Unified Video Technologies

MULTI-INGEST TO MULTI DELIVERY EXPERTS

Solutions and Services for a New World of Media

Archiving: Digitization Done Right

July 2013

Mission Statement

UNIV supports traditional broadcasters in their transition to the new media world. Its software-based products help streamline operations and create high-performance workflows that reduce the time required to publish content.

Our customers' top priority is to keep their businesses operating efficiently and profitably. UNIV professionals advise customers about the technological changes required in media organizations and rich media enterprises, implement the new technology, and support the companies in fully exploiting it for the benefit of their businesses.

About Us

UNIV helps broadcasters, content owners and media-savvy enterprises plan, implement, and operate efficient high performance workflows that reduce costly redundancies and make media easy to create, share and distribute.

Experienced UNIV broadcast technology experts guide customers through the transition to powerful new media tools with advisory, design, integration and support services that cover the broadcast chain from ingest to delivery. We expertly identify optimal products for distinct customer needs, creating seamless, cost-effective bespoke solutions that fit each enterprise to a 'T'.

Our History

UNIV's founders were principals of World Wide Broadcast (UNIV), a Miami-based systems integrator that was established in 2006 and later acquired by KIT digital, a publicly traded company. KIT digital bought top systems integration companies around the world as well, including MHZ in the UK, Benchmark in India, Visual Connection in Prague, and IOKO in the US, and combined them to form the Broadcast System Integration group.

The group gained unprecedented experience in the field. Working with key clients across the globe, it successfully deployed some of the most advanced solutions in the industry.

In late 2012, UNIV's founders purchased the Broadcast System Integration group from Kit digital. The assets of the Broadcast System Integration practice of KIT digital were acquired by World Wide Broadcast, which is now a subsidiary of UNIV.

Moving Beyond Videotape

Video archives are becoming unusable as videotape becomes obsolete. Magnetic tape and tape cassettes, as well as video tape recorders, are no longer produced. Players for legacy media formats are hard to find, and parts to repair them are just not available.

The industry is renouncing videotape in favor of digital media:

- Videotape is subject to deterioration, breakage and other mechanical failure.
- Videotape cataloguing must be done manually using supplementary records, in a process that is time-consuming, expensive and subject to errors.
- Back-up of videotape archives is costly due to expensive media and a largely manual process.
- Video players are prone to breakdowns, and repairs, when possible, are time-consuming and costly.
- Videotape is expensive to store and maintain: Large spaces are necessary to store bulky tape, and extensive staff is needed to catalog and shelve it. Costly HVAC systems are needed to maintain the temperature and light conditions that won't cause media degradation.
- Videotape cannot be browsed or searched to find specific footage.
- Videotape can be lost, stolen or accidentally recorded over, with content lost forever.

Archiving Benefits

→ Digitization as the only way content owners can protect archives and ensure accessibility. Additional attractive capabilities and features of digital archives include:

- → Browsing
- → Metadata
- → Easy back-up
- → Compact storage
- → High degree of automation

Transferring Video Archives to Digital Media

Archives may be digitized through either manual or automated/robotic processes. Manual processes are labor-intensive and painstaking, with archival video played on VTRs and re-recorded on digital media.

Newer, more efficient automated and robotic processes are mostly performed by professional third-party services that specialize in videotape archive digitization , although some organizations digitize their own videotape archives.

Choosing a Digitization Solution

Critical features for evaluating and selecting a digitization solution:

- **Inclusion of metadata:** Metadata integration, a chief benefit of moving to digital, enables fast, accurate searching and browsing of archival video content. Most digitization solutions—even costly manual ones that individually examine and describe each frame--generate only incomplete metadata of questionable accuracy and uneven quality. *Full integration of accurate and comprehensive metadata is a key criteria for selecting a digitization solution.*

- **Turnaround time:** Video archives often include thousands of hours of video footage in legacy formats. Manual digitization can take over 3 times the playing time of each videotape, leading to a process that can take years when performed in-house. All but the very largest third party digitization services have limited numbers of VTRs, leading to exceptionally long turnaround times. *Archives should carefully check the projected turnaround time when evaluating digitization solutions.*

- **Video formats and compatibility:** Before committing to a digitization solution, archive managers must ascertain whether the solution generates files that are compatible with the archive's current video formats and workflows, as well as with media and asset management systems that might be implemented in the future. Ideally, the digitization process should be compatible with most file-based workflows. Digitization solution providers should be able to recommend a media and asset management system to the customer and utilize formats and workflows compatible with that system.

A Better Approach to Archive Digitization

Unified Video Technologies has developed a unique, patent pending, proprietary approach to archive digitization. The fully automated service provides…

- Fastest turnaround time in the industry
- Transfer of unlimited amounts of content
- Efficient insertion of rich, comprehensive metadata that includes facial recognition, voice transcripts, and the customer's existing metadata
- High broadcast resolution for excellent video quality
- A wide choice of storage media
- Low resolution proxies for rapid browsing
- Second copies formatted for webcasting and new media utilization.

UNIV's digital migration solution support a wide variety of new and legacy media formats and file wrapping standards for easy integration with existing workflows.

The Process

The Archiving Digitization Process

UNIV Archiving's digitization service leverages an automated robotic digitization workflow that quickly, accurately and comprehensively migrates legacy analog and digital video, with diverse formats and from a variety of media, to the digital format of the customer's choice, and uploads it to the selected storage medium. The process includes the following steps:

→ **Cleaning**
Each tape is inspected for flaws and its surface is cleaned. If a flaw is detected, the cleaning process is halted to avoid further damage to the tape, which is set aside for further attention.

→ **Evaluation**
Tapes previously identified as requiring special treatment are evaluated for problems including edge damage, deformities, surface damage, and mis-wound tape, and assigned to appropriate treatment modalities that minimize damage and maximize the quality of post-migrated content, before continuing to the video capture stage. Optional repair and restoration services are available for damaged tape, upon customer request.

→ **Up-conversion to HD**
Up-conversion to HD is not integral to the digitization process. However, for archives that have switched their facilities to HD, or plan to switch soon, it is far more efficient and cost-effective to upconvert all video from SD to HD in conjunction with digitization.

→ **Video Capture**
Unified Video Technologies' proprietary high-speed automated process rapidly captures video from any vintage media format and stores it as high-quality video, in any file-based formats desired by the customer and on any media that the customer chooses. By limiting manual processing to damaged or fragile video, UNIV Archiving expedites digitization, reduces costs, and maximizes capture rates and video quality. UNIV Archiving's fully automated robotic solution performs video capture for any quantity of media, no matter how large or small, quickly and efficiently.

The Archiving Digitization Process

→ **Transcoding**

Once video has been captured on digital media, it is transcoded to MPEG-2, MPEG-4, or any of the wide variety of file types used for broadcast and streaming workflows and digital asset management systems. Content may be optionally transcoded in multiple formats during digitization so it is broadcast-ready for the archive's most-used applications.

For archives that use file-based workflow and/or a digital asset management system, UNIV Archiving transcodes content to supported format(s). Customers who have not moved to file-based workflow may opt to transcode content to formats compatible with most workflows. UNIV Archiving is happy to discuss the archive's file-based workflow requirements, recommend a suitable system and, if acceptable to archive managers, transcode files to formats that are compatible with that system.

→ **Creation of Low Resolution Video for Browsing**

In addition to high resolution digital files containing archive contents, UNIV creates low resolution digital proxies that facilitate rapid sampling and previewing of archived video, and are enable high-speed network-based video searches. Low resolution files can be integrated with clients' file-based workflows.

→ **Metadata Insertion**

Metadata is essential since it enables file content to be efficiently and accurately searched. UNIV Archiving's digitization process automatically transfers and inserts all existing metadata for each video, whether it is coded in the source media or filed in a complementary database.

The UNIV Archiving process is unique in its ability to automatically add detailed new metadata, based on both audio and video content, to files created from legacy videotape. During video capture, UNIV Archiving algorithms generate digital representations of every face that appears in a vide, which can be searched for matches to identified facial images within the archive, including images scanned in as the basis for searching. Once an image has been identified in a search, the name of the person can be added to the metadata of the video in which the image appears.

UNIV Archiving also captures all audio on archival videotape and transcribes every word to text. The transcribed text is related to the video and integrated in the archive's media asset management system, enabling comprehensive and accurate searching of the audio content of every video.

The Archiving Digitization Process

→ **Delivery Media**

Today's fragmented and specialized broadcast market utilizes many media and formats for file-based content delivery. Clients may select delivery media based on compatibility with relevant applications, digital asset management systems and workflow. UNIV Archiving is happy to deliver digitized archival content on the medium each customer chooses. Frequently requested delivery media include:

→ LTO

→ SAN

→ Blu Ray

→ XDCAM

→Cloud

→ **Long Term Backup Storage**

Unified Video Technologies provides long-term backup storage for customers seeking to ensure the survival of their archive's contents in case of fire, flood, natural disasters—and just plain human error. Off-site storage is available for original legacy videotapes as well as for file-based digitalized copies in UNIV Archiving's temperature-controlled, fire-proof and secure storage facilities. Off-site backup serves as cost-effective insurance for archival video content.

Benefits of Migrating

The Benefits of Migrating with UNIV Archiving

→ **Migrating to Digital with UNIV Archiving costs less!**

Digital media archives are much less costly to maintain and use than legacy videotape archives. And migrating your archive using UNIV's unique automated migration process is the fastest, least labor-intensive, most efficient and least costly solution available.

→ **Usable Material**

Digitization makes video content more usable. Comprehensive and detailed metadata; fast, accurate searches; quick access to low-resolution video files of all content; and highly portable file-based formats make it easy for internal and external users to find and use the video they need.

→ **For-Profit Content Distribution**

Many broadcasters, TV channels, educational institutions, production houses and government bodies maintain video archives that go back as far as the early days of television. The footage in these archives may have considerable cultural, historical and **commercial value**. Artists, creators of programming and advertising content, researchers in the fields of science and history, and casual users all actively seek—and are willing to pay for--archival video footage.

Migrating an archive to a file-based environment turns it into a **potential revenue center** as well as a rich and active resource. Networks platforms, including the public Internet and private networks, make it remarkably simple to distribute digital video content. And the rich metadata and content proxies generated by UNIV Archiving make it easy for potential users to search for and select the video they need. By offering and licensing all or selected archive content to users, archives can generate substantial revenues.

How UNIV's Archiving Will Help You Monetize Your Investment?

Migrating an archive to a file-based environment turns it into a **POTENTIAL REVENUE CENTER**. By offering and licensing all or selected archive content to users, **ARCHIVES CAN GENERATE SUBSTANTIAL REVENUES**.

UNIV CAN PREPARE FILES FOR:

→ New media distribution including OVER-THE-TOP(**OTT**) VIDEO-ON-DEMAND(**VOD**) services.

→ Uploading to content platforms that make them accessible to potential buyers.

→ Publishing to YouTube and other online video platforms.

→ Distribution over IP for lower costs than satellite.

Archiving Services

Digitization Transfer Services

→ **Service includes:**

- → Cleaning
- → Evaluation of videotapes
- → Video capture
- → Transcoding
- → Creation of metadata
- → Creation of low resolution proxies for easy browsing
- → Uploading to digital media.

▪ **OFF-PREMISE SERVICE:**

Archival videotapes are shipped to UNIV Archiving for digitization and transfer. For large archives, UNIV Archiving recommends a staged process, in which one batch is uploaded as digital files before a subsequent batch is submitted.

At UNIV Archiving, no digitization project is too large or too small to enjoy our full attention and dedication. UNIV Archiving offers flexible scheduling options that meet all digitization needs and budgets and a variety of monthly content-hour digitization packages. On-time delivery is guaranteed for all projects and premium expedited processes are available upon request.

▪ **ON-PREMISE SERVICES:**

For on-premise archiving, UNIV brings professional staff and high-end equipment and technology to your location. Our workflows bring the benefits of our experience and expertise to your workplace, and our thorough understanding of the digitization process enables us to accurately project time and costs. Setup is quick and on-premise services ensure that original tapes never leave your site, saving transport costs and insurance expenses for valuable materials.

Additional Services

→ **Metadata Creation**

Metadata creation, including facial recognition scanning and audio-to-text transcription, may be performed for existing digital video content as well as for content being digitized. Services are available on a full archive basis or for selected content only.

→ **Up-conversion to HD**

UNIV Archiving offers cost-effective up-conversion of legacy SD content at the time of digitization. This service frees archives from the need to maintain SD facilities for legacy content in addition to their up-to-date HD facilities.

→ **Long-Term Digital Video Storage Services**

Long-term off-site storage services at the UNIV Archiving premises ensure that archives' contents will not be lost if the primary archive is destroyed by a fire, flood, natural disaster or mishap. Customers may choose to generate back-ups for off-site storage during or after digitization. Our climate-controlled, spacious facility is an ideal storage environment for original archival videotape as well as for newer media.

→ **Distribution of Digital Content**

UNIV distribution platforms enable video archives to open their entire video archives or selections from their collections to potential users who are seeking video content on the Internet or via private networks. UNIV Archiving empowers archives to create robust distribution platforms featuring searchable metadata, low-resolution proxy samples that can be transmitted quickly over most networks, and file-based content in standard formats that can be downloaded easily.

Thank you!

