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
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 2\textsuperscript{nd} 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
• 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
Strengthening Partnerships

• 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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