Archival Sound Recordings Project

Lessons Learned

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Introduction

The Archival Sound Recordings (ASR) Project was funded by The Higher Education Funding Council for England (HEFCE) via the Joint Information Systems Committee (JISC). The funding was provided as part of the JISC's Digitisation Programme and sought to make 3,900 hours of audio from the British Library Sound Archive available online to the higher and further education communities. Requirements included compliance with open and interoperable standards such as the Open Archives Initiative for metadata harvesting and international standards for audio digitisation, together with World Accessibility Initiative compliance at level A and implementation of a web interface in line with Special Educational Needs and Disability Act (SENDA) 2001 legislation. The project sought to implement the newly developed Metadata Encoding and Transmission Standard (METS)[1].

Executive summary

This report focuses on the issues that arise when undertaking a complex and ground-breaking project. It documents the management of external contractors, complicated rights clearance processes, issues with digitising sound, sustainability of digitisation and the delivery of online resources.

The ASR project has been a success, with the majority of the materials online at the time of service launch. Much of the audio digitisation was carried out to international standards by an external supplier, with smaller amounts undertaken in-house. Documentation was undertaken by an internal team by extracting data from the Sound Archive catalogue (CADENSA). The extracted data was enhanced with segmentation marks, standardised textual edits and output as xml. The resultant metadata was then compiled and exported as METS by the digitisation supplier. The resulting digital objects were provided in two access formats for streaming (WMA) and for download (MP3). Rights were cleared with private individuals, broadcasters and commercial vendors both by the in-house team and by external suppliers. Some content packages were enhanced with images of the original packaging (e.g. Beethoven String Quartets). Web delivery functionality was developed by the British Library's Web Services Delivery Unit. Interface testing was conducted online and in lab-based conditions. An academic user panel provided guidance on delivery and content selection.

This report documents the learning experience of the original Archival Sound Recordings project (2004-7). Its application will prove invaluable in the successful execution of the second, recently funded, phase of work, the Archival Sound Recordings 2 project (2007-9).

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[1] The METS schema is a standard for encoding descriptive, administrative, and structural metadata regarding objects within a digital library, expressed using the XML schema language of the World Wide Web Consortium.

PROJECT PLANNING, IMPLEMENTATION & COMMUNICATION

LESSON 1 – Business Case Development

⇒ **The trajectory from the call for proposals to submission deadline was short and this meant that considerable effort was required to complete the proposal in time. At the same time there was a natural tension between the JISC's funding criteria and the Library's business requirements. While there was a high degree of overlap, they were not identical: this situation is normal with bids for external project funding.**

Background
Developing a business case is as critical as answering a call for proposals. Both activities are interdependent but an internal business case is not a funding proposal. The internal business case needs to state why funding is being sought and what effect the project will have on core business. More importantly, there needed to be a thorough assessment of what would be committed by the Library. This required consultation with <u>all</u> the potential stakeholders and was a time-consuming activity. Funders are less interested in the internal organisational dynamic but the Library needed to fully understand the implications for its core business of initiating this project.

Recommendations
– Establish an outline definition and case for the proposed project separately from the funding proposal. This should show how the vision will be implemented, concentrating on the impact to core business.
– Appoint a Project Manager in addition to the Senior Responsible Officer (SRO) at this stage. Together they should lead the project through its SHAPE PROJECT Phase
– Develop a Communications Matrix to ensure that all stakeholders are identified and fully consulted.
– The business case should inform the funding proposal not the other way around.

LESSON 2 – Deciding on and assessing inputs and outputs

⇒ **Project outputs are only as good as the inputs. Planning relies on good data about inputs so that outputs are realistically planned. Assessment of collection items to be digitised under the ASR project was not done with sufficient rigour, or by those with sufficient expertise.**

Background
The core business of the Archive is to acquire sonic materials, document them, store them ensuring their preservation, and to provide access. Working with legacy collections is challenging as they are sometimes less well documented (or represented only by a collection

level description), or dispersed across a collection area (e.g. Classical Music).

Assessing condition, duration and configuration of legacy carriers (e.g. ¼ inch magnetic tape, 78rpm coarse-groove discs or "acetate" direct-cut discs) is time consuming and cannot be done effectively on an *ad hoc* basis by inexperienced staff without risk of damage to the material. The challenge is that existing resources need to be stretched to carry out the assessment work in advance of funding being allocated.

Curators will know some collections intimately, especially if they have been involved in their acquisition, but in many instances they may only know a collection at a high level. Audio requires playback devices to access it, and visual inspection often only tells part of the story; the lack of exhaustive auditioning at this stage can lead to skewed data with impacts later in the project.

The technical specifications for the bid, and later for the Request for Proposals, were written from scratch because the BL standards were not sufficiently documented at that stage. This meant they were specified with the needs of the project in mind rather than with a focus on archival long-term digitisation strategy.

The sampling bit rate specified at the time was lower than the present British Library standard because the bid was made in 2003 when there were issues of capacity (storage was more expensive). Also, the Library's Digital Object Management System (DOMS) project was at an early stage. Understanding clearly the information requirements of a supplier is also necessary because on the Supplier side, for example, it is not the number of audio hours that varies cost; it is the quantity of discs to be digitised.

Recommendations
- Dedicated resources should be appointed to carry out assessments. They should have enough experience to ensure that adequate data is available to those who make business decisions.
- Curators' time to select appropriate collections should be factored in to the bidding process.
- A detailed log of candidate collections to be digitised should be maintained to allow for informed and speedy selection once a funding call is made.
- Curators should consult extensively with technical colleagues prior to recommending a collection for digitisation.
- The process of creating master, access, and playback copies developed during the project should be integrated into British Library practice and absorbed into the digitisation strategy.
- Estimating criteria should not concentrate solely on duration as the duration of each individual item can vary independently of the nature of the physical carrier. For example 78rpm disks should be estimated by the number of sides rather than by adding up notional minutes.
- Technical standards need to be rigorously documented and routinely updated.

LESSON 3 – Developing Product Descriptions[2]

> ⇒ **Without fully comprehensive Product Descriptions a production project will not deliver required outcomes. Business cases and initiation documents are high-level expressions of required outputs (outcomes). Product descriptions state all the requirements for the delivery of a particular output. Product descriptions can also be created to describe reporting tools and mechanisms so that the Project Manager can prepare appropriate, timely and effective information about the outputs to the Project Board and to Suppliers.**

Background

The Project Board needed early and specific information on project outputs. However, in some cases they had not signed off on the relevant product description so this information was not available when required. Product descriptions are also necessary to evaluate whether the products have actually been satisfactorily delivered prior to sign-off by the Project Board.

Technical product descriptions are especially useful to the Project Team as they provide a clear and early statement of the purpose of the product, and describe the processes, requirements and quality criteria for that product.

Recommendations

- Effective delivery against budget, time, and quality targets is highly dependent on timely completion and sign-off of product descriptions.
- The use of product descriptions needs to be better understood in the Library.
- Project Boards need to understand what the product descriptions are for and need to sign them off.
- The Library and its supplier need to formally endorse any relevant product description as part of their contractual process.

LESSON 4 – Project Boards

> ⇒ **Project Boards need to balance the sometimes competing demands of stakeholder interest and the successful delivery of project objectives and outputs (outcomes).**

Background

The Library has many projects running at any one time. Project Boards include colleagues with a business-related interest in the project. This can result in Board members appearing to act as gatekeepers rather than as supportive members of the Board. There were external requirements that the Project Board needed to meet regularly (monthly) and this sometimes meant that there was little progress to report and no decisions to be made. Project Management methodologies such as Prince2 state that Project Boards only need to meet at the beginning and end of stages or when there are exceptions to plan.

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[2] the structured description of the purpose, form and components of a product. It should always be used as a basis for acceptance of the product by the customer.

Members can gain a better insight into the business by casual interaction with the project team.

Recommendations

- Project Boards should be constituted of people in a position to directly support the execution of the Project rather than inclusive of all connected interested parties.
- The ASR board included at its discretion a supplier representative and due consideration of this possibility is recommended for future projects.
- Project Board members should be given the opportunity to see what is being delivered and to verify that it is actually delivered. They should be encouraged to come to the "shop floor" for this purpose from time to time.
- Irrespective of the frequency of meetings, project reports should be submitted monthly to project Board members.
- Project Boards need supplier representation, funder representation and user representation.

PROCUREMENT

LESSON 1 – Defining requirements

> ⇒ **The EU Procurement for digitisation services took 10 months (expected to last only 6 months). Suppliers have communicated that they find difficulties in responding to very detailed Requests For Proposals (RFPs) if these do not express exactly what is required. Much of the suppliers' time can thus be spent proposing solutions that have been alluded to as potential solutions in the RFP. This can also result in a more protracted negotiation stage.**

Background

Generally the procurement went well and the right supplier was appointed with a fair Best And Final Offer (BAFO). The BL decided to undertake an EU Negotiated Procedure because it was seeking a variety of solutions to the metadata requirements of the ASR project. It also sought diverse solutions for mass digitisation of audio materials. Furthermore, there was a perception that an external supplier might also handle the web delivery aspect of the project, which was ultimately not the case. The British Library recognised that requirements were not easy to define and that a negotiate procedure would take longer to complete. The publication of an RFP, rather than a statement of requirements, proved the best solution given the circumstances.

Recommendations

- Time could be saved through the appointment of a specialist consultant for those requirements that are hard to define. For

example the implementation of the Metadata Encoding and Transmission Standard (METS).

- Regarding metadata standards, the requirement should be expressed in terms of functional outcomes, rather than prescribing specific solutions.
- More preliminary work on the technical requirements and standards saves time in liaising with the supplier during the procurement.
- Where a novel technical solution requires original development work, consideration should be given to developing the technical expertise in-house, limiting the supplier role to production.

LESSON 2 – Negotiation

⇒ **During the negotiation phase there was an attempt to define detailed solutions. For example, developing a detailed METS definition at pre-BAFO stage. This meant that rather than negotiating, both parties became bogged down in too much detail.**

Background

The EU Negotiated Procedure allows for negotiation with a range of short-listed suppliers and provides each of those suppliers with an equal opportunity to make proposals and to clarify requirements. Again, this process went well. The supplier will only do sufficient work to reach the Best And Final Offer (BAFO) stage. The client is trying to get as much information about the supplier as possible and ensure a best price for the work. The danger for the client is to treat the negotiation as a consultancy in which the supplier may challenge the client's requirements. This can lead to lengthy exchanges and may put the developing relationship at risk.

Recommendations

- Developing specifications is costly, and suppliers cannot be expected to undertake this work during procurement. A definition and benchmarking stage is recommended post-BAFO to facilitate standards and specification. Time spent at this stage will yield benefits during later stages of the contract.
- For developmental projects, consideration should be given to running this benchmarking stage as a small project in its own right. The benefit would be in undertaking the full procurement as a non-negotiated procedure (reducing time scales) as requirements would be better defined.
- Procurement for this mini project would be open and could be advertised in the Official Journal of the European Union (OJEU). The subsequent, larger procurement would allow those companies not successful in bidding for the mini project the opportunity to bid for the larger project against more clearly defined requirements.
- If the above approach were followed, it would be necessary to ensure that the company carrying out the mini project would have no advantage over other bidders in the larger procurement.

LESSON 3 – Providing sufficient information

⇒ **A) Suppliers were concerned that they were either over- or under- estimating at BAFO stage, as they had not had sufficient time to inspect the archival material (original carriers; 78s, LPs, tapes, *etc*.).**

⇒ **B) The content to be digitised was viewed by the BL in terms of audio carriers rather than as collections. The successful supplier has communicated that they needed more information about the content of the collections.**

Background

The BL did provide a small amount of material for inspection and information was conveyed in the RFP but the emphasis had been on physical and technical specificities. The short-listed suppliers asked for this during procurement, but the BL found this request hard to facilitate because the archival material in question had yet to be extracted from the overall collection. It was recognised that the provision of very small number of samples was not ideal, but it was all that could be offered at the time.

Recommendations

− Suppliers need a good understanding at the procurement stage of the content to be digitised and the client should facilitate this.

− Suppliers need at least one full day with a representative sample of the archival material, including the opportunity to listen to it and to inspect the carriers physically.

LESSON 4 – Estimation of materials

⇒ **The number of audio hours digitised often fell short of the estimates for the respective tranche of material. Additional costs were incurred in meeting the contracted overall target of 3,900 hrs of audio.**

⇒ **During the life cycle of the project, some collections had to be substituted for technical or rights reasons. This meant that un-planned and un-budgeted additional selection and validation work had to be done.**

Background

Analogue audio is very difficult to estimate in terms of hours without real-time playback, because carrier length is often a poor indicator of audio duration. Carriers are often not filled to capacity; for example, there may be blank sides within a sequence of cassettes. If a BAFO is made for a certain number of hours and this is not met, there will be extra costs incurred (requiring a request for change). However, this is better than overestimating and having to pay for 'blank digitisation'.

Recommendations

− The number of metadata (METS) files created is a more meaningful measure of output performance than the number of audio hours digitised, and should therefore be used for reporting progress.

- The exact number of hours for any collection or for the entire project is of little relevance to the audience; rather ensure that the best quality and most useful materials are presented to the audience.
- Where broad estimations of duration have to be used, reduce estimates based on number and type of carrier by 15% for un-published and by 10% for published recordings.

LESSON 5 - Consultancy

⇒ **The consultant appointed to support the process was also working in parallel on the procurement for the British Library's 19th Century Newspaper digitisation project. This meant that the consultant's availability was limited and this may have added to the time taken for the procurement. Having said this, the consultant did support the Library well in achieving a positive outcome.**

Background
The Library's Contracts and Purchasing Unit appointed an external consultant to manage the work on this OJEU procurement. It was the right decision to appoint a specialist for this kind of procurement.

Recommendations
- Where necessary appoint specialist procurement consultants to facilitate the process.
- Consultants should only work on one large-scale procurement at a time.

LESSON 6 – In-house *versus* external digitisation

⇒ **Some collections could have been done more economically in-house.**

Background
Where collections are technically complex and require a high level of skill and care, there is a saving to be made by doing the work on BL premises where content experts are on hand. Large-scale mass digitisation can be more economically viable if done outside the Library where economies of scale come into play, but this situation is changing because the internal Technical Services team are now able to ingest multiple audio streams simultaneously.

Better intelligence about the physical characteristics of collections could have led to decisions on selection for internal or external digitisation being made earlier in the project rather than during procurement.

Recommendations
- Careful consideration needs to be given to the economics of digitisation in-house and externally. It is only worth out-

sourcing if sufficient economies can be made because logistical overheads can be high.
- Ensure that adequate information is on hand to enable informed decisions to be made on which content to digitise externally before the RFP stage of procurement.
- Funded projects should consider carefully before out-sourcing all digitisation work. The development of internal facilities could lead to longer-term savings, as equipment is re-used for future digitisation work.

CONTRACT MANAGEMENT

LESSON 1 – Clarifying requirements

⇒ **Developing a good relationship with the supplier is paramount. A benchmarking period built into the early part of the contract is important with new un-proven processes. The alternative is to digitise small amounts of material early on and then to increase production in subsequent stages. Digitisation (audio transfer) went very well and the supplier showed sufficient flexibility, but without this there could have been a considerable cost increase.**

Background
The supplier was well versed in the finer points of high-end audio transfer (e.g. 78rpm one-to-one material) but it was necessary to develop new working methods in order to ensure quality when ingesting multiple streams simultaneously, and this took time. A number of unexpected issues were encountered such as blank sides in long-sequence interviews, and splices and low signal on some carriers in a sequence. Fortunately the BL had identified a supplier with sufficient technical expertise and flexibility to handle most issues. During the course of the project the supplier "up-skilled" its staff resource and invested in new equipment to facilitate both mass and one-to-one digitisation. At one point there was a serious delay in launching large scale DVD-R writing using a robotic system, but this was resolved by the BL's supplier working with the supplier of the robotic system to facilitate the requirements of the project. This has impacted on the ASR team's ability to undertake QA routines. QA is a major consideration when digitising with an external supplier, because there is a dependency between the supplier's delivery and the promptness of the QA so as to avoid further delays down the production chain.

Recommendations
- Set up a benchmarking and requirements refinement stage early in the contract.
- Ensure during procurement that the supplier is aware that issues will arise during the course of the work and that the supplier will need to be flexible enough to deal with them.

- Discuss at the outset all the formats to be digitised, and work to find agreed solutions for each carrier type.
- Take a 'Working Together' approach to find solutions that work for both parties.
- Ensure that QA is carried out promptly even if there have been upstream delays.

LESSON 2 - Differences in business culture

⇒ **The supplier endeavoured to meet reporting requirements but there have been issues with timing, as on each occasion data needed to be collated from diverse systems and processes at the Supplier end.**

Background

There have been reasonable levels of reporting over the life cycle of the contract for digitisation services. Requirements will naturally change over the course of a project, or the supplier might find difficulties in servicing some requirements once work has commenced. There are significant cultural differences between different organisations and smaller contractors can find difficulties in fulfilling the expectations of larger organisations such as the BL. The BL's systems for monitoring and compliance are fairly advanced but compliance, QA, and monitoring may not necessarily be as well developed at the supplier end. For example the Library's need to report Key Performance Indicators (now Balanced Scorecard) may not be well understood by small suppliers, for whom the bottom line and delivery against budget is normally paramount. Reporting can become especially complicated when the supplier needs to draw information from a number of diverse system processes (as in this case) and collate these to make unambiguous reports against performance targets.

Recommendations

- The RFP needs to be specific about reporting requirements and set down clear rules to ensure that the required information is delivered on time.
- The Supplier needs to build in costs for set-up of effective reporting mechanisms.
- Service Level Agreements (SLA's) should be tight enough to ensure responses within 24 hrs for certain requests, or within a week for others.

LESSON 3 – Contractual detail

⇒ **In the RFP the rules for segmentation/fusion/index/ structuring were not well defined, or in some instances were not expressed at all. This was carried forward into the contract, causing misunderstandings with the supplier.**

Background

Scoping for the ASR project was a complex undertaking because collections are often heterogeneous and may be held in separate locations. In the case of the ASR project this meant that scoping relied on exploration of catalogue records, some hands-on investigations, and in some instances generalisations based on curatorial knowledge. Some collections were previously only documented to accession level, which caused problems for the supplier in the segmentation of master recordings (e.g. one archival master tape may contain 30 distinct recordings, which for access purposes need to be presented separately online).

Recommendations

- Audio digitisation requires careful consideration of how the resulting digitised materials should be configured and presented. For example a set of 78rpm discs needs to be examined to ensure that the sequence in which they must be digitised is communicated to the supplier. This analysis should be carried out by the project team prior to procurement.
- The time-consuming work of carrying out such mapping exercises should not be done under pressure during procurement.
- In essence the collections need to have been carefully assessed for technical requirements prior to procurement. Curators may be familiar with collections within their scope but this can be at an intellectual level rather than in relation to technical issues (particularly with legacy collections). However, it is important to find out everything the relevant curator knows about the selected collection as they may have information to communicate that is not readily apparent from other sources.
- Appoint a systems analyst early on to create use cases within the anticipated workflows.

LESSON 4 - Project Management

⇒ **A project manager on the Supplier side should have been appointed from the start to ensure early clarity around deliverables and time scales. The measurement tools used for setting project targets were unfamiliar to the Supplier and were often too detailed for their purposes. Product descriptions were also issued late and not signed by both parties, which meant that they were not available for reference when they were most needed. The project's success owes much to flexibility on both sides, which meant that project management deficiencies could be remedied through negotiation.**

Background

A commitment to project management methodologies is a fundamental requirement for any Supplier wishing to compete for work of this nature and on this scale. Again, smaller suppliers are not necessarily well versed in the finer points of project management. General principles are well understood but projects like ASR require

carefully developed project management structures and tools in order to ensure effective control.

The benefit of working with smaller suppliers often outweighs the potential lack of project management rigour, but an agreed project management method still has to be followed. In the case of the ASR project the plans included project deliverables not directly under control of the Supplier and this led to confusion as to deadlines. Plans indicating all project activities were provided so that the supplier could understand dependencies and gain a feel for overall project objectives (digitisation being only one strand). Numerous and lengthy meetings were held to agree plans, but the documentation of agreements reached was provided in the form of MS Project plans, and this was not effective as the Supplier had little experience of using this software tool.

Recommendations
- Make the appointment of a professional project manager on the Supplier side a contractual requirement.
- Keep deliverable schedules simple and supplier-specific.
- Develop project descriptions in consultation with the supplier and ensure both parties sign off on these.

LESSON 5 – Sharing data between client and supplier – workflow tracking

> ⇒ **No agreement was made as to which tools were required for tracking files/carriers beyond the stated need to develop a digitisation log. This was created but it was not detailed enough to track/monitor master file digitisation in the way the supplier would have found useful. The interpretation of data was to some extent subjective. A tracking database with Root IDs entered by the project team at the time of shipping, shared by both parties, would have facilitated better tracking and processing.**

Background
The master Root ID list would have ensured that when carriers were received they could be checked against the list by the Supplier. If errors had been introduced on Supplier systems this would have been easy to monitor and resolve. However, a list of 8000 lines is hard to manage so a database system would have to be developed.

Recommendations
- Use a database to track all production, agreeing in advance the necessary data specification.
- Consistency checks need to be implemented when data is received at the supplier end.
- Procedures for Quality Assuring process data need to be agreed before production starts.

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│ TECHNICAL                                                     │
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LESSON 1 – In-house *versus* out-sourced

⇒ **A) BL Sound Archive Technical Services could have carried
out the smaller amounts of digitisation such as ripping
CD-Rs as this would have been more cost & time efficient.
Out-sourcing mass ingest work has not really delivered
the benefits usually associated with this approach. The
supplier has communicated that it underestimated costs
because it had not envisaged having to do individual
track selection from compilations ripped in their
entirety. The key lesson here is the benefit of
purchasing a ripping station to enable this kind of work
to be done in-house, unless very high volumes need to be
digitised where economies of scale could apply.**

⇒ **B) Suppliers charge for each task and if these are not
specified up front, time is lost and costs can escalate.
In this case the Supplier invariably met the BL half way
when it came to changing requirements but changes still
take time.**

Background

Early on in its life it was decided that the ASR project, beyond its
key objectives, had a secondary objective in testing the validity of
undertaking large scale audio digitisation out-house with an external
supplier. Further to this was the assessment of mass digitisation
solutions for audio. While it was recognised that ripping CDs & CD-Rs
can easily be done in-house, there were at the time no in-house
facilities for multiple ingest. The BL Sound Archive has recently
acquired equipment for parallel mass digitisation in its new
technical facilities at St Pancras.

Recommendations

- Subject to extraneous factors, in-house working is advantageous
  as control of the archival material is much easier.
- It may be more cost-effective to buy in devices which could be
  funded from the capital element of any bid.
- Only use suppliers for tasks such as CD ripping[3] if large
  volumes are involved.

LESSON 2 – Skills acquisition / knowledge transfer

⇒ **The in-house Technical Services section has not benefited
as much as the supplier from the skills learned during
the project.**

Background

The audio digitisation work was undertaken by an external supplier.
The major factor in the decision to follow this path was the lack of

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[3] the process of copying the audio and/or video data from one media format, such as
Digital Versatile Disc (DVD) or Compact Disc (CD), to a hard disk.

internal technical facilities. While this provided some advantages in managing the work through a clear contractual framework, it had the disadvantage of limiting the exposure of the in-house technical team to this strategically important area of work.

Recommendations
- Consideration should be given to facilitating more in-house digitisation on a large scale.
- Technical familiarity with collection items is much more advanced internally than it ever can be externally. Use internal expertise where it is important to achieve the very best results.

LESSON 3 – Projects working in isolation

⇒ **Occasionally the project team seemed to be working in isolation from other Sound Archive colleagues. For example, there was a session on the use of the Integrated Proxy Indexing software used for segmentation and documentation of audio streams, but this was not followed through with additional training/meetings. The roundtable meetings with Sound Archive colleagues were useful but infrequent.**

Background
The ASR team organised a series of quarterly round table meetings to which internal stakeholders where invited. These meetings were attended by curators, technical staff and Sound Archive Managers. Feedback from Technical Services indicated that there was not sufficient technical detail in the content of these events. The round table meetings were quite general, originally being conceived as update sessions on progress.

Recommendations
- Special meetings with Technical Services and Documentation teams should be run on a monthly basis to look at how standards are being implemented and how the work with the supplier is progressing at a technical level.
- Work on the collections should include consideration of life-cycle collection management issues, involving internal BL stakeholders as appropriate.
- Skills should be shared between the ASR team and Technical Services with consideration given to short-term staff exchanges.
- Job shadowing days would ensure more effective skills and knowledge transference.

LESSON 4 – Projects *versus* core business

⇒ **The ASR website is aimed at the UK higher and further education community. The BL seeks needs to serve, through its Sound Archive, a wider audience with a larger range of services. A project such as this one has a set of defined tasks and processes, which do not always fit well with on-going Sound Archive activities.**

Background

There were occasional internal tensions between the project and in-house technical services around the impact on pre-existing workflows of significant demands from the project for advice, document review, and QA work, and issues of control and policy were sometimes apparent. The main factor in this is the need to recognise that the ASR project was much more than a digitisation project: the creation of a Web service delivering audio was the main objective. There were some similar tensions between the Project and Sound Archive curatorial colleagues around issues such as selection and documentation.

Recommendations

- Projects should not be considered as intrusive to core activities, but as opportunities to extend and improve those activities.
- Better communication from the project would aid better understanding of how the project is being run (see also Lesson 3 in this section).
- Projects objectives should align with BL strategic objectives.
- The Archive needs to develop its understanding of who its customers are. They will increasingly be online and frequently engaged in education. They are becoming more demanding and want services fitted to their needs and expectations.

LESSON 5 – Digitisation systems

⇒ **The Supplier's initial workflow for digitisation was heavily reliant on specialist audio digitisation system, which is a "closed" system. The system is good where inputs are uniform and consistent but QA is not effective where heterogeneous material is concerned.**

Background

Digitisation systems were available for dealing with large quantities of high quality material such as broadcast tape, and they worked well for this type of material. The Supplier had anticipated using this type of system for much of the ASR material but found it not to be suitable. Other issues with such closed systems are the difficulties in migrating digitisation process data to other platforms.

Recommendation

- Do not assume that digitisation solutions appropriate to large-scale broadcast archives will be useable for heterogenous materials kept in national or general sound archives.

LESSON 6 - Digitising issues

⇒ **Issues arising from the difficulties in scoping content for the project meant that the Supplier had to face a number of challenges early on. These were resolved through open dialogue with the Supplier. For example one reel of tape had up to 120 splices. Many of these came undone when the tapes where being digitised. Blank sides are a frequent issue with oral history cassettes.**

Recordists are not always professionals and they may record at varying speeds on one or two sides or a tape. They may not understand microphone positioning or how to set recording levels. The supplier showed a good attitude to work not detailed by the contract and met the BL half way in reaching solutions.

Background

Issues with legacy carriers are hard to estimate. During contractual negotiations only a proportion of the challenging issues will come to light. It is therefore important to have an open two-way dialogue and to recognise that such issues will exist. In some instance changes will have to be agreed and these will cost the client money but in many instances a work-around can be found or tasks can be rescheduled.

Recommendations

- Keep communications open.
- Find a work-around wherever possible.
- Look at doing the digitisation in a different way.
- Make sure all changes are agreed in a change request.
- Leave some contingency in budgets if funding allows.

DOCUMENTATION & METADATA DEVELOPMENT

LESSON 1 – Implementing standards

⟹ **A) Developing a schema for the Metadata Encoding and Transmission Standard (METS), the standard adopted for the project, was the most challenging aspect of the work. The theory was well understood in the BL but the technical implementation requirements were not. This cost time during the procurement and there was a need for changes during the implementation stage.**

⟹ **B) The Supplier did not have an in-house expert available to deal with the technical implementation and was reliant on a subcontractor. An external consultant was engaged by the subcontractor to devise the METS schema but it was expected that the BL would work on the iterative development of the schema; something the BL had not anticipated.**

Background

- Suppliers need to provide the solutions. The client may not have the expertise to make all the right decisions. This is why the client seeks an external solution. On the other hand the client needs to provide the supplier with sufficient information on which to base the solution. METS was at the time a new technical process and the Supplier had a lot to learn about its implementation, though this was not apparent even at the BAFO stage. It should be borne in mind that the project

sought to develop a complete metadata solution for the presentation of archival audio as a web service. The legacy of this development work is a system that can be used for future online delivery of audio from the entire Sound Archive. The development costs may appear at first glance to be relatively high but it should be noted that development work is always expensive. The Supplier could have developed the solution and then presented it in its entirety. At that point the BL could have had it independently evaluated and asked for changes.

Recommendations
- A supplier needs an in-house expert to aid them in managing specialist contractors. Sub-contracting adds an additional management risk and in any case requires tight management in a project context.
- METS has provided a strong archival solution and though the development was extremely challenging, the correct solution was ultimately provided by the supplier. Its use should, however, be evaluated at BL Digitisation Programme level on the basis of costs and benefits.
- The Library also needs to appoint an expert in the technical implementation of standards, preferably within the project team.

LESSON 2 – Sharing data between client and supplier – Unique Identifiers

⇒ **The Unique Identifier (UID) rules as agreed pre-BAFO were not always followed correctly during the implementation of the project. It is time-consuming to correct errors once they have been introduced to systems. The root identifiers within the file names were based on Sound Archive shelving barcodes. Unfortunately these were not scanned by the BL when collection items were shipped. Manually created spreadsheets may lead to inaccuracies in resulting UIDs. Initially there was no quality assurance agreed for UIDs, barcodes and root IDs**

Background
Developing systems for sharing information between client and supplier is time-consuming and often not sufficiently thought through before work commences. A series of barcode errors was accidentally introduced to Supplier systems. This created a series of further errors as processing proceeded across a different system. The supplier also introduced errors when there was a lack of clarity as to which file-type signifier to use in that element of the UID.

Recommendations
- Processing barcodes should only be done using a barcode-scanning device.
- Consistency checks need to be implemented when data is received at the supplier end.
- Procedures for Quality Assuring data need to be agreed before production starts.

- A root ID master document must be shared between client and supplier to facilitate checking on both sides.

INTELLECTUAL PROPERTY RIGHTS (IPR) CLEARANCE

LESSON 1 – Defining a strategy

⇒ **In the early part of the project the notion was that the Project Team Leader would be responsible for IPR clearances for the ASR content. Identification of an individual with the necessary mix of skills and experience turned out not to be feasible. A strategy was outlined in an early risk assessment report but this was not thoroughly reviewed once the project had started. Developing a strategy for each content package in consultation with the curators and the clearance supplier would have meant a more consistent approach. This was agreed at management level, but curators were less involved. The fact that there was a lack of pre-existing detailed information on many recordings meant that a strategy was hard to devise. This meant that lists of contributors and performers could not always be supplied to the clearer. Again a strategy for dealing with this issue could have been formulated at an early stage.**

Background
The complexity of clearing so many rights across such diverse content was not well enough understood, though it was recognised that it would not be straightforward. The commissioning of a risk report was the correct approach but this needed to be followed up with a strategy based on the report's findings. Rights clearance is a very time-consuming, and thus expensive, activity. The main concern at the beginning of the project was cost but time became the bigger challenge in the event.

Recommendations
- Start rights clearances as early as possible.
- Engage with BL specialist expertise in licensing/rights clearance from the outset.
- Construct a detailed strategic approach for each content package (collection).
- Liaise with Curatorial staff face to face.
- Always forecast on the basis that clearances take more time than initially thought.
- Do not constrain clearance by setting hard and fast delivery dates as these have a heavy dependency on external rights owners not connected with the project.
- If deadlines are set be prepared to drop content or re-plan work.

LESSON 2 – Deciding ownership

⇒ **Research is challenging where there is little data available. Discovering who owns the recording is the first step, but discovering who the contributors are can be very time-consuming. Archives do not always have lists of contributors available or relevant documentation to hand. This may need to be created during the digitisation process. Once the owners are known, one needs to find their contact details but this can still only be the start of the process; negotiation may have to follow. It is not unusual to find out that, once the material is up and being accessed, there are some previously un-recognised un-cleared rights in the content package.**

Background

The BL decided early on to make very conservative financial offers to rights owners once they had been identified, and wherever possible to clear rights for free, the main concern being to keep cost down.

Recommendations

- Work consistently through the collection to assemble data.
- Make structured lists of content and of interested parties.
- Consider in-house research.
- Have weekly update meetings to ensure all rights issues are being adequately addressed.

LESSON 3 – Clearing rights within projects

⇒ **Clearing rights is best approached by specialists. The Library's corporate Contracts and Purchasing Unit became involved late on and this meant that procedures that should have been followed from the start were only implemented later on.**

Background

The strategy for clearing rights was partly dictated by funding. Much time has been spent clearing rights and production has sometimes been adversely affected by dependency on this process. Expertise in clearing audio rights is not easy to buy in and there was no expertise within the Library in the early stages of the project.

Recommendations

- The BL legal team should lead clearances and should be adequately resourced for that role.
- Licences should be drafted early on in full consultation with the legal team.
- Lists of contributor names should be extracted in full from any available documentation prior to clearance starting.
- Careful consideration should be given to the strategy for each package with work allocated to those with the particular skills or contacts to complete it within budget.

LESSON 4 – Using external clearance suppliers

⇒ **(A) External rights clearers brought particular skills to the project. They were allocated a budget and a negotiating brief. It was not always easy to keep the work on schedule: the reporting requirements of the project were clearly more demanding than anticipated. It was difficult to validate the quality of the research work on the limited evidence provided by the documentation supplied to the project team.**

⇒ **(B)The documentation provided to clearers was sometimes not sufficient and this led to confusion and had an effect on (A).**

Background

Once it was decided that the Project Team Leader could not be involved in rights clearances it was decided to appoint external suppliers to do the work: one expert in published music and the other expert in clearing educational materials.

Rights clearers need clear documentation. For example, they need to identify contributors, authors or musicians. Lists need to be drawn up in order to identify names from any catalogue, labelling, or documentation accompanying products. Clearers need distinct numbered master lists otherwise they have no means of checking

Recommendations

- Use internal staff to undertake initial research especially with collections where contributor names are known.
- Only hand over documentation to the clearer once it has been fully compiled.
- Make sure that any change of content is communicated to the clearer together with the relevant information to complete the new clearances.
- Provide clear numbered master lists of contributors or authors or recording companies.
- Use a product description including a list of what needs to be cleared for each item as a basic tool to help manage the process.

LESSON 5 – Managing IPR risk

⇒ **It often takes much longer to clear rights in a selection of recordings than it takes to digitise them. Legal advice should be sought for any commercial clearances. Await claims are only acceptable once all research avenues have been exhausted.**

Background

The rights report provided clear advice on what would need to be done and what the challenges would be; however, it concentrated on the financial aspects. Engaging with commercial publishers has risks attached in that they can just say no, or will want to impose draconian restrictions on what can be done with their content, or will just stall indefinitely.

Recommendations
- When approaching commercial owners plan for long negotiations.
- Start clearances as early as possible.
- Remember, licensors own proprietary content, not the archive.
- With unidentifiable rights owners, retain evidence of the attempt to locate them, so that should they come forward in the future there is documentation to prove that best efforts were made.

PROJECT RESOURCES & INTERNAL COMMUNICATIONS

LESSON 1 - Communicating across teams

⇒ **There was a lack of internal communications to the ASR team especially when it came to communicating change. There was a feeling within the team that there were ever-changing goal posts.**

Background

Projects are about continuous change. There is a maxim that says 60% of a project is planned the rest is chaos. It is in fact at this chaotic level that the most innovative work takes place, but project teams often feel extremely uncomfortable with this, especially in an environment where ongoing operational activity is standardised and well understood. The nature of projects is to some extent to challenge existing structures and to test new ways of doing things. Projects can be seen as a threat because on occasion it is necessary to take unconventional approaches to get the job done.

Recommendations
- Organise team meetings with project brief. Make these weekly – permanently in diary for a set day and time.
- The Project Manager should provide a summary of project plan in team meeting. This especially needs to indicate which phase the project is in.
- Communicate targets.
- Need to have same terminology and references to the collections to avoid confusion.
- Define what method of communication is needed for each task/process.

LESSON 2 - Staff recruitment and retention

⇒ **Funded projects need to be able to recruit staff in very short timeframes as the funder expects progress and the project is time-constrained. The usual two-month recruitment cycle is time-consuming, not just in terms of the post in question but also for the whole team. A further risk arising from this is that a small project team might stagnate.**

⇒ **Staff retention is difficult, especially towards the end of the project because team members seek new employment opportunities as the end of their contract approaches.**

Background

There has recently been a case where the ASR project needed to appoint someone very quickly to finish work in time against the funding deadline. Late on in a project when team members are leaving, replacement staff need to be assigned to the project within a few days. It is very difficult to retain staff as a project is nearing its end.

Recommendations

- There is a pressing need to minimise the recruitment timeframe for fixed-term project posts. This need is particularly acute with short-term appointments.

WEB DELIVERY

LESSON 1 - Communicating across diverse teams

⇒ **A) Delivery of digitised materials on the web requires join-up of the production team (or teams in this case) and the team mounting the material on the web. This was a challenge for the ASR project. The Supplier could not always stick to schedule due to technical issues and this meant that the Library's Web Services team had to change its schedules to accommodate fluctuations in delivery dates. The ASR team effectively became brokers between both parties and this made upload of materials to the web a challenge.**

⇒ **B) There were also considerable challenges for Web Services in utilising the data received. Data required for web navigation is different than that required for archival purposes. Web Services asked for a number of changes to data that had already been specified in a particular way with the Supplier. These changes took time to engineer. This illustrates the difference between web and archival data. The ASR team could have facilitated these challenges earlier on had there been better communication with Web Services.**

Background

The decision to work with BL Web Services was certainly the correct decision, because handling a second major contract would have placed extreme demands on the ASR project team. Web Services have had to successively re-schedule when there have been late deliveries of data. An external supplier would not have been able to accommodate such challenges without incurring costs. Early on in the project it was thought that the digitisation supplier might offer the web solution. This might have provided benefits in that the Supplier would better have understood the data it was creating. However, asking one supplier to deliver the entire solution within such a complex project may actually have led to the web strand having less priority. The principles of 'Working Together' (developed by Boeing)

dictate that all project teams must communicate from the start and that solutions must be shared. Web Services were receiving data directly from the Supplier which the ASR team had not previously seen. This led to Web Services spending unnecessary time on working out how to process the data received direct from the Supplier.

Recommendations
- When more than two teams are involved, implement 'Working Together' methodologies.
- Pre-plan sufficient lead time between delivery of data and web implementation.
- For smaller projects, one supplier delivering all solutions might be best.

LESSON 2 - Accessibility and usability

> ⇒ **Money spent on usability and accessibility provides good returns on investment. The ASR web interface was tested in lab-based conditions and by a wider group online. BL Web Services have implemented a number of changes in response to the requests of those engaged in testing. Investment in testing cuts down on the need for changes after the website goes live. Changes at that point may be extremely difficult to implement.**

Background
Two rounds of lab-based testing were carried out by a company specialising in usability and access. An online survey was conducted with a 60 or so users and the User Panel were able to facilitate some feedback from a group of students. Setting up a demonstrator site is the best way of facilitating testing. The ASR demonstrator was delayed and this meant that testing could not be completed before launch.

Recommendations
- Set up a demonstrator site as early as possible. Engineer sample data to facilitate this.
- Test with as many people as possible.
- Engage lab-based testing companies if budgets permit.

CONCLUSION

The ASR project has delivered the benefits it set out to deliver. Many obstacles had to be navigated along the way and we believe that the learning documented in this report will be of practical benefit to future projects.