenges

- Confidence monitoring
 - Will be used as primary (only?) vehicle for content delivery
- Sufficiently responsive service
 - Get help to arbitrary classroom in a few minutes
- Policy
 - Have not been diligent about pushing for policy
 - Heard some good interim strategies

Opportunities for You to Join Us

- **Matterhorn Basecamp Program**
 - We help guide you in adoption by hosting a VM and providing a regional friendly face
 - U of S is Canadian base camp provider, other groups in different countries around the world
- **Backed by commercial vendors means costs are lowering; Epiphan, Ncast, Entwine...**
- **More than just Matterhorn, an open & meritocratic community**
- **We encourage divergence, diversions, and diversity! Room for all kinds of contributions...**

We've wandered an interesting path:

- **Converging to a production system and service that meets needs**
- **Jointly developing the service has been a really good exercise.**
- **UofS is betting on Matterhorn OpenCast**
 - Flexible solution
 - Extra confidence because we have been part of the development effort
 - Robust, fault-tolerant design
- **Open Source Software and Community**
 - No “open-first” policy; but this is a good choice for us at this time
 - Opportunity to build on a research program here
- **Become a member of a community that is writing the future**

Interested?



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