

International Association of Sound
and Audiovisual Archives

Internationale Vereinigung der
Schall- und audiovisuellen Archive

Association Internationale d'Archives
Sonores et Audiovisuelles

Asociación Internacional de Archivos
Sonoros y Audiovisuales

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The IASA Journal is published twice a year and sent to all the members of IASA. Applications for membership of IASA should be sent to the Secretary General (see list of officers below). The annual dues are €40 for individual members and €158 for institutional members. Back copies of the IASA Journal from 1971 are available on application. Subscription to the current year's issues of the IASA Journal is also available to non-members at a cost of €70.

Le IASA Journal est publié deux fois l'an et distribué à tous les membres de l'association. Veuillez envoyer vos demandes d'adhésion au secrétaire dont vous trouverez l'adresse ci-dessous. Les cotisations annuelles se montent actuellement à €40 pour les membres individuels et €158 pour les membres institutionnels. Les anciens numéros (à partir de 1971) du IASA Journal sont disponibles sur demande. Ceux qui ne sont pas membres de l'Association peuvent s'abonner au IASA Journal pour l'année en cours au coût de €70.

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Errata: In the IASA Journal No 25, Dr Shubha Chaudhuri was mistakenly designated ' Chief Coordinator, Archives and Research Centre for Ethnomusicology, India', when she is in fact 'Director of the Archives and Research Centre for Ethnomusicology'.

The recent IASA conference held in Barcelona, Spain, was an inspiring event for all who attended. Not only was the historic conference venue beautiful, but the programme content was compiled thoughtfully and the standard of papers high. The few papers published in this issue (and, we hope, in the next issue), will certainly testify to that. The conference succeeded in creating a feeling of 'archival fever', a phrase that Jacques Derrida coined and that John Vallier from UCLA used in the paper he delivered titled *Users' Perspectives: Tipping the Balance towards Fever*, which is published in this issue. Derrida described 'archive fever' as *to burn with a passion*. When one observes the recent activities undertaken by IASA, in some cases in alliance with other sister organisations such as FIAT, then it seems as if we archivists are starting to identify with Derrida's fever. Since the Barcelona conference, IASA has participated in at least four workshops across the world, and has a few more up its sleeve. New audiovisual archives are being established with interesting collections, and old(er) archives are being dressed in new, digital attire, becoming more accessible and living up to the ideal of taking our archives to our 'users', instead of our users coming to us.

The articles in this issue look at the passion with which we embrace the future of our collections, but also continue to address ethical issues. Grace Koch's brilliant article *Negotiating the Maze: Ethical Issues for Audiovisual Archivists* lays the foundation for IASA to draft a Code of Ethics. On the issue of preservation and access, Dietrich Schüller debates the idea of archives versus database in a thought-provoking article *What is an Archive - and what is a Database? A plea for a two-tier structured labour division of audiovisual research repositories*. Digitisation and dissemination of content is discussed in a number of articles such as the DEKKMMA collection in Belgium, content dissemination through Peer-to-Peer technologies by David Fernández Quijada, and flexible exploitation of collections by Guy Marécha.

The IASA Board wishes you a feverish archival 2006.
December 2005

My first President's letter! It seems like only yesterday we were enjoying the sunshine and warm welcome in Barcelona. Now, I am readying my garden for winter, with snow in the air this morning, while anticipating eagerly my first visit to Mexico City. This will be my first opportunity to participate in a training session and to speak, as President, on behalf of IASA. It will also provide an opportunity to see the facilities for next September's IASA conference and to experience Mexican hospitality. The fact that it will be warmer than November in Ottawa is an added, but welcome, bonus.

My own contribution to the seminar's programme, *AV Memory in the Digital Society*, will look at the evolution of our understanding of digitisation. From the acceptance of computerised databases, and the idea of sound files for preservation, restoration and access, to an integrated digitised approach to collection management, and the forward thinking concepts presented in some of the papers at the Barcelona conference, digitisation has been, and continues to be, an evolving concept that dominates archival discussions. IASA has always been in the forefront of these debates. This is reflected in our Journal articles and in our publications, in particular TC-04, *Guidelines on the Production and Preservation of Digital Audio Objects*, more and more the standard source for information on digitisation. Digitisation is a topic that illustrates the importance and complexity of training and education in a fast changing AV world.

Training and education have become priorities for IASA. It is certainly an area where IASA, and IASA members, have had a significant impact. The seminar in Mexico City is just one of several to be held this autumn. There have been, or will be, seminars, meetings, and training courses in Latvia, South Africa, the Netherlands, and Italy. Each will have strong representation from IASA members. I would like to thank everyone who has participated in these sessions.

Several have been in partnership with our colleagues in FIAT and received extensive co-operation from various host organizations and governments. The increasing attendance at these events, and the willingness of broadcasters and other organisations to provide organisation and sponsorship, suggests that there are further possibilities for promoting the care and preservation of the world's audiovisual heritage. Both *Ya Pele* in South Africa and *Pan-Baltic Images: Reaching out to the World* in Riga in October left the strong feeling that a breakthrough had been achieved and there could be opportunities for progress and regional co-operation in the development of sound and audiovisual archives in these parts of the world. UNESCO's declaration of October 27 as the World Day for Audiovisual Heritage is another milestone in raising international awareness of AV archiving issues.

IASA's participation in these seminars and workshops, and our ongoing outreach through the CCAAA, provide opportunities to promote IASA and bring attention to the broader issues of AV preservation. IASA needs to balance these successes with our sometimes limited personal, organizational, and not to mention financial, resources. If IASA is to continue the active role in training and education pioneered by this year's Special Recognition Award winners, Dietrich Schüller and Albrecht Häfner, it will need to look seriously at developing more trainers, working with our partners in the CCAAA, and taking advantage of these opportunities to build IASA as a successful organization. Training was a priority of the last Board, and it will continue to be so for the new Board.

The mid-year board meeting is planned for March in Paris. It will have a full agenda as these are busy times, if the volume of emails circulating among board members is any indication. The call for papers for this year's conference should be issued shortly and by March we will be in full programme preparation mode. Please watch for the call and reserve 9 to 14 September for the Mexico City conference. The theme *Between Memory and Oblivion* should elicit interesting papers from both within and outside IASA's membership.

The Board will also continue the process started in Barcelona of mapping out IASA's direction for the next three years, working towards IASA's 40th birthday in 2009. With contributions from you the members and the hard work of your board it should be an exciting process. We welcome your input.

Richard Green
December 2005

An Electronic Composer: The Preservation of Sound Archives

Keynote speech by Andrés Lewin-Richter, presented at the IASA Conference 2005, Barcelona, Spain

First let me give you a brief idea of my background. I have been working in two quite different fields, unfortunately never really complementary. There was hardly any feedback from one field into the other. It meant a lot of effort over many years, but it was certainly worthwhile. I hope my family bears no grudges towards this approach.

The two fields are engineering and music. I am a qualified engineer, with a long study period, eleven years in all, which at the time was the minimum requirement for a good background. I majored in electricity, computer science and acoustics, in Barcelona and at the New York Columbia University. I am an untrained musician, but nevertheless a composer, with over 100 pieces to my name. Being Edgar Varèse's assistant at the Columbia Princeton Electronic Music Centre, he helped me to compose a commission of his by Ian Hugo, creating the soundtrack of *The Gondola Eye*. During one of our conversations in his house I told him that I had thought seriously about studying music, but his answer was: "Rather not". So here I am, a composer with no formal musical training, no formal teacher, and not playing any kind of instrument, but composing electronic music. *Musique concrète* and computer music systems have taught me all I needed in order to create works. As I have indicated, there is no correspondence between the two fields, but I can tell you that it did work very well for my psychological balance. Many engineering problems were managed by focusing on music, and the family did not resent it so much because much of the musical work was done at home, in spite of spending many Saturdays at the official Phonos studio, which I established with four colleagues, and which today is still running on the Pompeu Fabra University premises.

I started recording in the late 50's. The first occasion was an organ recital at one of the old churches in Barcelona, Sant Sever, next to the Cathedral, by Montserrat Torrent, who needed this recording for German Radio as a promotional sample. Since then I have recorded many contemporary music concerts in order to help composers and musicians to preserve their performances and to use as a study. Still today I am sometimes asked to make copies of these recordings. While at Columbia University, apart from taking my first steps in composing in the electronic music studio, I did archiving at the Laura Boulton Ethnomusicology collection, together with Mario Davidovsky, and there, among other transfers, we had to copy aluminium disks to tape and edit them. At the electronic music studio I managed the electronic music archive and reorganized it, and since many tapes came from Europe with no reels, just hubs, it was really a problem. If any of these tapes came apart, it meant a lot of work to unscramble them and put them back onto reel. The fact that some of the tapes had paper backing made the problem worse, because they broke and then had to be rearranged and spliced correctly. Out of this Columbia collection I have copies at my own house. I have also been keeping an archive of my own works and archiving the production at the Phonos studio. This means there is lots of material to be taken into consideration, and one of the main issues is of course space. In the past few years I have been struggling to find a rational solution to this problem.

There are several objectives in the process:

- To preserve my own work in a reasonable way, keeping all the materials
- To have master copies of taped music and taped parts of instrumental pieces ready so that if a performance comes up, an audio CD can easily be produced, including a CD of the score material so that scores can be easily printed
- To have master copies of recordings of my pieces so that eventually they will be available for a CD production or lecture

- To have CD copies of electro-acoustic music pieces in my archive so that I can prepare my lectures at the Catalunya Music School, where I am a lecturer in the History of Electro-acoustic Music
- To have CD copies of electro-acoustic pieces for instrumental performances at the Phonos Concerts, about 10-15 concerts a year
- To have CD copies of all the past recordings in my archive

In the past six years I learned the hard way, and experienced many problems with CD recordings and extracting material from the originals, and I would like to let you participate in my experiences. Let us begin with my first wrong decision.

My objective was to create audio CDs, and I began transferring material from DAT to CD (my own works). In 2000 I was commissioned to record a piano and CD piece, to be performed by Jean Pierre Dupuy, *Resonancias*. The performance went well and the piece was kept in limbo, but Jean Pierre decided to perform it again in 2005, began to practice and gave me a call, the CD was unreadable. It confirmed my previous experiences. AUDIO CDs burned on home CD-R burners last only from three to five years. AUDIO CDs burned industrially seem to last 20 years, so we may give back business to CD recording companies in the very near future.

The objective of this keynote speech is to show how I preserve electro-acoustic pieces to meet the above objectives.

What do we have to preserve?

- LPs of recordings of pieces
- Tapes (mono 1/4", stereo 1/2-track 1/4", stereo 1/4-track 1/4", 4 track 1/2", 4 track 1/4", 8 track 1/2")
- Cassettes of recordings of pieces
- DAT
- CDs (data, audio)
- software
- MIDI instructions
- Scores (paper, Personal Composer, FINALE, SIBELIUS)
- Mixing software (Cool Edit, Vegas, Cakewalk(Sonar), Cubase)
- Videos
- DVDs

Transferred to:

- DVD data or hard disk (always in duplicate)
 - o Sound in .wav 44,1 kHz, 16 bit
 - o Scores on paper: scanning in .jpeg
 - o Rest: in the original form, with a copy of the software check every five years, if still valid

Sound Storage

There are different opinions: NOA, an Austrian archiving specialist company, working with SONY, prefers to store at 96 kHz 32 bit, at 44,1 kHz or 48 kHz 16 bit, and MP3, and, at the same time, on hard disk (which is expensive).

Tape Pieces

In the early 60's, to make a final mix we used to synchronize up to four mono tape recorders and copy into a stereo tape recorder. And because of the change in speed along with time

settings of the tape recorders owing to heating of the motors, we could only synchronize up to 60 seconds. This meant that complicated pieces with many sound bites were built using segments of up to one minute.

To revert to the original materials means a lot of reconstruction and is not really worthwhile, except if it is included in a research project.

With the appearance of the first 4-track machines and $\frac{1}{4}$ "-tape in the mid 60's, synchronization became a minor issue, since each track was recorded separately and the 4-track tape was the "mixer". From this a stereo copy was produced, which was the "master".

Over the years, tape machines with more and more tracks were developed. I remember working on a Studer in 1990 with 24 tracks, on a $\frac{1}{4}$ "-tape, which made mixing and preserving the material so much easier, since all the original sounds were stored on the different tracks on the tape. Inherent tape problems have also been solved over time, such as:

- Print through: transfer of sound between rings of tape, therefore the first precaution was to store tapes "tails out"
- Hiss: reduction with Dolby systems

Stereo 2-track Tapes

These are theoretically ready to be performed, or even transferred to a commercial CD.

With modern computer technology and good quality reproduction systems one suddenly encountered "defects", which were mainly:

- hiss
- clicks, mainly from incorrect splicing
- distortion

Suddenly one discovered imperfections that had slipped in. Finally one compromised, taking a decision to:

- eliminate hiss with good "noise reduction" at Cool Edit
- eliminate clicks by good fade out and fade in, around the click, adding a sample of the nearby material
- eliminate distortion by reducing the noise level, or substituting similar material
- Make a final and definitive mix to be stored in .wav format

Tape Pieces (more than two tracks)

Split the piece into mono tracks and create a Vegas patch in order to synchronize all the tracks. In this case there should be no problem with tape machine speeds, since there is only one tape recorder, but I have to admit that some 4-track $\frac{1}{4}$ " tapes I have synchronized using a stereo quarter-track $\frac{1}{4}$ "-tape recorder copying first tracks 1 and 3, then copying tracks 2 and 4 backwards, and synchronizing them afterwards, apparently without problems.

- Instructions have to be given for the correspondence of track and position of the speaker in the diffusion system
- The reproduction system in this case would necessarily be a computer with the required multitrack sound card
- This means that in a CD or DVD we would have to open a file containing all the tracks in .wav format, and an instruction sheet in Word or similar

Instrumental Pieces with Tape

All above applies, and we have to add the score as well. The score should be easy to follow for the musician, writing the instrumental score using a defined tempo. Without tempo changes along the score, if possible, I use mainly quarter-note 60 metronome in 4/4 tempo,

and add in the score, for security, time in minutes and seconds, in case a chronometer is preferred for following the score. The tape material is shown in the score, indicating the most remarkable sounds or effects, as a guide for the musician.

Pieces composed before 1989 are only on paper, so they have to be scanned and saved in a separate file in .jpeg format.

Pieces composed between 1989 and 1997 use *Personal Composer*, and for the time being have to be scanned. Pieces composed after 1998 are either in Cakewalk, pending transfer to Sibelius via MIDI, or already in Sibelius.

In a future editorial project they will be transferred to .pdf in order to avoid any further manipulation.

Music for Theatre, Ballet, Exhibition

The original material is on tape, so only the sound material is preserved, as with regular "incidental music". There could be a video recording of a performance, but in this case there is just a document. The material would remain as a musical piece, if there were any proper value in it, since it was created for a purpose and would rarely be re-enacted.

Music for Cinema, TV, Video, Commercials

There is a possibility of the image with sound being on a video or a DVD. In earlier times many experimental films were lost. As a composer I only retained the soundtrack. In the case of *The Gondola Eye* I knew that Ian Hugo had deposited all his films at MOMA, and recently I requested a copy of the film. After many difficulties I got a copy, and to my astonishment I found that Ian Hugo had asked another composer to compose new music for a shorter version of the film. So I lost the opportunity to recover the film with *my* music. When video became available, films with sound were easily stored.

Computer Music Pieces

Since the emergence of the NeXT computer in the late 80's, many things have changed in the creation of electronic music. Digital sound may not be the best sound, as some fans of analogue sound profess, but many are happy with its good audible range. We forget the early IBM 9070, the PDP 11, and other computers where you had to be a programmer in order to archive sound, first on MUSIC IV, then MUSIC V, and later C Sound. With NeXT music began to be user friendly; later came MAC, and in the 90's many software applications were developed so that today programming is not required in order to use computers to make music.

We have wonderful tools for sound transformation: Cool Edit, Sound Forge

- Tools for good mixers - up to 64 channels or more: Cool Edit, Vegas
- Tools for combining electronic sound with instrumental simulation via MIDI: CakeWalk-Sonar
- Tools for writing scores: FINALE, Sibelius, which enable you to store all the steps in the composition, from initial sounds to end mix on a CD or DVD

Interactive Music

I have been working with the virtual reality group of our university on a few interactive pieces, where change of image and sound run in parallel. Here the original sound material is a series of samples that change from image to image and are processed in real time by a defined sound transformation program, which changes some of the parameters of the sound according to particular software.

What do we preserve in this case: a video document of the performance, the samples, the software applications used in the process? Again, aside from the visual document the rest will remain a research project of reconstruction, to be decided whether recovering it would be worthwhile.

Works with Live Electronics

This is the most complicated chapter, which creates a lot of headaches if you look at it from the point of view of a concert programmer, as in my case. Live electronics have been and are being produced using either hardware or software.

In the case of hardware, we speak of an “instrument”, and as long as the instrument exists it will be performable. But most of the time the instruments become obsolete, owing to poor commercial interest, or they become defective in time. These pieces tend to “be lost”; if a good recording is preserved, that is all we can expect to survive. This also applies to the many synthesizers and samplers that have existed over the years, using memories in cassette, cartridges or discs. But in this case you may still save the sound samples and reconstruct the piece using a MIDI keyboard to trigger the samples stored in the computer.

In the case of software, as long as the computer operating system supports that software, things remain unchanged most of the time, but this requires the software to be updated from year to year to make sure it is operational. Once you find it is no longer operational, look on the Internet to see how other people have solved the problem - you are not the only one to have this kind of difficulty.

In our university, for technical and practical reasons we have eliminated Mac. All the operations are done on PC. People who have composed interesting works on Mac, using early versions of MAX/MSP, found the information was rarely transferable to the new MAX/MSP version for PC, particularly in the case of special “objects”, which were created with the tools of those versions.

Conclusion

If your mission is to preserve documents and supply them to the public in “listening” rooms: the solution is to store as much material as possible on hard disk in a decent audio (.mp3) or video format that could be accessed from a terminal. For research purposes, supply materials in good standing data (audio (.wav) or video) format. For editorial purposes, meaning ‘supply materials’ for concert performance, supply in audio format (44,1 kHz, 16 bit), remembering never to use 100% normalization, if you use the NERO software, for example. I strongly recommend looking at the wave before transferring to CD, and if you see that some sections of the wave touch the limits, go back and normalise to 90%. I have found out that some CD players will present problems when reproducing the 100% normalised, by skipping or jumping back along the rings.

Negotiating the Maze: Ethical Issues for Audiovisual Archivists

Grace Koch, *Native Title Research and Access Manager, AIATS¹, Canberra, Australia, presented at the IASA Conference 2005, Barcelona, Spain*

Do you, honourable Archivists, swear that you will proceed with all rectitude and fidelity in keeping custody of that Archive and its documents in good order and that you will keep secret all that you do and all that is in the interests of the rights of this city to be kept secret?.

This is the required oath of the archivists of the Catalan city of Tortosa in 1579. It appears as a historical, not a procedural, example at the top of the most excellent Code of Ethics of Catalan Archivists.² Hopefully we archivists have observed the first part of the oath about keeping documents in good order, but no longer do we keep our procedures and activities secret. Indeed, if we look at the web pages of businesses and professional organisations internationally, we can see their codes of ethics displayed for the world to see. This is because clients want to understand what an organisation stands for before they join it, or do business with it, or deposit material in it; therefore codes of ethics are actually driving how we do our work.

First of all, what is a code of ethics? According to WordWeb Online³, a code of ethics is a system of principles governing morality and acceptable conduct. A code should consist of an 'aspirational statement' that lists the ideals the organisation hopes to live up to, and some 'rules or principles' that members of the organisation need to observe.⁴ A code of ethics, which deals with enduring principles, needs to be distinguished from standards of practice, which consist of comprehensive descriptions of procedures.⁵ Sometimes the two documents may seem to overlap. I will deal with this topic later in the paper.

In everything from the politics of access to the capacity to change history through digital manipulation, the audiovisual archivist seems to face an increasing array of ethical dilemmas and pressures (Edmondson 2004: 4). Therefore, in this paper, I would like to show how possible conflicts of ethics may arise between funding bodies for research and audiovisual archives, to examine some of the different emphases on ethics placed by librarians, archivists, and audiovisual archivists, and to discuss some of the special issues that need to be addressed in a code of ethics for IASA. I limit my study to professional codes for information management organisations, but of course the codes of other professional societies based on subject specialties, especially in the humanities, offer important elements for the conduct of research.

Issues with Ethics, Research Funding Bodies and Audiovisual Archives

A large proportion of the materials held by audiovisual archives may be generated by research funded by, for example, private foundations, departments in universities or other educational institutions, or government agencies. This is especially true of research archives.

Sometimes a clash of ethical requirements may cause problems for archives when there are several layers of codes of ethics. A grant-giving body may set ethical requirements for how

¹ Australian Institute of Aboriginal and Torres Strait Islander Studies

² <http://www.arxiv.org/admin/docs/CODI%20DEONTOLOGIC-ANGLES.PDF> (26/08/2005)

³ <http://wordwebonline.com/en/ETHICS> (13 August 2005).

⁴ See MacDonald, Chris. Guidance for writing a Code of Ethics. <http://www.ethicsweb.ca/codes/coe3.htm> (18/8/2005)

⁵ See Bradley, K. (ed). Guidelines on the Production and Preservation of Digital Audio Objects A presentation written by Kevin Bradley, Jacqueline von Arb (speaker) and Lars Gaustad (speaker). Presented at the World Library and Information Congress: 71st IFLA General Conference and Council. http://www.ifla.org/IV/ifla71/papers/139e_Arb_Gaustad.pdf

the research should be conducted and, in many cases, how the material created during the course of the project should be treated. Next, the grant money may be administered by a university or other institution that has its code of ethics. And, finally, the most appropriate archive for preserving the material generated may have its own code as well. Our concern is with the audiovisual materials generated as part of this process and how they are positioned within the maze of ethics statements. A diagram will show a common framework for the grants process. My example comes from the grants process in the National Health and Medical Research Council/ Australian Vice-Chancellors' Committee (NHMRC/AVCC), which funds a large proportion of university research in Australia.



In order to take up a grant, researchers must obtain ethical clearance for their projects and be subject to the decision of an ethics committee. The NHMRC/AVCC statement, the Australian Code for Conducting Research 2004, is heavily based on medical ethics and the need for privacy of personal data. In the heading for the section on data and records management, the introduction states:

*'In the **Australian Code**, data is used to describe sufficient information from the work to enable the published results to be defended, enable other researchers to follow what was done, and ascertain whether the findings were genuine, analyzed appropriately, and not fabricated.*

While the original material – such as ore, biological materials, questionnaires or tape recordings – may not need to be kept (except as required by legislation or discipline convention), a durable record of the relevant information derived from them (e.g. assays, test results, electronically recorded responses, or transcripts) should be kept....' (NHMRC, ARC, AVCC consultation draft 2004: p.10)

A distinction is made here between 'original material' and 'data'. Original material, gathered during research before it is analysed formally, may include tapes and/or photos and may be of the greatest importance to archivists. Note that the NHMRC/AVCC Code says that original material 'may not need to be kept'. However, the definition of data in that code deals with the interpretation of the original material, or transcriptions, test results, etc. and this 'data' is required to be preserved.

There is a qualifying statement requiring that 'institutions conducting research are responsible for the storage of data... and for maintaining clear and durable records concerning the location of stored data' (NHMRC,ARC,AVCC consultation draft 2004: p.2).The interpretative data is provided for, but not the original material.This is hardly a comforting thought for archivists who may want to seek out the material, as there is a hint that original material such as tapes may be destroyed after transcription.

A diagram based on this example will show the situation:

Description	Interested repository	NHMRC,ARC,AVCC requirements for storage
Original material	Archives (Libraries)	mostly none
Analytical data	Libraries Universities Archives	University departments for at least 5 years
Published results	Libraries Universities	not applicable

There is a way round this dilemma. In cases where a researcher may get funding from several sources, deposit of original material may be negotiated, and some funding bodies recognize this provision formally. For example, many Australian universities consider AIATSIS to be the best repository for field recordings of Australian Indigenous languages, music and, often, of oral history projects. Where researchers are grantees of AIATSIS, they are required to lodge their field recordings and other audiovisual material produced during the research, and their published results, both with the AIATSIS archive and with the people who provided the information. The AIATSIS contract states that they must do this even if they have additional funding from other sources.⁶

I raise these points because archivists need to know that funding bodies, in their ethics requirements, may not consider the importance of the original material, such as field recordings and other audiovisual data. We archivists must try to make our interests known widely.

Codes of Ethics within Library and Archival Organisations

Unesco maintains a site, 'UNESCO Archives Portal: An international gateway to information for archivists and archives users' that includes codes of ethics for 31 national library organisations and 12 archival organisations, including FIAF.⁷ The International Council of Archives (ICA) has translated its code into 22 languages. Ray Edmondson, in his document, *Audiovisual Archiving: Philosophy and Principles*, encourages us to read some of these in order to get a fuller view of neighbouring professions, and that is exactly what I did. These codes vary in length and in detail, ranging from the four concise points of the Canadian Library Association to the more highly prescriptive codes from Hong Kong and Sri Lanka. Several codes classify their issues by responsibilities to the public, to the collections, and to the profession.

This information gives an interesting picture of what issues get emphasised nationally. For example, some countries concentrate in great detail on how to deal with breaches of conduct,

⁶ Guidelines for Ethical Research in Indigenous Studies. Australian Institute of Aboriginal and Torres Strait Studies. May 2000. Canberra, Australia.

⁷ http://www.unesco.org/webworld/portal_archives/pages/Communities/Others/Codes_of_ethics/index.shtml

while others want to support colleagues when their professional duties clash with political pressures. For my analysis, I listed the points in each code and made a checklist to see which ones were repeated the most, examining libraries and archives separately. The highest scoring points were:

Libraries	Archives
Offering unbiased service with a guarantee of free and equal access	Maintaining organic unity of records and their context
Maintaining privacy and confidentiality to users	Maintaining privacy and confidentiality to users
Continual upgrading of professional knowledge	Offering unbiased service with a guarantee of free and equal access
Having concern for the image and requirements of the profession	Fighting censorship of materials within the law
Being loyal to the organisation and its policies	Observing copyright and other laws
Respecting and supporting colleagues	Continual upgrading of professional knowledge
Fighting censorship of materials within the law	Not competing with other organisations for material
Avoiding conflict of interest	Avoiding conflict of interest
Maintaining highest standards of service	Safeguarding collection from damage
Participating in the social and cultural life of the country	Distinguishing personal beliefs from those of the organisation

Two items scored equally between the two professions: maintaining privacy and confidentiality to users and avoiding conflict of interest (dark grey above). Three other points common to both libraries and archives but not listed in the same order of importance are unbiased service, fighting censorship, and continual upgrading of professional knowledge (lighter grey above). I was disappointed to see that competent handling of audiovisual materials was stated explicitly in only three library codes, those of Sweden, Switzerland and the Netherlands.

Interesting issues mentioned by only one or two organisations were these:

- Staying in a job long enough to compensate the employer for the training and adjustment time needed for hiring them
- Avoiding associating with people or organisations that could ruin the reputation of the employee
- Admitting one's limits to knowledge and referring clients to subject experts
- Integrating information systems in the library and other parts of the institution

Overall, the data show that codes of ethics for libraries tend to concentrate on dissemination and free access to materials, while those for archives place proper arrangement and description and safeguarding of the material from damage higher on their ethical scales. Both professions include most of the same elements in their codes, although they appear in different order in the codes.

We move on to audiovisual archives and codes of ethics. In the Coordinating Council of Audiovisual Archives Associations (CAAAA)⁸, out of seven participating organisations

⁸ See <http://www.caaa.org/>

only three have codes of ethics - the International Council of Archives (ICA), the International Federation of Library Associations (IFLA), and the International Federation of Film Archives (FIAF). The only organisation of those three dealing primarily with audiovisual material is FIAF, and the following chart shows its code compared with ICA and related archival codes. Note that I do not list the FIAF provisions in the order they appear in its code, but as they relate to the ICA codes.

ICA	FIAF
Maintaining organic unity of records and their context	Respecting and maintaining the integrity of the material in its care
Maintaining privacy and confidentiality to users	Avoiding breaches of confidentiality; are deemed to be serious violations of professional standards.
Offering unbiased service with a guarantee of free and equal access	Acknowledging that the public has a right to ask for access and will be treated with courtesy even when access cannot be allowed
Fighting censorship of materials within the law	Protecting material from censorship
Observing copyright and other laws	Respecting the owners of copyright and other commercial interests
Continual upgrading of professional knowledge	Believing in the free sharing of knowledge and experience
Not competing with other organisations for material	Acting in a spirit of collaboration, not competition, with fellow archivists in their own and related institutions
Avoiding conflict of interest	Not indulging in activities that compete or conflict with the goals of their institution
Safeguarding collection from damage	Protecting its holdings and to pass them on to posterity as a primary responsibility
Distinguishing personal beliefs from those of the organisation	Clarifying whether an action taken is taken in a personal or an official capacity

The third and the fifth points have different shades of meaning for the two types of organisations. FIAF gives a less glowing statement than ICA about access, acknowledging that clients have a right to ask for access, whereas ICA guarantees unbiased service with free and equal access (of course, within legal constraints). Also, the continual upgrading of professional knowledge is stated in FIAF as 'sharing of knowledge and experience.'

I would encourage all the IASA members to look at the FIAF code⁹ and note the emphasis on protecting material in the best possible conditions, keeping copies faithful to the original, documenting all the processes of restoration, and maintaining exemplary personal behaviour. The FIAF code gives a good starting point for IASA members as we think about developing our own code.

⁹ See <http://www.fiafnet.org/uk/members/ethics.cfm>

A Code of Ethics for IASA

There are several reasons for now being the time for IASA to create its own code of ethics.

1. Obviously IASA cares about ethics. Our sister organisation, SEAPAVAA, chose the theme, Ethics, Values and Standards: Building Blocks of AV Archiving for its conference in 2001 in Singapore. Also, Ray Edmondson, in his *Philosophy of Audiovisual Archiving* updated in 2004, devotes much of Chapter 7 to archival ethics in relation to audiovisual archives.¹⁰
2. We have already gone partway towards a code of ethics for IASA. The IASA Technical Committee gave the title, *The Safeguarding of the Audio Heritage: Ethics, Principles and Preservation Strategy* to its TC-03 document including statements on the ethics of technical preservation, conservation and restoration.
3. The Research Archives Section of IASA has been given the task of putting together a proposal for such a code.
4. As we have seen, other related professional organizations have codes of ethics.

Your workplace may already have a Code of Ethics. If so, it may be interesting to examine it in the light of these questions raised by Chris MacDonald, one of the leading ethicists world wide.¹¹

- We need to decide the purpose of the code – whether it is to control behaviour, to inspire its members, or a combination of both.
- In what order should we list the values, seeing that usually a code of ethics lists the most important ones first?
- Should we include some sort of enforcement mechanism?
- When the code has been finalised, what steps could we take to make sure the values stated are put into practice in our organisation?
- How could we make sure the code is reviewed and revised when needed?

Edmondson lists a host of ethical issues that audiovisual archivists must face up to in his 'Philosophy' document. On page 70, he lists the following:

- Protecting the integrity and preserving the context of collection materials
- Probity in access, collection development and other transactions
- [Providing for] the right of access
- [Avoiding] conflicts of interest, and private benefit
- Observing the 'rule of law' and policy-based decision making
- [Maintaining] integrity, honesty, accountability, confidentiality and transparency
- [Pursuing] excellence and professional growth
- [Observing good] personal conduct, duty of care and professional relationships

He offers extended discussion on these and other topics. You may not agree with some of his conclusions, especially under the headings, Dilemmas and Disobedience and Power. Examples common to most library and archives codes are keeping originals, maintaining proper contextualisation of material, and avoiding conflict of interest when dealing with suppliers and other clients. One unique item is mentioned- 'assuming a cultural and moral responsibility to the material of indigenous peoples.' (Point 7.4.3.4, p. 74).

The final paragraph of this paper comes from the Research Archives Section meeting at the Barcelona conference. A decision was taken to convene a Task Force to create a plan and a time frame for producing a draft code of ethics for IASA. Of course, a code of ethics for

¹⁰ see *Audiovisual Archiving-Philosophy and Principles*. Edmondson, Ray. (CI/2004/W5/2) Paris, April 2004. (Unesco document)

¹¹ See MacDonald, Chris. <http://www.ethics.ca/codes/coe3.htm>. (18/8/2005)

IASA must belong to all its members. Expect to be contacted soon about how you can contribute to the process of creating one for IASA.

In closing, here is a paraphrase of the Code of the Archivists of Tortosa that may be more fitting to audiovisual archivists in our organization.

Do you, honourable Archivists, swear that you will proceed with all rectitude and fidelity in keeping custody of that Archive and its documents in good order and that you will help to develop the ethical framework describing the enduring values you hold in your profession as members of IASA to guide both present and future members?

⁹ See <http://www.fia.n.t.g/uk/memb/sf/shic> . . .

User Perspectives: Tipping the Balance towards Fever

John Vallier, *Ethnomusicology Archive, UCLA, USA, presented at the IASA Conference 2005, Barcelona, Spain*

Introduction

Archives and ethnomusicology are inextricably intertwined. As Anthony Seeger writes, 'audiovisual archives played a key role in the establishment of ethnomusicology, in the formation of theory and method in the field, and its development over the decades' (Seeger 2001). Ethnomusicologist Bruno Nettl writes that 'the idea of having archives for storing, processing, classifying, and cataloging ethnomusicological recordings has become basic in the field' and that 'archives are, in a sense, equivalent to libraries in other disciplines insofar as their importance in research is concerned' (Nettl 1964:17). Whatever their significance may have been, archives are understood by many ethnomusicology students and scholars as relics of salvage ethnomusicology and as storehouses of recordings that bear little relevance to current trends in the discipline. And today's younger, iPod-toting and IM-communicating users seem especially frustrated by archive policies and restrictions. This archival ennui, in turn, saps the desire among recent ethnomusicology graduates to deposit their research materials into archives.

In an effort to address these concerns and reaffirm the interconnectedness of the archive and ethnomusicology, this paper will describe a number of recent initiatives at the UCLA Ethnomusicology Archive. From making archival recordings accessible online to documenting contemporary musics within the multifarious communities of Los Angeles, UCLA is undertaking a number of projects that are helping to define the role of both archives and ethnomusicology in the 21st century. By discussing these and other projects at UCLA, it is my desire that archive users — especially our traditional core of users — will begin to see archives as sources of inspiration and scholarly fever, not ennui.

The Ethnomusicology Archive

Before delving into the paper, allow me to contextualize my observations by providing an overview of the UCLA Ethnomusicology Archive. The archive was established formally in 1961 when Professor Mantle Hood, Director of the Institute of Ethnomusicology, asked archivist Ann Briegleb Schuurisma to establish the archive as a research unit of the Institute of Ethnomusicology. When the institute was disestablished in 1974, the archive became part of the Department of Music. In 1988 the archive became part of the newly formed Department of Ethnomusicology and Systematic Musicology, which was renamed the in 1996. Since its inception, the archive has grown from what was a handful of recordings stored in a cramped basement room into an institution with over 100 000 recordings and a suite of rooms in the heart of UCLA's Schoenberg Music Building. Though the archive's collections are numerous, its personnel are not: two full-time librarians (myself included) and a small staff of part-time students help.¹

What/Who Are Users?

What is a user? My first step in interpreting user perspectives begins with a trip to the Oxford English Dictionary. According to the OED2, a user can be defined as:

- 1a. One who has or makes use of a thing; one who uses or employs anything
- 1b. A person who takes narcotic, etc., drugs. orig. U.S.
- 1c. A person or organization that makes use of a computer
- 1d. One who manipulates others for personal advantage

¹ See <http://www.ethnomusic.ucla.edu/archive/description.htm> for a description of our holdings and <http://www.ethnomusic.ucla.edu/archive/history.htm> for an overview of our history

How helpful is this? I already know a user uses something (1a). I don't think archive users — for the most part — take narcotics (1b). An archive user does not always use a computer (1c). And though archive users can be fixatedly concerned with their particular projects, I don't believe I have run into many who have attempted to manipulate me for personal gain (1d).²

Rather than asking what, let's ask who our users are. Based on my observations as an archivist since 2002, there are two general categories of Ethnomusicology Archive users: a core base of traditional users and an increasingly prominent set of emerging users. The former includes ethnomusicology scholars, whether budding (undergraduate and graduate students) or established (professors and professional researchers). The latter, emerging set of users includes scholars outside ethnomusicology, university administrators, and the general public.

What Do Users Say?

The title of this conference asks 'Archives Speak: Who Listens?' If we rephrase the question in the context of this paper, we encounter other significant questions. Users speak, what do they say? Users speak, what do we hear? I hear a constellation of user reactions and perspectives, from laughter to perturbation, from silence to words of praise. Archive users can be serious, frustrated, bored, excited, proud, confused, and/or amazed.

I have decided to boil down this heterogeneity into a pair of binary opposites that define the external limits of the constellation: users who exhibit excitement on the one hand and frustration on the other hand. Archival excitement results in what I call, in borrowing a term from Derrida, archive fever. This is something we archivists endeavour to encourage. Archival frustration results in what I call archival ennui, something we obviously want to counter. This distinction is outlined here:



Archival Ennui

Ennui is the 'feeling of mental weariness and dissatisfaction produced by want of occupation, or by lack of interest in present surroundings or employments' (OED2). Archival ennui is, therefore, frustration, dissatisfaction, and a lack of interest in the archive. Archival ennui is particularly evident among our traditional base of users in terms of 1) using the archive for research/study and 2) supporting the archive by depositing collections/funding them. Below are a few paraphrased examples of mental weariness I have encountered at UCLA:

- You are hardly open, so why would I use your collections?'
- Your are hardly open, so why would I put my collections in there?'
- Why can't I make a personal copy of these field recordings?'
- Isn't everything digitized yet?'
- Why isn't it online yet?'

In these example the sources of archival ennui can be traced to funding issues that result in shorter hours of operation, an unfamiliarity with the restraints of copyright law, and an enthusiastically unrealistic idea of what it takes to digitise analogue materials and make them available online.

Beyond these sources of frustration there also exist more deeply rooted factors contributing to a culture of ennui among our traditional user base. Nearly twenty years ago Anthony

Seeger identified these discipline-based sources of frustration in his article 'The Role of Sound Archives Today.' While lauding ethnomusicology archives, Seeger aptly describes archives as having an 'image problem' and being effected by a series of changes:

'These changes include the role of transcription in analysis (less than previously), the reward system of academic departments (in many cases rewarding only publications and not the time and effort required to organize deposit good field collections), the vagueness of the United States Internal Revenue Service (the "market value" and therefore tax-deductible worth of field collections in the United States is difficult to determine), the perceived use of archival holdings (limited to preliminary research or posterior verification), and concern about plagiarism.' (Seeger 1986: 263).

In addition to illuminating the reasons why ethnomusicology suffers from a discipline based ennui in terms of using and supporting archives, Seeger highlights the fact that archival ennui also has a foothold in one the most widely read ethnomusicology books: *The Study of Ethnomusicology: Twenty-Nine Issues & Concepts*. In this work author Bruno Nettl identifies key reasons for a decline in popularity of the ethnomusicology archive:

- Remnants of survival ethnomusicology: 'collecting and preserving have sometimes become ends in themselves' (Nettl 1983: 270)
- Inefficient networks: 'Archives of the world have not found a way to cooperate fully in exchanging and combining information' (ibid: 271)
- Irrelevant storehouses: 'While archives continue to grow, most scholars in their research rely upon their own recordings' (ibid: 272)

Therefore, Nettl concludes that 'as a group... [archives] may possibly not justify all the energy that has gone into putting them together' (ibid).³

Fever

Despite this malaise of archival ennui among ethnomusicologists, a fervid desire and fever for archives is present and growing among others. Students and scholars interested in deconstruction, colonial studies, and performance studies have demonstrated a passion for studying archives. Jacques Derrida, the father of deconstruction, sparked widespread archival interest in 1994 with his lecture *Archive Fever*. In this work, Derrida describes archive fever as...

'to burn with a passion. It is never to rest, interminably, from searching for the archive right where it slips away. It is to run after the archive.... It is to have a compulsive, repetitive, and nostalgic desire for the archive, an irrepressible desire to return to the origin, a homesickness, and nostalgia for the return to the most archaic place of absolute commencement.' (Derrida 1996: 91)

But Derrida is only among the latest of authors to revisit the archive. Since the late 1980s there has been a growth of interest in archives outside of archive studies and library science. In the cultural studies sub-discipline of colonial studies, archives are viewed as sites of knowledge production, not knowledge retrieval. As anthropologist Ann Laura Stoler writes, a blossoming of literature about colonial archives signals 'a more sustained engagement with those archives as cultural artifacts of fact productions, as taxonomies in the making, and of disparate notions of what made up colonial authority' (Stoler 2002: 85). Like colonial studies, the field of performance studies is also a sub-discipline of cultural studies and has demonstrated a keen interest in archives. As Helen Freshwater points out, since its inception in 1996, the

³ Bruno Nettl recently wrote a very kind letter of support for an Archive grant proposal, so perhaps his feelings about archives has changed.

journal *Performance Research* has included articles about, and reviews of, archives. There is even a dedicated issue of *Performance Research* — 'On Archives and Archiving' (2002) — that highlights the significance of archives to the discipline.

Currently the archive fever exhibited in deconstruction and cultural studies has not made its way to the Ethnomusicology Archive, but this is not to say that we are fever free. Not surprisingly, information, library, and archive studies graduate students — especially those who have an interest in music, folklore, and anthropology — are demonstrating a passion for archives. At UCLA it is these students, in particular, who are interested in working in the archive. When we circulate a job posting it is predominately these students, not the ethnomusicology students, who respond. And since the creation of a joint Moving Image Archive Studies programme at UCLA, another category of graduate students is entering the fever fray.

I have also seen a glimmer of interest (not quite fever) among a segment of the university's administration. UCLA's Center for Community Partnerships, which was created by Chancellor Caresale, has funded both of our year-long community outreach projects. The projects, which I will describe later, have been part of the Chancellor's university-wide initiative to make UCLA's presence more visible off campus. Such visibility is especially important for the university's public and governmental relations. With the implementation of term limits it has become difficult for representatives of the UC system to build long-term relationships with elected officials in the State Legislature. This, in conjunction with lingering State budget woes, has made it necessary for the university to demonstrate that it is effecting positive, real world change, and is not just an ivory tower.

Finally, I have recognized some of the most impassioned expressions of archive fever among members of the general public. Writers, composers, schoolteachers, music supervisors, musicians, those in search of ethnic identity or family history: whether motivated by personal or professional pursuits this emerging group of users consistently demonstrate an appreciation of the archive, its holdings, and its services.

Encouraging Fever

While archive fever is percolating among emerging users, it has only begun to make itself felt among traditional users. In what follows I describe some of my attempts to turn up the heat and increase the fever among this traditional core.

Since coming on board as an archivist in 2002, I have spent a good deal of time building our capacity to digitise recordings. Digitisation empowers users to discover and use holdings in new contexts that increase and extend the use of our collections. Whatever the goal — be it be for preservation, or access, or both — increasing this capacity has enabled us to do the following:

- Improve in-house access: reel-to-reel tapes sound good, but are cumbersome to use; digitised recordings are easier to play and allow random access
- Facilitate classroom access: with the advent of online audio reserves, and as analogue playback equipment is removed from classrooms, we are asked to supply professors with digitised materials
- Allow off-campus access: the archive's Online AV Gallery allows users to sample legally/ethically cleared material from afar and/or when the archive is closed⁴
- Provide more information: when we digitise a recording we revisit and re-evaluate its metadata and accompanying finding aid. This spurs us to create new, more detailed

³ See <http://www.ethnomusic.ucla.edu/archive/gallery.htm>

EAD finding aids, bibliographic records, and metadata that in turn enhance the profile, reach, usefulness, and intellectual control of collections. Eventually, we plan to link these finding aids with the corresponding digital objects and integrate related materials from different institutions into virtual collections

- Repatriate: the relative ease of duplicating already digitised field collections facilitates the distribution of recordings back to the communities from which they were originally collected. Repatriation of digital copies allows communities to revisit their past and perhaps reimagine their future, but it also gives the original collector a chance to give something back to communities from which they were able glean so much
- Provide collector copies: as we digitise field recordings with greater speed, streamline workflows, and retain skilled people in the lab we are increasingly able to promise collectors digital copies of their field materials. This service, in conjunction with repatriation, is motivating traditional users to deposit their collections into the archive
- Publish recordings: in conjunction with our departmental publications office, the archive has published a CD of selected field recordings from the collection of Gertrude Rivers Robinson: Bali South. Such projects are expensive, so we need an infusion of funds to make this happen. A possible alternative to publishing a CD is to publish field recordings online in the context of a finding aid or virtual exhibit (if intellectual property issues permit us to do so)

While the effects of digitisation slowly increase interest among our traditional users, we are also attempting to spark their fever by integrating the archive into new contexts:

- Curriculum: the Department of Ethnomusicology class 'Audiovisual Archives in the 21st Century' underscores the connections between ethnomusicology and archives. Originally offered by Louise Spear and Anthony Seeger, the class draws in ethnomusicology students who may want to explore archival issues but have no other classroom venue for it
- Radio: our Internet Radio — Sounds from the Vaults of the Ethnomusicology Archive — gives listeners the opportunity to hear a cross-section of the archive's holdings each week. And by inviting ethnomusicology students to DJ the show we are attempting to introduce traditional users to our extensive holdings.
- Local partnerships: as mentioned above, the archive has initiated two local community outreach projects: Archiving Filipino Music in Los Angeles (AFAMILA) and Gospel Archiving in Los Angeles (GALA). These projects have paired the archive with community-based organizations and have overseen the documentation of performances and digitisation of exciting community collections. Both projects have increased fever among traditional users by 1) paying graduate students to work on a project that is aligned with their research interests, and 2) complementing/adding to research already begun by the faculty⁶
- Global partnerships: beyond local partnerships, the archive is also generating fever among our traditional core by reaching out to a global community of archives. With ethnomusicologist Loraine Sakata, the archive is a partner in 1) the Central Asian Archiving Project, an ongoing venture to build the capacity of audiovisual archives in Tajikistan and Kyrgyzstan, and 2) a proposal to digitise the holdings of Radio Afghanistan.

⁵ See <http://www.ethnomusic.ucla.edu/courses/292/>

⁶ These community partnerships are also beginning to fulfill the vision of the founder of ethnomusicology at UCLA, the late Mantle Hood. In 1957 he wrote the following: "Like most large cities (and some small ones) the metropolitan area of Los Angeles contains enclaves of a variety of cultures. It is our plan to begin the systematic collection of these materials and deposit them in our archives for future study" (Hood 1957: 7).

Conclusion

My goal is to encourage fever and prevent ennui among all our users. And as I have shown, it is our traditional core of users that are going to take the most coaxing. But with a growing backlog of materials and frequent threats to curtail our funding, we are already stretched fairly thinly. How can we realistically encourage fever, laughter, excitement, scholarship, learning, and joy when we are just trying to keep on top of the most fundamental tasks?

One word: fundraising. Since July 2002 I have written five successful grant proposals for the archive. Thanks to these efforts I've been able to raise \$130 000+ for the archive and its fever related projects. But I've also written two lengthy and unsuccessful grant proposals. All the proposals take a considerable amount of time to research, write, and (I hope) administer. What time I put into grant writing I take out of other pressing duties. Grants may fan the flames of fever, but they do not usually fund more mundane day-to-day operations. Therefore, as I attempt to tip user perspectives away from ennui and towards fever, I am finding myself having to strike a balance between fulfilling the core mission of the archive and chasing grant funded, fever raising, opportunities.

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Archives and Advocacy: The WITNESS Media Archive and Global Human Rights
 Grace Lile, WITNESS Archives, Brooklyn, New York, USA, presented at the IASA Conference 2005,
 Barcelona, Spain

'For memory to be effective at a collective level, it must reach larger numbers of people. Hence, the acts or works that convey it must be accessible.'

~Dominick LaCapra, *History and Memory After Auschwitz*

Abstract

WITNESS is a human rights organization that works in partnership with non-governmental organizations around the world to help them incorporate video in advocacy campaigns on a range of issues. The WITNESS Media Archive is an outgrowth of these partnerships, and as such has several roles: to serve the long-term archival needs of these partners; to provide ongoing production and distribution support; to preserve the media as documentation for the human rights record; and to provide access where possible to a broader community of advocates, journalists, researchers, and filmmakers. How does the Archive balance these sometimes conflicting mandates? This paper will examine the ways in which the Archive has expanded access to its collection through the internet, strategic collaborations, and a marketing campaign, and how it addresses issues such as shared copyright, moral and ethical obligations, and potential conflicts between security and access.

Introduction

The use of audiovisual tools in human rights advocacy and documentation is a relatively new development. In conjunction with other new technologies, video is providing unprecedented opportunities for communication to people in every corner of the world. The importance of archives as a vital tool in the endeavor for universal human rights is likewise only recently being articulated.¹ The issues inherent in both audiovisual and human rights archiving pose a particular set of opportunities and challenges for the archivist; I will discuss some of these in light of the WITNESS Media Archive, with a focus on issues of access and outreach. Challenges include balancing the needs of sometimes competing constituencies, the impact of new outreach efforts on core archival activities such as cataloging and preservation, weighing individual rights of privacy or security against the desire to provide wider access, and ethical considerations when reusing or licensing footage shot originally for an explicitly non-commercial purpose.

WITNESS

WITNESS (www.witness.org) is a small human rights organization that works in partnership with non-governmental organizations (NGOs) or grass-roots groups round the world to help them to incorporate video in advocacy campaigns on a range of issues.

¹ See for example: Montgomery, Bruce P. "Archiving Human Rights: A Paradigm for Collection Development," *The Journal of Academic Librarianship* 22 (1996), p88.

Figure 1: 1991 amateur video of LA police officers beating Rodney King, taken by George Holliday



WITNESS was founded in 1992 by musician Peter Gabriel, the Lawyer's Committee for Human Rights, and the Reebok Foundation, in the wake of the Rodney King video. Rodney King was a Los Angeles motorist whose beating by LA Police officers was caught on video tape by a man named George Holliday, who happened to hear the commotion outside his window and grabbed his camera to record it. Holliday's footage captured a crime of excessive force and brutality that otherwise might never have come to light; the video was broadcast worldwide, and in the US brought new attention to the issue of police misconduct.

Since then, WITNESS has loaned or donated video cameras to over 150 groups or individuals in more than 50 countries. In addition to equipment, WITNESS provides training, technical assistance and feedback, strategic guidance in using video to reach particular audiences, and assistance in scripting, editing, distribution, and archiving. The goal is to give these partners the tools and training to tell their own stories in their own voice. After an active partnership of 2-3 years, ideally partners have acquired the capacity and expertise to use video autonomously. Partners work with a variety of issues; current campaigns focus on the use of child soldiers in the Eastern Congo, forced labor and displacement in Burma, Roma rights in Bulgaria, and prison reform in the US.

Figure 2: NAKAMATA Coalition partner training in Mindanao, Philippines, 2001



The video captured by these partners may be used in a number of ways to further their advocacy goals: in documentary videos, often in several length and/or language versions; in submissions to human rights or legal bodies, such as the InterAmerican Commission on Human Rights; in presentations at the UN, or to government policy-makers; in releases to news media in an effort to generate wider interest in the issue; and for locally-targeted efforts, such as community-building or education.

The Archive

The WITNESS Media Archive is an outgrowth of these activities. The video collection comprises the original raw footage captured by partners and the masters, submasters and access copies of all the productions and co-productions. Originals are mostly on Hi-8, miniDV, VHS-C, and DAT; masters on Beta, Digibeta, and DvCam; access copies on VHS and DVD. The raw footage represents the heart of the collection; examples include documentation of the aftermath of ethnic cleansing and NATO bombing in Kosovo; forensic anthropology investigations in Bosnia and Rwanda; child soldiers in the Congo; environmental devastation in the Amazon Basin; hidden camera footage inside sweatshops in Saipan; interviews and footage of key human rights figures such as Rigoberta Menchu, Natasha Kandic and Shirin Ebadi; and footage of forced labor and displaced communities taken at great risk in rural Burma and smuggled from the country.

While the collection dates back as far as inception, focused attention to cataloging and preservation by trained staff began in early 2003. At that time we selected a low-cost FilemakerPro platform cataloging template. As we began the process of cataloging, however, we realized that this template and protocols were inadequate, given both the nature of the collection and the rapidly evolving plans for the archive, which included expanding our licensing activities and providing greater access on the Internet. In early 2004 we brought in a Filemaker programmer, who helped us redesign and restructure the database significantly, the better to serve our workflow, content and technical requirements, and coherent cataloging practice.

Thesauri and controlled vocabularies for subjects, partner names, geographic locations, content types, and production terminology have been created in-house; these were created with an eye to existing human rights and media taxonomies but, modified to fit the size and scope of the collection, and the needs of our users.

To date, we have complete or partial records in the database for about 85% of the 5 500 or so items in the collection. Editing and completion of existing records is continual, as we gradually view and research earlier material.

In 2004, WITNESS moved to new quarters, allowing us to expand our controlled climate media storage, and to expand and upgrade our editing and duplication facilities. Most of our media are stored onsite, but Digibeta masters of all the productions, as well as backup copies of selected raw footage, are in an off-site storage facility. Our contributing partners are strongly encouraged to archive their originals with us, and to retain first-generation copies themselves, which we will provide. This is because in the vast majority of cases we have better safeguards, storage conditions and overall resources for long-term preservation and access. In some cases, our partners do insist on retaining their originals, and we oblige them.

Figure 3: WITNESS Media Archive videotape vault



In 2005, WITNESS launched a completely redesigned web site, which includes a standalone section for the media archive (www.witnessmediaarchive.org). Here users can find general information about the collection and services, about how to license and donate footage, links to resources for audiovisual and human rights archivists and researchers, and an interface for searching a selected portion of the database. Users can view short video selections from selected titles, and request footage online.

While WITNESS has licensed footage and productions for some time, in 2005 we launched our first marketing campaign, which included a full-colour brochure, a press release, and ad placements in documentary magazines and production directories. We have revised our licences and created a rate card for licensing footage. Licence fees are weighed on the basis of ability to pay, and on standard categories of distribution, term and territory.

With a solid infrastructure and trained staff in place, the archive recently assumed responsibility for distribution of the 50 or so documentaries WITNESS has co-produced. This is not necessarily a traditional mandate of archives, but being a small organization it has fallen under our aegis. Our first printed sales catalogue of productions is currently at the design stage, and is scheduled for release and a direct mail campaign in January 2006. This mailing will target the academic/educational market, which is where we see the most potential growth in sales. Because we are a non-profit organisation, the catalogue is meant to be a multipurpose document, and will be used in organisational fundraising and outreach as well. While this mailing will be targeted mostly at US audiences, we will be revising our online store to be more multilingual and international; for example, by providing Spanish language descriptions and order information for those titles with Spanish versions.

We are now a staff of two, and a part-time editor, responsible for cataloging, rights management, web site content, production support, duplication, distribution, and licensing.

As we look ahead, one of our long-term goals is to strengthen relationships with our allies, and to work towards a more formal or structured network of human rights audiovisual archives. To date, we have established informal alliances with Amnesty International and Human Rights Watch; we have also deposited research copies of selected footage at the Open Society Archives in Budapest, via a grant that they facilitated.

Some recent research has gone into exploring the possibility of a 'Human Rights Video Databank',² this study, conducted by Willem Offenbergh of Amnesty International, details both the difficulties and the benefits of trying to create such an enterprise. While the logistical obstacles in networking or collaborating between organizations are considerable, some sort of networked or collaborative source of human rights audiovisual material, as well as standardised protocols for audiovisual documentation, would be a great resource for news media, researchers, and activists.

The media archive mission, then, may be summarised as follows:

- To serve the long-term archival needs of WITNESS partners
- To provide ongoing production and distribution support for partners
- To preserve the media as documentation for the human rights record
- To provide access, where possible, to a broader community of advocates, journalists, researchers, and filmmakers

Access and Outreach: Goals and Challenges

Given the mission statement above, what are our specific goals for expanding access? There are several. The first and foremost is to provide WITNESS staff and partners with the most efficient access to their own media and documentation. We want our partners to know that they will have easy and reliable access to their media, even after the active partnership has ceased.

The second is to further awareness of partner advocacy work in particular, and of human rights issues in general. This is a very broad mandate, and includes providing access to news media, documentary makers, and activists; collaborating with other human rights NGOs; and ensuring, through preservation, access to future researchers and scholars. Our mandate extends to others doing similar work; if another NGO or production company were doing a documentary on, for example, transitional justice in Sierra Leone, we would consider their work complementary to, rather than competitive with, ours.

Thirdly, we hope to generate whatever revenue possible, not only to help offset the high cost of media archiving, but also because some degree of self-sufficiency is very attractive to US funders.

As for challenges, I've divided these into several broad and somewhat overlapping categories:

I. Cataloging and Documentation

Cataloging is always fundamental to access, regardless of what delivery mechanisms or access modes are chosen. Because WITNESS is a human rights organization working with visual images, issues of documentation are particularly crucial: our catalogue must serve not only as a finding aid, but as an essential component of the documentation itself. Ensuring factual accuracy and adequate context are essential; this requires significant knowledge of particular issues and the political contexts in which events occur. Because most of our material is raw, unpublished, and produced by media non-professionals, its quality is quite variable. It may also have content of a personal nature, never intended for public dissemination.

Film Curator Jon Gartenberg has said, 'I think it is fair to say that professional cataloguing is still the least visible activity of a film archive or media center. Yet, accurate control over both filmographic and technical information about these moving image materials is the pivot upon which the other archival activities depend.'³ I believe that in production-oriented

² Willem Offenbergh, In Praise of Unsung Heroes: A Feasibility Study on the wider use of visual material of Human

³ Rights and Human Rights Defenders (HRDs) in particular; on behalf of the Martin Ennals Foundation, 2001

Jon Gartenberg, 2002, comments on internet salon convened by NAMAC

environments this is especially true. Delegating cataloging to interns or novices without sufficient training and supervision could compromise the integrity and coherence of the entire database. Obtaining and sustaining sufficient resources, time, and support therefore require a consistent, ongoing effort.

2. Rights

Rights management is a complex and time-consuming activity. At WITNESS we license footage and music for our own productions, we license footage and productions to third parties, and we have joint ownership licences with our partners who cover both raw footage and co-productions.

In the process of retroactive cataloging we have discovered that a significant minority of contracts had been misplaced or lost over the years. 'Standard' agreements governing co-ownership of footage from partners have also varied and evolved over time. Much of our continuing content management work involves researching and reconciling these rights issues, in addition to managing new ones.

At present we have a standard contract with our partners who designate shared ownership (50-50) of footage and productions with the partner group that created it. This includes a split of any licensing revenue. This co-ownership has for the most part worked well, although at times difficulties owing to language or cultural differences have to be addressed.

3. Security

Human rights documentation in any form often carries with it restrictions on use. Concerns are such that in some instances primary source documents have been destroyed deliberately in order to protect subjects.⁴ Security restrictions relating to video may include the need to withhold names, to disguise faces or locations, or to allow use in limited contexts only. Most obviously, the subjects fear reprisal for speaking out, examples being villagers in Burma testifying to SPDC abuses, or female anti-Taliban activists in Afghanistan working under death threats. Sometimes it's the person or group wielding the camera that is the most at risk, and we have guaranteed anonymity in more than one instance. Occasionally someone who gives consent at one time withdraws it later.

This requires a layered approach to cataloging and hierarchical levels of access. Our full database is available internally only, and features detailed security information and alerts. Only very abbreviated records of selected footage are uploaded to our web site. We usually allow qualified and trusted researchers or clients greater access to information.

Other restrictions on access to footage or videos may be legal and temporary, as when footage of testimony refers to an ongoing legal case, and it is embargoed until resolution.

4. Ethical and Moral Considerations

Beyond the clear cut security restrictions are situations that are more nuanced and variable. Like most archives, we act as gatekeepers to whatever extent necessary and possible, meaning that we vet the intended use and distribution of any request. Permission to use material depends on the context, intended audience, the nature of the footage, and sometimes the relationship with the partner. What we provide to a filmmaker may be different from what we provide to an NGO, which in turn may be different from what we stream on the web.

⁴ Case File Security Editorial, Ed. Montgomery, Bruce P.25 November 1998 University of Colorado 28 Feb 2000.

To give one example: A client wanted to use footage of the exhumation at El Mozote in a generic sense in a fictional film. While the intentions of the filmmaker seemed responsible on the whole, we said no, because the footage of the exhumation, reburial and mourning was shot for a specific purpose; it has great religious and ritual significance for the people affected. The same footage has nonetheless been used in a documentary and in news stories to illustrate the particulars of the massacre, its aftermath, and subsequent efforts to secure justice.

As we were developing our marketing materials we had to think carefully about the use of language and imagery. Included in discussions were people from the marketing, archive and programmatic points of view, who at times had differing perceptions of what was appropriate. To give an example, one suggestion was to create thematic clip reels as a marketing tool for distributing and streaming on our web site. We decided ultimately that the editing together of uncontextualized clips in some sort of thematic way would be reductive and thus inappropriate.

In general, generic use of footage of human suffering and victimisation can be problematic. It is very easy to use visual images in ways that are reductive or inaccurate. While the stories we tell may have their universality, each has its particularity and complexity as well. As archivists, that won't always be our judgment to make, but we need to ensure that we present images in a contextualised, accurate, and judicious manner.

For the most part we consult our partners to inform them of third party use. Maintaining trust is paramount, a core value of the organisation. Our relationships with partners would almost always override our legal right to use footage against their wishes. I can't say that that would hold true in every case, but it's always an important consideration.

5. Logistics and Resource Allocation

Conflict arises fairly regularly between our advocacy goals and our business goals. For active or current campaigns we usually waive royalty fees for footage, and we distribute a significant number of copies of documentaries for media and outreach. In general we need to weigh the importance of getting the video or issue seen by a particular audience; this is not necessarily the strongest negotiating position, but it is nonetheless a factor. Obviously the subject matter of our collection means that the vast majority of our potential clients -- social-issue documentary makers, news media, non-profit organisations, etc -- are working with small budgets; our potential for revenue generation will never be great.

Resource allocation is a constant struggle, with no easy resolution; we are continually reprioritising. Particularly difficult is balancing crucial core activities, such as cataloging and preservation, against the very demanding, visible, deadline driven day-to-day needs.

Continually evaluating what we do against our core mission is important. For example, as we expand our video sales operation we have to ask, does it make sense for someone with archival training and knowledge to be performing order fulfilment, inventory, and shipping? If in fact we expand that part of our business in the way we project, the answer will be no, and at that point we'll look to outsource these functions.

As a relatively young organisation, our impulse is to say yes to every worthwhile project that comes our way, but that is simply impossible without compromising our core mission.

6. Technology

As I write, WITNESS is undergoing a technology audit, the results of which will give us more guidance on future plans for digitisation, on creating a web based archival toolkit for partners (and other archivists of amateur video), and for video delivery via the web. The avenues for both upload and delivery of video via the Internet are expanding rapidly, and will extend the possibilities for collaborative work and distribution. It's not yet clear, given organisational priorities and resources, just what path we will take. What is clear is that the media archive is considered an integral part of the organization and will have a pivotal role in this process.

Conclusion

WITNESS is predicated on a strong belief in the power of video as a tool for change. In our work with our partners we have demonstrated how visual evidence can promote or be a catalyst of change when other avenues have failed, or proved less effective. The increasing availability of video production and distribution tools provides a tremendous opportunity to expand the reach of media to some of the world's un- and under-represented peoples. Archives have an important part to play here, by ensuring accurate documentation that will stand up to scrutiny in future contexts; by being advocates of ethical and judicious use of images by their users; by forging strategic alliances and sharing resources; by preserving the human rights record for posterity; and by providing access as widely as ethics, security, and resources allow.

Louis Bickford, who has published several studies on human rights archives, believes they should be regarded not merely as repositories of documents, but as active agents in the processes of change, and potentially powerful agents in struggles against impunity and forgetting.

He writes, 'By creating human rights archives, [human rights] activists suggest that they can help construct a narrative of the past which gives adequate emphasis to the pain and suffering of victims of human rights abuses. Archives are thus seen as both an activist tool (i.e. because they contain living documents: documents that are still relevant to the pursuit of justice) but also as a source of ammunition on a broader and more complex battlefield: the battlefield of historical memory.'

⁵ Louis Bickford, *Preserving Memory: The Past and the Human Rights Movement in Chile*. 2000. Essay prepared for Latin American Studies Association.

What is an Archive - and What is a Database?

A plea for a two-tier structured labour division of audiovisual research repositories

Dietrich Schüller, Phonogrammarchiv, Austrian Academy of Sciences, Vienna, presented at the IASA Conference 2005, Barcelona, Spain

Abstract

It goes without saying that preservation is not an aim in itself. The raison d'être of all archives is to ensure sustainable, long-term access to information. A prerequisite for access, however, is preservation which, specifically in the digital age, constitutes a major logistical and financial challenge. Over the past 15 years digital technologies have opened totally new dimensions of access to information; this has triggered a sort of access euphoria, not to say a pressure on archives to make their holdings accessible. Today, accessibility is the yardstick by which the success of archives is measured.

Access is the magic buzzword which, with the development of modern ICTs, has entirely changed the reputation of classic repositories like archives, libraries and museums. The formerly dark and dusty collections protected by possessive and xenophobe curators have turned into bright attractive places from which, by a mouse click, information can be retrieved from everywhere in the world via the ever growing and ever faster Internet. Indeed, broadcast archives for instance have seen a tremendously increased support by their parent organisations as they have become effective and powerful instruments in reducing costs of programme production. National archives and libraries are developing attractive services of previously unknown dimensions of democratic access to documents, slowed down only by legal issues.

In the scholarly world we have seen an enormous growth of data bases providing access not only to raw data, but also sometimes to corpora elaborated to sophisticated degrees, which give them the character of publications rather than of archival materials. Interestingly, most of them are branded archives: another strong evidence that over the past ten, fifteen years this term, associated with access to and delivery of information, has undergone a substantial change, together with the reputation of and support for our activities.

Apart from these positive aspects, at least for research archives, this development must also be seen critically. It raises the expectations of the scientific community and the public to the service of archives beyond reasonable dimensions. Peer reviews are notoriously governed by unrealistic, often outrageous ideas about the capacity of archives concerning their services, which are expected to deliver elaborate creations far beyond of what an archive, at least under the governing financial resources, can responsibly achieve. There is a serious threat that by this development archives are tempted, if not forced, to neglect their – in a classical sense – archival duties, while activities or institutions calling themselves archives create a wrong impression of properly preserving their holdings, which is neither the case nor even in their interest.

This paper discusses the present development, defining the indispensable core responsibilities of an archive in order to contrast it against audiovisual or multimedia data bases which structurally have the character of a publication. The paper suggests a two-tier structure in the organisation of preservation and access in the scientific/scholarly world: archives proper should concentrate in an uncompromising way on the preservation of the raw data, while data bases should take care of the creation and maintenance of their data sets.

What in essence, in a narrower sense, is an archive? And what is a database? Specifically in the realm of research archives, an archive can be defined as a repository of raw data whose level of description is relatively low. A database is a creation based on raw data: the description level is high (deep), generally containing (elaborate) links to various outside references.

The *raison d'être* of research archives is to hold sources readily available for research, to keep them ready to check the results of respective researches against the source, and to ensure availability of the raw data for re-evaluation by new schools and generations of researchers. As a matter of principle, archives keep raw data unmodified for long periods.

Databases structurally have the character of, or at least the tendency towards, publications, governed by the interests and the traditions of periods and schools. They are, therefore, not necessarily up to date for longer periods.

All these definitions apply to archives and databases in their narrower sense. It is important to understand that there is no clear borderline between them: several archives expand seamlessly towards databases.

In order to understand better the background of the problem discussed here, a realistic view of the quantitative aspects of the work of research archives is necessary.

The EU funded project PrestoSpace estimates the total holdings of audiovisual archives around the world to be 100 million hours of audio and 100 million hours of video. Most of these are held by radio and television archives, which are about to develop strategies for safeguarding their holdings (selectively) for future use. The quantity of materials held in research archives has not been seriously assessed to date, nor do we know the size of research collections held by national archives. Almost all of these holdings are still outside modern digital archival custody, and have to be transferred to digital storage systems in the short term, in order to prevent their loss by carrier degradation and/or by obsolescence of replay equipment. In this context, it must also be noted that a significant number of audio and video recordings generated by researchers have not even been deposited in archives. Their assignment to appropriate archival custody will be one of the major additional challenges for research archives in the future.

The time factor in transferring original analogue and digital single audio carriers to digital repositories must be calculated to be, on average, in the order of three. This means that to transfer one hour of original material, including a minimum of descriptive documentation, needs three person hours.¹ Video archiving at present takes at least twice the time factor of audio archiving, but there are realistic hopes of bring these time factors down in the near future.

The time factor in setting up databases that include multimedia linking, references to literature and to existing other raw data, as well as transcription of texts, melodies etc is open ended.

¹ Automated transfer processes as developed for radio sound archives, which permit a considerably lower transfer factor, are only applicable to collections of homogeneous carriers in excellent condition. Generally, this is not the situation prevailing in research and national archives. Additionally, any deeper assessment of descriptive metadata extends the time factor considerably.

As staff and financial resources are notoriously low – specifically in the world of research archiving – there is the obvious danger that ambitious expectations for the creation of elaborate metadata and database-like elaboration of raw materials may be at the expense of either quality or quantity of preservation.

In this situation it seems necessary to define the minimum requirements for an institution justifiably to call itself an archive:

- Adherence, or at least the decisive intention to adhere, to archiving principles, eg as laid down in IASA documents TC 03 and 04
- Assessment, storage and adequate arrangement only of such information/metadata as cannot be generated from the source itself. In practice this embraces the core information on recorded persons and subjects (who, where, what, how, etc), which can only be provided by the generator of the source, ie the field worker, the researcher etc
- Establishment of an adequate retrieval structure in relation to the character of the sources, which permits fast and easy access with the help of modern ICTs

Information retrievable from the source itself – such as transcription of texts, melodies, links to other information, critical annotations etc – is, of course, permissible, if it is affordable. In the case of a tight budget, however, all the aspects of analysis or evaluation, and all the steps towards a publication, should be left to the users. Their interests may be very diverse and may – and often definitely will – change over time. Thus, descriptive input going beyond the information given by the creators of a source may become obsolete in time.

Research archives of a more general character and global scope engaged in safeguarding of anthropological, ethno-musicological and ethno-linguistic materials are practically forced to follow such a policy.

However, archives restricted to specific contents or regions, serving a clearly defined clientele such as national folk song or dialect archives, may develop metadata further and deeper, expand the archive into databases, add transcriptions, critical annotations etc to the extent they can afford. They remain archives as long as they adhere to the archival principles above.

Problems occur, however, when institutions call themselves archives without following preservation principles, sometimes even without the intention of doing so.² This constitutes a considerable threat to archives proper, as such services are taken as a yardstick of attractiveness and success.

A possible model for avoiding such conflicts is a two-tier structure in organisation of the preservation of, and access to, audiovisual research materials.

Archives proper adhere to archival principles and keep raw materials at low descriptive levels. Databases devoted to specific subjects, regions etc bring scattered holdings of archives proper together, building up descriptions and annotations to higher, more elaborate levels. There are several successful examples under way, and a further systematic development of such a two-tier structure would be of enormous advantage to the scholarly world. It would lift the pressure of deep-level description from archives proper, while lifting obligations of eternal preservation from databases.

² This refers to institutions which, for instance, transfer field tapes sloppily to MP3s for Internet access without carrying out any further preservation activities.

Measures for safeguarding the term 'archive' represent an important support in raising awareness of the distinction between archives and databases. Archives proper should publish a statement on stationery, fliers, publication web sites etc, such as

Committed to maintaining its collection to the standards of archival preservation laid down by the International Association of Sound and Audiovisual Archives, IASA

Institutions not adhering to such standards should be discouraged actively from calling themselves archives, and instead be termed collections or databases. Such measures should not be seen as downgrading but as necessary clarification.

In summarising, the author wants to make certain that there is no misunderstanding concerning the role of archives: their *raison d'être* is to ensure access to information. Preservation is the prerequisite, so there is no opposition between the ultimate aim and the precondition it is based on. The point made here is that, under the prevailing conditions, archives cannot generally be obliged to create elaborate data sets, which structurally have an evaluative character. This would be the role proper of databases, which in turn should not be obliged to safeguard their materials in the long term.

Digitisation of the Ethnomusicological Sound Archive of the Royal Museum for Central Africa (Belgium)

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Presented by Olmo Cornelis at the IASA Conference 2005, Barcelona, Spain

Abstract

This paper describes the sound digitisation project of the RMCA (Royal museum for Central Africa) and Ghent University. Its objective is the durable conservation and improved accessibility of the sound archive by digitising. All sound recordings will be digitised optimally, as well as all enclosed data, so the archive stays preserved and is made available (by internet) grace to developed database facilities. Innovative is also the aspect of flexible querying of and the audio-mining research on non-European music. Flexible querying will improve searching techniques while the audio-mining will create new meta-data oriented on content-data. This paper deals with aims, methodology, approach and results of the project.

Introduction

The Royal Museum for Central Africa (RMCA/KMMA - Koninklijk Museum voor Midden Afrika - Tervuren, Belgium) was founded in 1898. The museum has a focus on the African culture and all kinds of ethnographic objects. At present the archive of the Department of Ethnomusicology contains around 8 000 musical instruments, and 50 000 sound recordings with a total of 3 000 hours of music, mostly field recordings made in Central Africa of which the oldest sound recordings date back to 1910.

The audio archive is one of the biggest and best documented archives in the world, for the region of Central Africa, and is therefore one of the most important sources for the music from an area that is currently suffering political instability and a loss of cultural heritage owing to both modernization and genocide.

The museum has a big responsibility to preserve this unique archive, not only for conservation of this patrimony for the future, but also for accessibility of the archive.

The DEKKMMA project (Digitalisatie Etnologisch Klankarchief van het Koninklijk Museum voor Midden Afrika) is a four-year project aiming for durable conservation (including conversion from analogue to digital sound carriers) and easier consultation of the sound archive. The project draws on co-operation between the RMCA and the Ghent University (Belgium). It unites experiences of ethnomusicologists, musicologists, informatics and database specialists. The partners of Ghent University are the Department of Informatics (CSL-Telin) and the Department of Musicology (IPEM). A fertile combination that led to fruitful results concerning conversion of the audio and data, database development, and Internet access of the archive (<http://music.africamuseum.be>).

The DEKKMMA project also aims at expanding the results obtained, with new technologies in flexible querying and audio-mining. The endeavours are, on one hand, enlarging the possibilities of searching the archive – for professional and non-professional visitors – and on the other hand, creating prospects for new, profound, professional ethnomusicological research into non-Western music.

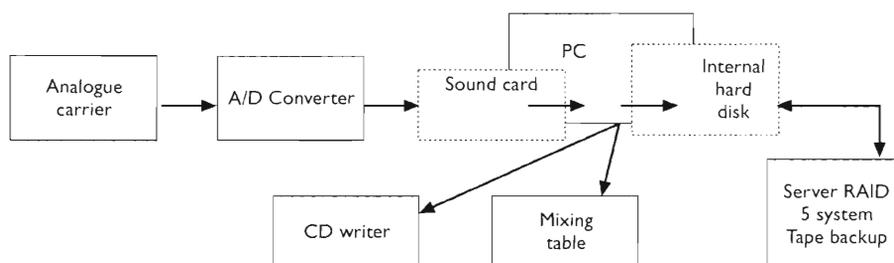
This paper will deal with all the aspects of the project, divided into the following categories:

- Sound Digitisation
- Meta-data Digitisation
- Database Development
- Website Development
- Contextual Digitisation
- Flexible querying
- Audio-mining

Sound Digitisation

Developed during the 20th century, the archive encountered all kinds of sound carriers and therefore reflects an aspect of history in itself: carriers such as Edison cylinders, wire recordings, 78, 45 and 33 r.p.m. records, magnetic tapes, cassettes, DATs, CDs are all present. They all need a specifically adapted digitisation process, but in general we can refer to this schedule as a mainframe for the digitising.

Figure 1: General overview of the digitisation chain DEKKMMA



Once digitised, the audio file is moved onto the storage RAID5e. The audio signal can be consulted by the museum's intranet. A copy is therefore made on the hard disk of the PC, while the original remains untouched on the RAID5e system. On the PC, the audio signal requested can be listened to, restored or burned onto a CD.

The used AD/DA converter is the ADDA 2402 from Digital Audio DENMARK. The sound card in the PC is the RME DIGI96/8 PAD from RME. Software on the PC is Soundforge. Redundant storage is available on the RAID5e system with backup on LTO Ultrium2 backup media tape.

Metadata Digitisation

An important aspect of recorded (traditional) music is the accompanying information on the people, language, geographic location, social function, musical characteristics, etc. Each record in the archive holds an index card containing musicological and anthropological information about the recording. Until now, this information was available only in the museum by searching the separate index cards. Ending this limited accessibility by means of digitisation should provide both external and internal users with a fast and complete searching module.

Musicologists and database specialists both use the term 'metadata', but with a slightly different meaning. For musicologists, metadata is the textual description (performer, title, instruments used, etc) of a music fragment. In the database world, metadata refers to the information about the database and its schema, kept in the database 'repository' (the catalogue of the database). In this text, unless explicitly stated otherwise, metadata refers to the musicological interpretation.

To ensure that the metadata digitisation process was accurate and efficient, the available data had to be checked to make sure it was correct and to establish uniformity (including uniformity of spelling) of the names of peoples, musical instruments, functions and music genres. This was a time consuming activity that called for a careful approach. As this concerned own music recordings and collections, it was possible to provide information first hand.

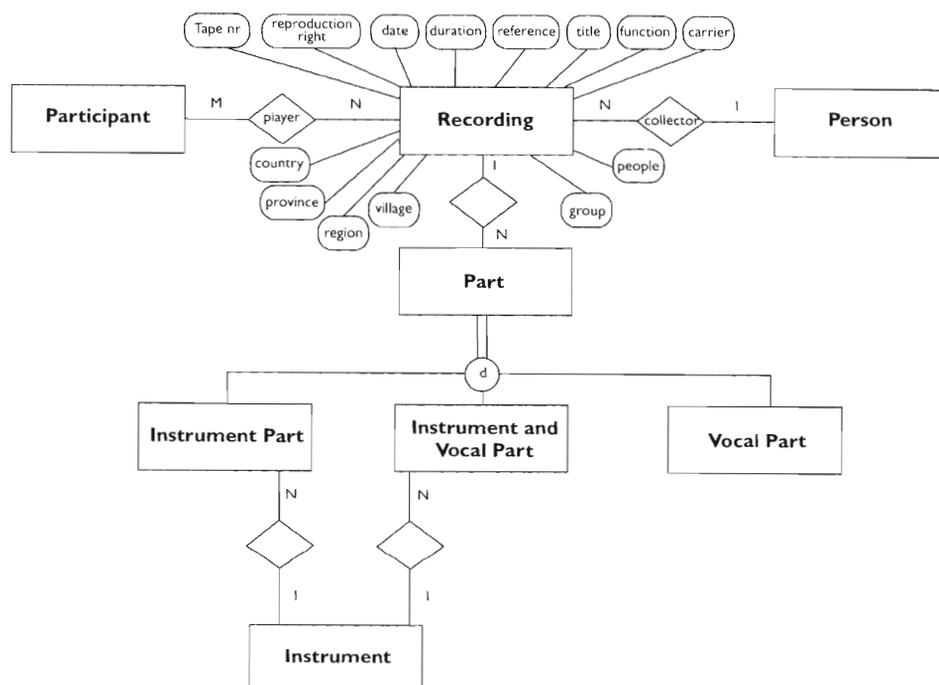
A database was developed along with software that allows fast and accurate insertion of the metadata. It remains a very time consuming activity, but it is as important as the sound digitising, because without the metadata the audio becomes decapitated and without good retrieval possibilities the audio doesn't become anything whatsoever.

Database Development

Design

The first step in designing the database for the ethnomusicological sound archive of the Royal Museum for Central Africa concerned analysis of the specific needs. The structure found on the existing index cards formed the basis of the database design. Several interviews with internal users and musicologists further refined this structure, in a series of steps, until the current design was developed. This design is shown here as an Enhanced Entity Relationship (EER) diagram, which is a standard technique for modelling database designs (Chen, 1976).

Figure 2: Simplified EER-schema



Implementation

For implementation of the design, the EER diagram was translated into a relational database schema, using a commonly used technique, and afterwards implemented in the Relational Database Management System. When implementing the design, care had to be taken with respect to some attributes in order to ensure consistency. For instance, when entering new data, the spelling of a country, region, people, etc should always be the same, while some other attributes, such as function and style, have a predefined set of possible values. These attributes are therefore linked to thesauri. Besides checking data entries, the thesauri also facilitate the multilingual aspect of the respective attributes and make it easier to consult the database.

Integration with the available ICT infrastructure

With respect to integration with the ICT infrastructure available in the museum, the database design is implemented in SQL Server 2000, which is the database management system used in the museum. The database is currently hosted on the museum's servers and, to minimize data loss in the event of a computer crash, a backup is made daily.

User interaction

To avoid the possibility of abuse, users never interact directly with the database, but have to use an intermediate application to consult the database and enter new data. Distinction has to be made between internal users (those allowed to insert new data and/or update existing data, and consult the data) and external users (all the others, allowed only to consult the data).

Three applications have been written for internal users (specifically for those responsible for entering data):

- The first has been developed for management of the different thesauri and can be used to enter and modify terms in the thesaurus
- The second is the main application for entering new data. It can be used to digitise conventional paper files. In developing this application, usability and efficiency were very important issues because, when over 50 000 records have to be entered, a great deal of time can be saved if the data entry process is efficient
- The final application is designed specifically for translation of the titles of, and comments on, the recordings. These translations cannot be done automatically, because titles and comments are free-text fields

All the applications are client-server applications, written in the Java programming language, allowing them to be used on all sorts of platforms (Windows, Unix, Linux, etc). Furthermore, a manual explains how to work with the applications so that, once the DEKKMMA project is over, the applications can still be used, even by new museum employees who have never participated in the DEKKMMA project.

Open archive

To allow better co-operation between archives, the information that is going to be exchanged needs to be formatted in a standardised way. Several standards have been proposed for this, such as the Open Archive Initiative (OAI), and the Metadata Object Description Schema (MODS). These standards do not deal with internal representation of the information, but the exchange format itself is of importance. A further study of the standards will be done in order to make the best choice of standard. This choice will be based on several aspects, such as applicability, whether it is commonly used, whether it is easy to transform into other possible standards. Once the standard has been chosen, two protocols need to be developed:

1. Starting from the database, it must be possible to extract information formatted according to the chosen standard, which can then be sent to any other archive that meets the same standard.
2. Starting from information formatted according to the chosen standard, it must be possible to insert this information into the database. In this way, information coming from other archives can be integrated easily into the database.

Once these two protocols have been developed and implemented, information can easily be exchanged with other archives round the world that are compliant with the same standard.

Web Site Development

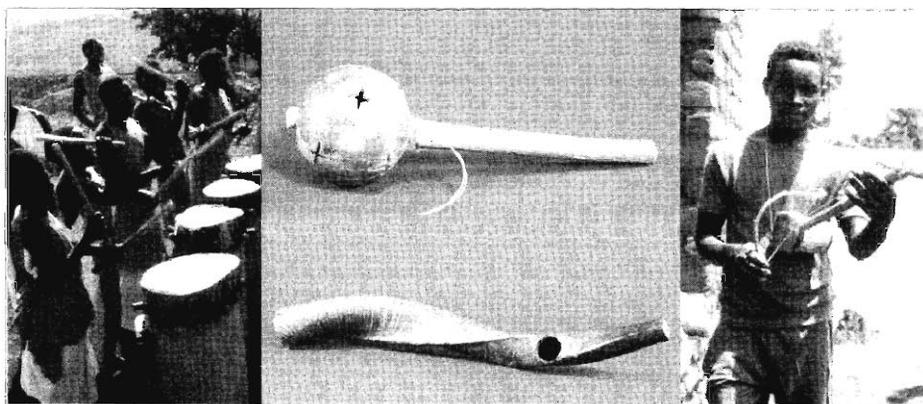
A web site has been developed to enable both internal and external users to consult the database (<http://music.africamuseum.be>). As has been said, the input database is shielded from the outside world for security reasons. To ensure that the database can nonetheless be consulted via the Internet, a copy of the entry database is placed on a separate server that does allow access from the outside world. This copy is synchronised with the internal input database daily, so that it remains up to date.

The web site can be used to search for the African musical instruments and recordings that have been entered into the database. Furthermore, links are provided to the available contextual information, and sound fragments can be obtained for some instruments and recordings.

Context Digitisation

To establish the context of the sound recordings more clearly, additional information about the country, people and musical instruments is provided. All the texts are available on the web site in three languages and have been completed for Rwanda, Uganda and Burundi. Preparations for the Congo, Chad and Ghana are at an advanced stage. The fact that the RMCA may be regarded as more or less the custodian of traditional music culture from the Congo, Rwanda and Burundi makes it feasible for the consortium to share the knowledge and actual documents it has gathered through research on the ground in these countries on a comprehensive and clearly organised basis.

Figure 3: Example of photographic contextual metadata



Flexible Querying

Flexible database querying is about enhancing database access and making it easier for users to find what they are looking for in a database. Using traditional querying techniques, a database entry will be found only as a result of a query if it completely satisfies all the constraints imposed by the user. Flexible querying will relax this, making it possible for database entries which, for instance, satisfy most (but not all) of the constraints to be found in the query result. This is particularly useful when none of the database entries satisfies all the constraints.

Flexible querying can be achieved using the following techniques:

- Flexible constraints. Using a traditional query language, users do not always know exactly how to express the selection criteria they want to impose. For instance, one often doesn't know the exact date and/or place of the recording one is looking for, but only that it was, say, around 1970 and/or near Kinshasa. Using traditional techniques, this can be achieved only by asking for a range of values (eg 1968-1973), hereby eliminating the values falling just outside the boundaries of the range (eg 31/12/1967), which is probably not the best solution. A better way to achieve this is by introducing a constraint satisfaction that is not an all-or-nothing concept (as with traditional techniques), but a matter of degree. For example, the closer to Kinshasa, the higher the constraint satisfaction degree. In this way, the otherwise strict boundaries are relaxed.

Another type of flexible constraint is that which takes advantage of similarities defined between certain concepts (eg instruments). For instance, when a user seeks recordings with instrument X, he might, to a lesser extent, also be interested in recordings with instruments that are similar to instrument X.

- Weights. It is often the case that users do not find all the selection criteria equally important. For instance, the user may find it more important that the music was played with instruments X and Y than that the recording took place 'around 1979'. Weights between 0 and 1 attached to the selection criteria can be used to acknowledge the respective importance of the criteria, where a weight of 1 denotes 'fully important' and weight 0 denotes 'not important at all'.

In general, a flexible query will impose several selection criteria, weighted or not. All the constraint satisfaction degrees will be aggregated to obtain a global query satisfaction grade for each database entry. The results can then be ordered according to their satisfaction grades, giving the user an indication of which results match (globally) the imposed selection criteria the best.

As mathematical foundation of the flexible querying techniques, *Extended Possibilistic Truth Values* (EPTVs) will be used (De Tré, 2000). EPTVs allow for a more general, epistemological representation of truth, which allows us to reflect our knowledge about the truth of a proposition, not only in terms of true or false, but also with intermediate degrees of truth (thus also allowing the representation of (partial) uncertainty. This makes them suitable for truth modelling in cases where one cannot without doubt determine whether the proposition is either completely true or completely false, and thus for modelling the grade with which a given database instance satisfies a selection criterion of a (flexible) query.

The ultimate goal will be to combine flexible querying and content based search and retrieval, thereby enhancing even further the search facilities of the users.

Audio-mining

Introduction

Audio-mining is extracting musical, content based information from music. At first this information is put into 'datasets', where they need interpretation and representation, so it becomes new metadata, enriching the audio archive. Final challenges are adding this new metadata to the database and creating new retrieval possibilities.

State-of-the-art

Content based search and retrieval implies that music can be searched and retrieved using descriptions that pertain to the content of the music, such as descriptions of musical structure, style specifications, meaning and subjective experience. Part of these descriptions may be obtained by automated methods, such as audio-mining techniques. Part of these descriptions may also be obtained using subject based manual methods.

Content based search and retrieval provides an additional tool for access to audio archives. Using these techniques, an audio excerpt can be given as an example and the system can be asked to search for similar audio files in the database. This search can be refined using verbal descriptions, or additional corporeal behaviour.

At Ghent University, a musical audio-mining project (MAMI-project) has been exploring the possibilities of content based search and retrieval since 2000 (<http://www.ipem.ugent.be/MAMI>). Important results have been obtained in melody extraction (De Mulder et al., 2004), drum detection (Van Steelant, Tanghe et al., 2004), and verbally based semantic description (Lesaffre, Leman et al., 2003). Melody extraction and drum detection allow extraction of important structural musical (non-verbal) content from audio. The verbally based semantic description allows subjective description related to musical structure (eg soft, loud, consonant, dissonant), movement (eg gliding, stuttering), and to affects and emotions (eg sad, anxious, passionate).

Tasks

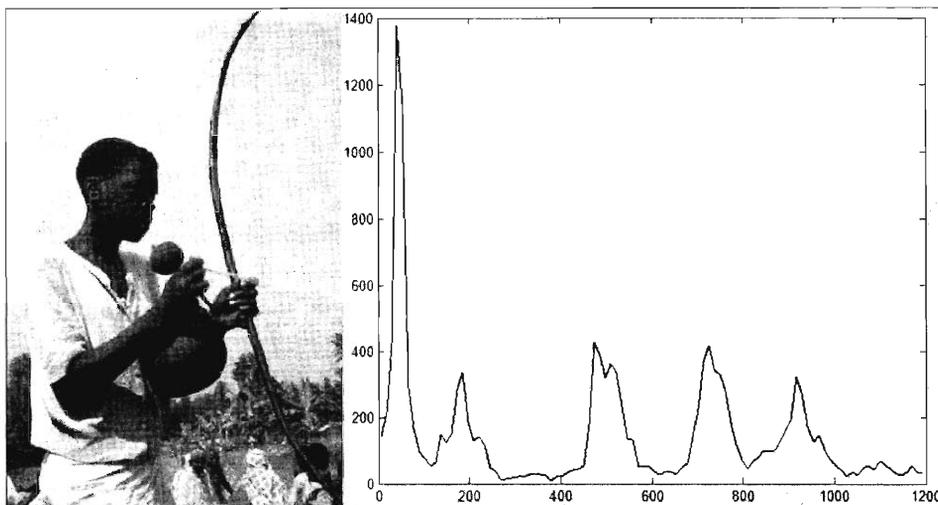
Particular attention in DEKKMMA will be given to pitch extraction and drum detection, pitch scale and rhythm description. This task will rely on the technology of the MAMI project. Another step concerns processing of time dependent features that are extracted from the audio files up to a more abstract level where they can be used as musical fingerprints in a database, which contains characteristic information about the musical content. Once the content based descriptions of musical audio have been generated, they have to be integrated into a database. This step will have to be worked out in collaboration with flexible querying.

First Results

The software now available for extracting pitch and percussion from audio material has been tested on 200 selected sound fragments from the archives. The analysis was semi-automatic. The software has been developed, but is not designed specifically for African music, so some adjustment was necessary. In addition, the data sets obtained were processed manually in MATLAB, a data processing program.

As regards pitch, 200 sound fragments have been processed. The output obtained is a list of annotated pitches (in Hertz). Visualisation in MATLAB provides a good picture of the pitches that occur and hence a graphic reproduction of the intervals presents. We can refer here to reproduction of the pitch scale used, which expresses the relationship between the pitches extremely well.

Figure 4: Musical bow (Rwanda) and its scale representation in cents (number of pitch-annotations of a song; pentatonic scale: one main note and 4 notes with equally distributed occurrence)



Analysis of the percussion beats was tested on only about twenty sound fragments. The output is a list of time indications, from which the software surmises that a percussion event has taken place. The relevance of this rhythmic pulse is also expressed as a figure, whereby the value measured is the dynamic strength. This makes it possible to remove incorrect annotations partially and to detect the rhythmic pulses as well. The (provisional) further processing of the data was done in Excel.

The main problem, however, was cataloguing the data and labelling the data sets. The data that are produced with the software are very precise but difficult to work with. They consist of raw data sets. Even once the data have been cleaned up, it is still difficult to label them because of the wide variety of results and a European musical system that is not appropriate for this African music. Bridging this gap is the main challenge to be dealt with shortly. Cataloguing may become easier when a large number of data sets are available and trends can be discerned. The other problem that was underestimated was inadequacy of the European musical system for describing non-Western scales. The tone distances of this African music measured precisely by the software may not be rescaled to Western scales. The achieved preciseness of data provides new opportunities for studying African (and other ethnic) music with due respect to their originality. Further research will be needed to develop a correct representation of the scales used, in order to develop a useful retrieval system and allow study of this new musical metadata.

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An Optimized Architecture for Content Dissemination: Peer-To-Peer

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Abstract

Peer-to-peer technologies must be considered as a new opportunity to improve and extend the dissemination of digital audiovisual contents through large networks such as Internet or cellular telephony. It provides a cheaper and easier access to stored files thanks to an architecture that optimizes bandwidth and transmission capability. This paper provides an overview of the opportunities as well as the problems that users and providers will find in this kind of systems.

Introduction

Academic literature and research into peer-to-peer (P2P) has usually focused on the technical aspects of these systems. It seems natural, if we consider that areas involved in this research have been predominantly engineering and informatics. Peer-to-peer has been observed as a technology more than as a tool for communication, but we firmly believe that a glance from the communication field could give a new perspective on the way people operate with this kind of system. A perspective heavily influenced by a convergent approach will be used, and this supposes considering the possibilities of traditional and new media devices, live TV sets, or cellular telephony terminals, alongside the now predominant archival access medium, the personal computer.

In the first section of the paper the technological aspects of a typical peer-to-peer architecture will be described, considering the basic elements we must take into account when thinking about the possibilities of adopting this dissemination technique for an audiovisual project. So we enumerate a series of advantages and problems we face when adopting P2P technologies.

In the second section we consider several aspects of implementation of these systems. We look over some commercial and experimental implementations in the field of the mass and interpersonal media. After that, we will try to narrow our view of the archives' field. Finally, we will see what are the main advantages and the main problems that implementation of such systems can provoke.

To conclude the explanation we will expose some conclusions and advice for those who are interested in the issue. We will also consider new fields of expansion derived from the combination of P2P systems with other techniques and methodologies, such as metadata.

Technological Aspects

In this section we try to mark the main characteristics of a typical peer-to-peer architecture, considering its advantages but also exposing some problems that are still unresolved.

1.1 The Architecture

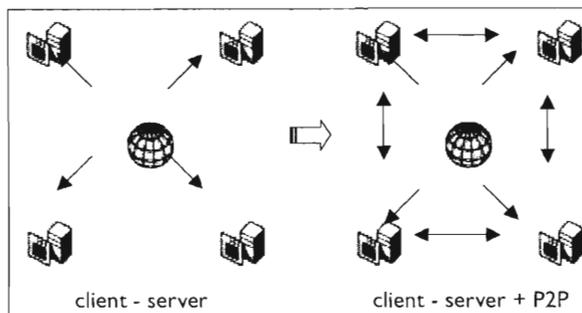
Disseminating its content has become the essence of archives in a digitised environment. Development, especially in the last decade, of network technologies, has opened new possibilities for archives to accomplish this key principle. Among all the tools we have available nowadays, the Internet, as a global medium, plays a central role.

When the Internet began to gain a wider reach, around the mid 90's, it was still difficult to transfer large quantities of information through it. But the nature of the Net evolved, and better local equipment, optimized hardware and improved network technology allowed relatively easy transmission of large audio-visual files that had previously been downsized, thanks to compression techniques.

In any case, in 1999 Napster appeared in the Internet. Under its noisy appearance, a revolution was being cooked up, and its name was peer-to-peer. Peer-to-peer is a technique based in a new architecture, different from traditional client-server systems and optimized for the provision of large audiovisual files through a net.

Peer-to-peer is a diffusion technique that, applied to audiovisual files, can provide new possibilities for dissemination and can facilitate access to their contents. Wider and cheaper access could obviously help to reduce the digital divide. It is not a panacea, but it is a new path that must be taken into account.

Figure 1: New communication paradigm



There is not a single model of P2P architecture. In fact, the model has evolved over the years and improved generations of systems have been developed. In fact, we can find at least three models when referring to P2P (Sandvine, 2002):

- Centralised systems: this represents the first generation of P2P systems, where two peers have communication between them but need a central server in order to coordinate interchange (eg Napster)
- Decentralized systems: communication between peers needs no central server and files are transferred without external help (eg Gnutella)
- Hybrid systems: this is the third and, until now, last generation of P2P, a mix of the previous two models, a controlled decentralized environment. There are several client machines that act as 'supernodes' where a variable number of clients connect. Several supernodes connect among them and act as hubs among peers.

These are the three main models developed. All the projects based on a peer-to-peer architecture can be ascribed to one of these models, although slight differences can be found depending on the particular project.

1.2 Broad Advantages

Under this new concept we must consider a series of questions in order to evaluate how peer-to-peer systems can affect archives and one of their purposes, wide dissemination of their contents. We can find new opportunities, but also several problems, when we confront P2P technologies from a technical perspective. We have selected some of the most important issues:

Table 1: Technical issues of a P2P architecture

Advantages	Problems
Scalability	Network asymmetry
Robustness	Lack of interoperability
Resource optimization	Network's saturation
Resource decentralization	

Among the advantages we would like to remark on four of them: scalability, robustness, resource optimisation and resource decentralisation:

- Scalability had traditionally been the Achilles heel of streaming diffusion systems in Internet. In fact, the success of a content delivered in this format supposed an increase in the need for bandwidth and, therefore, a higher cost to the distributor of the contents. This, in the 'all free' environment that framed the first steps of Internet as a massive medium, ended up condemning many distributors to a cruel death by success.

This lack of scalability can be solved with P2P systems. They use installed but underused resources located in the periphery of Internet, notably the local area networks of homes and offices. It is a decentralisation of resources limited by the degree of operations that, in the set of a P2P system, require some type of centralised connection. This means that pure P2P systems – those that do not require a connection to a central server at any moment - will tend to exhibit a greater level of scalability than other hybrid models in which some operations, typically location of the pairs, are made through a centralized system.

- Increase in *robustness* of the technical system is another positive factor that we must emphasize as a main contribution of a peer-to-peer scheme. This greater robustness is based on multiplication of the nodes that provide contents to the global electronic network. The system offers more resources and more sources for these. That is why the information availability is greater, providing simultaneously the necessary transmission capability. In fact, P2P systems have become authentic audio-visual banks, the main source of contents in audio and video format on the Internet. The end of the systems' centralisation allows these to be more resistant to the possibility of external attacks.
- P2P architecture offers a solid argument for its adoption by organisations: the resource *optimisation*. Its formula is based on adding internal resources to the whole system, already installed but clearly underused, those located in the local area network, avoiding new expenses in hardware and software.
- With P2P a lot of computer capabilities are put into the global system, but the greatest value of this architecture is *decentralisation of valuable and limited resources* for a single organisation. Among these are capabilities of transmission and storage. This large digital mediatheque is dislocated, ubiquitously distributed throughout the network. With the new generations of mobile devices with network access, besides, this content will also be physically mobile.

A user contributing infrastructure to the network is something completely new in the field of audiovisual delivery. It is not a remote possibility. It is something to which users of these systems are contributing nowadays on the Internet, and in the next few months on systems such as TiVo's personal video recorder or cellular telephony networks. The best for the user is that it does not suppose any additional cost to him/her. What is more, it is an element from which, in theory, he could even obtain an economic yield, since it is facilitating infrastructure for the network operator.

This phenomenon is possible only once users' devices and, fundamentally, their personal computers have acquired remarkable capabilities of calculation, storage and efficiency. If we think about the TV set we see that the last generation of set top boxes are providing it with capabilities of storage and information processing, as well as bidirectional capabilities of communication.

1.3 New Problems

Among the new problems P2P systems can bring, the asymmetrical nature of the network, the lack of interoperability, and questions related to network saturation seem the most serious and those that should be resolved first:

- An important weakness of P2P systems resides *in the network asymmetry*. Peer-to-peer systems are, by nature, symmetrical. A data package a user is downloading through the downlink must arrive through the upload channel of another user. Nevertheless, this symmetry is not the prevailing model in a network such as the Internet, where the client/server scheme, paradigmatically represented by the web like the space for the publication of contents, has determined an asymmetry in the relation of reception/contribution of contents and, by extension, of knowledge. This question appears clearly in the connection supplied by most ISPs that prioritize the reception channel in front of a much more limited ascending connection. This is not a problem when referring to backbones, but it is clearly appreciable in the last mile.

The consequence of the web model has been fundamentally to turn the Internet into a model of downloading, but not of uploading or publication, stimulating consumption but not generation of contents. The new distribution parameters and data traffic arisen from P2P, however, make this broadcasting method inefficient because it denies one of its pillars: asymmetry in the circulation of data.

A consequence of this asymmetry of the networks is the appearance of bottlenecks in one of the places in which they have traditionally been taking place, the last mile. The uploading traffic in this section of the network always tends to be slower than that in the downloading one. This creates congestion when using a symmetrical P2P system. Paradoxically, the greater problems of congestion are found in the habitually underused channel, the uplink. This clearly visualises that present networks have not been designed to provide a symmetrical communication.

- Something that could constitute a problem for audio-visual distribution through P2P systems is *the lack of interoperability* of the applications. This problem, derivative of the lack of standardisation of these systems, supposes fragmentation of the user base, which repeals their own possibilities of development. In a much more limited field, such as audio-visual archives, this problem could easily be avoided by requesting standard protocols and systems that could contribute to generalization of a standard P2P model in the area.
- The question of *network saturation* has been recurrent since the appearance of the Internet, and the exponential user growth that it experienced from the mid-90's. The data on volumes of information that circulate in the networks, however, are not made public. Nowadays, we lack of independent and trustworthy measures of the total traffic of the Internet. We can only use partial data relative to certain networks that monitor their traffic and offer the results publicly.

Even so, the traffic generated by P2P networks is supposed to be around a 70% of the total Internet traffic (Sandvine, 2002; P-Cube, 2003; Caspian Networks, 2003). This data of 70% of P2P traffic in the whole network comes from companies such as Sandvine or P-Cube. These companies are dedicated to selling systems to manage this type of traffic.

Beyond the exact number, the impact of peer-to-peer networks has been remarkable and swift. Its massive presence in the networks has arisen in little more than six years, since in May 1999 Napster was born. This has forced carriers and ISP's to develop

several techniques for offering a service that is suitable and proportionate to the real needs of the clients.

Among the early solutions, we must mention the extension of the networks' capability, or the blockade of the ports that use P2P applications designed for the interchange of audiovisual files, that consume greater bandwidth. This last method has become a useless exercise, since the last generation of these programs incorporates the capability for using any free port of the computer to avoid the blockade of its activities by the network administrators, a technique known as port hopping (Sandvine, 2003).

Implementation

After introduction of the technical perspective, in this second section of the paper we will try to show the advantages and problems that may be found when passing from the technological level to implementation.

2.1 Advantages

When referring to the implementation of P2P systems we must equally consider the advantages and problems these bring, as opposed to traditional or alternative delivery methods

Table 2: Implementation issues of a P2P architecture

Advantages	Problems
Network externalities	Intellectual property management
Diminution of costs	Free riders
Mediation function	Interconnection tariffs
User autonomy	Churn
	Integrity of the contents
	Corporate Tolls

Among the advantages of implementing P2P systems, we can emphasize four of them: increase of the network externalities, diminution of cost, redefinition of the mediation function, and growing user autonomy:

- In the first place, the implementation of P2P systems in the Internet allows activation of a multitude of nodes that have been practically inoperative as a content generators and/or distributors until now. We are referring to users who made use of the network almost exclusively, were oriented to consumption of resources available through a web model, and seldom became creators of their own contents.

With the appearance of peer-to-peer systems, a significant number of these users have become creators, or at least distributors of audio-visual contents. That increases the network externalities, multiplying the value of the whole system significantly. Beyond the new technical capabilities that have been added, today the amount of information stored in local systems is greater than the total capability of transmission of the Internet (Coffman et Odlyzko, 2002).

The advantage of these networks is that each new user increases the value of the network, adding not only contents but capabilities and generally adding robustness to the system in contents and in capability of transmission. Simultaneously, the loss of a user is of no importance once it relevancies irrelevant because the operation of

the whole system rests on the great number of existing resources. The result is that the user finds what he wants in an easy, cheap and informal way.

In this sense, we are facing the emergence of a new communicative paradigm, with an evident displacement of the contents from the centre of the communicative ecosystem towards edges that communicate among them, avoiding the centre. The core of the system will provide contents as it has done until now, but communicative decentralization results in greater extension of the contents and opening up of new channels, new routes of circulation and distribution of knowledge.

- In relation to this optimisation of resources we must consider a weighty argument in most organizations: *diminution of cost*. The project of digitisation already supposes an important reduction of cost for the cultural industries. Use of foreign resources such as those of the users implies a new diminution of the cost of dissemination of contents on the Internet. In this way, the organization transfers to the user most of the cost of implantation, management, and maintenance of the service.
- A new opportunity that arises for the content distributors relates to persistence of the mediation function. Users have the ability to act as creators of audio-visual contents, thanks to the huge reduction in the price of the hardware and the software needed for their creation in the past few years, as well as a minimum cost of distribution thanks to P2P systems, which can also be automated if they are related to RSS systems. However, we maintain that producers and distributors will continue to play a central role, since its selective mediation function between the available contents and the users will be harnessed. In a hyperinflationary content environment, users will need a reliable source to choose their media consumption. Media professionals have the required skills and they dedicate their time to it, whereas the time-budget of the users tends to be more and more reduced. Therefore, reinforcement of this function appears to be an excellent opportunity for media in the new environment of the digital networks. The quality of this function of mediation, and its adaptation to the new scheme imposed by P2P architectures, could mean an opportunity for revaluation of its activity.
- The *user autonomy* is an aspect that is closely related to decentralisation of the resources. This autonomy equips the whole system with greater flexibility. Owing to the absence of centralised management, the system must adapt to each particular scene. In any case, this flexibility equips the system with the capability to incorporate the resources needed in each situation.

2.2 Problems

The disadvantages of P2P systems can be summarized in six elements: management of the intellectual property, the question of free riders, cost of interconnection, churn rate, integrity of the contents, and the new corporate tolls that appear on the communication landscape:

- *Management of the intellectual property* in the new digital environment of superabundance requires new parameters. The first peer-to-peer applications, such as Napster, Gnutella, Freenet, Audiogalaxy and Scour, or some of the most popular at present, such as Souleseek, KaZaa, Morpheus, Emule, eDonkey and BitTorrent, do not satisfy an appropriate and legal requirement of the intellectual property. Until now, the industry has not been capable of coming up with a satisfactory formula for maintaining the integrity of works that, in the digital environment, are easily reproducible and transmissible. This is a serious weakness for the whole audio-visual system, and simultaneously it represents an evident difficulty for consolidation and acceptance of the peer-to-peer model at an industrial level.

In the field of archives, besides, it represents a serious threat, since the transferred material is usually of great value and usually difficult to access. In this sense, many of the latest projects concentrate their efforts on development of an appropriate DRM solution.

- The second identified weakness is related to the level of resource contribution of the users to the whole system. There are users who can contribute various technical capabilities of processing, storage and bandwidth, but mainly contents, representation of their culture and cultural heritage.

Regarding these contents, we also must consider a factor of quality beyond the quantitative contribution. Contents count on a different value level, basically depending on the demand for them and the shortage of supply, in a simple equation of the traditional law of supply and demand that regulates interchange in a capitalist society. Thus, we can establish a hierarchy of users based on variables of amount, but also of the quality of its contribution to the whole system. Among users, those that make little or no contribution to the system constitute a load for this one, since they are reproducing the generic usage patrons of the web model, consuming resources without contributing them. This parasitic user group was already identified as *free riders* by Adar and Huberman in their pioneering study on the Gnutella network (Adar et Huberman, 2000). In that research one double typology of free riders was established in the function of contributing contents to the network:

- a) users who neither share archives nor contribute them to the system and only consume, a category which, in that study, rose to 66% of the total of users of the analysed network;
- b) users who share archives of little or no interest to the rest of users, a category that was left obvious when it was demonstrated that 50% of the archives downloaded in Gnutella were provided by 1% of the users.

The fundamental idea that emanates from the free riders typology is based on people who derive a benefit from the system without contributing to its maintenance. In order to diminish this problem, some P2P systems have developed hierarchic systems that allow a resource consumption based on the level of contribution of the user. In fact, with digital contents the problem of free riders is relativised by the fact that access to the resources is not based on an exclusive feature relation.

In an archives environment this principle can be reformulated, taking into account the different typology of every institution. There are projects that are oriented to corporate environments in which contributions are supposed to be made by every user. But in projects oriented to individual users, contributions tend to be more focused on technical capabilities than on contents.

- We have found an economic issue related to own organization of the networks. It is the interconnection fees that network operators have to pay to other operators in order to connect themselves to their networks. Configuration of the Internet limits this interchange, carrying out most of the traffic interchange in neutral points and using resources such as proxies to limit this interconnection. P2P traffic, however, does not recognise the location of the pairs, and in many instances leaves them outside their own network, since in this type of scheme location of the content does not depend on its position but on its description, with which it discards the location of the files as a search and selection criterion.

Use of techniques as the cache of contents in the peer-to-peer networks is not viable by legal means. At present networks operators cannot be prosecuted by the owners of intellectual property rights for breaking the law, since they offer only a technical channel. But as soon as they store this content in any form, it they are considered to be participating in a violation of these rights and can be legally prosecuted and punished for it.

- This bandwidth compulsive consumption originated by most of the P2P applications can result in a decrease in the quality of service, slowing the connections through saturation of the network.

A solution used originally was the blockade of the ports typically used by these applications. For the ISP's this posed a clear risk of seeing an increase in its *churn rate* and the loss of dissatisfied clients among P2P users. However, the above port hopping technique has rendered this stratagem obsolete. In any case, allowing for high use of the bandwidth on the part of P2P users, it could lead to an increase in the churn rate on the part of the non-user of this type of application, which is why management of this tension has become a new function for the operators.

- Another factor that poses a threat to P2P systems is the lack of trust in the *integrity of the contents*. In systems that distribute pirated contents, this factor is assumed to be inherent in their own system, but this does not prevent the user from being left dissatisfied at not obtaining the desired content, or with the quality that was aimed for. Obviously, when referring to archives this factor is assumed to be of less importance, since the institution that operates the service is supposed to have a reputation and can guarantee this integrity.
- The last threat factor, of which the Internet seems free, has been developed recently in the environment of the cellular networks. By its closed nature, the paper of gatekeeper of the operators can lead to the imposition of corporate tolls that make the development of contents and, specifically, of P2P models difficult. In particular, we are referring to the decision of the many cellular operators to charge for their GPRS and UMTS services according to the bandwidth consumed. This fee policy favours development of neither the own users' contents, nor of the decentralized model of distribution. In the case of the Internet, generalisation of flat fee systems, independent of the amount of bandwidth consumed, have eased the spread of the user base and the development of audio-visual contents.

On the contrary, these corporate tolls favour bottlenecks, allowing the carrier control over a fundamental resource. It is trying to perpetuate a hierarchic vertical distribution model in favour of an emergent model of anarchical horizontal distribution.

3. Conclusions

In conclusion, P2P must be considered as a possible way to deliver content, which benefits both the user and the source of the content. The whole process is optimised. And it is not only related to Internet diffusion, because it can also be implemented – borne out by real experience – in other networks, such as cellular telephony and TV, in what can be considered a positive model for spreading the reach of the Knowledge Society.

Peer-to-peer is a new paradigm for the dissemination of content but it is not a panacea. Traditional problems like indexation and its management will persist. That's why the combination of P2P with metadata projects, especially MPEG-7, and systems of automatization like RSS can help to avoid the problem of the isolation of the content and connect it to the real needs of the public.

In the era of convergence, Internet and other telecommunications networks tend to converge with TV and other media networks. Integration of audio-visual archives into networks of their own nature could help to build stronger multiplatform environments, a way that should also be considered even though it does not have priority. Enhanced and interactive TV systems, with video on demand services, seem the clearest example and a possible means of access to a new universe of users.

In fact, the most pressing problem of P2P systems is their legitimacy. This issue is intimately related to the way in which they were born, and a business model that has been unable to create an application that respects the intellectual property rights, or to build a stable model of income. But after the first stage of creation of this new market, companies have to develop models for adapting a system of distribution that is already accepted by the community of users to the patterns that govern the transactions of the audio-visual contents.

Alongside this lack of legitimacy, P2P systems must also improve their interface with the user, since some of these systems are excessively complex for the average user. It may be expected that with the development of these applications they will become more transparent, and the interaction will be done with more intuitive systems, or even integrated into a familiar environment for most of the users, such as the Web.

In any case, what is unquestionable is that P2P has radically changed the way cultural industries consider the distribution of their raw material. While most of them have not yet completed the evolution from the analogue to the digital era, P2P patterns have shown the need to consider different distribution systems. In fact, this is a system that optimizes the digital nature of cultural goods and offers a broad, fast and cheap distribution platform. For these reasons, the industry should consider development of these platforms as a new set of opportunities for development of its business in a near future.

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Flexible and User-Friendly Exploitation Based on Persistent Media Archives

Guy Marécha, PROSI adviser for the "Memnon Audio Archiving Services", Belgium, presented at the IASA 2005 Conference, Barcelona, Spain

Introduction

Requirements of Users and Archives

The **cultural, social, economic, political ... value of archives** is directly dependent on three main qualities: the intrinsic interest of their substance; their ability to be exploited easily (retrievable, reachable and usable in a user-friendly way); their persistence (reliable, affordable and manageable). The first quality has an unpredictable value, whereas the last two have a technology dependent value. The contribution introduces possibilities for enhancing that intrinsic interest through restructuring and by adding metadata; for selecting the appropriate technologies. The result is exploitation of the archives by a large span of users and user communities.

The SIP, AIP, DIP Architecture in the OAIS Model

The OAIS model is a very powerful frame for creation of vision and of a strategy for managing and exploiting the archives. But its 'Blue Book', as a rule, does not specify any implementation.

The purpose of this contribution to IASA 2005 is to pave one of the ways to realistic implementation of the OAIS model or dynamics.

Any way, global control of the information packages should be organised into the three OAIS modes: '**Submission**' (SIP), '**Archival**' (AIP) and '**Dissemination**' (DIP). The archival activities are dealing with **original documents** (on any media) that do not meet the OAIS requirements for SIP's. For pragmatic reasons, at the conference, those documents will be called **OIP** (Original Information Packages).

Current Projects and Services

The AIP material has to be organised in order to facilitate and construct the flexibility and adaptability of the dissemination. Organisation of those properties is based on the experience acquired through several projects in which the author has been involved. They include audio content, video, images and text. One of them involves digitisation of analogue originals (the **ASR** project of the **British Library**); another focuses on addition of indexes, structures and metadata (and on retrieval of content) assisted by voice recognition techniques (the **AIDAR** project); another focuses on acquisition, structuration and indexation of video rushes in real time from high resolution digital camera from **Panasonic, Sony and Grass Valley** (Thomson); others are focused on Web services (the 'Audio Library' and 'Video Library' facilities of **Memnon** and **Lsi-e**) and finally, an important one intends to define an open architecture and technical specifications implementing the **OAIS** model for **small** and **large** systems: it is the **AXIS** project (Acquisition, eXchange, Indexing & Structuring).

The AAE architecture

To reach long-term persistence, the SIP, AIP, DIP architecture can be combined with the approach of the **Autonomous Assets Entities** (AAE). The paper introduces its theoretical foundations:

Using semantic criteria, **Collections** of content assets are selected, represented and/or linked following a **profile** of standardised formats (metadata, edit-lists, controls, synchronisations ...). The backbone of the profiles are **two** types of **orthogonalities**: 'Carrier / Data' and 'Form / Substance'.

The media **Projects** are managed using a reference model including proxies, fitting with the OAIS dynamic. The projects endorse the architecture and, from the start, integrate the contents, the metadata and the controls in the collection.

Combining the OAIS Model with the AAE Architecture

Organising management of the media content according to the SIP – AIP – DIP and to the collection based (foundation for the creation of persistent **Autonomous Assets Entities**) approaches offers great flexibility in the ways of dissemination and gives persistence to the archives. The exploitation can be done through the Internet or by nomadic distribution (DVD's, CD,s ...). The acquisition, enrichment, exploitation and maintenance of the media assets become easy and powerful.

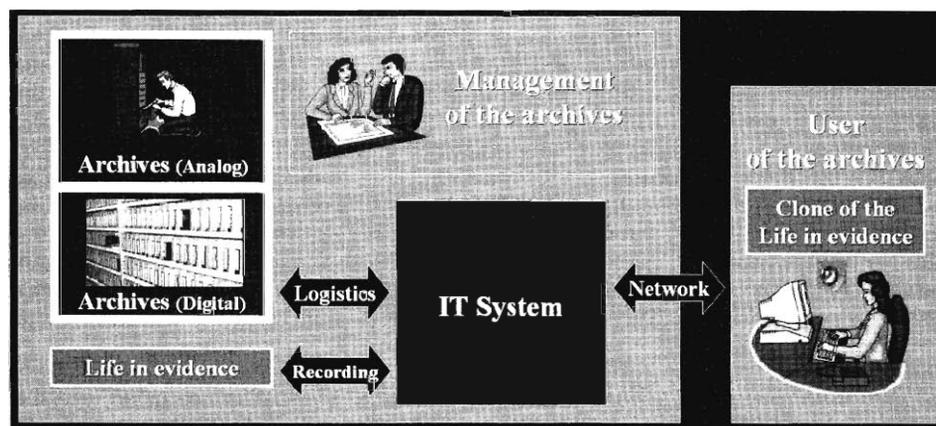
For a long time, persistent archiving with the Information Technologies was reputed to be unreachable. Now, with the progress of the technologies and adoption of new strategies, reliable solutions become possible. These involve construction of persistent archives that can be exploited and enhanced in flexibly and easily. Through automatic and scalable IT maintenance processes, the persistence is expected spanning centuries.

Requirements of Users and Archives

The **cultural, social, economic, politic ... value of archives** has to be promoted by 'Management of the Archives'. It will be done by a powerful, flexible architecture of the acquisition, archival and IT systems.

How will this MANAGEMENT meet the requirements of the (future) users and of the archives? Indeed, it could be said that the archives have requirements on behalf of the social communities financing the 'archival' and protection of the cultural, social, political ... heritage they represent.

Figure 1: Management of Archives



Management teams should not agree to be confined to "Proprietary Systems"; to pay the price of "Exclusive" suppliers; to suffer the artificial "barriers" and "obstacles" constructed by their suppliers or internal privileges in the flows of their processes.

The archives, as custodians of social memory, need to:

- be accessed and exploited easily
- survive progressive physical degradation of their support
- survive progressive evolution of the formats of representation
- survive changes in industrial policies
- have their existence known
- be semantically understood
- have the enrichments kept for further exploitation

An Architectural Approach

An architecture is organising ways to construct things with specific properties. It is more than a model, such as the OAIS model. It is less than an implementation. Realisation of an architecture implies writing its technical specifications.

Based on my experience, ten recommendations seem pertinent for those having to construct an architecture fitting the local requirements of their organisation, taking into account its possible evolution. The current information technologies become mature! The definition of 'architectural directives' becomes realistic!

There are many good solutions. Some of the recommendations could not fit with the local constraints, or with the characteristics of a specific organisation. Each large organisation should define what I call its 'red line', or its 'strict guidelines'. Those guidelines usually include 'policies', 'technical & technological specifications' and 'structural & managerial facilities'. My recommendations should be seen as a contribution to the local process of defining, refining or modifying its OWN guidelines.

Ten Recommendations

I suggest that the management teams should check their current red line, or construct/define it taking the following into consideration:

- Use standards to have full control of the exchanges between functional modules
- Adopt the SIP, DIP, AIP architecture of the OAIS model
- Construct 'Logical Entities' from 'Physical Originals' using 'Proxies'
- Deliver the DIP through various channels
- Always trace the 'Packages'
- Create 'Collection Profiles' to enable 'Autonomous Assets Entities'
- Create the AIP's as sets of 'Autonomous Assets Entities'
- Manage the persistence of the AIP's
- Manage the off-line conservation of the AIP's
- Adopt the previous nine recommendations for your Operational Units and for your AIP's

Most of them are obvious and require simple comments

1. Use Standards to have Full Control of the Exchanges between Functional Modules

The management teams must have full control over the exchanges made between the elementary functional modules. Availability of the full technical specifications of the IT interfaces and protocols is the main component of that control. Furthermore, if these specifications are based on standards, management of the persistence becomes trivial and flexibility is ensured. By 'based on standards' I mean that the specifications are a combination of references to international standards (ISO, ETSI ...), to national standards (ANSI, DIN ...), to common industrial or community standards (METS, MXF, PDF, Dublin Core), and to local formal definitions expressed according to an IT language and a formalism specified by standards (XML, XSD ...).

This recommendation applies only to IT representations (data) of the exchanges and exports. It doesn't concern the human interaction, the issue of documents in evidence and of the functions themselves: these aspects are added value and differentiating factors for the suppliers.

2. Adopt the SIP, DIP, AIP Architecture of the OAIS Model

The OAIS model is very rich and is targeted at the archival. It could be understood to mean that an organisation decides not to adopt the full OAIS model. But simply adopting the OAIS model for all the imports and exports is an easy management decision (elementary and cheap, if the recommendation 1 is endorsed). The concept of 'package' is essential to the OAIS. It includes not only the Content Information but also the Preservation Description Information, both wrapped by the Packaging Information. The PDI covers everything that is required for managing preservation of the Information: provenance, context, references and fixity. The OAIS reference model is available at <http://public.ccsds.org/publications/RefModel.aspx>

3. Construct 'Logical Entities' from 'Physical Originals' using 'Proxies'

The OAIS model doesn't prescribe how the contents should be represented and structured. The cultural heritage of the organisations/institution in charge of the archives gives them the priority of protecting the original physical carrier. In the IT world (in particular, in the OAIS model) the priority is understanding and protecting the contents. The data carriers are simply accidental and commodities.

In the IT world, the logical entities are the ontological and semantic primitives of management of the contents: acquisition, archival, exploitation. A logical entity could, for example, be one of the movements of a symphony; another could be the symphony as a chain of its movements. The physical entity is the physical carrier with its contents, which could be a casual assembly of logical entities. This aspect is further developed and illustrated in the last part (AXIS concepts).

4. Deliver the DIP through Various Channels

The OAIS model doesn't prescribe how the contents should be disseminated and exploited. But organization of the AIP should be done so as to anticipate a wide variety of use. Some of the organizations have only one main mission (broadcasting of television programmes, for example). Even in that case, production of DVD's, production of new programmes from the archives and from the rushes, presentation on the Web ... require the possibility of exploitation and dissemination through various channels.

5. Always Trace the Packages

The tracing should cover all the exports and imports, and the structural links between physical and logical. Tracing starts from the acquisition of packages (directly through the OPI and SIP; indirectly by acquiring in one module from AIP, or even from DIP), ensuring tracing of the AIP's and of the logistics of each of their copies and, finally, locking the tracing of rights and proxies associated with each issue of a DIP (all the exploitations, including internal ones).

There are many ways of ensuring that tracing. One of the most powerful is to implement the 'certificates of traceability' for all the exports and imports of one module.

6. Create 'Collection Profiles' to enable 'Autonomous Assets Entities'

Often one organization is managing logical entities of the same type (music, movies, books, photographs ...), or of the same semantic context (sport, news, interviews...). Representation of all the aspects of one logical subject (called 'opus' in AXIS) could be expressed by a combination of standards and local formalism. That combination is called a profile. As soon as such a profile is defined, it could be used to create 'opus', occurrences of the profile. An

Autonomous Asset Entity is the assembly of a set of opuses with all the involved profiles. This construction is a fundamental management tool for constructing and tracing the packages.

7. Create the AIP's as sets of Autonomous Assets Entities

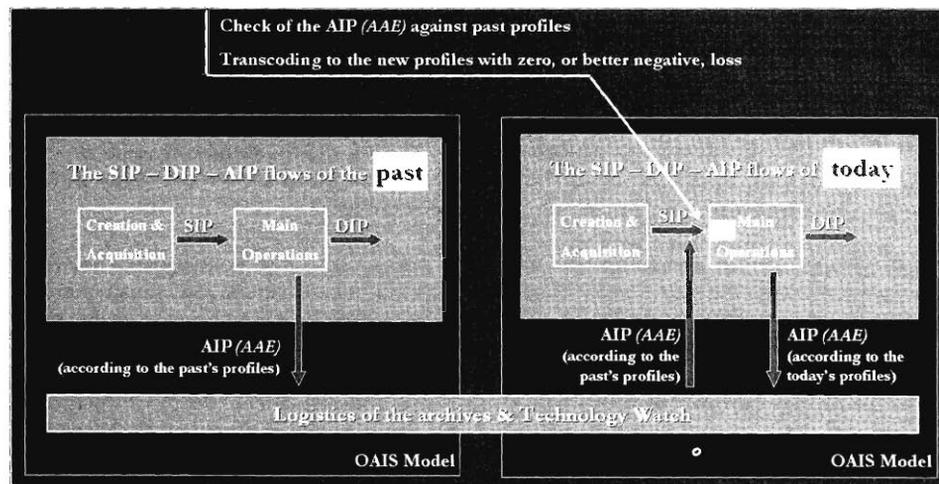
Creation of AIP's as sets of AAE's means that management of the exploitation and of the persistence can be done in a very simple way. Management of the rights and of the obsolescence can be done easily because the entities are logical and represented according to standards.

8. Manage the Persistence of the AIP's through the AAE's

Creation of AIP's as sets of AAE's means that management of the exploitation and of the persistence can be done in a very simple way. Management of the rights and of the obsolescence can be done easily because the entities are logical and represented according to standards. The persistence has to cover assurance of the integrity, the resistance against obsolescence of the carriers, contexts (infrastructures ...), of the formats and, whenever applicable, the consequences of the policy changes of the suppliers.

When changes have to occur, the key is to define new profiles. The technology watch on the profiles allows identifying the AIP's having to be upgraded to the new profiles. They will be extracted from the archives and presented to the current systems such as SIP. The acquisition will ensure the upgrade (see the next figure)

Figure 2



9. Manage Off-line Conservation of the AIP's

If the AIP's have been created according to the previous approaches, their management (in particular, their conservation) becomes a logistic problem.

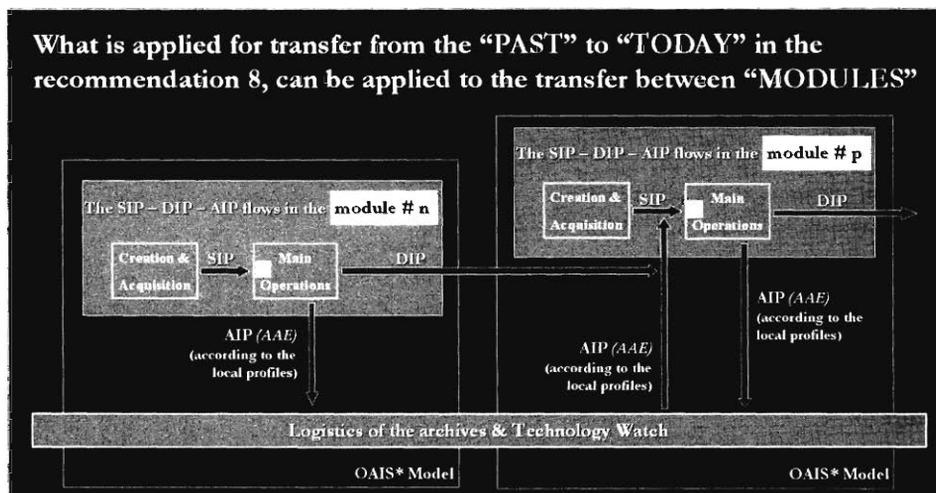
The most flexible way is to manage the logistics according to a three-axis orthogonal identification system: each carrier, each content and each location is identified independently.

10. Adopt the Previous Recommendations for your 'Functional Modules' and AIP's

This recommendation is a simple extension of the previous one. The key idea is to declare the capacity of autonomy of the internal functional modules of an organisation. In that case,

each organisation could supply DIP's or AIP's to the next ones in the flow; in turn they would acquire that DIP or AIP as being an SIP and further process the AAE; and so on. The result is flexibility of rearrangement of the flows and of the functions, the very simple tracing and overall control of the intellectual, cultural, social... assets managed by the organisation.

Figure 3

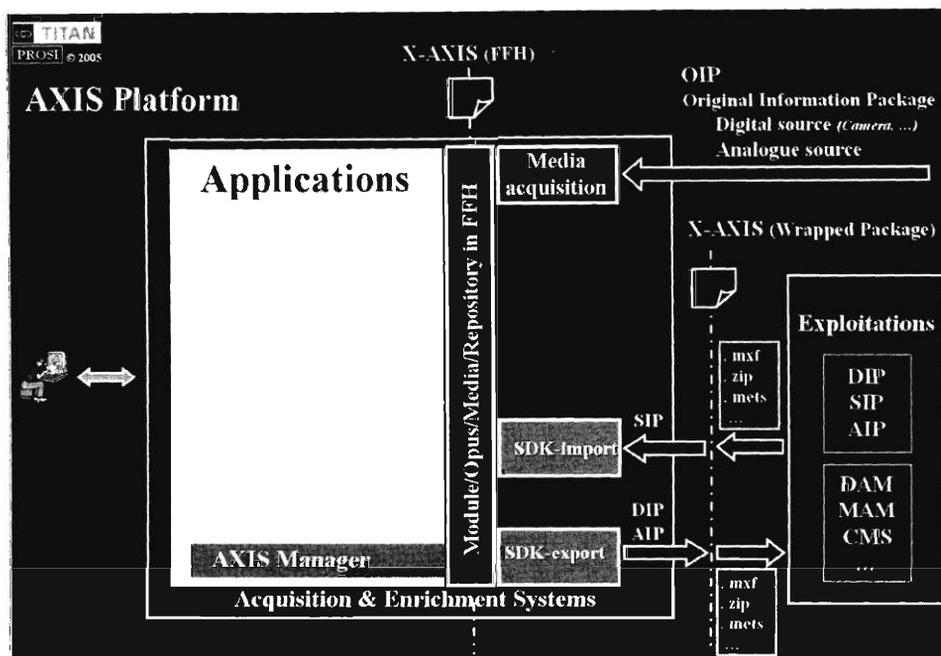


The AXIS Architecture and Technical Specification

The **SIP, AIP, DIP** architecture, combined with the OIP, AAE and the profiles, is used currently in several projects mentioned above. The technical specifications are almost ready and the simplicity has been confirmed by the practical implementation.

The AXIS platform for one functional module is presented in the next figure. The white rectangle represents the large variety of applications that can be included. The human interface is not part of the architecture, or of its specifications. The only functional specifications concerns the AXIS manager, which is a simple file, folder and hyperlink editor not dealing with contents of the files except for the RDF/Dublin Core definitions included in an XML node called 'axisFootPrint'. The X-AXIS (FFH) expresses the data independently of any carrier. The X-AXIS (WPP) expresses the exports and imports in terms of Wrapped Packages. The X-AXIS (FFH) could remain an abstraction, whereas the X-AXIS (WPP) is a reality with a physical carrier.

Figure 4



Conclusions

Each organisation should define its own strict guidelines (architectural and technical).

Implementation of the OAIS model can be done progressively and in a simple way, if the previous recommendations are followed. Your guidelines can ensure that your **media assets** will be listened to or seen for centuries!

Annex: The CONCEPTS of 'Logical' and 'Physical' in AXIS

Example from a Concrete Case

The pianist Wilhelm Kempff has rendered many times part or the whole of the 32 sonatas for piano composed by Ludwig von Beethoven. Three times the full rendering has been recorded:

- Recorded in 1926 on shellac and marketed on shellac
- Recorded in 1945 on coarse-groove and marketed on coarse-groove; then on microgroove; then on audio-CD
- Recorded from 1964 to 1965 on original magnetic tape with Polidor as producer

The first issue was by Polidor in 1965 on 15 dual-face microgroove; the last issue by Deutsche Grammophon in 1993 on 8 Audio CD, as the set no 5 of 14 sets representing all the Beethoven recordings marketed by Deutsche Grammophon.

- The 32 sonatas constitute an OPUS (*of the type **Clip-Stream***) as composed by Beethoven
- Each of the sonatas constitutes an OPUS (*of the type **Clip***) as composed by Beethoven
- Each movement of each sonata constitutes an OPUS (*of the type **Clip-Component***) as composed by Beethoven

The set of three full recordings rendered by Wilhelm Kempff constitutes an OPUS (*of the type **Clip-Stream***), further split into three OPUS (each of the full recordings). Each of these three full recordings rendered by Wilhelm Kempff constitutes again an OPUS (*of the type **CLIP-Stream***), further split into 32 OPUS (each sonata). Each recording of one of the sonatas constitutes an OPUS (*of the type **CLIP***) as rendered by Wilhelm Kempff. Each of the sonatas is further split into movements. Each movement of each sonata constitutes an OPUS (*of the type **CLIP-Component***) as rendered by Wilhelm Kempff.

For the third rendering, the 126 magnetic tapes recorded in 1964-1965 constitute the **originals**. The 2 x 15 faces of the microgrooves constitute a **volume-stream** of 30 **volumes** (on 15 **carriers**). Those carriers are wrapped by a **container** (brochure, paper slips and illustrated box). The marketed product in 1965 is the **package**.

The 8 Audio CDs constitute a **volume stream** of 8 **volumes** (on 8 **carriers**). Those carriers are wrapped by two levels of **containers**: At the lower level, two CD Jewel-cases designed to hold 4 CDs and each with a front and a back cover and one booklet; at the upper level, a hard-paper box wrapping the three items.

The three Volumes of the scores of the 32 sonatas published by the 'Breitoff' editions constitute a volume-stream split in 3 volumes. Each of the sonatas is a volume component. Each of the pages is a carrier component.

The mapping expresses the links between the elementary (or complex items): Track 9 of volume 4 (compact disk 4) of the Deutsche Grammophon issue of 1993 is mapped on the first movement of the sonata no 14 (opus 27 no 2) *Mondschein-Sonate* represented in the second volume of the *Breitoff* edition starting on page 22 (carrier component).

Comment on the definition of 'package':

All the information managed in a 'module' is defined without any reference to a specific 'carrier'.

Any specific implementation of a 'module' obviously runs on a specific infrastructure: however, representation of the information is structured data using only folders, files, data-sets, records ... coded according to norms or standards. The package entity is used in the following main situations:

- For the Import and Export facilities of the Module, a specific embodiment is required for interchange of the data with the other Modules and the acquisition, management or exploitation systems.

These packages are usually qualified according to four types:

SIP: The Submission Information Package is a package presented to an information system as being a candidate for integration into the data management system. After appropriate conformity and quality assurance check, and proper transcoding, if required, the information included in the SIP will be integrated.

AIP: The Archival Information Package is a package issued by an information system including all the information available pertaining to a Collection, including the used formats, coding, norms and standards and the package information.

DIP: The Dissemination Information Package is a package issued by an information system targeted to a specific (trade) audience and/or dissemination channel. Many dissemination processes could be marketed simultaneously: Each of the episodes of a TV series can be broadcast once a week, while selling the whole series in a DVD jewel-case.

OIP: The Original Information Package is the original package presented as is to the module for acquisition but not having the OAIS properties of packages.

- The module has the capability to define the existence of packages: it is the case when the package is produced outside the module.
- The module has the capability to define the process required to produce packages. In that case, the package is defined in the OPUS entity.

Comment on the links between 'Clips' (logical 'Opus') and 'Packages' (physical 'Opus').

The indexing allows identifying and mapping 'Clips' and 'Packages'. For example:

- Bach's Matthäus-Passion BWV244 could be managed as one 'Opus' having one 'Clip' composed of sixty-eight 'Clip components', which could be indexed 01 to 68.
- The 'Opus' contains a 'project' for management of the planning, of the resources and of the recordings (made on 25 – 29 August 1998) of the public performance of BWV244, conducted by Philippe Herreweghe.
- One of the 'deliverables' of the above project of the 'Opus' is the issuing by Harmonia Mundi of a 'Package' of that BWV244 under the identifier HMC951676.78. The issue comprises:

A Container box containing:

- One Container folder holding three Audio CDs
- One Container folder holding one CD-ROM containing
- One User manual
- One book

The three Audio CD's could be indexed AA, AB and AC

The twenty-nine tracks of the first Audio CD could be indexed AA, AB, AC, ..., BA, BB, BC

It means that the third track of the second Audio CD (indexed ABAC) is a representation, coded in .wav, of the 'Opus component' [*Und da sie ihn verspottet hatten*] (indexed 55).

On the CD-ROM, the representation, coded in .mp3, of the same 'Opus component' could be indexed CC (CC is the 55th item in the coding AA to ZZ), while the corresponding 'Clip component' could be indexed BWV244-55.

This expresses the possibilities of identification and mapping of the logical 'Opus' and 'Opus components' onto one specific embodiment while creating or receiving 'packages'.

Comment on representation of the structures

The expression of structures in AXIS can occur on three hierarchical levels:

1. The hierarchy or chaining of Opuses expresses the first level.

Example of applications:

- To express the five episodes of a series.
- To express the components of Collection
- To bundle and chain daily programmes (TV news, ...)

The associated metadata are expressed in the .afp file of the Opuses, or in dedicated/personalised added file (see details following).

2. The hierarchy or chaining of Clips expresses the second level.

The associated metadata are expressed in the .afp or .aci file of the Clips or in dedicated/personalised added file (see details under Clips and Clip Streams).

3. The logical structure within a Clip expresses the third level.

That structure is expressed by the metadata attached to segments and points of the Clip as defined in the .aci file. Simple attachments, i.e. the attachment of metadata to one segment, or to one point, does not express structure. But multiple attachments allow expressing any kind of structure. Use of the SMIL syntax is a priori selected.

Survey of Reissues of US Recordings

*Commissioned for and sponsored by the National Recording Preservation Board,
Library of Congress*

by **Tim Brooks**

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Washington, DC 20036
(accessible in electronic form at www.clir.org).

Review by Pekka Gronow, YLE radio archives, Helsinki, Finland

In the European Union and most other countries with functioning copyright laws, sound recordings are protected for 50 years from the year of first publication. United States copyright law uniquely grants sound recordings protection for 95 years. In addition to this, sound recordings made before 1972 may be protected perpetually by State or common law, even if the companies that produced them ceased to exist a long time ago. This has created a situation where libraries and archives face great uncertainty when they, for instance, plan digitisation of historical recordings.

The aim of the present survey was, firstly, to find out whether it is possible to determine the current owners of American sound recordings made between 1890 and 1964, and secondly, to calculate how many of these recordings have ever been reissued either by the legal owners or any other company. There is no discography listing all the American recordings made before 1964, so the author instead used some twenty well-known discographies covering specific areas of music, such as Tom Lord's *Jazz discography*, Richard Spottswood's *Ethnic music on record*, Joel Whitburn's various popular music listings, *Blues & gospel records* by Godrich and Dixon, and *The world's encyclopedia of recorded music* by Clough and Cuming. Taken together, these works list about 400 000 American recordings made before 1964, but it is important to note that they do not represent all the American recordings of this period. While the coverage of jazz is nearly 100 per cent complete, large areas such as instrumental light music, wind bands and white religious music are hardly covered at all, and coverage of popular music is limited largely to the best known and/or best-selling artists. From the contents of these discographies, the author drew a statistically representative sample of 1 521 recordings, which were investigated in detail.

The author then attempted to identify the present owners of these recordings. All the records made by Decca Records, for instance, are owned today by Universal Music. However, for 16 per cent of the material, it was not possible to determine a current owner. The percentage of such recordings was naturally highest for the period before 1900, but for the years 1920-1925, when there were many small record companies operating in the USA, the figure was also quite high, 34 per cent. It was possible to identify the owners of all the recordings made since 1955.

It is not completely clear what actually is the legal status of recordings whose owners cannot be identified. Copyright is not extinguished when, for instance, a company goes bankrupt. For all practical purposes, however, such recordings become 'orphans'. A person or institution

who wishes to use such recordings for any purpose where the permission of the rights owner is required will be in a very difficult position. The problem has recently been investigated on a wider scope by the US Copyright Office (see copyright.gov > orphan works).

When copyright protection in the US was extended to 95 years, one of the reasons given was that the longer term would encourage the rights owners to keep the recordings available for the public. In practice this has not proved to be so. Brooks discovered that only 14 per cent of all the records covered by the study have ever been reissued on CD by the original owners. The percentages varied between different periods and different genres of music. Only a few per cent of recordings made before 1920s have ever been reissued. The most frequently reissued categories are country, classical and popular music. Practically no ethnic recordings have been reissued.

Interestingly, it was found that other record companies have been much more active in the reissue field than the original owners, and altogether they have reissued 22 per cent of the recordings covered by the study. Many of these companies operate in Europe, where American recordings fall into public domain after 50 years, but some are small American companies which have in many cases been able to operate quite openly because the original owners frequently do not know what they own. It is important to note that the survey of reissues does not represent all the American recordings made before 1964. Of the large number of recordings not listed in standard discographies, very few have ever been reissued.

It is a pity that the survey does not also attempt to find out how many historical sound recordings have actually been preserved by the owners in the form of archival copies, master tapes, or metal stampers. Even if a company owns the immaterial rights in a recording, it cannot easily reissue it unless it physically owns it. My guess would be that although most companies have fairly extensive (but not complete) archives of recordings produced since 1960s, the further back we go, the lower the percentage of archival copies will be.

Tim Brooks's survey concentrated on reissues, because 'one of the most reliable guarantees of preservation is the widespread dissemination of copies to interested individuals and archives'. In many countries, selected libraries and archives may have the right to digitise sound recordings and make them available for researchers on their premises even without the permission of the rights owners, which diminishes the risk of the total destruction and disappearance of historical recordings. However, the possibilities for such 'fair use' are always limited, and there are many potential uses of such materials that are not possible for copyright reasons. The owners of the recordings seem to have no interest in reissuing and making most old recordings available, because the economic yield would be too small, but no one else could do so either.

IFPI, the International Federation of the Recording Industry, recently suggested to the European Union that the protection of sound recordings in Europe should be extended to 95 years, following the American model. While the extension would be beneficial for the very small percentage of recordings that still have commercial value after 50 years, it should be evident that it would have considerable social cost: a large part of our recorded heritage would become inaccessible.

A Gallant Little Lady The Florence Nightingale Cylinder

Rob Perks and Will Prentice, British Library Sound Archives¹



The inscription on the little plaque reads:
*The Voice of Florence Nightingale. Recorded
July 30, 1890, by Col. Gouraud, Presented by
Edison Bell, London, on May 17, 1935*
Photo: Chris McGlashon, British Library

In November last year the British Library Sound Archive assumed responsibility for the care and custody of what will be one of the most treasured items in its collection – the wax cylinder containing the voice of Florence Nightingale, donated by the Wellcome Trust, its resting place since the 1930s. This is the story of why the recording was made and how it has been passed down through the years.

In May 1890 a minor public scandal erupted when it was discovered that many veterans of the Charge of the Light Brigade in the Crimean War were destitute. The Secretary for War stated in Parliament that he could not offer assistance, and in response the *St. James's Gazette* set up the Light Brigade Relief Fund. We are indebted to the work of Bennett Maxwell, an expert in cylinder recordings, for some of the details in the story that follows.

We are so used to charity records today that the idea of producing recordings to raise money for good causes has become commonplace, but at that time – so soon after Thomas A. Edison's invention of the first sound recording machine in 1877 – it must have seemed an extraordinary innovation. Colonel Gouraud, Edison's representative in Britain, arranged to make three wax cylinder recordings to support the fund: Martin Lanfried, trumpeter and veteran, sounding the charge as heard at Balaclava; Alfred Lord Tennyson, reading his poem *The Charge of the Light Brigade*; and Florence Nightingale, celebrated for her nursing achievements in the Crimean War, delivering a message to the veterans, recorded on 30 July 1890 at her home at 10 South Street, Park Lane, London.

We also know that Florence Nightingale presented Colonel Gouraud with a print of *The Return*, Lady Butler's painting of the aftermath of the Charge, with the intention that it be sold to raise money. The print and the letter to Colonel Gouraud are now held in the regimental Museum of the 17th/21st Lancers at Belvoir Castle. The cylinder was still being exhibited 15 years later. In April 1905 *Talking Machine News* reported that 'One of the most interesting cylinders in Mr Johnstone's collection is that bearing a short sentence by Florence Nightingale. The occasion was an exhibition promoted at Edison House to help the survivors of Balaclava. The date is July 30th 1890. Very clearly the gallant little lady speaks: 'God bless my gallant [sic] comrades of Balaclava, and bring them safe to shore,' and then, after a pause, 'Florence Nightingale.'

Meanwhile, Colonel Gouraud's Edison Phonograph Company, set up in 1888, became the Edison Bell Phonograph Corporation, and later the Edison Bell Consolidated Phonograph

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Co. In 1897, Edison Ltd. was formed, inheriting the business of the latter. In 1909, J. E. Hough purchased the assets of Edison Ltd., forming J. E. Hough Ltd., a company that went public in 1926 as Edison Bell Ltd. In a letter to *The Sound Wave* on 21 June 1910, Hough confirmed that the cylinders previously held by C.R. Johnstone, including that of Florence Nightingale, were now in his possession: 'I am in possession of vocal records delivered in 1890, which might be considered priceless if they could be put to public use, for instance three by Alfred, Lord Tennyson ... and Mr Gladstone ... Florence Nightingale, Prince Napoleon, H M Stanley, Phineas T Barnum, but these records are merely venerated relics, and so far as any public use is made of them they might as well be buried in oblivion.' Mr Hough would surely be delighted if he knew how treasured these very same recordings are today!

As the cylinder market declined, Edison Bell Ltd. Was driven to bankruptcy and was subsequently bought out by Howard Flynn, who reformed the company under the name Edison Bell (1933) Ltd. On 24 March 1934 Flynn took part in a BBC radio programme, *In Town Tonight* (only a transcript of the programme has survived) in which he recalled that:

'We were looking over old matrices in the archives of the present Edison Bell Company last year when we came across an old mahogany box, securely fastened and labelled "Old Wax Cylinder Masters 1888-1890". We opened it and found inside a number of old wax cylinders... The cylinders bore traces of fungus and for some time we were afraid to even test them for fear of serious damage. Eventually however, we got out the original old machine on which they had been recorded, carefully overhauled it and its reproducer, and selected one of the waxes. It was labelled "Florence Nightingale 1890". For some seconds we heard nothing but a terrible scraping sound and then suddenly we listened awestruck to this great lady, long dead, speaking clearly but faintly, and what I heard thrilled me from head to toe.'

In the radio broadcast Flynn announced the imminent release of a new record to be called *Florence Nightingale: An Episode of the Crimean War*, with royalties going to the Red Cross and hospital charities 'so much beloved by this great lady'. A letter from Decca to Flynn dated 11 June 1935 confirms that they were ready to produce copies of the record at 4/6d per dozen for the first 160,000 ('cash with order') and a series of discs was planned as 'British Celebrities'. Apparently sales of this, the first in the series, were 'almost negligible', and no others are known to have been issued. The firm went into liquidation in 1938, after selling the goodwill and stock of the business to Decca in 1937. In 1935, Flynn presented the original cylinder to the

Wellcome Historical Medical Museum, from where it was subsequently passed on to the Wellcome Trust Library. An unsigned carbon of a letter from Flynn to Sir Henry Wellcome dated 17 May 1935 survives, presenting 'the original Master record of the voice of the great English lady, Miss Florence Nightingale... This tiny wax cylinder... has made possible the permanent preservation of her words. Into the care of you, Sir Henry, who knew her so well, we give this record of her voice, to rest for all time in your Museum.'

And there it did indeed rest, until March 2004, when Dr Michael Clark of the Wellcome Trust brought to the British Library a brown wax cylinder, held in a small wooden and glass case with a plaque identifying it as the voice of Florence Nightingale. New transcriptions have been made by Sound Archive technical staff of the two recordings on the cylinder, both of the same speech, and for the first time the complete contents of the cylinder can be heard on the Sound Archive's new 2CD set of historic speech recordings, *Voices of History*, published in November last year.

'When I am no longer even a memory, just a name, I hope my voice may perpetuate the great work of my life. God bless my dear old comrades of Balaclava and bring them safe to shore.'

Florence Nightingale.'

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