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Annual Report on Preservation Issues for European Audiovisual Collections

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ABSTRACT   This is the second annual report on the preservation status of European audiovisual material. The report is compiled from direct contact with nearly 400 audiovisual collections of various sizes in 34 European countries. The emphasis is on preservation awareness and preparedness – and how much training needs to be done.

KEYWORDS   Preservation Audiovisual Archives Status Training Europe

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1. Document Scope

This report is an annual public document, aimed at persons responsible for audiovisual collections and giving a status report on audiovisual preservation across all EC countries. This document is the second report. Rather than repeating the content of the first report, only new and updated information is in this report.

2.   Executive Summary

This report summarises the preservation status of European audiovisual material.

A year ago, we reported on data from 21 countries, and direct contact with 31 collections – and found 20 million items (around 10 million hours). The report concentrated on the physical state of the items, plus some data on preservation projects and funding.

This year, we have the benefit of the TAPE project, which is sharing data with PrestoSpace. The TAPE survey in 2005 had responses from nearly 400 archives, and found about 25 million hours of film, video and audio – of which an estimated five million hours was already identified in last year's PrestoSpace survey.

The TAPE survey has results that are even more significant than this additional 20 million hours of identified material: it shows the **state of awareness** of preservation as a problem, and the **state of preparation** for meeting that problem.

In general, 70% of material is seen by its curators as in acceptable, good or very good condition, and 30% is deemed deteriorating or unknown. **But half the archives do not have controlled storage conditions, half have no regular equipment maintenance, and 2/3 do not have a systematic preservation programme.** Furthermore, for every response saying that a particular problem (like vinegar syndrome or colour fading) was not present in a film collection, there were three "not known" responses. So there must be serious doubts about the 70% figure, and this report argues that it represents complacency (or apathy), not fact – and that this complacency is a problem equal to, or even greater than, the problems of physical decay and of preservation budgets. Surveys on digital preservation have found similar results: statements that mean "we don't see a problem", which is not at all the same as evidence that there is no problem.

If there is a cure for complacency, it lies in education – which is the focus of TAPE. However it will take more than TAPE and PrestoSpace to solve this training problem, and **further EC actions to support audiovisual preservation should consider 'lack of awareness' as a primary problem to be overcome**.

# 3.   Update on the size and urgency of the problem

3.1.   Summary of 2005 findings

Last year we reported on a PrestoSpace User Survey covering 11 countries, with additional data from the public websites of archives in another 9 countries.

The basic questions asked were:
- How much material is in audiovisual collections?
- What condition is it in?
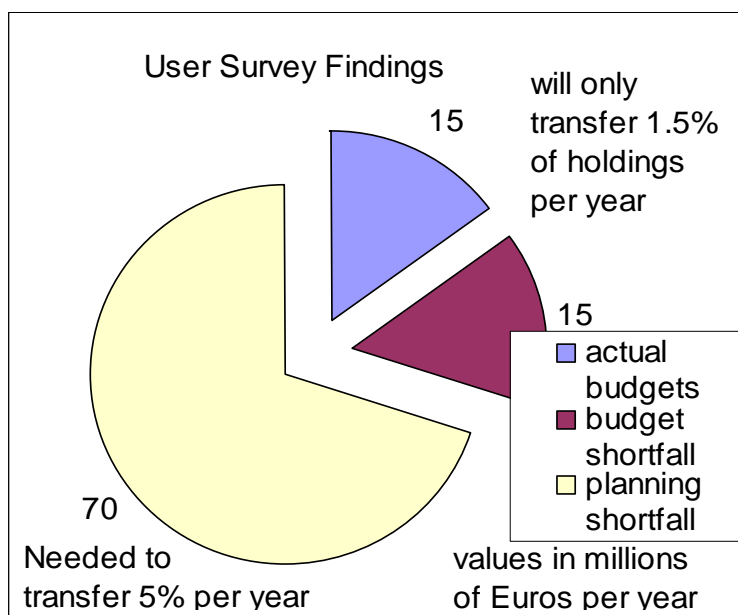- What is being done about its preservation?
- What are the major problems?

How much? In 31 institutions (out of many hundreds, but including many of the biggest) across 20 EC countries, we found 20 million individual items of film, video and audio.
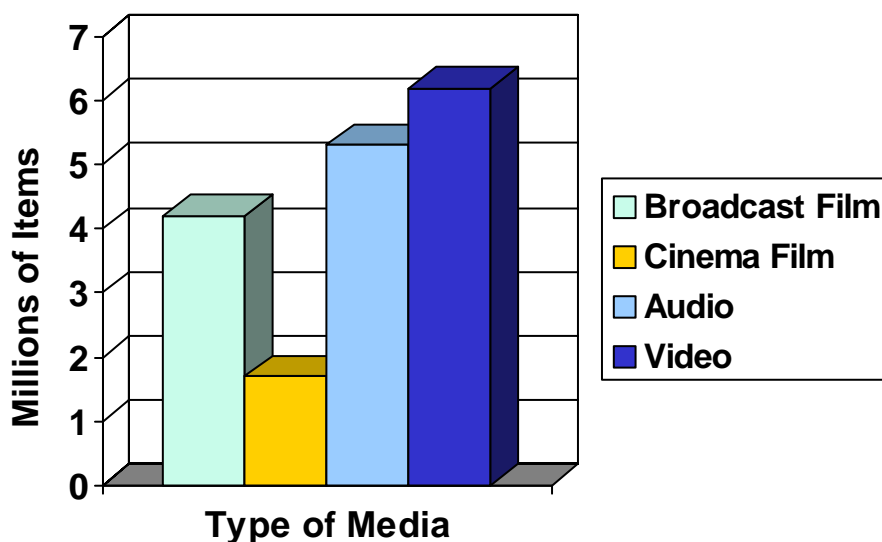
What condition is it in? They did not know. Lack of condition assessment procedures is a main finding of the PrestoSpace User Requirements Survey.

What is being done? Preservation projects were planned or underway to transfer about 250 000 items per year: about 1.5% of total holdings. At this rate it would take 60 years to deal with current holdings. This rate of progress is inadequate because:
- Much of the material will not last for 60 years; average 'format life' of videotape is 20 years or less (as little as 10), and then the format is obsolete. Life expectancy of the material itself varies with storage conditions, but without cold, dry storage most audiovisual materials deteriorate after 20 to 30 years.
- New material comes in; project Presto found that acquisitions were exceeding preservation work by a four to one ratio[1].
- There is already insufficient budget and insufficient resources: the PrestoSpace survey found that archives had half the budget they needed (just for their planned 1.5% per year transfers), and the facilities providers also had half the needed capacity.

User Survey Findings

15
will only transfer 1.5% of holdings per year

15

actual budgets
budget shortfall
planning shortfall

70
Needed to transfer 5% per year

values in millions of Euros per year

In summary, only about 1/3 as much preservation work is planned as is needed – and only half of that is funded. These results led to the prediction that 40% [2] to 70% [3] of existing material would simply disappear by 2025 if the situation remained as is.

Using a Preservation Factory approach, we estimated that half the total existing audiovisual heritage could be saved. It would require fully funding the planned projects (which at present were only half funded) – and then doubling that funding, as shown in the next diagram.

European Estimate: twice as much "out there" as we've already found

values in millions of Euros per year

40

30

30

actual budgets
shortfall
selection savings
PrestoSpace efficiency

100
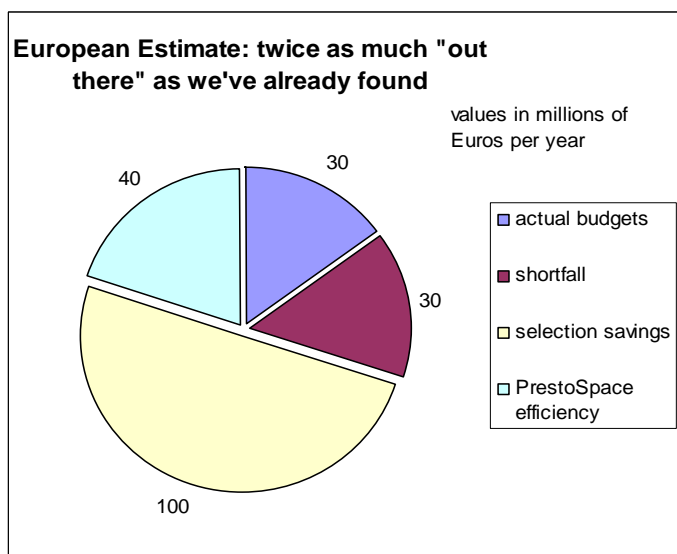
That was last year. This year the TAPE[4] project has performed a much larger survey, with a short questionnaire available in eight languages, distributed to reach the full range of audiovisual collections. The survey procedure has been very successful, with 376 responses from archives ranging in size from less than 100 hours to over 1 million hours. Complete data will be available from the TAPE project. In this report, we give the main findings – and compare them with last year's data and conclusions.

3.2.   Summary of findings from TAPE survey

There were two basic kinds of information in the TAPE results: data about the material in the collections, and data about the staffing, training, equipment and budgets of the collection holders.

3.2.1.   Data about the material

The 376 respondents held a total of 25 million hours of material. Allowing for overlap with the PrestoSpace results from last year gives 20 million additional hours of material, beyond the roughly 10 million hours identified last year. Altogether, this means that PrestoSpace and TAPE have specifically identified 30 million hours of audiovisual material in Europe. These results substantiate the original Presto estimate of 50 million hours of audiovisual material in Europe[5], made in 2001. TAPE and PrestoSpace have now actually found 60% of that estimated total. More significantly, we now know specifically where the 30 million hours is, and who is in charge of it.

The condition of the material was generally described as very good, good or acceptable; about 70% of the respondents gave those answers. However a closer analysis supports the conclusion that this 70% is a statement about the *awareness* of the respondents, rather that a statement about the actual material. This interpretation emerged from considering responses to specific questions about condition. When asked whether problems such as mechanical damage or colour fade were present, on average only 16% said the problem was not present in their archives – and a disturbing 24% of responses (to the condition of film) were "don't know" (10% for all media). If the wildly optimistic assumption is made that the "don't know" responses should be counted as 'no problem', that still leaves **73% of responses actually identifying physical problems with the material**. This is in line with the Presto results from five years ago, where 70% of European audiovisual holdings were seen as at risk. More worrying, if even half the "don't know" responses are counted in the problem category, the estamount of material with one sort of problem or another is 79%.

We conclude that **80% of the material in the TAPE survey has preservation issues** – while those responsible for the material said that only 30% is "deteriorating or not known". The implication is that respondents will report that material is damaged in various ways (fading, torn, has storage problems), but remain resistant to describing the material as deteriorating. This is a bit like people who will admit to their weight in kilograms, but won't admit to being overweight.

3.2.2.   Data about the collection holders

If 80% of material has problems – or even if only 30% has problems – how well are archives and other collections, and their managers, equipped for dealing with these problems?

The answers are not encouraging:
• Nearly 50% of respondents do not have climate-controlled storage conditions;

- Only 40% have technical information on the equipment used to make their materials; 50% perform regular maintenance on their equipment (and 50% do not!);
- 30% responded that they had staff professionally trained in audiovisual material;
- only 20% thought training opportunities in their country were adequate.

Finally, around one-quarter of responses said that their collection had a systematic programme of transfer from old to new carriers – and 1/3 almost never made transfers!

In other words, there is a considerable amount of 'sitting on the problem' going on.

4.   TAPE Survey Details

4.1.   Method

The TAPE survey was filled in by the staff in charge of collections. The distribution was from the TAPE website, through the ECPA mailing list (and picked up by other mailing and websites, including UNESCO), through audiovisual professional bodies including IASA (sound archives) and FIAT (television archives) – and the survey was promoted by the PrestoSpace website.

The survey could be filled in on the TAPE website, or downloaded, filled out and posted as a paper survey. There were five TAPE partners (plus the TAPE coordinators ECPA) cooperating to provide advice to respondents, in six countries and six languages. All of this preparation was important in achieving the 376 responses.

4.2.   Findings

Full findings from the TAPE questionnaire will be presented by the TAPE project. Here, thanks to the assistance of the TAPE project, we present those results that are most relevant to preservation.

4.2.1.   Type of Organisation

TAPE succeeded in contacting a wide range of organisation that hold audiovisual content, as follows:

Type of organization	No.of resp.	%
Archive	143	38.03 %
Library	81	21.54 %
Museum	42	11.17 %
Research institute	28	7.45 %
Institute	26	6.91 %
Radio/tv company	21	5.59 %
Other	15	3.99 %
Commercial company	11	2.93 %
Private person	9	2.39 %
	376	100.00 %

These organisations serve the following categories of collection user:

Target audiences	Score	% of max
General public	1052	55.96 %
Academic researchers	1295	68.88 %
Students	1261	67.07 %
Publishing/media	919	48.88 %
Other commercial users	262	13.94 %
Special usergroup	502	26.70 %

4.2.2.   Holdings

Getting data on holdings is always awkward, because collections use various statistics to describe the amount of content: hours, items, titles, meters or feet (very common for film archives) – or even combinations of these terms. TAPE converted everything to hours, using assumptions that varied from media type to media type (wax cylinders are known to be approximately 2 minutes, for instance). Full details are available from TAPE.

Holdings	Total responses	Total amount in hours	Growth	Rate
Film	221	3 049 667	24530	0.80 %
Audio	327	10 878 904	659000	6.06 %
Video	313	11 942 578	780772	6.54 %
Total	861	25 871 149	1464302	5.66 %

4.2.3.   Preservation Status

The following three tables give the detail behind the conclusion that archives considered about 70% of their material to be in very good, good or acceptable condition. All the data values are actual numbers of responses, except for the totals which have also been converted to percentages.

Film, Audio and Video Condition, as evaluated by users

Film condition   206   respondents

	35mm	16mm	8mm	other	Total	%
(very) good	15	15	9	6	45	17
Acceptable	59	64	39	3	165	60
Deteriorating	6	11	6	4	27	10
not known	9	13	9	3	34	13
					271	100

Audio: 339 respondents

Audio   Cyl.   78   inst.   33   1/4"   K7   DAT   CD   ROM   MD   Other   Total   %

condition			discs		tape			DVD				Total	%
(very) good	6	13	4	40	22	50	38	89	71	30	9	372	31
acceptable	22	52	19	16	97	104	25	50	28	21	8	442	28
deteriorating	7	16	16	13	44	41	6	3	5	1	4	156	14
not known	20	12	9	12	28	25	11	9	12	12	8	158	27
												1128	100

Cyl = wax cylinders; 78 and 33 are the two main types of analogue disc media (gramophone recordings); "inst discs" are instantaneous discs -- that were cut (as a recording method before audiotape was developed) rather than pressed (for distribution). ROM refers to CD-ROM and DVD-ROM, burned individually, as opposed to commercial CDs and DVDs which, like 33s and 78s, are pressed. MD is minidisc.

Video: 319 respondents

Video condition	VHS	S-VHS	U-Matic	BetaSP	DigiBeta	Video 8	DV	Other	Total	%
(very) good	51	9	11	40	35	7	48	30	231	29
acceptable	157	35	35	39	12	16	17	18	329	42
deteriorating	28	8	28	5	2	4		8	83	11
not known	21	13	27	22	11	15	17	16	142	18
									785	100

Having asked about overall condition, the following three tables give responses (again, separate tables for film, audio and video) to whether specific conditions or problems were present in their collections – and if so, what position the problem held in their overall management prioritisation. As stated in Section 3.2.2 **Data about the collection holders**, this method of enquiry uncovered a far larger percentage of problem material than was the case when only overall condition was reported.

Specific problems with film, audio and video:

Film:	Nitrate	Mech damage	Vinegar syndrome	Colour Fade	Storage	Catalog'ng	Other	Total	%
high priority	18	17	25	10	35	50	10	165	23
low priority	5	27	22	19	24	29	1	127	18
mod. priority	6	51	21	43	41	32	3	197	27
not known	8	28	40	45	20	15	14	170	24
not present	5	8	10	7	18	13	1	62	9
								721	100

Nitrate is a form of film that is potentially volatile, requires secure storage, and can only be handled and projected under controlled conditions by specially trained staff.

Mechanical damage is any form of physical damage, such as torn perforations or shrinkage for film.

Vinegar syndrome is the problem with acetate-backed materials (and therefore common to film, audio and video materials using acetate – which is the bulk of audiovisual holdings) turning into acetic acid = vinegar.

Colour fade will be understood by anyone over 40 who took colour photos 20 or more years ago. People who put photographs on their refrigerator door or anywhere exposed to the sun will experience this problem much more quickly.

Storage refers to any storage problem, generally lack of humidity or temperature controls. Life expectancy of acetate-based materials is almost entirely predictable given knowledge of temperature and humidity.

Cataloguing refers to having a problem of uncatalogued material.

Audio:	Mech damage	Lack of Equipment	Storage	Catalog'ng	Other	Total	%
high priority	31	56	50	70	11	218	25
low priority	72	34	55	36	1	198	23
mod. priority	59	66	60	69	6	260	30
not known	28	10	7	8	9	62	7
not present	12	41	44	34	3	134	15
						872	100

These problems for audio include problems already identified for film, plus the addition problem of lack of equipment for replay. Film archive can have equipment problems too, but they won't be lack or replay equipment (at least, so far a the common formats are concerned). But audio and video archives can hold material that they cannot even listen to or view, stopping any preservation work before it can even start (because preservation begins with knowing what you have).

Video:	Mech damage	Lack of Equipment	Storage	Catalog'ng	Other	Total	%
high priority	26	54	60	78	16	234	25
low priority	72	47	55	44	1	219	23
mod. priority	53	47	66	68	3	237	25
not known	31	7	4	2	2	46	5
not present	35	66	51	44	4	200	21
						936	100

The following table summarises the above three tables, collapsing the three priority categories into one 'we have a problem' number. The table shows that 'not known' is a significant response, especially for film where 24% of responses were 'not known'. The table also shows that overall 73% of respondents reported presence of specific problems, with 11% 'not known' responses. The final column eliminates the 'not knowns', by splitting them in half and adding 5.5% to the other two figures[6].

	film	audio	video	total	%	Equal split of 'not knowns', %
have a problem	489	676	690	1855	73	**79**
not known	170	62	46	278	11	
not present	62	134	200	396	16	**21**
Total	721	872	936	2529	100	100

4.2.4.   Preservation and Digitisation Work

Collections were asked whether they had a planned programme of preservation work (as compared to work on-demand when problems were found). The answer was:

preservation programme

no	192	66
yes	98	34
total	290	

The result is clear: only 1/3 (of those respondents that answered) were going about preservation in a systematic fashion – and 86 respondents didn't answer!

TAPE asked whether people were using digitisation, and why. The following two tables summarise results:

Do you digitise?	Film	Audio	Video
yes	78	143	117
total archives with this category of media	206	339	319
%	38	42	37

These aren't high numbers, though it may be an underestimate as some respondents may simply have ignored the question.

Why digitise?	Film	Audio	Video	Totals	%
browse copies	205	369	255	829	19
user copies	247	453	301	1001	22
relieve stress	305	549	381	1235	28
rescue content	302	559	407	1268	29
Other	25	26	37	88	2
				4421	100

These figures show that nearly **30% of the digitisation relates to preservation** (putting endangered content on digital formats), and **70% to access (**relieving stress on master copies, plus browse and use copies). Interestingly, these answers are nearly identical (within 1%) regardless of whether audio, video or film was being reported. Also, relieving stress on master copies is a preservation process as well as being an access process – see footnote 15.

Finally, equipment and engineering is only one side of maintaining a collection. The foundation of any collection is the documentation – so the collection managers know what they have, and so users can find material. Lack of documentation is a serious as any other problem. While not a deterioration issue, lack of documentation does impede preservation, because it prevents assessment of relative value of holdings, their cultural or other significance, and whether they are unique or originals – or merely copies of material already held in other institutions.

percentage catalogued?	Number of responses	Average % catalogued per response
Paper-based catalogue	151	64
Electronic system	214	63
Not described or catalogued	126	34

The figures show that about 40% of content was described on a paper-based catalogue, and that overall about 1/3 of holdings remain uncatalogued. If preservation awareness, processes and budgets are not improved, it is a safe prediction that it is this uncatalogued material that will be lost, irrespective of its physical format and physical condition. Until material is catalogued, it is very difficult to raise funding for its preservation.

PrestoSpace is developing technology for detailed automated documentation of some forms of media (broadcast news) – but in general manual documentation will be needed. **This undocumented one-third of audiovisual content must be a priority for any and all work on audiovisual preservation.**

The PrestoSpace survey asked how much of an archive's budget was allocated to documentation work, but we did not ask about the effects of this work: how much of their collection had been documented. Live and learn. The figures from TAPE have uncovered a vital issue, as significant as any other aspect of preservation.

5.   North American Information

There have been many surveys and databases about audiovisual material in recent years. FIAT did a survey of digital archives[7]. The US Library of Congress has sponsored project MIC[8], building a database of Moving Image Collections. FOCAL[9] has a membership website. Presto[10] and PrestoSpace[11] circulated questionnaires. There have also been quite local questionnaires, such as one for Yorkshire[12] in the UK, and one for the Northeastern USA[13]. All this potential information should be pooled, and PrestoSpace is working on that issue.

In 2005, Cinetech (a major commercial firm in North America, and part of the global Ascent Media company) distributed a questionnaire[14] about audiovisual (including still images) preservation and related issues, and they agreed to cooperate with PrestoSpace and TAPE in sharing data.

5.1.   Method

The survey was distributed to members of 17 organizations via listserv, email, websites, association newsletters and hardcopy by mail.

Recipient organisations included: Visual Resource Association; Museum Computer Network; Visual Materials Section, Society of American Archivists; Association of Independent Commercial Producers; Western Museum Association; Association of Canadian Archivists; Midwest Archives Conference; Society of California Archivists; Conference of Inter-Mountain Archivists; Northwest Archivists; Rocky Mountain Archivists; Society of Southwest Archivists; Society of California Archivists; and the Association of Moving Image Archivists (AMIA).

While AMIA is international it has a large North American membership, and many of the other recipients were North American or regional organisation within North America. This survey is interesting, because one would expect uptake new technology to be somewhat ahead in North America, and we could get a hint about the direction and rate of change that will affect all audiovisual collections.

5.2.   Responses

The preliminary findings supplied to PrestoSpace cover :
- Fifty nine (59) responses to date representing a diverse range of institutions – small, large, public, private (list attached).
- Five categories of respondents: Archive, Library, Museum, Educational Institution, Other
- The majority of respondents are 'educational institutions' or 'other' which include hybrid organizations, historical societies, television stations, production studios, foundations, and corporations.

5.3.   Findings

The survey was not about the amount of material, but the format. In particular, were the collections using conventional media or electronic files and mass storage. The questions were about the degree and rate of conversion to this new technology.

- 61% of respondents have digital files in their collection and approximately the same amount are actively digitising materials for preservation and/or access purposes
- 14% have plans to produce and/or acquire digital files in the next 2-5 years
- 8% do not own digital files or have plans to acquire digital records
- 40% of respondents are using electronic distribution to circulate digital files and another 25% are planning to.

They were also asked about technology for managing these files: asset management systems and related systems.
- Approximately 50% or respondents have, or are planning, an integrated system for collections which combines a physical asset system with an electronic file based system

They were asked what technology they use to digitise:
- 44% have, or are planning to use, a commercial off the shelf product for digitisation

They were asked if they had a digitisation programme, or was it ad hoc (on demand).
- 36% of respondents have, or anticipate having, a structured digitization program
- 42% have, or anticipate having, an ad hoc program.

In the TAPE results, 34% of archives had systematic digitisation – though that figure excluded those who gave no answer. Including the 'no answer' group (so TAPE results can be compared like for like) reduces the TAPE score to 26% -- and 51% with an ad hoc approach.

Finally, the Cinetech survey reports; "Those institutions that digitize materials on an ad hoc basis do so, or plan to do so, to create copies for on-line access, to satisfy user requests, to reduce handling fragile originals or to help generate revenue; fewer do so to save materials from obsolete carriers."
In the TAPE results, these same categories occur, but we interpreted 'reduce handling fragile originals' as motivated by preservation considerations, just as much as 'to save materials from obsolete carriers'.

Finally, the survey asked about barriers to digitisation, and summarised the responses as follows:

> **A number of institutions indicated a general lack of funding as an obstacle, but lack of in-house expertise and staff resources were also cited. Other challenges include: pre-planning (workflow), lack of standards, lack of qualified contractors, rights/ownership issues, low quality output, high quality equipment at an affordable price, awkward formats (ex. bound books).**

Readers of the TAPE results will not be surprised by these findings, except audiovisual collections don't have to worry about bound books.

5.4.   Conclusions

Having looked at the Presto, PrestoSpace, TAPE and Cinetech results the first conclusion is that it would be a lot easier to compare results if they had asked the same questions, used the same scoring and presented results in the same fashion.

However the Cinetech and TAPE questions were really quite similar.

The following overall conclusions can be drawn, supported by all the studies:

- People are adopting the new technology of file formats and mass storage

- To do so they have to digitise, and they are so doing

- Most digitisation is done in an ad-hoc fashion, which Presto showed was not the most economically efficient approach (but you have to start somewhere)

- Most digitisation is for access. TAPE had a 30-70 split for 'why digitise?': 30% for preservation, 70% for access – although an access copy that protects use of a master or original copy is also preservation. If such access copies are included as preservation, then 60% of the TAPE-reported digitisation was for preservation[15].

6.   Access

The year 2005 was a significant year for access to audiovisual collections. Access has traditionally been a problem. According to a recent article[16] on audiovisual access: "*As collections developed, a variety of levels of access also developed. Originally, some collections had no external access. The collections were private, access required using specialist viewing or listening equipment, and there were issues of rights, security, censorship and state (or institution) control. A closed collection, available only to the staff of the host institution, would seem an anachronism – but even today there is no direct public access to virtually all broadcast archives.[17]*

However the situation is rapidly changing. In 2005 there were significant developments in four access areas: public access, commercial access, technology for access and basic research.

6.1.   Public

Public service broadcasters and heritage institutions have made significant progress in making audio and moving image material publicly available – in large quantities. Here is a sample:

Canada: The Virtual Silver Screen includes footage of Canadian troops preparing for World War I and life in Canada at the turn of the 20th Century [25 vintage films and newsreels in all]. The Canadian CBC Archives offers both film and sound archive. There are over 2000 radio selections from the 1920's onwards – roughly 200 hours. From television there are around 2500 clips, so about 300 hours. Content is growing daily.

Sweden: SVT, the national television broadcaster, has launched an online archive called Open Archive. The launch announcement give more information. SVT has current content (up to 1000 hours, available for up to 30 days) available for streaming. The Open Archive at present appears to have about 100 items.

Luxembourg: Their national broadcaster RTL simply puts nearly all its output on the web, and appears to keep it there. The television archive and the radio archive both go back to 2001.

France: The inside story is that the Institute National de l'Audiovisuel (INA) will launch, in 2006, a public offering of several thousand hours of online content. Amazingly, there will be significant amounts of sport – which most public access offerings have been unable to achieve owing to rights issues.

Germany: The Deutsche Wochenschau newsreel collection with archive back as far as 1949. Over 4,000 stories have been issued so far.

Italy: RAIClick is the RAI TV-on-demand offering. With a broadband connection you can download films, film clips, TV programs, documentaries, news programs, horoscopes, sports and more.

In the **Netherlands**, the Institute for Sound and Vision is poised to move into a new building that will combine broadcast archiving with public heritage access – and significant amounts of material will become publicly available as their enormous collections is digitised.

UK: According to leaks that are correct though not officially confirmed, the BBC will launch its entire TV and radio catalogue in 2006, with hundreds of hours of content at the launch and thousands to follow. Content will be mainly factual, which has minimal copyright complications. Access will be for viewing, not for the 'rip and remix' approach that generates so much publicity, problems and false expectations.

The UK National Archives has a collection of digitised content that can be viewed via BlinkxTV (select National Archives in the "information section"). British Pathe newsreel archive has content from 1896 to 1970; the collection size is 3500 hours. The British Universities Newsreel Database (BUND) doesn't have the footage, but it has all the available cataloguing for all the UK newsreel companies.

In the **USA**, the Library of Congress American Memory Project has both movies and sound recordings. The Newsfilm Library at the University of South Carolina has clips from Movietone amongst others. The National Library of Medicine offers surgery videos with all their gory detail. NASA has a Video Archive and the NASA Image Exchange(NIX).   Specialist online public collections include the Film Trailer Archive from the University of Huston, the Gallery of Historical Films from NOAA, and the Video Archive at the Institute of Politics.

In a surprise announcement, Google revealed an agreement with the US National Archives and Records Agency (NARA) to digitise and make public historic films. Only about 20 are on the site so far, but that is expected to increase rapidly. This move parallels similar Google activity in the book world, digitising major libraries. Clearly there is now an important link between cultural heritage institutions, content preservation, and the major commercial companies such as Google that are competing to be our first choice for web access. These companies want what cultural heritage institutions have: content. PrestoSpace has always claimed that there is digitisation funding available via access – as the commercial initiatives by Google, Microsoft, Getty, Corbis and others demonstrate.

6.2.   Commercial

Major footage archives are now using the web for commercial access, though for some websites this approach also provides public access – to low-quality version of the material, or to selections.

Major commercial footage sales websites include INA-Media, the BBC Motion Gallery and the National Geographic Digital Motion.

The major commercial online image galleries have also moved into moving images. Both Corbis and Getty are offering online preview for commercial sale: Corbismotion and the film part of Getty Images.

6.3.   Search Engines

Although individual institutions and collections are developing web access, for heritage or for commercial purposes (if not both), the major development in access is in search engines for audiovisual material. The general population of internet users now rely on text search engines – for finding things, and for re-finding things (instead of saving 'favorites' or using other indexing approaches.

As the general public starts to look for audiovisual content in the way that in past years they have searched for text, the efforts of companies such as Yahoo, Microsoft and Google may be the single most significant factor in web access.

We have already seen how Google has tried to expand its text content by digitising libraries[18] – a move that is being countered by both the Open Content Alliance and by the European Digital Library (which has just announced plans to make "*At least six million books, documents and other cultural works will be made available to anyone with a Web connection through the European Digital Library over the next five years*"[19].

The main audiovisual search engines include:
- Blinx: claims 1 million hours of TV and video
- Google: modestly described as "the world's first open online video marketplace, where you can search for, watch and even buy an ever-growing collection of TV shows, movies, music videos, documentaries, personal productions and more". It currently has about 100,000 items.
- Yahoo: has millions of items – three million hits on the word 'of' – but much of the content is uploaded by individuals.
- Many more search engines, both free and fee-paying, are discussed here: http://blog.searchenginewatch.com/blog/041105-093901

[The phenomenon of individually-donated amateur material is as interesting as is the development of video search engines. Flickr, for instance, has altered the way people treat both the web and their own personal photographical collections. People can donate material, to share it and (hopefully) to see it preserved. Will these self-appointed repositories will actually preserve content – or will it disappear in the next dot.com bubble?]

There are also audio search engines, and music search engines. Audio Find, Alta Vista Audio, Yahoo Audio, Lycos multimedia, Singingfish and many more – just type "audio search engine" into a (text) web search engine!

6.4.   Research

Access to audiovisual material is also an area of academic research. It is distinct from the search engines just described, because they work on text (subtitles, mainly) – and distinguish themselves by how well they can find and interpret text. The only real exception are those that attempt speech recognition – but even for those the searching is then on the text arising from the speech recognition process.

But there is also research in search and retrieval on the actual images (and in some cases sounds) themselves – in the actual content rather than the text in some way associated with the content.

This review will not go into individual areas of research, but there are two overall activities of note:

1) TRECVID. TREC is the Text Retrieval Conference held for more than ten years, which allows researchers and commercial developers to prepare common test beds, and compare their algorithms on these common materials. It takes a lot of manual effort to prepare the training and evaluation material needed to develop computer-based approaches, so TREC has been welcomed as an effective contribution to advancing the state of knowledge.

TRECVID extends that approach to video, and has been in operation for four years. It has had up to 100 participants from across the world. Latest results and more information are available on their website: http://www-nlpir.nist.gov/projects/trecvid/

2) "Search Engines for Audio-Visual Content" has recently been singled out by the European Commission (EC 6th Framework, IST) for extra funding:

> 6th IST Call: in addition to the i2010 digital library strategy and new directive on film preservation (which seems to include video), the EC has put extra funding into the most recent call for project proposals: 30 M€ for "action line2.6.3 Search Engines for Audio-Visual Content", closing date 25 April 2006:
> http://www.cordis.lu/ist/so/search4av/home.html

7.   European and Global Support for Audiovisual Preservation

7.1.   EC support for audiovisual preservation

EC actions –2005 was the year when the EC made a range of responses to the need for digitisation for preservation and for digital library content.

1. **EC Strategy:** in October 2005, Viviane Reding (EC Commissioner for the Information Society and Media) announced a strategy to turn Europe's "historical and cultural heritage into digital content". The aim of this i2010 Digital Library strategy is "to digitise and preserve records of Europe's heritage — including books, film fragments, photographs, manuscripts, speeches and music — and make it available online to all European citizens."
   http://news.zdnet.co.uk/internet/0,39020369,39225402,00.htm
   Further information:
   http://europa.eu.int/information_society/eeurope/i2010/index_en.htm
   http://europa.eu.int/information_society/policy/index_en.htm

2. **EC directive:** in November, the European Parliament and Council issued a recommendation (2005/865/CE) on "film heritage and the competitiveness of related industrial activities. This document listed a range of "Commission's Intentions", including:

   - compulsory deposit for film
   - funding of research in long-term preservation and restoration of film
   - standardisation on cataloguing
   - standard deposit agreement terms covering public access

   However the bulk of the recommendations are for actions by the EC member states, including:

   - systematic conservation and restoration
   - systematic collections, to be implemented by 16 November 2006
   - introducing measures to permit reproduction for restoration
   - legislation and other measures to make deposited works accessible for educational, cultural, research and other non-commercial uses

   One reason to quote all this at length is because of the definitions included in the document:
   - 'Cinematographic work' means moving-image material of any length …
   - 'Moving-image material' means any set of moving images recorded by whatever means and on whatever medium … capable of conveying an impression of movement.

   So that definition includes videotape, which in turn includes broadcasting!

7.2.   TEL and i2010 Digital Libraries

The European Library describes itself as "a portal which offers access to the combined resources (books, magazines, journals.... - both digital and non-digital) of the 45 national libraries of Europe. It offers free searching and delivers digital objects - some free, some priced".

The interesting point to watch is when TEL will cease to call itself a portal to 45 national libraries, and establish its own resources and identity. The very recent (02.03.2006) announcement mentioned in Section 6.3, in which "*six million books, documents and other cultural works will be made available to anyone with a Web connection through the European Digital Library over the next five years*"[20] make mark the turning point.

This issue is central: will the European level confine its efforts to portals (the original role of TEL) and coordination (the original role of Minerva), or will it develop genuinely European cultural heritage activity?

The i2010 Digital Libraries activity launched with a consultation that closed in January 2006, and the announcement of the six million books digitisation project is the first outcome from that consultation.

7.3.   France-German Euro-Google

Before the 02.03.2006 announcement of a digitisation project by The European Library, there was lobbying led by the French National Archive for a commercially-driven European effort to counter the dominance of US-based search engines – Google, one assumes. This has the provisional name Quaero and is (largely) a Franco-German governmental project in the industrial/commercial domain (eurocentric search engine).   Industrial partners involved include Thompson, Bertelsmann, France Telecom, Deutche Telecom …   Again, they need business model / user case information. Quaero is some sort of parallel to IST efforts, so the EC must be concerned about how to relate to Quaero.

more information on Quaero:
- http://www.telegraph.co.uk/money/main.jhtml?xml=/money/2005/08/31/cnsearch31.xml&menuId=242&sSheet=/money/2005/08/31/ixcity.html
- www.ideesde**france**.fr/Quaero-A-European-Google.html

The TEL announcement makes the whole situation more complex.   The TEL announcement is about digitisation, and Quaero leans more toward search and retrieval – yet one would expect them to develop in very tight partnership, if not as indeed a single project.

7.4.   The European Archive

Finally, there has been one visionary who has been working pragmatically at both preservation of, and access to, 'all the world's knowledge' for a decade – beginning with the first attempt to 'archive the web'. That is Brewster Kahle of the Internet Archive and other initiatiatives. The very fact that he holds the URL www.archive.org/ shows how early and influential his work has been.

Now there is a European branch of this work, the European Archive, headed by Julien Masenes and based in Amsterdam. The website is: www.europarchive.org

Internet Archive policy has been to host anything that "belongs in an archive". This is done completely on a non-commercial basis. Several important collections have now been created and preserved already – those these are material that conventional institutions wouldn't have considered or even understood – like 35,000 items of vintage computer software, and 30,000 amateur videos of popular music concerts.

But Internet Archive also holds over 30,000 other video recordings, and over 70,000 audio items. This makes its collection of a scale where they have international importance – and the addition of European Archive brings this endeavour into Europe.

Audiovisual collections that want preservation and access could well consider the European Archive as a possibility, although there are also various national and regional efforts to act as audiovisual cultural heritage repositories. The trouble is, they are fragmented, and await initiatives from TEL and i2010 to consolidate their holdings and access. The European Archive is available now.

7.5.   The Global Dimension

International Appeal for the Preservation of the World Audiovisual Heritage

In a campaign that spread far beyond Europe, the French national broadcast archive INA petitioned the UN as part of an International Appeal for the Preservation of the World Audiovisual Heritage.   The petition gathered some 10,000 signatures from over 110 countries. The UN and UNESCO responded in October 2005 with formal statements of support, and in November at the World Summit of the Information Society in Tunis the issue of audiovisual preservation was raised directly to the head of the UN, Kofi Anan. Details are on the FIAT-IFTA website.

Audiovisual Preservation Training Workshops

UNESCO, FIAT, IASA and others have been organising training workshops around the globe.   Training is an area where a small amount of investment can have a high return – it trains people in how to best go about the business of preservation. The overall problem of funding is not solved by training courses, but the training brings people together, get local projects started on the best footing, and enables archive staff to seek funding with confidence. Potential sources of funding also gain confidence – that funds will be used for professional work following international best practice.

Training courses during 2005 included:

UNESCO: Audiovisual archivists, conservators and IT specialists from Laos, Cuba, Uganda, Ethiopia, Israel, Latvia, Poland, Romania, Denmark and Austria met for the Vienna Summer School on Audio Preservation from 11 to 15 July 2005 in Austria's capital. The UNESCO sponsored training course was run by the Phonogrammarchiv of the Austrian Academy of Sciences, in cooperation with the Austrian Mediathek.

UNESCO, FIAT, FIAF, IASA: Third international seminar of sound and audiovisual archives "The preservation of the audiovisual memory in the digital society" México, 21st-25th November 2005.

UNESCO, FIAT, IASA: FIAT / IASA Southern African Workshop on Film, Video and Sound Archives Johannesburg, 10-14 October 2005

FIAT: First Asian seminar on Audiovisual Archives "Audiovisual archives : a challenge for today, benefits for tomorrow" Beijing, 26th-28th October 2005

SEAPAVAA: Magnetic Media Preservation Training Workshop Brunei 7th & 9th May 2005-05-17. There were 22 registered participants for the workshop, there were also one or two observers at various times. Participants from RTB, the Brunei state broadcaster comprised the majority. However people were also present from other Brunei libraries and archives. There were also four participants from other countries, two from Thailand and one person each from the Cook Islands, Laos and Cambodia.

TAPE: TAPE: Training for Audiovisual Preservation in Europe - Amsterdam [28th Sept- 4th Oct 2005] . The first TAPE Workshop on management of audiovisual collections.

8.   Service Industry Responds

Industry developments – 2005 was the year of the rise of the Archive Preservation Service Specialist. There were commercial initiatives all across Europe and as far afield as Dubai and the USA, to assist archive preservation. The PrestoSpace project has been developing links with this industry, and now has a list of about 75 companies in Europe that have specialist skills and equipment for providing audiovisual preservation services.

PrestoSpace is developing a model for working with this industry, which we will be discussing throughout 2006:

- at a Service Providers Workshop in May

- at our stand at IBC in September

- at our training event in September

PrestoSpace is getting its message across, as witness the number of facilities service providers who are using the term Preservation Factory -- a fact which presumably motivated Sony to go one better are register the phrase. PrestoSpace (via INA) has now registered 'preservation factory' in major countries when Sony did not already have registration.

Part of being a preservation factory is being able to work outside conventional geographical boundaries. Historically much preservation work was done (if done at all) in house. This approach was partly based on rules preventing or limiting movement of archive content – but was largely based on conservatism. In 2005, the British Library Sound Archive awarded a major sound preservation project to a company with facilities in Brussels – showing that geographical barriers can be breached. The project is reported to be going well[21]. Material is transported by a private vehicle belonging to the contractor – with two drivers and with a rule that at least one person is in the vehicle at all times.

In an even more ambitions project, a facilities company has recently set up in Dubai – offering audiovisual preservation work with the logistics organised by air freight.

MAY 18th 2006 Vienna: PrestoSpace Service Providers Workshop

Meeting Notice: PrestoSpace is working hard to develop the most effective way of getting people with the problems (archives) and people with the preservation skills (the facilities industry) to be able to do business together. The problem is that preservation is more than tape copying. Archives have methods of **service delivery** based on their material on shelves, and they need to be able to maintain service – and add new ones – with digital materials that may not be on shelves. So the full package includes access and delivery for digital media – and includes media restoration.

PrestoSpace is developing new technology in these areas. So what is a Preservation Factory? Is it a pile of new technology? Is it a fast, cheap tape copying service? Is it replacing archives with websites? The answer is complex, and may differ from archive to archive. But whatever the full picture, the facilities industry is at the centre.

This meeting will be mainly for service providers and technologists. PrestoSpace will present its idea of the PrestoSpace Preservation Factory, and then endeavour to reach agreement with the facilities industry on how we all work together.

The TAPE technical committee with join with PrestoSpace for part of the meeting.

9.   References

1 http://presto.joanneum.ac.at/projects.asp#d2

2 This calculation is for audio and video tape, not for film. Some film can last for 400 years, but total resources for that form of preservation/conservation are also expensive, and only a few archives have adequate storage for a true 400-year conservation plan.

3 Calculation: 20 years at 1.5% = 30% saved, so 70% lost. After 20 years, all resources dedicated to rescuing what is now new material, but will then be 20 years old and needing urgent attention.

4 TAPE web site = http://www.tape-online.net/
  TAPE questionnaire = http://www.tape-online.net/questionnaire/

5 PRESTO Archive Preservation and Exploitation Requirements, R Wright and A Williams, June 2001. http://presto.joanneum.ac.at/projects.asp#d2

6 It could be argued that a better estimate would be to split the 'not knows' by the ratio of 'have a problem' to 'not present' responses, rather than splitting them equally. That method takes the percentage of 'have a problem' material to 82%.

7 http://www.fiatifta.org/projects/information/fiat/digital_survey/

8 http://mic.imtc.gatech.edu/

9 http://www.focalint.org

10 http://presto.joanneum.ac.at/projects.asp#d2

11 http://www.prestospace.org/questionnaire/index.php?sid=3

12 http://www.tfpl.com/questionnaire/ymlac/ymlac01.cfm

13 http://www.oldfilm.org/nhfWeb/about/ourMission.htm (which mentions the survey, but no results yet)

14 http://www.surveymonkey.com/s.asp?u=905921228156

15 Probably access copies should be counted as preservation and as access, in which case the TAPE results on motivation for digitisation would be 60% preservation, 70% access.

16 From "Access to Audiovisual Archives – New Methods" by Richard Wright BBC Information & Archives (in press).

17 For access to the BBC archives for example, the general public has to use the British Film Institute (http://www.bfi.org.uk/collections/rvs/index.html) and the British Library Sound Archive (http://www.bl.uk/collections/sound-archive/recorded)

18 books.google.com/intl/en/googlebooks/about.html

19 http://www.europa.eu.int/rapid/pressReleasesAction.do?reference=IP/06/253&type=HTML&aged=0&language=EN&guiLanguage=en

20 http://www.europa.eu.int/rapid/pressReleasesAction.do?reference=IP/06/253&type=HTML&aged=0&language=EN&guiLanguage=en

21 personal conversations with both British Library Sound Archive staff, and with the contractor.