Sharing Moving Image Metadata and Streaming Video on Demand Content – The Project AVA as a Use Case for Cross Domain Cooperation between Film Festivals and Public Libraries

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Abstract:
This paper explores new models of sharing moving image content and metadata through cross-domain cooperation between film festivals and public libraries to give access to video on demand streaming services in libraries. Libraries and film festivals share in common that they collect and catalog moving image metadata and give access to moving images. The different communities have been connected for the first time on an international scale by the AVA project (Audiovisual Access). Through AVA, libraries and festivals from seven cities in six European countries cooperate with the company Reelport, which provides the video on demand streaming infrastructure. The public-private partnership is co-funded by the European Union Creative Europe MEDIA program in 2016-2018. This paper focuses on the use case of the cooperation between interfilm, the International Short Film Festival of Berlin, and the Berlin Central and Regional Library (Zentral- und Landesbibliothek Berlin).

By taking the example of the AVA project as a starting point, the paper aims at discussing future perspectives of international and cross-domain cooperation between moving image content providers and libraries to give access to video on demand streaming services. Special attention is given to questions of the metadata standards applied, and the requirements for cross-domain data exchange. It also discusses questions of technical infrastructure and equipment needed, as well as information gathered about user requirements and user expectations concerning the streaming video on demand service.

Keywords: Streaming video on demand, film festivals, public libraries, moving image metadata, cross domain international cooperation, public-private partnerships

Introduction
We are currently witnessing a rapid development in the way moving images are consumed. The moving image distribution market is undergoing a disruptive change: physical media sales are declining while digital streaming of audiovisual content continues to rise in the home entertainment field, as well as in the fields of eLearning, science and knowledge transfer. Despite the users’ shift to streaming audiovisual content, public libraries in Germany
and in many other European countries are still heavily focused on the acquiring and lending out films and television series on DVD and Blu-ray Discs. As many of the users are beginning to shift to streaming audiovisual content, public libraries face the challenge of establishing video streaming services parallel to the services of lending out physical media - otherwise they risk to lose users to commercial streaming services (Bohn 2015). In order to establish new video on demand services in libraries, one solution consists of building new partnerships with other audiovisual communities.

In the AVA (Audiovisual Access) project – European film festivals and public libraries cooperate to give access to films in public libraries. AVA serves as a use case for cross-domain cooperation between organizations sharing moving image metadata and streaming video on demand content. The project is co-funded by the European Union Creative Europe MEDIA program for the duration of two years (2016-2018). The funding program is focused on audience development and aims at stimulating interest and improving access to European audio-visual works.

The AVA pilot project has established partnerships between film festivals and public libraries in seven cities and six European countries to give access to new video streaming services of short films (AVA 2017). In AVA, short film festivals curate programs to make them available on-site in their local public libraries, and by streaming video on demand. The film festival staff clears the rights in direct contact with the filmmakers, uploads the files and collects metadata of the short films for the AVA film server. The project is designed as a public private partnership: the technological element of the video on demand streaming infrastructure is provided by the company Reelport/PicturePipe. Reelport is Europe’s largest submission platform and provider for digital video libraries for film festivals. The company develops the services and technology necessary for the AVA project and also promotes the project among film festivals (Scheel 2016).

Through AVA, the short film festivals collaborate with the local public libraries to give access to a selection of the festival’s film program. The AVA project partners include the International Short Film Festival interfilm Berlin and Zentral- und Landesbibliothek Berlin, the short film festival in Cologne; Kurzfilmfestival Köln and Stadtbibliothek Köln in Germany, the Tampere Film Festival and the Library of Ylörjärvi in Finland, the Cork Film Festival and Cork City’s Central Library in Ireland, La Guarimba International Film Festival and the local public library in Italy, the Short Film Festival Leuven and De Bib Leuven in Belgium, and Encounters - the Short Film and Animation Film Festival of Bristol in the United Kingdom.

The AVA use case focuses on the work in progress and current cooperation between the international short film festival interfilm Berlin and the Berlin Public Library – Zentral- und Landesbibliothek Berlin (ZLB), which gives access to a program of almost 200 short films via the library. The use case deals with the challenges of metadata sharing and reuse between cross-domain cultural organizations.

**AVA use case – interfilm Berlin Short Film Festival and ZLB**

Almost 200 films selected from the 32nd International Short Film Festival, interfilm Berlin, have been made available to watch on viewing stations at the ZLB, free of charge for a limited time from May 5th until July 31st 2017. The range of films exhibited the entire spectrum of interfilm’s short film programming. Competition films were offered side by side with special thematic programs as well as Foreign Focus shorts from China and Italy, and
compilations from Cuba and the Arab world. Further highlights included the 2017 Oscar winner, *Mindenki* (2016) from Hungary, directed by Kristóf Deák, and *Pas de Cadeau* (2016) from France, directed by Marie Vernalde, which received the Best Film award at interfilm’s last edition; thereby the library’s transfer of information and knowledge has been augmented by latest short film productions.

Figure 1: AVA Project Launch in the American Memorial Library Berlin on May 5, 2017. Presenters from left to right: Tilman Scheel (Reelport), Alexander Stein (Interfilm Berlin), Eva Kietzmann, Anna Bohn (ZLB) © James McBreen, AVA.

The project partners
The international short film festival, interfilm Berlin ([www.interfilm.de](http://www.interfilm.de)), founded in 1982, is one of the most important short film festivals in Europe. It is the second oldest German short film festival (after the International Short Film Festival Oberhausen founded in 1954), and is recognised as the second most significant and oldest international film festival in Berlin after the Berlinale. For the 32nd edition of interfilm Berlin in November 2016, the festival curators selected around 500 films out of approximately 7,000 film submissions and arranged programs of the short films for different thematic sections, including international, German, animation, documentary and children’s films. The ‘Focus On’ section highlights productions from specific countries or regions. In addition to this, special sections were devoted to areas such as music videos, experimental films, historical films and retrospectives. For the AVA library, the interfilm festival staff curated a selected program of 199 short films out of the festival program. The festival staff cleared the rights with the filmmakers. The closed circuit rights allow users of the Central and Regional Library Berlin to get access to the short films with their library card for a limited time of three months after the festival.
The Berlin Central and Regional Library (Zentral- und Landesbibliothek Berlin, ZLB) is the library of the City and State of Berlin. It was established in 1995 as a foundation by State law and as a fusion of the Berlin City Library (Berliner Stadtbibliothek), founded in 1901, and the American Memorial Library (Amerika-Gedenkbibliothek), founded in 1954. The ZLB’s Cinemathek film library offers the biggest film collection freely accessible in a public library in Germany - with approximately 65,000 films on more than 50,000 DVDs and 6,000 Blu-ray-Discs. The AVA video on demand streaming service is the first on-site streaming service installed in the library.

Starting with the launch of the AVA project on May 5, 2017 (figure 1), the films were accessible for a limited time until July 31, 2017 on eight viewing stations in the two buildings. Six viewing stations were located in the American Memorial Library (figure 2) and two in the Berlin City Library. In collaboration with the IT-department of ZLB, Reelport installed a client-server-architecture on-site. The staff of the library’s IT department configured the network and provided an ethernet connection to all viewing stations.

The setup for on-site viewing used the equipment that was already in place for the viewing of physical media: video screens (Samsung smart tv monitors) with remote control and an extension cable for the headphones (figure 2). For the video on demand service, Reelport provided peripherals for each station – a PC client, a Mouse and a keyboard.

Flyers and signs at the viewing stations invited users to watch the AVA film program. To do so, library users had to lend out headphones at the service desk, where they were also given the login and password and were asked for authentication with their library card and ID-card to check whether they are of age. The background for this is that the short films had not been
rated by the German motion picture content rating system FSK, which classifies films released in cinemas and in the Home Movie Market with regard to suitability for audiences relating to their age.

The metadata provided by interfilm Berlin for the AVA library in 2017 included the following elements: Video ID (a local identifier in the Reelport database); original film title; English language title, Country of Production; Year; Runtime in Minutes; Directed by; Film type (controlled vocabulary values: Documentary, Animation, Live Action, Experimental, Music Videos, [V]irtual[R]eality); Synopsis; Thumbnail filename [screenshot of the film]; Genre; Tags; and [Festival] Section (controlled vocabulary values: Special Program, Competition, Focus and KuKi for Children’s films). In the first year of the pilot project, metadata on original language(s) and on subtitles had not been collected. For future editions it is planned to include the elements original (spoken) language(s) and languages of subtitles.

The films can be searched for in the AVA library portal. Users can filter films in the different categories like, for instance, Section, Country or Type (Figure 3). All the short films offer English subtitles. There are some limits to the search: while users searching for films in the AVA library can filter for countries (of production), it is not possible to search for original language, as the data has not been collected. The descriptive metadata in 2017 had not been integrated in the catalog of the Association of Public Libraries in Berlin (Verbund der Öffentlichen Bibliotheken Berlin www.voebb.de) as the pilot project gave access to the films for a limited time period of three months and a discovery system as well as an authentication system were not (yet) available.

The lessons learned as a result of the first three months of the service being installed and users watching films on the AVA library is that the users expect to get easy access to the film
program. They expect the technical settings to be as self-explanatory as possible. Users wish to get remote access to the streaming service and to be able to login via an automated authentication system, so that they do not have to come to the library, to lend out headphones and ask for a login at a service desk.

Technical problems occurred as a result of users manipulating the viewing stations by unplugging cables to plug in their own devices. One recommended solution for on-site streaming therefore is to provide sufficient plug sockets for the users, and to check the functionality of the on-site installation daily before the opening of the library. It is generally advisable to protect on-site video streaming installations using specially adapted furniture for audiovisual multimedia viewing stations. The purpose is to cover and hide the PC-client architecture and allow only authorized persons to access interfaces of the network.

**Sharing is caring: bringing together library and festival communities**

The AVA (Audiovisual Access) project brings together two different communities: libraries and film festivals. These communities have been connected for the first time on a larger international scale through the AVA project. The communities differ strongly in profile. On the one hand, film festivals are event-centered. The festival staff selects films from a vast number of entries submitted to the festival and curates film programs. They collect descriptive metadata on the films for the festival catalog. They are in direct contact with the creators of moving images and strong in connecting the persons responsible for creating film works with an interested audience attending the festivals. The festival staff work at a high level of extraordinary commitment for many months in order to prepare the festival event. The festival takes place over the course of a few intensive days (and nights) with screenings, encounters with filmmakers, festivities and an award ceremony at the end.

Public libraries, on the other hand, are open throughout the year - serving a constant and usually high flow of daily visitors to which the library offers efficient services thanks to well-established workflows, marked by a huge degree of labor division and routine procedures. Libraries have a long tradition of creating, curating and sharing authority data for printed materials. Authority data related to audiovisual works, however, is still underrepresented. Since the ascent of the home video market in the 1990s, most public libraries provide free access to film works published on physical media and have become important film heritage institutions. They need to offer new video on demand services to meet the demands of the users. Whereas festivals work in teams with flat hierarchies, libraries tend to be more hierarchical than festivals and decision-making processes tend to be more regulated by an administrative framework.

A common feature of libraries and film festivals is that they collect and catalog moving image metadata and give access to moving images. Combining advantages and strengths of both partners, they can be ideal partners for cross-domain cooperation. The benefits for the communities are manifold: festivals can expand in time, reach sustainability and share their knowledge on curating moving image and filmographic documentation. Libraries can bring in their knowledge of metadata sharing, creation of authority data and management of data workflows. By cooperating with the film festivals they can offer unique and new audiovisual content and expand their video on demand streaming services to the benefit of the users. The cooperation offers the chance to bring together audiences of the different communities - encouraging festival-goers to visit a library, and library users to get to know the film festival.
Challenges and future perspectives for cross-domain cooperation

By taking the example of the AVA project as a starting point, the paper aims to discuss future perspectives for international and cross-domain cooperation between moving image content providers and libraries to give access to video on demand streaming services. Special attention is given to questions of the applied metadata standards and the requirements for cross-domain data exchange.

The experience gained in the pilot project AVA library shows that cross-domain cooperation in the field of video on demand services is of mutual interest and benefit for both the library and film festival communities. To allow for an efficient workflow of content and metadata cross-domains, it is advisable to align the practices and standards of filmographic documentation with the standards of creating and collecting moving image metadata in libraries. For the BIBFRAME AV-Modeling Study: Defining a Flexible Model for the Description of Audiovisual Resources, Kara van Malssen pointed out that “there may be a desire among catalogers to align their practice with other content and structure standards available within various AV communities for the purpose of increased interoperability and data exchange, especially when libraries and archives are collecting resources and metadata from broadcast, music publishing, film distribution, or other creative industries that might incorporate very different data models than those found in libraries” (LOC 2014:10).

To ensure interoperability and efficient exchange of data, the festival and library communities should agree on a common metadata schema and define a minimum standard set of elements for descriptive metadata. The minimal set of elements should allow for identifying and finding films as well as for differentiating between film works to fulfill the principle of convenience of the user and ensure the sharing and reuse of filmographic and authority data within and outside the library community (ICP 2016: 5). The metadata schema should also take into account existing standards and practices established by the film industry and major streaming video on demand providers, like, for instance, the metadata template published by Netflix (Netflix 2016). Relevant standards developed by the film industry include universal unique identifiers for film and television assets like Entertainment Identifier Registry (EIDR, www.eidr.org) or International Standard Audiovisual Number (ISAN, www.isan.org).

The rules and standards of the library community have been developed within a long, venerable tradition of cataloging print materials. By and large they do not yet correspond to content and structure standards of audiovisual communities (Bohn 2016). A comparison of metadata standards developed by the film industry and other audiovisual communities with the standards and rules of the library community show major differences that are problematic for data exchange. I’d like to show this by selecting three aspects: (1) persons and corporate bodies responsible for creating moving images, (2) unique identifiers, and (3) rating.

1) Persons and corporate bodies responsible for the creation of moving images

The creation of a moving image work usually is a product of multiple creators. The persons and corporate bodies contributing perform various functions in the creation of content, like, for instance, director, producer, screenwriter, editor, cameraperson, composer, actor, etc. The BIBFRAME AV Study points out that “identifying the primary ‘creator’ and supporting ‘contributors’, for this content, as is often required in library cataloging, is very challenging, and can lead to inconsistent or even misleading descriptions.” (LOC 2014: 6).
In Resource Description & Access (RDA) an agent responsible for the creation of a work is defined as a creator. The creator having principal responsibility is defined as a core element in the standard element set (RDA 19.2). In the case of moving images RDA does not allow for cataloging persons and corporate bodies responsible for the creation as creators, with the exception of the rare case of a filmmaker who “is individually responsible for the conception and execution of all aspects of the film” (RDA I.2.1). For most moving image works produced worldwide this definition is not applicable.

Even though, for instance, the credits of television series quite often name “creators” of the series, RDA does not define these persons as creators. As a result, no minimum standard for cataloging persons and corporate bodies responsible for creating a moving image work has been defined in RDA. This is a major difference and deficit compared with standards established in the film industry and other audiovisual communities.

Film festivals have defined a minimum standard for the identification of a moving image work that necessarily includes persons responsible for the creation of the work. Cataloging moving images for film festivals always includes one or more directors of a moving image as part of the minimum standard of description of the work. For the International Standard Audiovisual Number (ISAN), one director of a moving image work is defined as a required element: „At least one Participant with RoleCode „Dir[ector]“ must be present (...) A scriptwriter and 3 actors are highly recommended when applicable“(ISAN 2012:15). The Entertainment Identifier Registry (EIDR) developed by the film industry confirms that a minimum standard, defined for cataloging persons and corporate bodies collaborating to a moving image work, is required for identification and differentiation of moving image works („It is used for differentiation and identification and is not a complete set of credits” EIDR 2015: 28).

Audiovisual content is extremely well-suited for the linking of information due to the fact that multiple agents performing different creative roles are involved in the production of a moving image work. In order to ensure user friendliness and retrievability, principal creative contributors in different categories, including film music, camera, script, etc. should be recorded - allowing for linking to content in other subject areas such as literature, music or theater.

2) Unique identifiers
International persistent unique identifiers for the identification of moving images are of growing importance in the film industry and the digital distribution workflow for moving images, although they are not (yet) common standard in the library world. In RDA, unique identifiers for works and expressions are defined as core elements (RDA 6.8; RDA 6.13). However, in the practice of cataloging films, existing unique identifiers developed by the film industry are, to my knowledge, not yet systematically integrated. Although the RDA toolkit lists examples of international unique identifiers like International Standard Musical Work Code (ISWC), unique identifiers for moving image works like EIDR and ISAN are not mentioned. For cross-domain cooperation between moving image content providers and libraries, it would be highly recommendable to integrate existing unique identifiers of moving image works when cataloging moving images. It would also be highly recommendable to integrate the unique identifiers in the authority data created by libraries in Gemeinsame Normdatei (GND) or in the Virtual International Authority File (VIAF).
3) Rating
Legislation for the protection of minors in many countries provides age rating of moving images. The moving image content rating systems are designated to classify films with regard to suitability for audiences. The content rating systems are country-specific and use a controlled vocabulary. Although RDA does not define rating as a core element required for the description of moving images, collecting data on rating is necessary to abide by the law. Metadata on ratings therefore should be included when cataloging moving images. Many titles offered in the catalogs of streaming video portals are not family friendly. For public libraries, giving access to moving images it is of major importance to catalog metadata on age ratings and to use filtering systems connected to the ratings to make sure that children and juvenile library users do not get access to content rated for older audiences. The minimum set for descriptive metadata of moving images should therefore include information on ratings.

Conclusion and future perspectives
I have presented the AVA library project as a use case on metadata and content sharing: between organizations, cross-domain and internationally - on a European scale. AVA brings together different communities in a public-private partnership: libraries and film festivals are collaborating with a commercial video on demand platform specialized in film festivals. The AVA library project aims at expanding various aspects: in terms of content, the project plans to expand from short films to also include documentary films by cooperating with documentary film festivals and public libraries in Lisbon, Belgrade, and Sheffield. In terms of dissemination, the aim is to expand from local libraries to a regional scale and to include associations of libraries. It is also planned to expand from on-site viewing to remote access. In the future, the AVA library project could develop into a much broader cooperation network between film festivals and libraries.

Metadata on moving images is collected in various library and audiovisual communities – public and academic libraries, film and media libraries, film festivals, film museums, film archives and in the creative industries. In the future, the different metadata standards and models should be compared and workflows be aligned to promote data exchange. Library standards and rules are to be revised to check whether they meet the requirements of interoperability and enable data exchange with different audiovisual communities.

The AVA library pilot project can serve as a starting point for developing a metadata schema for cross-domain data exchange and internationally between libraries and film festivals. To ensure interoperability and user friendliness, the minimum set of elements defined for the data schema could be based on comparing existing standards and practices of cataloguing moving images in libraries and film festivals as well as standards established by the film industry.

Authority data of persons and corporate bodies related to the creation of moving images and of moving image works are still underrepresented in library catalogs. The cooperation with film festivals and other audiovisual communities could foster the enrichment of authority data in libraries. On the other hand, metadata librarians could assist film festival staff in creating authority data on moving image works, persons and corporate bodies. The fact that the film festival staff are in direct contact with the creators and rights owners of the moving image work, represents a valuable asset in the workflow of metadata management and digital distribution. Creators of moving images would benefit from the festival-library partnership by being assisted in registering their moving image works and gaining wider visibility. Future cross-domain cooperation projects should foster the registration of moving image works with
international persistent identifiers. The authority data created in the library community (GND, VIAF) should be enriched to include persistent identifiers for moving image works like ISAN and EIDR.

Through the AVA project, the film festival experience expands in time and space towards the virtual multimedia library. The aim is to enhance visibility with audiences by extending the festival experience and to offer exciting new content for library users. It is of vital interest for libraries to cooperate with film festivals in partnerships with providers of audiovisual content and to exchange, enrich and create metadata with members of audiovisual communities. Sharing is caring!

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