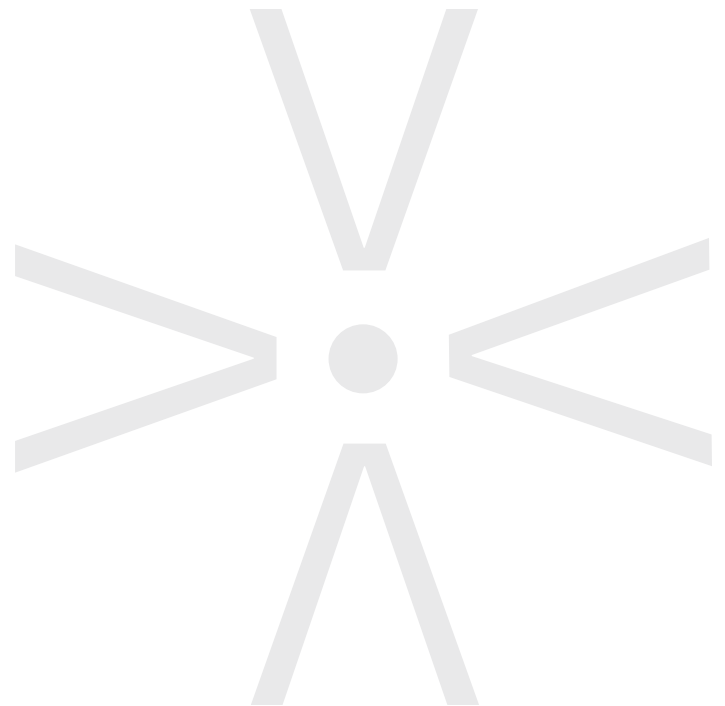


Auburn University

Enhancing the Learning Experience
using Starbak's Video Portal and
Integrated Network Platform



Background

Auburn University (AU) has developed into one of the largest universities in the southern US, providing a blended curriculum of arts and applied science to more than 24,000 students. AU offers degrees in 13 schools and colleges at the undergraduate, graduate, and professional levels.

Auburn University is not only known for its great education, but also for its impact on the state of Alabama. A recent study determined that AU had a nearly \$4 billion economic impact on the State of Alabama.¹

In early 2007, after almost six years of searching for the proper solution, AU's Harrison School of Pharmacology deployed a Starbak-powered content capture and streaming solution to enable the capture, management, and delivery of rich media content to onsite and remote (non-traditional) students across Alabama.

¹ Source: <http://www.ocm.auburn.edu/welcome/>

EXECUTIVE SUMMARY

To improve the learning experience for its student body, Auburn University's Harrison School of Pharmacology initiated a roll-out of a rich media streaming solution from Starbak. To date, more than 3,000 lectures and other educational sessions have been created using this system.

Key benefits of this project include:

- An enhanced learning experience
- Decreased support costs and staffing burden
- Advancement of AU's reputation as a leader in educational technology

The university chose Starbak's Integrated Network Video (INV) solution for a variety of reasons, including the solution's support for both video and PC content, and the ability to capture content via the university's campus-wide videoconferencing network.

By mid 2008, the university expects to expand its Starbak deployment to accommodate additional content and to reach a greater portion of the student body – both locally and outside the Auburn campus.

PROJECT RATIONALE AND OBJECTIVES

Auburn University recognizes the importance of technology to attract the best students and energize the learning process. With this thought in mind, the new Walker Building for the Harrison School of Pharmacology (which opened in the fall of 2006) was designed from the ground up to include the latest learning technologies. For example, many of the building's classrooms, lecture halls, and theatres were equipped with advanced audio systems (microphones at every seat, dynamic echo cancellation, etc.) and professional videoconferencing equipment to empower multi-location educational sessions.

Years ago, in an effort to maximize the value and longevity of its educational content and support the needs of students unable to attend classes due to illness or other physical ailments, AU started recording classroom lectures using video tapes, audio tapes, and/or DVDs. Although the manual process followed for lecture recording met AU's basic needs, it suffered from the following issues / limitations:

- High cost – content recording at AU was very expensive for the following reasons:
 - Recording equipment – each room required integrated (or portable) recording equipment.
 - Recording media – each recording required expensive physical media (videotapes, DVDs, etc.).
 - Distribution – once recorded, tapes / DVDs had to be duplicated and distributed to libraries and students.
- Resource intensive – each lecture recorded required an on-site AV technician.
- Limited access – recordings were only available in certain locations and in limited quantities.
- Time delay – in some cases, recordings might not be available for hours or days.

In hopes of resolving these issues, Auburn University activated a streaming initiative, believing that the digital capture and distribution of lesson content would address its basic requirements while enabling it to leverage its existing infrastructure.

Key objectives of this project included the need to:

- Automate the above content recording process
- Decrease associated content capture and distribution costs
- Eliminate content distribution delays
- Ensure 24/7 convenient access to content for authorized students

CHOOSING THE RIGHT VENDOR / SOLUTION

Once it understood its needs, Auburn University faced the challenge of finding a streaming solution that was easy to deploy and manage, and that could be rolled out cost-effectively throughout its environment. Additional considerations included easy content creation and the ability to start with a small (limited cost) deployment and expand over time.

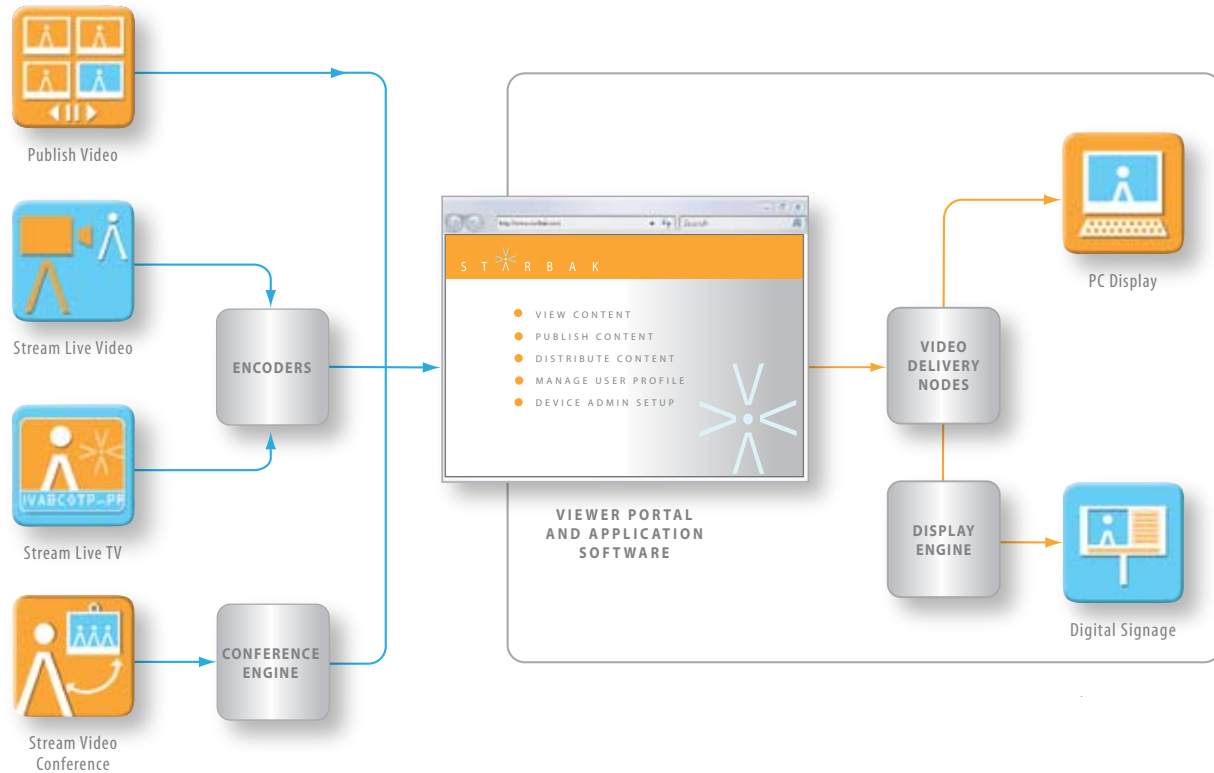
After several years of planning and research, AU selected Starbak and its INV platform. The reasons behind AU's decision included the following requirements and capabilities:

- The end-to-end coverage of the INV system (supports content creation, management, and distribution)
- Integrated support for capture of video (camera) and content (PowerPoint, etc.) signals
- A high degree of automation within the platform, enabling AU to minimize management burden and cost
- The ability to capture both local (audio/video) and remote (videoconferencing) content
- The ability to leverage their existing video conferencing deployment to turn their lecture halls and auditoriums into broadcast studios
- A modular architecture that allows gradual system expansions (simultaneous capture channels, content storage capacity, distribution nodes, etc.)

STARBAK SOLUTION DEPLOYMENT

To address Auburn University's requirements, the following Starbak components/products were deployed:

- **Starbak Manager** – A centralized management system deployed as a turnkey appliance that provides the ability to manage the devices, content, and authorized users within the global streaming environment. Starbak Manager also provides a dynamic web-based user portal that makes content available immediately after capture.
- **Starbak Conference Engines** – Rack-mounted appliances that enable the addition of PC content (e.g., PowerPoint) and videoconferencing content into the streaming environment. These devices allow AU to use its existing base of videoconferencing systems as content sources.
- **Starbak Encoders** – Appliance-based capture stations that can connect directly to any video source (DVD, VCR, camera, etc.), capture analog video, and convert the signals to digital Windows Media format.
- **Starbak Delivery Nodes** – Managed automatically by the Starbak Manager, these devices optimize content delivery and protect AU's production network (LAN and WAN) from the rich media traffic.



USING AU'S STARBAK SYSTEM

The following steps describe how AU uses Starbak's INV system:

Step One: Recording Content

The Starbak system is used to create a variety of content including class lectures (the most common content item), and mock interview sessions/bedside manner sessions conducted in "consultation" or "training rooms." To start the recording process, the professors use the videoconferencing system within the room, which AU has used for years to empower its distance education program, to dial into the Starbak capture system. Once the connection is made, the recording starts automatically. Upon completion of the lecture / session, the professor simply disconnects the video call. A few seconds later, the recording of the lecture is available for on-demand playback by all students registered for that class.

Step Two: Accessing On-Demand Content

To view the recorded rich media content, AU students visit the rich media library section (created and dynamically updated by the Starbak Manager based on the user's credentials) on the campus website. After logging in, students simply click on the lecture or content item they wish to view, and the playback starts immediately. During playback, the viewer can pause, rewind, or fast forward the content or stop the playback and resume later. The system allows hundreds of students to watch recorded content simultaneously.

THE DEPLOYMENT EXPERIENCE

The Starbak solution was officially launched in Q1 2007 within the Harrison School of Pharmacy. AU's initial plan was to make the recorded content available exclusively to students with excused absences or on medical leave as a way to help them stay up-to-date with the class material. However, within a few weeks the "secret" usernames and passwords spread beyond the intended target audience. Over time, student demand for recorded lecture content grew, which prompted the administration to expand the streaming program to include all lectures and all students. The reason cited was that "streaming content represents not only a substitute for, but also an enhancement to live lectures."

To date, 3,000 video sessions have been archived for viewing by Harrison students, and additional content is being captured at a rate of 750–1,000 sessions per semester. In fact, the program has been so successful that the term "Starbaking" (which means to record a lecture and make it available for on-demand playback) has become a verb among students and professors on campus. Questions like "Did you watch the Starbak of last week's class?" have become commonplace at university hang-outs. In fact, during a recent network upgrade, the common question around campus was "Why aren't you Starbaking this class?" This is a clear indication of the success of this program.

SOLUTION BENEFITS

Auburn University's Harrison School of Pharmacology has enjoyed numerous benefits from its "Starbaking" including:

- **Enhanced Learning** – Thanks to the Starbak system, lectures are now available to students 24 hours a day, seven days a week. This allows students to review class materials repeatedly, at their convenience, until it is fully absorbed.
- **Expanded Reach** – The Starbak deployment has allowed AU to expand the distribution of its valuable classroom content to larger numbers of students, both traditional and non-traditional (attending at night/on weekends) on several campuses.
- **Decreased Cost** – The ability to automatically create, store, and distribute content has allowed AU to decrease its staffing requirements and avoid the costs associated with videotape / DVD duplication and distribution.
- **Reputation** – The progressive use of digital media and streaming within the learning environment has helped advance its reputation as a progressive institution of learning.

BEST PRACTICES / LESSONS LEARNED

Although Auburn University's Starbak deployment proceeded according to plan and without significant issues, AU's technology team has learned a few valuable lessons along the way.

- Let the curriculum drive the technology, not the other way around. Educators should view technology as an adjunct to a high quality learning environment.
- Define your goals and priorities up front, but don't be afraid to adjust the plan to meet the needs of your student body.
- Take the time to train the faculty to ensure that they are comfortable with the technology.
- Make a point of highlighting the benefits of any new program to all parties involved.
- Have the courage to trust that your students will use, and not abuse, the system. To facilitate this, AU offers its students courses in professionalism and how to work within the policies and guidelines of the university.
- Do not be afraid of changes that may improve the teaching and learning process. Instead, embrace these changes and help maximize the benefit enjoyed by all.

FUTURE PLANS

Thanks to the success of the program, Auburn University plans to expand the Starbak system as follows:

- Expansion of the content storage capacity within the environment
- Extension of the program to include additional classes, students, and campuses
- Possible expansion of the program to additional schools (beyond the Harrison School of Pharmacology)

In addition, AU plans to conduct research to assess and quantify the incremental benefit – and specifically the enhanced learning and material absorption – afforded by augmenting traditional teaching methodologies with on-demand digital media.

SUMMARY

The deployment of Starbak's Integrated Network Video (INV) platform within Auburn University's Harrison School of Pharmacology has added a new dimension to an already successful learning environment. Considering that AU was the first school in Alabama to integrate videoconferencing in all teaching rooms, the first to activate wireless Internet throughout the campus, and the first to offer a live / synchronous satellite lecture program, the addition of on-demand lecture content is yet another example of this university's modern approach to education.

About Starbak

Starbak is a leading global provider of video networks that allow organizations to reach employees, partners and customers with “always on,” live, and on-demand video programming. Starbak’s solutions are used by hundreds of companies worldwide, including Fortune 500 corporations, colleges and universities, public schools, hospitals, and government agencies. Starbak solutions are available worldwide through a network of value-added resellers and full-service integrators. Starbak is a fully authorized, licensed and certified partner for Microsoft Windows Media. For more information, visit <http://www.starbak.com>

About Wainhouse Research

Wainhouse Research (www.wainhouse.com) is an independent market research firm that focuses on critical issues in unified communications and collaborative technologies including IM, presence, audio conferencing, web conferencing, mobility, videoconferencing, and streaming media. 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 free newsletter, The Wainhouse Research Bulletin, as well as a number of reports detailing the current market trends and major vendor strategies.

About the Author

Ira M. Weinstein is a Senior Analyst and Partner at Wainhouse Research, and a 15-year veteran of the conferencing, collaboration and audio-visual industries. Prior to joining Wainhouse Research, Ira was the VP of Marketing and Business Development at IVCi, managed a technology consulting company, and ran the global conferencing department for a Fortune 50 investment bank. Ira’s current focus includes IP video conferencing, network service providers, global management systems, scheduling and automation platforms, ROI and technology justification programs, and audio-visual integration. Mr. Weinstein holds a B.S. in Engineering from Lehigh University and can be reached at iweinstein@wainhouse.com.

