Atempo
Data Management, Simplified.

Atempo Digital Archive™
Customer Success Story

Canadian Heritage: How the NFB Preserves 70 Years of Film History

Recognized worldwide for artistic excellence and innovation, the National Film Board of Canada serves as an unmatched laboratory where Canadian filmmakers can take artistic and technical risks in creating otherwise difficult-to-produce cultural content. Today, NFB is at the crossroads of innovation in the 21st century, bringing their tradition of trailblazing to the multi-platform digital universe. The challenge: making their collections available to all on the platform of their choice, while preserving this priceless audiovisual legacy for generations to come.

About the NFB

The National Film Board of Canada (NFB) produces and distributes bold and distinctive social issue documentaries, auteur animation, alternative drama and innovative digital content that provide the world with a unique Canadian perspective. Since the NFB's founding in 1939, it has created over 13,000 productions and won over 5,000 awards, including 12 Oscars® and more than 90 Genies. Learn more at www.nfb.ca

Key Solution Requirements

- **Scalable.** To handle exponential growth of data volumes required to support digital productions.
- **Metadata ingest.** Rich XML-based metadata must be closely attached to the media essence.
- **Easy-to-use archive access.** A simple UI for search and retrieval by end-users, with cataloguing and indexing required.
- **DAM integration.** Must integrate with existing in-house asset management.
- **Automation.** To streamline workflows for building customer-specific deliverables, and so digitization processes may occur without impacting regular operations.
- **Broad media file support.** Including support for DPX files.

The Challenge: Digitizing and Organizing 6,000+ Hours of Content

The digital revolution has completely changed how audiences interact with audiovisual media. Through their Digitization Plan, the NFB has been preparing for this revolution for several years, researching image and sound processing, innovative transfer techniques, accessibility and distribution to prepare for the transition to digital technology.

A robust, reliable archiving solution was a key component of their sophisticated media operations for the collection, preservation and distribution of their digital assets. The archiving solution was expected to ensure the reliable long-term retention of the collection as well as the efficient management of the exponential growth in data volumes from all new productions.

The NFB had been using a backup tool for several years, but it couldn't efficiently and rapidly manage their digital assets, plus search, retrieval and cataloguing functionalities were not available. A true archiving solution was needed to provide efficient tools for every step of the asset lifecycle and allow the NFB to archive, index, and search and retrieve their content.

Story at a Glance

Objectives

- Improve accessibility of NFB works in digital formats, including new media.
- Restore deteriorated NFB works.
- Digitally preserving the extensive NFB collection.

Challenges

- Making works accessible for viewing and content repurposing.
- Containing exponential data volume growth due to digital content.

Solution

- Atempo Digital Archive is used to archive all digital masters and source files, including related meta-data, for restored and new works.

Results

- 70 years of digital history is being preserved and a solid archiving system in place for future projects.

"Atempo Digital Archive enhanced the NFB's post-production workflows by ensuring data integrity and giving quick and easy archive access to end-users to search and retrieve productions from our collections."

-Luisa Frate, c.a., COO and CFO, NFB

The Solution: Atempo Digital Archive with Metadata Ingest

The NFB plan required that an archiving solution be in place before digital preservation could begin. The archive solution needed to provide efficient tools for the complete asset lifecycle and allow the NFB to archive, index and search and retrieve the content. Cataloguing, indexation and search functionalities were a must. In addition, metadata—used for all title management and containing technical information for production and automation of workflows—needed to be closely attached to the media essence.

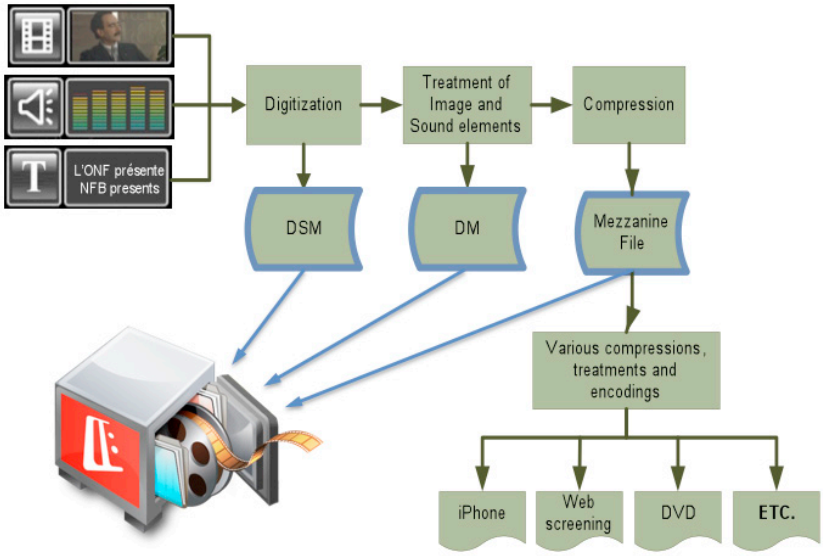
Atempo Digital Archive was able to answer all these needs. A special XML ingest capability, developed by a collaboration of the Atempo and NFB R&D teams, enables the archival of assets along with all their metadata. The robust Atempo Digital Archive catalog is able to store, manage and index millions of objects answering the strong need for scalability and easy search required by the NFB's ambitious preservation and accessibility project.

Content = Metadata + Essence

Digitizing audiovisual material involves more than simply converting it into a digital file. Metadata must be created and managed as well. Metadata must be recorded every time a component undergoes processing, tracking the history of the processing: the resolution at which it was digitized, the different aspect ratios, the source type, etc.

With Atempo Digital Archive, important technical parameters are recorded and archived with the digitized essence at every step of the workflow. The metadata are copied along with the media essence, as well as ingested into the Atempo Digital Archive database so that the metadata can be searched, read and manipulated.

"I can't overstate the importance of archiving metadata with the asset, especially when producing multiple versions of works from many digital components. Developing the XML plug-in with Atempo's R&D team was crucial to the success of our digitization and archival plan," said Julie Dutrisac, Head of Research and Development at NFB.



For each NFB production, DSM, DM, and mezzanine files—plus their associated metadata—will be archived to LTO-4 digital tape using Atempo Digital Archive.

The Workflow

- Digitize NFB works (image and sound) at the highest possible quality, creating the Digital Source Master (DSM).
- Digitize additional components of works: titles in all existing languages, subtitles, credits in all existing languages, closed-captioning files, etc.
- Produce appropriate metadata for the source and processing.
- ***Archive the DSM and its metadata.***
- Automatically restore digitized sources.
- Assemble, synchronize and perform digital color grading of the uncompressed DSM to produce the Digital Master (DM). DM files are used for theatrical screening and 35 mm formats.
- Check the digital quality of the DM (automatically and manually).
- ***Archive the DM and its metadata,*** then create a copy for intranet viewing.
- Automatically create an unassembled, compressed mezzanine file.
- ***Archive the mezzanine file and its metadata*** on LTO tape as well as in near-line storage for easier access. Mezzanine files are used to generate copies of the title for other distribution formats and platforms, from HD Broadcast to iPhone.
- On demand, generate required deliverables from the mezzanine file.

"The archiving steps are an important part of our workflow. They are repeated frequently over the course of the digitization chain. First, all DSM components are archived, followed by the DM components and then the mezzanine file components. All the image, sound and subtitle components are archived with all of the associated metadata."

-Julie Dutrisac, eng.,
Head, Research and Development, NFB

How Atempo Digital Archive Made the Difference

Workflow integration. Atempo Digital Archive integrated seamlessly with the NFB's existing in-house asset management system, streamlining their content workflows. Atempo Digital Archive's automation enables them to efficiently meet their repurposing mandates by efficiently providing platform- and format-specific deliverables to their customers.

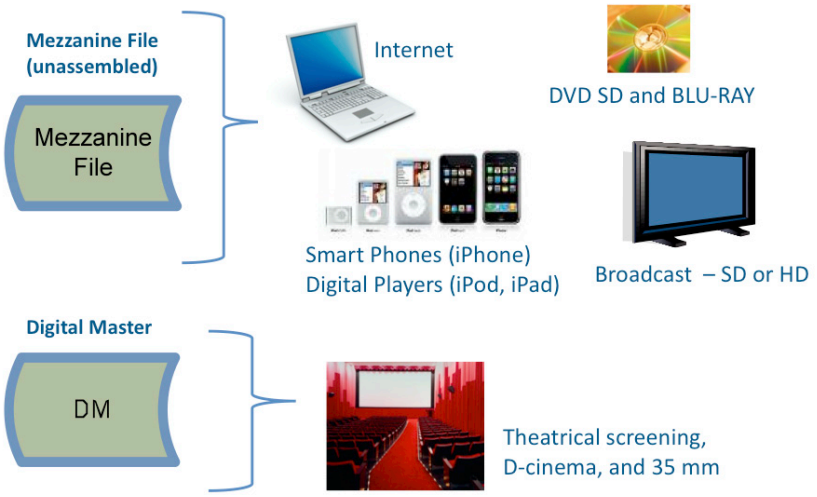
XML Ingest. The NFB and Atempo R&D teams worked closely to develop a XML plug-in that enables the full automation of the archiving of assets and their metadata. The Atempo Digital Archive catalog is able to store, manage and index millions of objects, providing the scalability and easy search required by the NFB's ambitious preservation project.

Simple Search and Retrieval. Atempo Digital Archive provides an easy-to-use GUI that simplifies metadata searches and allows drag-and-drop archive and retrieval. At the NFB, this GUI enables technicians and collection managers to efficiently search and retrieve works from the archive.

High Performance. With Atempo Digital Archive, the NFB was able to archive and retrieve hundreds of hours of content on a weekly basis. With over 6,000 hours of content and 13,000 works to be digitized, scalable performance was critical.

Scalable Capacity. Digitization generates a huge amount of data that must not only be saved and archived, but also be available for repurposing in future works.

Flexible Archive Hierarchy. Atempo Digital Archive does not dictate a specific archive structure, enabling the NFB to organize their digital assets in a hierarchy tailored for their workflows, simplifying the management of hundreds of components composing each production.



On demand, mezzanine files or DMs are restored from the Atempo-based archive and used to generate required deliverables based on platform and file format.

The Result: Making 70 Years of Content Available Digitally

With the NFB Digitization Plan and Atempo Digital Archive in place, 70 years of digital history is being preserved and a solid archiving system has been established for future projects. Digitization and archival of their film and tape-based collection began in January 2010 using Atempo Digital Archive. This process generates over 10 million metadata entries associated with 30 TB of content and 2.4 million files for 100 titles.

As this new workflow is rolled out, more of their collection will become accessible in a variety of deliverable formats, from digital cinema to HD broadcast to iPhone. Through Atempo Digital Archive's metadata handling, Canadians and the film industry will be able to search the collection digitally to view an NFB production or to repurpose it in their own production.

"We can already see the benefit from the metadata integration done through the XML plugin. Metadata can be stored in a specific level in the hierarchy, which enables us to return results at a very precise level. This integration gives us the automation needed to optimize work processes and provides us with flexibility, visibility, productivity, efficiency and the option to expand," said Julie Dutrisac.

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About Atempo

Atempo enables organizations to preserve and protect digital information simply and effectively, across any infrastructure, on any platform, over long periods of time. Atempo's comprehensive archiving solutions deliver policy-based and workflow-driven management of rich media files, e-mail and other high-value digital assets to maximize the efficiency and performance of storage systems and reduce long-term storage costs. Atempo serves thousands of customers around the world through a sales and support network of over 200 resellers and partners.
Learn more at www.atempo.com

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