Project Evaluation Report

Scottish Archive Network Project Evaluation Report

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1. Summary : What has the SCAN Project achieved?

The Scottish Archive Network or SCAN project, a £4 million initiative supported by the Heritage Lottery Fund, has put Scotland's archival heritage on the Internet and provided a model for access to archives in the twenty first century. It has created a virtual archive service, combining three elements:

- catalogues of the holdings of nearly every Scottish archive service;
- a suite of reference services, aimed at helping both the beginner and the experienced user of archives;
- a complete archive resource in digital form, 2.5 million images of all Scottish wills before 1901.

Three quarters of the project funding came from the Heritage Lottery Fund, with the balance coming equally from the National Archives of Scotland and the Genealogical Society of Utah. The project has taken just four and a half years to complete and has cost £3.8 million, making it just under budget. It has employed a total of 79 people, either full time or part-time, and they have contributed a total of 111 person years work.

The project has created or collected catalogue entries for over 29,000 archive collections across fifty two archive services. These give a summary of holdings with dates, and contact information. The reference services include a knowledge base of 1,000 key entries on Scottish archives and history, virtual exhibitions and an interactive course on early Scottish handwriting. There are also a series of educational resources aimed at schools. The wills are accessed via a newly created index, searchable by name and date, which allows the customer to jump straight to the digital image in seconds.

In order to make the project sustainable, images of wills downloaded from the Internet are charged for, though they are free to view in the search rooms of the National Archives of Scotland. All other services, including the wills index, are free.

The project was planned and led by the National Archives of Scotland, while the Genealogical Society of Utah provided volunteer staff to capture the digital images and work on indexing.

One of the project's major achievements has been to develop a system to allow high volume, high quality image capture from original archive documents, while safeguarding them through skilled conservation input. It has also changed the balance of access to archives, with help services controlled by the customer in place of the traditional archivist.

There are six areas in which SCAN has achieved significant progress.

1.1 Digitisation

SCAN has developed what is believed to be the largest and fastest digitisation operation from original archive documents anywhere in the world. The achievement has been threefold.

- First is the development of workflow procedures, including conservation treatments and pagination before scanning, careful handling protocols during scanning, and phase boxing afterwards.
- Second is the development of image management software with GSU experts, including a quality control system to minimise the time documents were under the scanner.
- Third is using skilled archivists to ensure the links from images to index entries were correct.

After several months delay as suitable equipment was procured and workflow systems were perfected, the project digitised three million pages of archive documents in thirty six months. This rate of image capture puts digitising documents on demand within reach for the first time, and NAS will be building on the lessons learned in the project. As a result of the work SCAN has done, it is possible to envisage an entirely remote access service for archives, in which customers select documents from the catalogue, then order digital copies, which can be scanned and delivered to them in about the same time as it takes to order a document in a traditional archive. This is of potentially enormous importance to archive services across the world.

1.2 Catalogues and Standards

SCAN's second major achievement has been to produce a single union catalogue of all Scotland's archives at the collection level. This puts Scotland ahead of other parts of the United Kingdom, in terms of coverage and consistency, and provides a model that is now being copied elsewhere. The components of this achievement are again threefold.

- First is the development of a set of guidelines for archive listing at the collection level in Scotland, based on international standards. This is the first time there has been a comprehensive standard for archive cataloguing in Scotland and has already improved consistency of description and raised professional awareness of standards.
- Second is the application of these guidelines by project staff across diverse record holdings, helping to transfer skills and increase the expertise of Scotland's archivists in description and the application of national and international standards.
- Third is the implementation of a catalogue database that could be used by the project's central server, and also by participating archives. Use of a common system by over half the participating archives helps promote common cataloguing standards, makes future updating of catalogues easier and provides an invaluable building block for further development of item level electronic catalogues in Scotland.

Although the project changed its strategy mid-way, adapting an off the peg product rather than developing its own system, the overall result has been to significantly improve access to Scotland's archival heritage, and help Scotland's archives to position themselves to benefit from future UK networking initiatives.

1.3 Marketing and e-Commerce

The SCAN project has broken new ground in applying business techniques to identify a market for electronic delivery of archival images, and to exploit it. The project began with an untested assumption that there would be a ready market

for the digitised wills. The experience of the NAS search rooms was that around 1,000 copies of wills per year were produced, for personal and postal enquirers, but the project hoped that more knowledge of the wills, and easier access would improve this. Marketing research, with the assistance of Lothians Enterprise and seconded students from Heriot Watt University, indicated that the market might be more substantial and that people would be perfectly willing to pay for a full colour, high resolution image delivered to them. The project has gone on to develop a thriving e-commerce facility that is selling as many images of wills per month as the NAS sold in a year, and with every sign of continuing growth in sales.

1.4 Genealogical Tourism

The project did not set out to specialise in genealogy, but it recognised early on that this was probably the single biggest growth factor in the use of archives. It is also one with significant potential to contribute to economic development, through stimulating tourism. SCAN staff worked with representatives of VisitScotland and local tourist interests to link their site to those targeting visitors to Scotland. This raised the awareness of both those holding archives and those promoting tourism, of the potential of the genealogical tourism market to Scotland, and the value of collaboration. SCAN has also led to a further initiative to develop ScotlandsPeople, a single official family history service for Scotland, at both national and local level. Genealogical tourism can be a potent argument for archivists at every level, showing a real connection between the care of the documentary heritage and economic growth.

1.5 Benefiting the Archive Community

The project has made a significant contribution to the capacity of Scottish archives. In addition to promoting awareness of standards, it has provided PCs and Internet connections to a number of Scottish archives that did not have them before. A total of 34 participating archives benefited. It provided associated ICT training that boosted archivists' knowledge, skills and confidence. It continues to provide specific help to some archives, including hosting microsites, digitising documents, and hosting virtual exhibitions. The ability of Scotland's archivists to respond to customer enquiries has been widened by the availability, for the first time ever, of a union catalogue and high quality on-line reference materials on Scottish archives and history.

1.6 Benefiting the Archive Customer

SCAN has created an archive website that mirrors the facilities of a physical service. Much attention has been paid to developing self-help services, allowing the visitor to access catalogues and reference materials, answer questions whether simple or complex, view exhibitions and educational material on-line, and order digital images of documents. This is now a tried and tested model for the development of archive services in the twenty first century.

The most obvious achievement of the SCAN project is that it has created a website which showcases Scotland's rich archival heritage and is extremely popular. It recorded over one million unique visitors over the past year, which several times greater than the total of people making physical visits to Scotland's archives.

2. Project Rationale

2.1. Project Background

Access to Scottish archives has been restricted as many archive users have found it difficult to establish what archived information was available and identify where that information may be located. The fact that much of this information was only available within central Edinburgh and that old paper catalogues could be very difficult to use, owing to their size and complexity, often compounded this problem.

To redress this situation the Scottish Archive Network (SCAN) project sought to open up access to the rich written heritage of the nation by creating a digital medium through which information could be more easily located and retrieved. To this end SCAN set out to create a virtual search room for Scottish archives, which would provide digital access to the top level finding aids for every archiv institution which had agreed to participate in the project. In addition, an electronically searchable 'knowledge-base' of Scottish history was also created to assist researchers in their exploration of Scotland's past. A further aspect of the project ensured that all the wills and testaments registered in Scotland between 1500 and 1901 were digitally imaged and linked to an electronic index making this major primary source of Scottish history more widely available to family history and genealogical researchers. All of these services were developed to be remotely accessible via the Internet. By the end of the project fifty two public and private archives from across the length and breadth of Scotland had joined the SCAN project, the largest of which was the National Archives of Scotland (NAS).

Core funding for the project of £2.9 million was awarded by the Trustees of the Heritage Lottery Fund (HLF) while the required partnership funding of £1 millio was jointly provided by the NAS and the Genealogical Society of Utah (GSU).

The project's objectives, as detailed in the Project Implementation Document, were as follows:

2.2. Project Objectives

- to create an electronic search room for fifty two participating Scottish archives.
- to collect the top level finding aids of the participating archives as they existed in the year 2000; to convert them to the International Standard for Archival Description (ISAD(G)) and into electronic form; to provide electronic links to more detailed electronic catalogues, if they exist, or to state that more detailed catalogues exist only on paper; and to make th information available and searchable electronically over the Internet.
- to construct a knowledge data base of 1,000 key themes of Scottish history from sources in participating archives and make it searchable electronically over the Internet.
- to develop a range of other services to enhance the electronic search room, including exhibitions, discussion forum, and archive directory, all searchable electronically over the Internet.
- to develop the existing electronic catalogues of the National Archives of Scotland and make the top level finding aids of 1,000 of their major fond available over the Internet.
- to create digital images and convert the various indexes to Scottish testaments, 1500-1875, to electronic form and link them electronically t digital images of the testaments.
- to improve the preservation conditions of the original testaments.

This report, therefore, sets out to provide both a critique and evaluation on the technical, financial and preservation implications of large-scale digitisation of

archive material, in the light of the project experience.

3. Defined Method of Approach

The project utilised the Prince 2 management methodology, adapted for the specific needs of the project, and was split intellectually and practically, into two separate parts:

- The creation of the products needed to create the infrastructure of the Scottish Archive Network.
- The subsequent exploitation and expansion of these initial products.

At a practical level the project was further sub-divided into the following four sub-projects:

- Online Catalogues
- Internet Resources
- Wills & Testaments
- Information Technology & Communications.

3.1. Project Deliverables and Outcomes

The top level finding aids (i.e. the fonds level finding aids) of all fifty two participating archives, were converted to ISAD(G) and into electronic form, electronic links were provided to more detailed catalogues, if they existed in electronic form, or statements that more detailed catalogues existed only on paper.

- A knowledge data base of 1,000 key themes in Scottish history, covering 450 subjects, 250 places, 250 people and 50 'how to's' was created and made available over the Internet.
- An electronic discussion forum, virtual exhibition space, and archive directory, were created and made available over the Internet.
- The existing electronic catalogues of the National Archives of Scotland at file/bundle/item level were made available over the Internet.
- 600,000 index entries to Scottish testaments, 1500-1901, were converted to electronic form and (currently) 460,000 have been linked to digital images of the testaments.
- 1.8 million digital images of approximately 3.5 million pages of testaments have been prepared, captured, quality controlled, stored and made available.
- The SCAN and ScottishDocuments.com websites were designed to be available 24 hours a day, 365 days a year and have attracted over 1 million visitors.
- The original paper testaments were placed in phase boxes and withdrawn from public consultation.

3.2. Project Harmonisation

Although there was no obligation for harmonisation between the SCAN project and other archival projects, much work has been carried out to allow a UK network to be formed in future . This has concentrated on the archival aspects of potential future networks rather than the technological aspects. This has now placed SCAN as an integral part of the plan for the development of a UK wide National Archive Network and laid the foundations for more extensive catalogue

conversion in the Mac2A project.

Joint work on name authority files was carried out with the then Public Record Office and the National Register of Archives and SCAN is currently represented on the committees of all the various networking initiatives. SCAN also worked closely with the Higher Education (HE) Hub to ensure that new cataloguing paid for by the Hub, in Scottish universities, was in a format which could be successfully integrated into SCAN and vice versa.

4. Project Interfaces

4.1 National Archives of Scotland (NAS)

SCAN worked closely with the NAS Historical Search Room in withdrawing the testaments from public use and providing surrogate copies. Although this was seen as a potential area of difficulty few complaints from the public were received. This was due to the publication of careful explanations and detailed timetables in the Search Room and by SCAN holding a series of meetings with record agents and readers to discuss relevant issues.

SCAN worked closely with the record cataloguing branches to compile the new NAS top level finding aid to replace the existing Summary Catalogue. Through extensive consultation with all the participating archives and with other archives in the UK, the project was instrumental in creating and introducing cataloguing guidelines, with the result that Scotland has now for the first time an agreed cataloguing standard at fonds level.

SCAN worked closely with the NAS Outreach and Education Branch in providing facilities for electronic exhibitions and publications. SCAN took the lead in website design and passed on the knowledge and experience gained through this process to the NAS who were able to use this information to successfully design their own website. Both the SCAN and the NAS websites share the same platform.

4.2 Descriptive Standards

One of the aims of the project, which has been fully achieved, was to develop a Scotland-wide catalogue of archives. An essential part of this was developing a set of agreed standards for cataloguing. Archives have come relatively late to standards and the tendency until recently was for individual institutions to develop their own house rules. Differences in rules mattered little, since the user had to visit the archive, and the local system could then be explained. With the arrival of the Internet and the opportunity for catalogue data to be shared with other institutions and with a public that did not necessarily visit, the need for standards became clear. The pioneering development in the 1990s was a data structure standard produced by the International Council on Archives (ICA), known as the International Standard Archival Description (General) or ISAD(G). The second edition was issued in 2000. ISAD(G) was followed by another structure standard, with some content rules, for describing individuals and groups, the International Standard Archival Authority Record for Corporate bodies, Persons and Families or ISAAR(CPF). At about the same time, the UK National Council on Archives produced a set of rules for describing personal place and corporate names, which parallels and complements the ISAAR standard.

One of the strengths, but simultaneously one of the weaknesses of the ISAD and ISAAR standards is that they are relatively easy to comply with. They were an essential pre-condition for exchanging and sharing catalogue data, but they did not of themselves provide a means of exploiting electronic cataloguing. A

North American group, led by Daniel Pitti, recognising the potential of markup languages and the power of document type definitions, produced Encoded Archival Description (EAD). The second and subsequent editions of this are directly linked to ISAD, and provide a means of coding ISAD structured descriptions.

SCAN recognised the importance of international standards and decided at the outset to use ISAD and ISAAR. However, it was less clear on the value of EAD. On the one hand, we saw its potential to help users target their searches, but on the other, we were concerned about the additional cost in tagging entries and how to deal with huge legacies of untagged material. In order to clarify matters, the project sponsored an international conference in September 1999 and invited a number of prominent speakers, including Pitti. The conference crystallised thoughts and led to the conclusion that SCAN would not use EAD as an input format, but it would seek to build it in as an export format, in other words, it would keep the option of producing EAD records from its catalogues. report on the conference is given at [link to conference report].

The question of data content remained, however. It was realised that the project would need to develop guidelines applicable across Scotland, across the different types of record encountered in all the participating archives, and consistent with the software packages in use. SCAN had one big advantage, it had its own dedicated team of cataloguers, rather than gathering other people catalogues as, projects such as the HE Hub and A2A did. This made it much easier to develop a set of data content standards. The decision to use the CALM cataloguing software, and the wide take up by participating archives, further helped to promote a standard approach to cataloguing. Catalogue standards have been published on the SCAN website. The benefits have been felt already in the consistency of entries across diverse archives in Scotland, and they will go on being felt, as catalogues are extended to item level. The main benefit, ultimately, will be for the user, who will find it easier to navigate and find resources.

4.3 International

SCAN has set a welcome precedent in leading the way in Scotland in the adoption of the agreed definitions, terminology and standards of the International Council on Archives and in the implementation of the name authority standards of the National Council on Archives. The project has also made a significant contribution to the European Union Archive Network, more information on which can be found at www.euan.org.

4.4 Genealogical Society of Utah (GSU)

There will be a significant legacy for the archive community in the work SCAN has undertaken with the GSU. In solving the problems that all archives will face in planning conversion of original historical material, SCAN and GSU have developed solutions that can safely address the key issues of preservation and access. In addition the working relationship between the GSU and SCAN project has already led to the GSU committing more volunteer resources to digitise the Kirk Session records in Scotland.

5. Assumptions

The project assumed the continuing support of the HLF, the NAS and the GSU and at the levels given in the cost summary attached to the project submission in the original PID. It assumed that the HLF would agree contracts and make payments timeously and would answer requests for decisions within two weeks

of receiving the request. Although these assumptions have proved generally correct, the HLF have not always answered requests for decisions within two weeks.

The relationship with HLF stretches over seven years. The first significant contact came as a result of the initial application for funding. Dr Barnes and Rc Mildren met with Seamus Ross (HLF IT Advisor) and Jane Stancliffe (HLF Senic Case Officer) in June 1996 to discuss the initial application. Following advice ar encouragement from HLF representatives, the project was re-designed and submitted again in 1998.

Throughout the lifetime of the SCAN project, the HLF has closely monitored progress and assigned not only a case officer but also two project monitors, Mike Smethurst and Seamus Ross. They have been responsible for monitoring the monthly reports and for advising the HLF on the direction taken by the SCAN project team. In addition there have been regular (quarterly) meetings involving the case officer, project monitors and senior project staff. In this way the project monitors have been intimately involved in many of the key decisior regarding the project. It would be fair to say that the relationship was not always smooth. There was a very fine line to tread between monitoring the project and directing the project. This caused severe friction when dealing with the issue of image quality but proved far more positive on the issue of the educational content of the website. It should be recognized that the HLF showe a great deal of faith and foresight in supporting the SCAN project which, at the time, was based on largely unproven technology and concepts. The counterbalance to this was to ensure that the levels of monitoring were high and that there was a reliance on performance indicators which were often difficult to establish or measure. Over the later years, however, the relationshi has improved significantly as the production of quantifiable deliverables has increased.

The support of the Genealogical Society of Utah has in practice far exceeded their legal obligations. The GSU were approached primarily for a cash contribution towards the project to help with the partnership funding. After initial discussions it was clear the GSU too were considering digital technology as an alternative to their microfilm projects and that this would be an ideal opportunity for them to become fully involved and learn more about the implications for a digital project as opposed to a microfilm project.

GSU agreed to supply the eleven staff that had been identified as necessary fo the digital capture of the testaments. They would supply a full time supervisor and five volunteer couples. GSU had been experimenting with a camera and software that would simplify the image capture process. They agreed to produ colour images and adapted the software to produce a very high quality colour image from a greyscale camera taking three images shot separately through red, green and blue filters. The software provided a major breakthrough in the project. Not only would the throughput be high but the software would handle other aspects of the capture process such as the file naming, storing and creation of process metadata. This simplified the operator involvement, reduce operator training times and reduced operator error. They supplied one camera for the project along with the software (dCam). This proved so successful that, when the open procurement competition failed to provide an effective alternative, it formed the blueprint for the camera configuration that successfully completed the digitisation of the testaments within budget and timescale.

The relationship with the GSU throughout the project remained very good. The contract negotiations allowed the archive to address the key issues of documer handling and training. The GSU agreed that all their staff would abide by SCAN handling guidelines and underwent training in advance of working with the original material. Weekly meetings with the GSU supervisor ensured that the

workplan was well known to both sides and issues could be dealt with quickly. Senior GSU staff also showed a great deal of interest in the project and frequently met with SCAN project staff. The GSU were able to benefit from the practical experience gained as well as the establishment of a successful workflow, lessons that they were subsequently able to extend to more digital imaging projects.

The assumption that all participating archives would actively support the project proved correct, although some took longer to commit to the project than others.

With guidance from the HLF, SCAN established a Participating Archives Working Group. This group was to act as both a sounding board for project ideas and also as a lobby group for the majority of archives who were sceptical about the overwhelming influence that the National Archives of Scotland (NAS) would exert on the project. The forum itself only met infrequently but meetings were also held with the full group of participating archives. The most positive outcome of these was the decision to extend the CALM licensing that the NAS had selected to interested participating archives. This initiative was supported by the HLF monitors and made a significant impact. More than 20 archives now have the same cataloguing software, have had training and can maintain and enhance the catalogue entries created during the project. The rollout of licences was successfully completed and was very well received. In addition to the PCs that had been supplied earlier in the project these were significant and tangible assets for the archive community in Scotland and create an excellent foundation for further development. The participating archives played an essential role and have now taken responsibility for the next major development in Scottish archive catalogues with the application for the Mac2A project.

A number of archive institutions also sought to join the partnership during the life of the project raising the total number of participating archives from forty five to fifty two by the end of the project.

The assumption that the NAS would wholly support the project proved problematic. NAS fully supported the project at a senior management level, but in practice there was confusion and scepticism over the aims of the project, and how it dovetailed with other NAS activities. In areas where the project was doing identical work to NAS, such as conservation, this took time to resolve.

The Historical Search Room was cooperative in withdrawing the testaments from public use and providing surrogate copies and NAS staff employed in all the record cataloguing branches played a valuable role in compiling the new NAS top level finding aid to replace the existing Summary Catalogue. Although staff from Outreach and Education Branch made a valuable contribution in terms of providing access to material for electronic exhibitions and publications, their support was not as critical as previously assumed. Full cooperation between existing NAS conservation staff and SCAN conservation staff, however, took longer than anticipated to develop. In retrospect it may have been a more satisfactory solution for SCAN to have commissioned the necessary conservation resource direct from NAS. This would have allowed the NAS conservation team greater flexibility in deploying its staff and meeting the targets set by the SCAN project.

While the NAS had agreed to provide suitably qualified staff on secondment to the project, as and when necessary, it was found that while the NAS has been willing to carry out its obligations it had been unable to do so because of the lack of availability of suitably qualified staff. The difficulty SCAN has had in appointing and retaining suitably qualified staff has been mirrored in the NAS itself. This has also had a major impact on the online catalogues sub-project.

There appear to be several key reasons for the high turnover

- younger archival staff are keener to develop a 'portfolio' career whereby they build experience by spending shorter periods in more varied posts
- archival staff who had recently left University with student debt were keener to accept short contracts where the salary was higher rather than rely on a slower, reliable progression within a pay band
- there were a lot of attractive archival projects underway at the same time
- new staff wanted to work on a wider range of activities

Relations with the NAS relied heavily on the continued support of senior management, particularly the former and current Keepers, Patrick Cadell and George MacKenzie. The view assumed by many participating archives was that the project was seen as wholly owned by NAS. In direct contrast to this, many staff in NAS were suspicious of SCAN. Whilst the decision to house the full project team at TTH was essential in fostering the good team spirit and level of communication evident within the SCAN project, it meant that the many NAS staff would see it as distant and separate from their day to day activities. This underlined the case that SCAN was indeed additional to the NAS but also fostered a reluctance to co-operate unreservedly.

Staff, personnel and welfare matters were mainly handled by the Scottish Executive Human Resources Division throughout the project, although in some instances it was more convenient for the project to engage casual staff directly in order to overcome restrictive Scottish Executive recruitment policies. This approach was encouraged by the HLF monitors and was an invaluable source of flexibility when dealing with staffing issues.

It was assumed that all public orders relating to copies of wills that have been digitised were dealt with by SCAN staff and the revenue earned from these transactions was retained by the project.

6. Social & Political Context

6.1 The Scottish Archive Community

Scotland has a diverse arrangement of archive services. In addition to the national institutions, the NAS and the National Library of Scotland, most of the 32 local authorities have archives, and, at the time of writing, others are in the process of setting them up. There are different models: some services are predominantly historical, with considerable expertise in the records of the predecessor authorities, particularly the older Scottish burghs. The collections the cities of Aberdeen and Dundee, for example, are especially rich. Other authorities, such as South Lanarkshire, provide records management services addition to looking after older records. Some services are located directly within the corporate management structure of the authority, others are managed along with libraries and in one or two cases they come under the museum service. In some cases imaginative joint service arrangements have been put in place, such as in Ayrshire, where a single archive serves three local authorities. There is no statutory basis for the services, though the Freedom of Information (Scotland) Act of 2002 is prompting authorities that have not established archive and record services to do so. Local authorities have not, in the past, given particular priority to their archive services, and funding levels are generally low. At the outset of the SCAN project, for example, few had proper ICT facilities and most had no email or Internet services.

The older universities all have archives, and many of the newer ones have also established them. The collections of the universities vary, but generally include the institution's own records, papers of eminent staff, and other material that has been donated or collected. The University of Glasgow has particularly

extensive holdings of business archives. The university archives have benefited in the past few years from funding streams to develop and enhance research collections. These have led to higher standards of cataloguing and better access than in the local authorities. A few of Scotland's health authorities have also provided archive services, and two of the strongest are located in Glasgow and Edinburgh, using space in the universities, but funded by local NHS bodies. There are also a range of specialist archives, ranging from the Scottish Theatre Archive to the Clan Donald Trust. These are generally small scale operations with a single professional archivist, and a range of funding from voluntary and private sources.

The SCAN project brings together 51 of these diverse services, representing virtually all the local authorities, all the universities and health authorities, and all the specialist archives that have professional archivists in post.

6.2 Funding Archives

Archives in Scotland, especially those outside the central government and higher education sector, have suffered from lack of attention and funding. An Archival Account of Scotland in 1999 , produced by a consortium of national and local archive services, revealed chronic under-funding leading to poor and unacceptable practices. Against this background, the funding from the SCAN project was particularly valuable, and enabled some local authority archives to benefit from PCs and Internet connections for the first time. The publicity which the project has generated has also helped to focus attention, by the public and by officials, on the richness of Scotland's archival heritage and the ways it can be used for self discovery and learning, and the promotion of tourism.

On the positive side, Scotland's archives continue to attract growing numbers of customers, mainly those interested in the history of their families, their houses and their local communities. These now account for about two thirds of visitors to archive services. The growth in interest in such personal history since 1996 has amply justified the decision to include the wills in the project. The statistics from the National Archives indicate an increase in genealogical researchers from 44.5% of the total researchers to 51.3% over the same period.

6.3 Virtual Access

The emergence of the Internet as a major feature in public services has occurred during the period of the project and has helped it. At the planning stage in the mid 1990s, delivery of images in real time to users across the world was barely feasible. Now it is emerging as one of the main means of access to archives. SCAN has demonstrated that the technology of scanning archive documents works, that the model of the virtual archive, combining catalogues, reference services and images, works, and that there is a market for the services it has created. Scotland's archives, with their collection level catalogues on the Internet, and with access to the expertise and facilities for digitising documents, are in a much better position to benefit from electronic service delivery as a result of the project.

6.4 Archives and Education

Archives have a potentially strong role to play in learning, but this has scarcely been exploited. One of the reasons is the difficulty of identifying and interpreting archive material for use in classrooms. Teachers generally have insufficient time to do this, while archivists are unaware of the needs of educators. Yet the holdings of archives can be used to illustrate just about any subject, and of course are of crucial importance in teaching history. Local archives contain information on how local communities reacted to past events, and using this imaginatively can not only help deepen understanding of what

happened and why, but also strengthen the feeling of personal and communal identity, aligning the learner to the past and to a place in a unique way. The National Archives (TNA) in London has done pioneering work with its Learning Curve website, and in Scotland the NAS, along with the Scottish Executive Education Department and Learning and Teaching Scotland is developing archives for schools materials, with teachers working alongside archivists.

The SCAN project recognised the value of electronic systems for delivering learning materials for schools and developed a number of modules on topics in the history curriculum. Using scanned documents and other images, specially written interpretive material, plus sound and interactive features helps to bring the past alive. One of the features of this work was that it was led by teachers in the User Group, and involved archivists working with them to identify material from across Scotland. The final product was professionally produced by a leading multi-media company, which greatly enhances its appearance.

6.5 Genealogical Tourism

The growth in interest in family history has led to recognition of its potential for developing tourism. This has attracted considerable attention both nationally and locally. Research commissioned by VisitScotland, Scottish Enterprise and Highlands and Islands Enterprise has revealed that genealogical tourism is a significant niche market, and one with growth potential. In 2001, around 0.25 million trips were made to Scotland motivated by genealogy, and a further 0.2 million visitors undertook some genealogical research whilst in Scotland making a total of around 0.5 million visitors who undertook some genealogy related activity. Genealogy-motivated visitors are estimated at just 2% of all visits to Scotland, but tend to stay longer and therefore generate almost 5% of total expenditure by holiday tourists. VisitScotland launched a new website aimed at ancestral tourists, ancestralscotland.com, in January 2002. SCAN staff contributed to planning the new site and ensured links from it to the SCAN site.

Archives have a crucial role to play in the development of the genealogical tourism market. They can help to attract visitors, they can increase the length and quality of visits, and they can help visitors identify the places their ancestors lived in. SCAN helps promote this, both by its internet presence, and by offering people the opportunity to do research before they visit.

7. Progress Measures

A series of key performance indicators were agreed with the HLF monitors early in the project and formed part of the monthly progress reports. Some parts were easier to measure than others. For the Online Catalogues project the fact that the total number of fonds in Scotland was only an estimate and that each fonds could be very different in the amount of effort required to prepare meant that it was difficult to establish a meaningful performance indicator. In addition as more of the fonds were imported from the HE Hub than originally anticipated it always appeared that the Online Catalogues would never meet the completion target. Other performance indicators, such as number of images captured, proved relatively simple to record and monitor.

A project board oversaw the early parts of the project and the successful establishment of the digital deliverables. Regular team leader meetings took over the main role of measuring progress, planning further developments and dealing with day to day issues.

In the early days of SCAN, contact with HLF was direct to the London office. In 2001, the HLF opened an office in Edinburgh and subsequently the HLF

managed their administration of the project from there. This was a helpful move for the project and communication with the Edinburgh office was much easier. In addition, regular monitoring meetings were held between senior SCAN staff and the HLF monitors. These continued throughout the project at approximately quarterly intervals. Each year an annual review was prepared which highlighted progress made and allowed both the project team and the HLF monitors to assess where other developments could be made.

A spreadsheet was developed which allowed each sub-project to measure its progress performance against agreed targets on a monthly basis. This information supplemented a detailed progress report which was submitted to the HLF each month.

Appendix 5 provides a link to all the monthly reports submitted to HLF.

8. Critical Success Factors

8.1 Online Catalogues

The online catalogues work was completed during March 2004, later than anticipated. The total quantity of entries in the database was about 30,000, which was at the top end of our initial expectations. The delay in completion arose in part because of the serious impact from late 2000 for about a year of the lack of availability of appropriately qualified staff. While this was less of a problem from end 2001, the section's work was also significantly impeded in mid-2003 by problems with the archive management system, CALM, being used in the project. SCAN did benefit, however from the money being spent by the HE Hub in producing fonds level descriptions in university archives. This has meant that SCAN had much less work to do in university archives and was able to absorb the increased number of participating archives. The NAS also helped SCAN by undertaking some work on its own catalogues, once its own electronic catalogue conversion project (e-Cat) started. This allowed SCAN to concentrate on local authority archives, specialist archives and the National Library of Scotland. Once the NAS e-Cat had begun to deliver, it became easier for us to work on NAS collections, which formed about one quarter of the expected total of entries. SCAN has also concentrated on producing skeleton entries for commonly-occurring fonds (e.g. records of county councils, which differ little from one county to the next) which will both ease and standardise the subsequent collection of a whole range of fonds. These were the focus of discussion for meetings of the Participating Archives Working Group and this was a helpful step in reaching a consensus.

When we began the work in autumn 1999, we had forty five participating archives within the fold. At the end, we had fifty two. The increase in numbers is explained partly by the formation of new publicly-funded archives (e.g. Fife Council Archives), and partly by established archives realizing that there were benefits to association with a nationwide project (e.g. Archdiocese of Glasgow Archives). We were happy to accept new participating archives where we could the only proviso was if we could accomplish any collection description work on new participants in time without impacting excessively on our long-term partners. We were pleased that we did manage to keep up with the work across the board, despite the additional burden, helped by the extension of the end of project deadline. By the end of the project, there was a small number of potential participants, who in an ideal world we would have welcomed aboard, including Edinburgh City Archives, Argyll & Bute Council Archives, and the Bank of Scotland Archives. The first two were originally unable to participate, because of the then state of their catalogues and concern as to an insupportable increase in archive usage.

One part of the original expected work for SCAN in its project bid was over

taken by events. We had been expected to "to develop the existing electronic catalogues of the National Archives of Scotland and make the top level finding aids of 1,000 of their major fonds available over the Internet". NAS was still examining ways to improve its electronic catalogue when SCAN started its work. However, as time passed, it became clear that NAS had taken full control of its requirements, and devised its own electronic catalogue acquisition and conversion project, which was complete in its original form by end 2003. SCAN had always been involved in this case, because of the near-certainty that we and NAS would use the same archive management system. Indeed, in the course of 2003 it became clear that NAS was not expecting to have made significant improvements to its current, mostly brief fonds level entries, as they would be improved in the course of subsequent work. Accordingly, we began to revise as many of the brief entries as we could, and have undoubtedly fulfilled our NAS objective as mentioned earlier, even if not quite in the way anticipated at the start.

The following factors were deemed to be critical to the success of the online catalogues sub-project. Each factor is briefly described first, and subsequent text develops themes arising.

8.1.1 Obtaining a database to hold all the data

This was crucial as until that was in place none of the data could be made available outside SCAN. The advantage of being associated with NAS in acquiring the CALM system was that the NAS influence was essential in persuading DS Ltd to resolve technical issues: NAS is DS's biggest customer. The consequence was that NAS made many of the decisions as to how CALM is used within NAS/SCAN, including what elements are displayed within the OPAC on which a resolution is still needed.

At the start of the project, we had been clear that we wished to use the ARKIS II archive management system created and developed by the Riksarkivet, the National Archives of Sweden. Their system was suitable for a Swedish project similar to SCAN which had been underway in recent years, and its database was already available to users online. In comparison, at the time of development of the SCAN bid for HLF funding, commercially-available archive management systems within the UK were not at that stage robustly tested with large quantities of data nor capable of being customised, and it was considered advisable to choose a system which did work and which could be customised. We appreciated that the decision to seek an accommodation with the Riksarkivet had potential risks: for example, the system's operating code was inevitably in Swedish, but the Riksarkivet was keen on making the system available to other, non-Swedish archives, and would certainly co-operate on an English-language version. A successful installation of the system in SCAN, and perhaps NAS as well, might then lead to its being made available to other participating archives in SCAN. Accordingly, once a dedicated IT staff member was appointed to online catalogues in spring 2000, a co-coordinated effort was made to establish exactly what would be required to develop ARKIS II for SCAN needs. This process also impacted on the production of the SCAN cataloguing guidelines, which to work effectively had to be geared towards what we understood of the operational requirements of ARKIS

Once better knowledge of how ARKIS worked internally was available, our IT staff member developed an MS Access database to mimic ARKIS routines, the purpose being to allow a swift migration of our data into ARKIS once we had our own version of the system. For ease of reference, the Access database was called WeeArkis. It was then employed within the project for data entry, and when combined with the cataloguing guidelines proved to be very useful in ensuring that staff used the right fields for their data. It was quickly appreciated that to allow WeeArkis to function effectively when staff were as much away from the office undertaking field-work as working in the office connected to

office networks, each participating archive required a separate WeeArkis database. Apart from ease of use internally, it ought to allow easier despatch of our data for local review by each archive. The drawback of this was that we would not have one unified database. We understood that a unified database was important when we were intending to use name authority records for record creators, as within a unified database we would have one name authority record potentially linked to a number of collections with which the person or body was connected. Lacking a unified database, staff could not be sure whether or not another staff member had already compiled a name authority record for a particular person or body, with possible duplication of effort. We estimated that the vast majority of name authority records we needed would be unique, and certain record creators anticipated to be commonly-occurring such as Sir Walter Scott would be self-evident to all. Concessions to practical requirements had on occasion to be made.

What we did not anticipate was that we would be into the final year of the project before we obtained a satisfactory, unified database. There were two reasons in particular why we took so long to reach that stage. First, we concluded at the end of 2001 that we could no longer be certain that we could anticipate sufficient, timeous development of ARKIS as an English-language option for its use within SCAN to be practicable. Second, once we had decided that we should not pursue ARKIS, we needed a satisfactory alternative, and one which would be operable within the NAS IT framework. Although effectively we were back to square one, we were well aware that NAS was well-advanced with its expected acquisition of a new archive management system, and we understood that one which met NAS's needs would also be capable of hosting the SCAN data. Accordingly, once NAS had decided in early 2002 that its best option (amongst a very small list of candidates) was the CALM system as developed by DS Ltd, SCAN agreed that it should acquiesce with NAS.

Given that decision, we therefore had to prepare ourselves towards fitting our data into CALM. We could see that the WeeArkis databases could be migrated into CALM with some preparatory work. As we were no longer the only force behind the system acquisition and installation, we waited until NAS had resolved any pre-purchase issues and begun the task of identifying how its own electronic and typescript data could be migrated into CALM. By end 2002 we were close to the stage where we could migrate the WeeArkis databases into CALM. Test migration quickly revealed that the task had to be postponed, as in the course of migration the system was over-writing what it considered to be duplicate name authority entries, even though in only a few cases was this actually so. The only alternative means of migration was to migrate everything and then eliminate actual duplicate entries once the data was fully loaded. Inevitably, given that it was late spring 2003 before we could complete the data migration, we now had many thousands of entries within CALM. Clearly, this was very satisfactory as it demonstrated how much ground we had covered; but the disadvantage was having to edit or eliminate a very much larger number of entries than would have been the case had we been able to operate a unified database a year or more earlier. Editorial work on the migrated entries then had to compete for time with work on new entries, but with the data now all in one system the work overall improved noticeably.

At times the CALM system itself caused problems which were very significant within a project of a limited duration. For ease of use within NAS and SCAN, all the data from both bodies were held in the same database. NAS's contribution as a national archive is immense, amounting to well over 2 million entries by March 2004. After a sustained period of system malfunction in mid-2003, very thorough investigation by NAS and SCAN IT staff uncovered a problem within the system itself of which DS Ltd had no knowledge: what is described as a load-balancing problem, whereby the system will devote its resources to answering one query from a user before moving on to cope with the next one. In a small office with a few system users this would be barely noticeable, but

NAS and SCAN have a large number of users with hundreds of thousands of entries, and the load-balancing problem was a cause of major dissatisfaction. DS undertook to investigate and resolve the problem, but it was only in the early weeks of 2004 that they were able to devote the staff resource necessary. However, it did mean that right to the end of the project we were occasionally afflicted by system freezes or crashes, with the inevitable consequence on work progress.

8.1.2 Finding a useable OPAC

Apart from the database acquisition, the other crucial stage was associating the database used in-house with an OPAC: without this, then this part of the project would have failed.

Inevitably, the delay in obtaining a unified database meant that we could not launch an OPAC until the final months of the project. We had certainly not intended that the OPAC's release was to be as late as that. Apart from the important public relations aspect of launching an OPAC, both as regards the participating archives and the potential audience of archive users, the OPAC was meant to be linked to the development of features within the website, so its non-availability had knock-on effects elsewhere within SCAN. We had tried more than once to make available some catalogue data in advance of the OPAC launch. When the SCAN website was first released, a few of our entries (in Microsoft Word format) were posted as samples of what was to come, but we decided not to increase the number, partly because we were always anticipating future developments. In late 2001 (once updated subsequently), we also made available to participating archives only a unified version of some of our name authority data, simply to show what we had at that stage been doing.

CALM has an OPAC module which can be (and was) acquired. Once the database had established, it was possible to consider how best to adapt the OPAC, but as it turned out the OPAC was not entirely suited to the type of data we had and wanted to display, but we hope that in the next year or two it will be modified by DS to take into account the needs of users like SCAN. The OPAC does not handle well name authority data maintained separately within the CALM database. For example, it seems as if it will only allow the display of one name authority entry per catalogue entry, whereas on occasion we have more than one name authority entry per catalogue entry. It looks as if DS have focused their efforts on the CALM database, and a core OPAC which will suit the vast majority of its clients. It seems that few CALM users across the UK wish to display name authority data in the way that we have it, and therefore we will have to wait for some OPAC upgrades (one of which was scheduled to appear in early 2004) before we can permit users a better appreciation of what data we have collected.

8.1.3 Working With Participating Archives

For the project to succeed we needed to get some data direct from the participating archives, as if we did not then they would not really feel part of the project. We knew that some of them were better off with available data than others. By compiling our data creation guidelines, we were able to show potential external contributors what suitable data would look like. We knew that what was especially important was maintaining close contact with HE Hub contributors, many of whom were also within SCAN, and we hoped and expected that data created for the one project would be readily adaptable to the other. In general, we needed to make frequent visits to participating archives where possible, and also send out regular messages about the current state of play.

In the course of meetings with the participating archives both before the project

start and afterwards, it became clear that for many of them the most importar element of SCAN was the online catalogue, presumably because archivists realised that having a union archive catalogue for Scotland had long been an ambition. Accordingly, within SCAN we had to be sure that we devoted sufficie resources to resolving problems which might occur on this aspect. This was no always easy, as the technical challenges of the Testaments section required a significant input from available IT staff in the opening months and years, and the website development work equally demanded IT resources as well.

As part of the programme of maintaining good contacts with the participating archives, we had always planned to make available state of the art PCs to all o them who wanted one. The initial project bid had made it only too clear how under-resourced many Scottish archives were with IT equipment, and their capacity to participate fully in the project would be handicapped if we did not assist them. As early as possible in the project, we began a roll-out programm Twenty archives were assisted in the first phase, and as funds permitted a second phase a further fourteen systems were procured thereafter. The practical benefits of being a participant in the project were thereby made apparent.

Although the PC provision was not strictly part of the online catalogue work, it was associated with the next potential means of assistance to the archives. We considered making available a version of our own unified database to them for their own in-house use. Originally, of course, this meant ARKIS II. Once the decision was made that procurement guidelines (and the balance of risk) mitigated against pursuing this, we gave consideration to providing a licence to use CALM to those who wanted it. We knew that a small number of the participating archives had already acquired CALM, and were therefore keen for us if possible to use that system, the better to allow easy exchange of data. W investigated the cost of licence provision, and having established that HLF were amenable to our making the offer of a restricted user licence to all of our participating archives, we sought expressions of interest. The offer was very popular, and once the detailed licensing and support issues were resolved we proceeded to provide first-time licences to almost thirty archives, and additional licences to four others (who had already purchased CALM themselves). Associated with the provision of the CALM licence, we arranged for DS Ltd, the system suppliers, to hold training in the system for the new licence holders. Spreading CALM to other archives in Scotland was considered by both us and HLF as representing good value for money and achieving the original aims of th project. By providing a tested archive management system, we were not only making it easier for recipients to exchange data with us, but also equipping them to cope properly with the challenge of informing their own staff and users adequately about the scope of records in their holdings.

The existence of the HE Hub project proved to be quite a blessing for SCAN. It had started on a UK basis at about the same time as SCAN, at first on a trial basis with a small number of participants, but slowly spreading its coverage. A from the start Scottish participants in the Hub would also be participating archives in SCAN, it was essential that we kept in touch with each other. We benefited from the online catalogue team leader being on the Hub's steering committee. While the Hub used a different means of providing user access to it corpus of data, like SCAN it saw the benefit of ensuring that descriptions submitted to it conformed with a restricted, mandatory subset of ISAD(G) field This meant that a description submitted to one project would be useable in the other. The major differences between the Hub and SCAN are the Hub's use of subject indexing and SCAN's use of name authorities, but the differences are not especially significant in practical terms. Of more significance, we were able to co-operate with Hub participants also in SCAN in creating suitable descriptions for their corpus of collections, thereby sharing the burden: for example, with Aberdeen, St Andrews, Dundee and Glasgow universities.

Since we knew that it would not necessarily be possible to provide general access to our data at an early stage, we decided that a reasonable means of revealing the riches that were held within the participating archives was to have a regular feature, "Document of the Week", within our weekly newsletter. The newsletter was dropped when the first website was launched and the Document of the Week was then published on a particular news page within the website. The documents in this feature were often supplied by online catalogues staff; others were supplied by the Internet resources team, who were also visiting the archives. Feedback suggested that recipients of the newsletters in general were interested in many of the documents we featured. Up to the end of the project, we regularly despatched to participating archives messages providing information about the current state of play on our work.

Another means of attracting local interest in the work we were doing, especially when we were well outside of Edinburgh and staying locally, was to give talks to local history societies or similar groups about our work (for example, in Orkney and Shetland). Often, these talks were run alongside features in local newspapers, the intention being to publicise in general the work of the archive we were visiting as well as providing information about the project. The talks were well-received. Along with equivalent contributions to conferences or seminars of professional information managers, measures like these showed that we always had in mind the promotion of Scottish archives as a whole.

8.1.4 Staff Skills and Knowledge

It was evident after a year or so that the team leader could not read through every entry as he had too much pressure on his time, especially when at that stage we did not have a single database in hand. It was essential therefore that there was a reliable assistant who knew enough to resolve inconsistencies. It was also necessary to have staff with the right skills in post to allow experienced staff to make significant progress with the task of getting work underway with each of the participating archives. The major obstacle was definitely losing staff too frequently in the opening two years or so; the significant advantage was recruiting high quality staff on a casual basis to work for us, whose recruitment via informal channels was very successful.

Overall, the work we have done required not only a good knowledge of current archive standards, but a grasp of how to summarise the strength of a fonds in the context of all other collections in Scottish archives. A small bundle of paper forming a fonds in one archive may have some interesting items, but if it is a possible stray from a very much larger collection held somewhere else, a balance needs to be struck in the description work, if at all possible. Accordingly, while we were happy to obtain recruits recently qualified on archive diploma courses, who had been formally taught about the archive standards, we knew that we would also need staff who had either some years' experience in archive offices, and/or had undertaken some historical research work. We were fortunate that for the duration of the project we had a mix of both.

One of the first, and most important, decisions made by SCAN while its project bid was being drawn up was that the online catalogue work would all be done by its own staff. The staff would travel across Scotland, working within each archive as required, and then completing the task back at the office. It was reckoned that this method would encourage consistency of approach, would allow the staff to become increasingly experienced and more productive as the months passed, and ensure that the work was done to a reasonable schedule.

The HE Hub project was undertaken on a quite different basis. There, there was a central co-coordinating team, and all the data creation was accomplished by locally appointed and managed staff, whose costs were paid by the Hub after submission of bids to the central team. Several SCAN participating archives

asked whether we would be prepared to accomplish our work in the same way but this approach was rejected by us and by HLF. We considered that we would be likely to lose control of when and how the work would be done, and monitoring the locally-appointed staff would be difficult. It was interesting to see how the Hub was accomplished. While SCAN undoubtedly had difficulty at times recruiting and retaining staff, the Hub too was affected by staff shortage at times, partly through the work in certain institutions often being very short-term even if relatively well-paid. Certain bids for funding suggested that the staff locally recruited for Hub work might also be undertaking other work within the archive office, an example of what HLF in particular thought would be the risk of work being undertaken locally by non-SCAN staff. It could be argued, on the other hand, that providing staff with duties other than fonds description work would give them a more interesting routine, something which would not be possible within SCAN, where online catalogues staff were engaged on only fonds description work.

Indeed, it is possible that a more varied routine for our staff would have been better option. SCAN was operating at a time when there was a glut of short-term archive contracts, and a paucity of qualified staff. This certainly led to some SCAN staff deciding that to further their careers there would be no harm in trying out an assortment of jobs, as there would always be something else on the horizon; and others suggested that after a couple of years doing this type of work they would welcome the chance of a more varied job. The extent to which both of these problems arose was unexpected because it had been thought that as the SCAN work was in the first instance only a three-year posting there would always be further career development potential after the SCAN project. These factors might not necessarily recur in other projects and in particular the ready availability or not of other jobs could be quite a determining factor.

As it turned out, we had lost three of our original four staff within a year of the appointment in 1999. This was a serious blow, from which it took many months to recover. At the end of 2000 it seemed to be very difficult for all archives in the UK to fill vacancies, and we were no exception. One post was filled in January 2001, but it was the summer before we obtained a further permanent staff member, and only in October 2001 did we fill the remaining permanent vacancy. Of those recruited in 2001, one left in August 2002 (replaced from amongst the NAS staff complement), but thereafter the staff complement remained stable. We had, however, been very fortunate that we could recruit two very experienced members of staff on a casual basis working largely from home. Without the fortunate occurrence of the availability of these two experienced archivists it is possible that we would have missed some of our targets.

What was clear, however, was that especially those staff who remained in the project for more than a few months have benefited from gaining a better appreciation of the holdings of Scottish archives which they would be able to bring to their next posts. When in their next posts, their office will also benefit from their experience, and it was precisely this benefit to the Scottish archive community which was considered to be one of the attractions of SCAN in the first place. Despite the steady expansion in the number of archives in Scotland in the late 20 century, there was not much movement of staff between offices, whereas an exchange of staff between the major national institutions and other archives might have led to a better understanding of the others' holdings and outlook.

8.1.5 Implementation of Standards

For useful data to be created we needed to be absolutely clear about what was acceptable and what was not, and try our best to adhere to this standard for as long as possible. Without that, data could have been created in a variety of ways and our aim was consistency. Current archive data entry standards e.g.

ISAD(G) seem tightly drawn, but they are equally loose, as the HE Hub and other projects experience shows. The creation of in-house data entry guidelines was very useful, especially for new staff, but also showed to other projects and participants that we were serious and that our work was as good as what was being done elsewhere.

At the start of the project, SCAN had decided to adopt the two significant international standards which had recently been drawn up: two International Council on Archives publications, the International Standard for Archival Description (General), commonly referred to as ISAD(G); and the International Standard Archival Authority Record for Corporate Bodies, Persons and Families commonly known as ISAAR (CPF). The UK manual on name authority records, National Council on Archives Rules for the Construction of Personal, Place and Corporate Names (1997) was also to be used as guidance on the format of names.

It was realised quite quickly that ISAD(G) was essentially a data structure standard, not a data content standard. This had major implications. Investigation of work under way elsewhere showed very early that there was a strong possibility of variable work being produced, even within the project, as ISAD(G)'s rules could be closely followed for the structure of any one entry, but the content of an entry could be written quite differently by two people yet in a way which still conformed with ISAD(G). As we wished for consistency within the project, we appreciated that whether we drew up entries in-house or accepted material compiled by others for insertion within our database we needed to have our own data entry guidelines. For this to work, we decided that the guidelines would as much as possible be a mandatory data content standard while allowing some leeway for external contributors whose entries might have been compiled to suit local factors. Because ISAD(G) itself was being revised during our first year of operation, our guidelines were not drafted until November 2000. The draft guidelines produced meant that for the first time Scotland has an agreed cataloguing standard at fonds level. The importance of this both for SCAN and archive users cannot be over-emphasised.

One area where we remained on the sidelines of international debate as to the best means of presenting archive descriptions to users was the matter of Encoded Archival Description. In the late 1990s certain archives in the USA, Canada and in the UK had experimented with EAD, and there was quite a head of steam urging us to consider adopting EAD as well. In September 1999 we held an international conference at which some of the leading participants in the debate gathered to present papers and discuss their views. Not all participants were in favour of EAD. We certainly were equivocal at this stage, partly because although we were inclined to adopt ARKIS II at that point as our database it did not then support EAD, although it was planned as the next development. We were then merely intending to collect our data in MS Word, with a view to subsequent migration into ARKIS. Some UK archives had developed an EAD template in Word. Our consideration of this suggested that for small quantities of data the separate files for each entry required here would be manageable, but when we had a vision of perhaps 25,000 entries it would be increasingly difficult to manage the data. Accordingly, we remained agnostics rather than sceptics. EAD has continued to be developed, in the USA in particular and also in the UK.

At the start of the project, a mix of staff personal knowledge and enquiries of the participating archives indicated that we might have to create about 25-30,000 fonds level entries to complete our work. We knew that it was possible that the corpus of data might not always be just at fonds level, but perhaps sub-fonds or series as well if a particular fonds required lower level cataloguing to permit users a better appreciation of the fonds' content. We also knew that two participating archives , the National Archives of Scotland (NAS) and the National Library of Scotland (NLS), would together account for half of all the

entries we compiled; but our knowledge of the scope of some of the archives was not especially good. A round of visits to archives was begun as soon as the project funding started, so that the new staff could obtain some familiarity with what they would be doing and where; and the visits permitted the staff of the archive being visited to raise any queries about the type of work we would be doing, and what facilities we would require.

The visits usually clarified our thoughts as to how we would best proceed with the work. Occasionally, we could foresee problems. Personal staff knowledge made us aware that compiling suitable data for the NLS fonds would be particularly difficult. Almost all its particularly rich holdings were accessed by a series of published or unpublished catalogues or guides, very little of which was then in electronic form. The catalogues or guides also concentrated on indexes of people or places, often giving only brief information about the content of any one fonds. The arrangement of the fonds was also exceptional, because of the NLS's library-oriented background. Briefly stated, the Library tends to catalogue collections as they are received, allocating new material the next block of manuscript (MS) numbers in a numerical order, thereby frequently splitting up irregular deposits from a depositor into numerous, scattered sub-groups; whereas archive offices would be inclined to maintain separate deposits of records from the same depositor within one fonds. For SCAN, it was important to tackle the problem, as the overall quality of material held by the NLS meant that not according it good treatment would be to users' disadvantage. At times the quantity of potential work at the NLS threatened to overwhelm us. Eventually, however, we were able to provide an entry for every unit which was formally catalogued from all of the MS collections, including the Advocates' Library material. This block of work in particular has for the first time ever resulted in a means of searching in one place across all the NLS's MS collections.

The participating archive visits occasionally threw up other surprises. Difficulties were certainly encountered in dealing with, for example, the collections held by the Scottish Theatre Archive, the Scottish Jewish Archive Centre, and by the Scottish Borders Archive. The first because the archive's arrangement was partly by shelf number and partly by theatrical institution, whereby records from whatever source were grouped under the name of, for example, a specific theatre the second because it arranged its manuscripts by subject, the third because it seemed that new accessions were often listed as additional series tacked on to existing lists even if, as in some cases, they would have been better slotted in elsewhere. The creation of fonds level entries in instances like these was quite difficult and time-consuming, and what we have done may therefore at times be rather artificial, even if it does represent as best as we can what we found. The majority of participating archives had arranged their collections by provenance and the staff soon became experienced in assessing the nature of the task that confronted them.

An interesting experience for the staff, and for participating local authority archives, was the attempt to draw up some standard text to be used within the administrative histories for certain commonly-encountered local authority records. Good examples are parochial boards, parish councils and school boards, but there are quite a number beyond those few. These bodies have an identical legislative background. We considered that we would be best trying to create some standard text to serve as the administrative histories, as such bodies would have differed little from one to another. This would save staff time, but it would still be possible to draw attention in any entry to significant differences. The first draft of these standard texts was circulated to the relevant participating archives in autumn 2000, and it was evident from the response that the standard texts were certainly appreciated. We have continued to revise and develop these standard texts as the project continued, using something similar for certain trades unions where individual branch records are often found, for example.

The local authority participating archives were the ones most interested in our standard texts, and they formed in part the basis of an investigation as to how best to treat local authority records within the project. We had always felt that for such records we would need to describe at a lower level than the fonds only to ensure that users obtained a full comprehension of the type of records held. Equally, we realized that it would be all too easy to reach too low a level in the record hierarchy in an effort to be fair across the board, which would probably have a serious impact on our ability to finish our work, given that this was a short-term project. Discussions with the local authority archives continued for much of the duration, culminating in a meeting in December 2002, when a possible approach towards our work was reviewed. On that occasion, it became clear that records have been listed in variant ways across local authority archives, as we had known from our work, something not always appreciated elsewhere. It was therefore impossible to adopt a standard approach to our description work, although we have tried as much as possible to ensure that users obtain a consistent level of detail about local authority records. It would certainly be possible for those archives to supplement our information if they wish.

These standard texts form a significant core of our corpus of name authority records, in which the administrative or biographical history is a vital adjunct to the name. In considering how we would proceed, we realised early on that the simple name authority record on the model of the NCA Rules would need to be supplemented by the administrative or biographical history, if we were to ensure that users realised that two apparently identical names referred to different entities. This is the approach recommended by the ISAAR (CPF) standard. The next stage was the acceptance that we would be as well to ensure that we could use one version of a name authority record for a particular record creator for all occasions when that record creator was found. Both ARKI II and CALM make good use of name authority records in the way that we compile them. The corpus of name authority records (around 20,000 entries) that we now have forms on its own a very significant output of the project. It will have a long term impact for Scottish, and even UK, archives.

8.2 Internet Resources

A considerable amount of information was collected for the knowledge base and research tools and many organisations in Scotland made a contribution to the site during the life of the project. The Stair Society, for example, contributed funds for further digital imaging. SCAN was in turn able to help organisations with fewer resources by offering them free facilities on the site. Microsites were developed and hosted for North Highland Council Archive and Perth & Kinross Archives, until this was replaced by a site run by the local authority concerned. Several hosted sites contain material which complements the work of SCAN, either by providing information about historical records, or by publishing digital versions of records and associated transcripts and indexes. The Stair Society site (www.stairsociety.org) includes digital images of two volumes of early Scottish parliamentary material. The thirteenth century Berne Manuscript and the 14 century Ayr Manuscript are two of the earliest surviving manuscripts of the laws of Scotland. The Friends of Dundee City Archives website (www.fdca.org.uk) features databases of some of the most popular records held by Dundee City Archives, including Methodist baptisms, poorhouse records, vehicle licensing registers, and The Howff File - an index to 80,000 records of individuals buried at a major Dundee Cemetery. The Scottish Records Association website (www.scottishrecordsassociation.org.uk) has news about Scottish archives, research advice and summaries of the archival holdings of libraries, museums, art galleries and other institutions not covered by SCAN's online catalogue. Other sites hosted by SCAN at the time of writing are the Abertay Historical Society (www.abertay.org.uk), the Scottish History Society (www.scottishhistorysociety.org), and the Scottish Text Society

(www.scottishtextsociety.org). A site for the Scottish Records Society is in preparation.

SCAN also collaborated on projects with the Scottish Records Association and the Conference of Scottish Mediaevalists. Internet Resources also took the lead in dealing with feedback and enquiries from the SCAN website, publicising the project, and worked extensively with VisitScotland, the National Museum of Scotland and the Scottish Executive in maximising the marketing opportunities afforded by Tartan Day in the U.S.A.

The following factors were deemed to be critical to the success of the Internet Resources sub-project.

8.2.1 Digital camera

The Internet Resources project team had a separate camera at their disposal and this allowed the team to:

(a) make images for the SCAN website
(b) digitise volumes for participating archives

This proved invaluable for acquiring images speedily for the website, especially for exhibitions, featured documents, knowledge base and research tools. It also proved to be a valuable resource for many of the participating archives which did not have digitisation facilities themselves. SCAN's ability to digitise whole volumes quickly and competently was a factor in good relations with many participating archives. This made a significant contribution towards making historical records more accessible via the websites of participating archives and the SCAN site itself. In particular, SCAN's digitisation and presentation on the website of 12 diverse volumes from local archives during Local History Week 2002 earned the project unanimous positive feedback from the archives themselves and from users. In his speech at the SCAN launch event in October 2003, it was this aspect which most caught the imagination of the distinguished broadcaster and historian, Magnus Magnusson. Similar work was undertaken for archives to support their exhibitions during Archives Awareness Month 2003 and to aid indexing and transcription projects. The digitisation of three minute book on behalf of the Royal College of Surgeons of Edinburgh has accelerated their work towards publishing a transcript of the early minutes in time for their quincentenary in 2005.

8.2.2 Size and nature of the Knowledge Base

Many of the targets set in the PID for Internet Resources, particularly with respect to the knowledge base and exhibitions, were very ambitious. In particular the target of 1,000 knowledge base entries was based on the assumption that the bulk of the entries could be edited fairly easily from answers by NAS staff over the last 40 years in the enquiry files (H-files) and the rest of the content would come from answers to frequently asked questions received by other participating local archives. Quite early in the project it was found that the NAS H-files were problematical, in many cases only giving information about NAS records, and that many participating archives were convinced that the enquiries they received were too specific or local to be useful in a national knowledge base. The preparation of knowledge base entries became much more labour-intensive than was envisaged, particularly in reconciling the H-files with the records and knowledge of staff in other archives. In general, the process involved SCAN staff drafting entries and submitting them to appropriate participating archives for additional content and quality checking. In a minority of cases the content originated in participating archives either unbidden or else at the request of Internet Resources. Over the life of the project about a dozen of the 52 participating archives, or individual staff within

those archives, have been particularly well-inclined towards the Internet Resources part of the SCAN project, especially in providing content and quality control for the Knowledge Base, material for exhibitions and other material. Three or four have been particularly proactive in providing content.

8.2.3 Visits to Participating Archives

Good relations with participating archives and the acquisition of valuable content from them for the websites was improved by personal visits to archive by Internet Resources staff. Although there was a financial cost involved in travel and expenses, the participating archives invariably expressed themselve keen to have a 'personal face' to the project, to aspects of the project explained, and to have the opportunity to pass on concerns and ask questions. Archivists might look upon a whole day spent traveling to and from a participating archives meeting in Edinburgh, or time spent answering requests for information by email as drains on their time. Whereas archivists were usually prepared to work quite intensively with a visiting member of SCAN staf for several hours in compiling content for the websites, and much of the conte of the knowledge base, directory and research tools was researched and writte during visits to archives.

8.2.4 Education website

Late on in the project, the HLF Monitors requested that more content should be added to the SCAN website aimed at the education sector as, to date, resource for education use on the website were limited. This was difficult to easily assimilate with the existing site as (a) it challenged a characteristic of the site: that it did not divide into separate areas for different types of users, and (b) th website did already contain a substantial amount of content useful to those in secondary and higher education. The short timescale involved in creating the education microsite by the end of the project did not allow enough time for the teachers hired to complete the text and the participating archives to source relevant images between them. It was intended that the education modules be largely the responsibility of the SCAN user group and that an external web designer should design the site. However, to ensure that the website would be finished on schedule, SCAN staff had to devote the a lot of effort to selecting appropriate records in participating archives, acquiring images, dealing with copyright issues, proof-reading, liaising with the teachers and designers, and uploading the site. The impact of this was accentuated by the fact that Interne Resources lost one curatorial member of staff and also coincided with the planned redesign of the SCAN site and preparation for the SCAN launch event October 2003. Inevitably, necessary upgrades and additions to the SCAN site were compromised. The end of the project would have been marked, appropriately, by the launch of redesigned SCAN and Scottish Documents websites, whose improvements would have been based on user feedback. Instead, the extra education work left little time to oversee, test and upload th redesigned site, and, as a result, SCAN staff are still working on parts of the SCAN site.

8.3 Wills & Testaments

The partnership with the Genealogical Society of Utah (GSU) proceeded very smoothly throughout the life of the project and their cooperation was a critical factor in ensuring the project's successful completion.

8.3.1 Workflow

One of the key achievements of the project was to establish a workflow that enabled high quality, high throughput digital imaging that maintained proper consideration of conservation requirements.

From the outset it was apparent that maintaining a constant supply of materia for the cameras would be crucial for the success of the project. Also, the inconvenience to readers in the NAS search rooms, caused by the withdrawal of the testaments, had to be kept to a minimum. To this end it was important that preparation of the registers and loose leaf material, to include paginating and conservation, should proceed as quickly as possible. To achieve this, the following working practices were put in place.

All nineteenth century volumes were prepared and digitised, without the need withdraw whole classes from public use in the search rooms. Where longer term withdrawal of pre-1750 material to be dealt with by Conservation was necessary, a programme was agreed with NAS Reader Services, and three months advance notice was given to readers.

All post-1750 volumes were paginated by the GSU team, who notified SCAN conservation of any material in need of repair, and all pre-1750 volumes and loose leaf bundles were inspected and paginated by SCAN conservation staff. N volumes were disbound, and loose leaf material was temporarily encapsulated plastic to lessen the need for repair. Both these measures had implications for the camera room equipment. A book cradle had to be procured for capturing tightly bound volumes, and adjustments had to be made to the cameras to eliminate reflection from the plastic.

The level of repair of bound material was kept to the minimum necessary to ensure lack of damage in the digitising process. After digitising all pre-1750 material was reboxed or repackaged and post-1750 volumes with bindings in poor condition were wrapped.

Once captured it was important to quality control the images as quickly as possible, so that retakes could be carried out while the original material was st in the camera room, ideally within 48 hours. To achieve this, a quality control software programme for the digital images was created in-house, to be operated by the GSU team. Images were checked for completeness, colour balance, clarity and correct numbering, and all images created on a given day were quality controlled the following morning (or on a Monday morning after Friday capture). A figure of 30% of images, randomly selected, was finally arrived at as an effective level of quality control (bearing in mind that 100% of images would be checked later at the index/image linking stage). Finally, a printed quality control report of each volume or bundle was generated, for ease of reference and for audit purposes.

Below is a diagram of the process flow that was developed for the cameras. Th has ensured that we can maintain a high level of throughput, that the images are quality controlled and accurate and that tape backups (both the GSU and f SCAN) are completed for all the images that have passed the quality control procedures.

8.3.2 Selection Of Technology

Mass digitisation of original records in full colour had never previously been attempted on this scale. In order to complete the digitising of the wills and testaments within the timescale of the project, with the staff and volunteers available, it was vital to select cameras, software and workstations that could b operated quickly and simply, with minimum damage to the records. The resulting images would need to be fit for purpose, i.e. of sufficient quality to be read easily online and to permit speedy access from a server.

Invitations to tender for equipment and software produced a number of suitabl
cameras. A number of camera suppliers were shortlisted and a range of tests
were planned. The tests evaluated image quality and throughput. These showe
that the cameras could produce good quality images but no software that woul
perform with the degree of automatic image processing required for mass
throughput.

It was fortunate that the GSU was at that time in the advanced stages of
developing digitising software to use as an alternative to microfilming. Having
tested this software with testaments material it was decided that it would
produce fit-for-purpose images at the required speed, using single-shot digital
cameras. The resolution of these images was lower than that conventionally
advocated in libraries, museums and archives for small projects involving
illuminated manuscripts, maps and photographs. However, a digitising standar
based on pixels per pen stroke was eventually agreed with the HLF monitors:
[Link to Digital Imaging Standards Report]

Book cradles for digitising volumes open at 180° and 120° were acquired after
the chief SCAN conservator visited the manufacturer in Germany and stipulate
certain modifications to the design.

8.3.3 Single/Double Page Capture

The decision to capture double-page images of post-1800 testaments registers
was critical in ensuring that the project was completed within a reasonable
timeframe. It was essential that HLF supported this view. The decision was
based on SCAN's advisory recommendation that:

1. The text of the registers is easy to read by all users.

2. The images will normally be captured using SCAN's higher resolution camera
(with an 8 megapixel array).

3. Double-page capture minimizes the risk to documents by reducing the
amount of handling required;

- allows for greater contingency in all aspects of quality control;
- is a simpler process to digitise, quality control and link to indexes;
- allows far greater throughput, well in excess of what was conceivable
  when the project was first proposed;
- is based on a qualitative assessment of the requirements for access;
- is based on the assessment of results from the User Survey.

4. The resulting images will comply with the pixel per line segment quality
standard defined by SCAN as meeting "fitness for purpose".

5. Without double-page capture the project cannot be completed on time and
within budget.

The decision was critically important for the project and has been borne out by
the fact that the digitization completed as scheduled and that there have been
no adverse comments received about the quality of the digital images produce
as double page captures.

8.3.4 Working relationship with GSU project partners at all levels

The GSU were keen to co-operate as fully as possible, as SCAN has been a tes

bed project for them in terms of testing and refining their dCam digitising software. It has also been an entrée to the NAS for future digitising projects or other series of records.

Despite the fact that there were no cameras on site until August 2000 and that systematic digitising did not get under way until January 2001 the GSU put volunteers into the project from December 1999.

The delay in procuring the cameras was due to protracted discussions with the HLF monitors about image resolution, from March to June 2000. At that stage there was only one make and model of camera that could operate with the dCam software, the Kodak 6.3i, which had been one of those offered in the tendering process. It took another two months to complete the procurement of one camera. Thereafter, it took another four months to streamline the capturing process and achieve good colour balance in the images.

The numbers of volunteers were built up from 2 over the following year to the full complement of 11 (including a supervisor).

The GSU agreed to their volunteers doing paginating, indexing and index/image linking tasks in addition to digital capture and quality control of the images. The indexing of all the Sheriff Court material up to 1875 was of particular importance in the work of preparation.

The co-operation between the Testaments team leader and the GSU supervisor has been a vital link in the smooth operation of the digital capture and the surrounding tasks. The presence of the supervisor on site has also contributed materially to the smooth running of all the camera room systems and the assimilation of new volunteers.

8.3.5 Involvement of SCAN IT to ongoing software requirements.

The close involvement of IT staff on a daily basis has been critical in developing software relating to the index and to digital capture. It has also been vital in liaison with the GSU for troubleshooting problems in the dCam software.

- Creation of database templates; conflation of completed databases to form the union index.
- Creation of index/image linking software, with ongoing response to operators' requests for refinements to simplify and speed up the process.
- Procurement of hardware to anticipate project needs, e.g. PCs and related equipment, server capacity.
- Availability of staff to answer a wide range of enquiries from GSU and Testaments team.

8.3.6 Level of equipment failure in digitising process.

There were a number of failures of individual pieces of equipment during the project, notably a Kodak and an Atmel camera. However, there was no major or general breakdown. This has been a high risk area, given that our supplier is in Germany and is unable to provide on-site servicing. Contact with him has been facilitated by the ability of the team leader to speak German. The GSU team in conjunction with the IT staff has been able to deal with most problems as they arise.

In general, cameras, book cradles and related equipment have stood up well to continuous daily operation. A number of small items of equipment were purchased as a contingency reserve in case of breakdown.

8.3.7 Staff Skills and Knowledge

Regular meetings of the Testaments team produced consensual working practices and codified procedures. For example, ground rules were produced to achieve consistency in the index for the rendering of personal and place names, information to be included in the description field, document types for inclusion in the notes field and the recording of dates. This information was used both in the compilation of new index entries and in correcting existing ones.

The selection, numbering and indexing of loose leaf material was speeded up by two team members working together, with an agreed division of tasks.

A new departure for the project was the ability to use home-working staff. This was facilitated by IT staff, who enabled remote index/image linking and provided software for uploading edited text files. This proved very successful and is likely to form part of future imaging indexing projects.

We had the flexibility to recruit casual staff. They assisted with index/image linking and preparation of website content. Without their contribution it would have been impossible to meet project deadlines.

Staff training in and out of house increased skills (notably in Conservation) and streamlined practice. In-house training continues on a regular basis, especially of the GSU volunteers, in document handling, indexing and index/image linking.

8.3.8 Conservation of material.

A range of factors contributed to make this issue the most problematical.

Positive:

- working procedures for a mass digitisation project from original records were evolved and codified
- handling training for volunteers was devised and successfully implemented
- a preservation assistant was recruited, whose contribution proved invaluable
- design of the book cradles was modified and improved with advice from the senior conservator
- involvement of NAS conservation staff in the last year of the project increased throughput and facilitated the inclusion of the warrants of six Commissary Courts.

Negative:

- the illness and subsequent resignation of the chief conservator materially impeded progress and reduced throughput
- the failure to recruit more than one qualified conservator also reduced throughput
- difficulty in establishing conservation procedures by the SCAN team to meet standards approved by NAS Conservation. However, NAS conservators were able to fill the void created by SCAN conservation staffing problems.
  For more information on the conservation process please see the Conservation Report

8.3.9 End users and project dissemination

The index and images of the testaments have proved very popular with readers in the search rooms of the NAS and on the internet via www.scottishdocuments.com.
The creation of the index has revolutionised the way in which the original documents can be used. Primary interest is from genealogists, but there is a growing academic use. For instance, researchers are now using the information about occupations in the description field of the index and are able to relate these times and locations in a way not previously possible. Readers in the search rooms have access to all the images free of charge via the index or as virtual volumes, and will soon be able to print off greyscale copies. Reactions from readers about the quality and accessibility of the images are very favourable. Images of the older testaments are judged to be easier to read than the originals.

The number of visits to the website, now topping a million in conjunction with the SCAN website, testifies to the popularity of the index. Statistics also show that the Famous Scots section attracts many visits. Images have been available for purchase since July 2002, and the number of customers is now 7,000. Sales of digital images are far greater than the sales of photocopies of testaments by the NAS before the project began. The proportion of UK to overseas sales fluctuates, but nearly half of all customers come from the USA, Canada, Australia and New Zealand.

The project has also generated a great deal of interest from archivists and those interested in the technical side of digitisation. The project receives enquiries about the digitisation process from all over the world and visitors come to see for themselves at Thomas Thomson House. SCAN staff, both IT and curatorial, are frequently called upon to speak both at home and abroad, and there is no doubt that the project has brought prestige to its partners.

8.4 Finance & Administration

8.4.1 General Administration

The PID outlines the level of administrative support that was put in place to support the delivery of the project. This support was crucial in ensuring that the business end of the project ran smoothly and that important administrative tasks were identified and addressed appropriately. It also allowed the sub-project teams to concentrate exclusively on their specific objectives rather than becoming sidetracked by administrative tasks.

A critical function of this role was to provide effective communications both internally to the project team and externally to project stakeholders, ensuring that all parties were kept informed of project developments. The development of an administrative web page enabled this process to be streamlined and provided a useful medium through which project information could be shared and accessed.

The decision to allocate additional administrative resource to the project when commenced its e-commerce operations was crucial in ensuring the success of this aspect of the project. This resource was primarily focused on providing a customer care service and on providing financial management information associated with e-commerce sales. It was also useful in identifying and resolving initial teething problems associated with the project's e-commerce activities. Although this resource was allocated temporarily to the project during the initial e-commerce implementation stage and its immediate follow-up phase, it is evident that this needs to be a continuing and integral part of the e-commerce operation. The cost of providing customer service based on current staffing levels, as shown at table 1, now significantly exceeds the cost of having a

dedicated customer service resource, which would be circa £15,000 per annum. Additionally, current customer service provision is being resourced from the Testaments team, which is having an adverse impact upon index image-linking progress.

8.4.2 Finance

Although allocations to initial budget headings proved difficult to accurately predict at the outset, the overall predicted budget for ensuring the projects successful delivery was accurate. Although this project was delivered within budget the flexibility shown by the HLF in agreeing to the reallocation of funds to balance out discrepancies between budget headings and to create new budget headings as the project evolved, was instrumental in helping this objective to be achieved. [View Budget Spreadsheet]

A critical aspect of the project administration role was to undertake financial monitoring of income and expenditure of the project to ensure that it remained viable over its lifespan. The monthly drawdown claims submitted to the HLF were normally assessed and paid within 4 weeks of submission. We also took advantage of business development grants, available through Scottish Enterprise, for marketing and e-commerce activities. E-commerce consultancy services provided by Scottish Enterprise also proved invaluable in help helping to establish and implement the scottishdocuments.com website. The projects finances were regularly subjected to rigorous independent scrutiny by auditors appointed by the board of directors.

The decision to contract with WorldPay, as a third party payment processor for e-commerce transactions, was the most efficient method open to the project for dealing with customer payments. The revenue generated by scottishdocuments.com, together with the costs of providing this service is shown at table 1. These figures represent an average based on revenue generation and running costs for the period July - Dec 2003.

Revenue	Monthly	Yearly	Costs	Monthly	Yearly
	£6,855	£82,620	Customer Care	£1,670	£20,045
			Advertising	£ 500	£ 3,000
			WP Commission	£ 470	£ 5,640
			VAT	£ 568	£ 6,816
Total	£6,855	£82,620		£3,208	£35,501

Table 1: scottishdocuments.com - average revenue and costs.

According to this estimate the income revenue exceeds the running costs by approximately 43%. This ratio could be significantly improved, however, if customer enquiries were resolved by a dedicated customer service resource, as previously intimated.

All income revenue received from the HLF, scottishdocuments.com, and various other sources, were processed through the project's accounting system. Each income stream was allocated a specific account code ensuring that income from specific sources could be unambiguously accounted for. Should the project go on to market additional digital resources, the same accounting procedures would be used in order to segregate the income and expenditure associated with particular resources. This would enable economic activity associated with the sale of the Wills and Testaments to be monitored separately from other

digitisation activities, enabling a longer term assessment of the project's overa effectiveness to be measured.

8.4.3 Communications

A further critical function of this role was to provide effective communications both internally to the project team and externally to project stakeholders, ensuring that all parties were kept informed of project developments. SCAN used shared network drives and also developed a documentation website to ensure that staff and HLF had access to all relevant information.

In the early days of the project a regular newsletter was sent to all participatin archives and a large number of other interested parties. Once the website was established this itself became the main means of communicating progress. In retrospect the project should have made more effort to publicise progress and keep in closer touch with participating archives. This could have been done by copying them the monthly progress reports that were sent to HLF without creating an extra task of work.

8.4.4 Value for Money

Looked at any way the project achieved value for money. All the planned deliverables (and a large number of additional benefits) were achieved within the budget originally granted by the HLF. The project unlocked a major resourc in the GSU contribution. In addition to the volunteer staff (which underlines the potential for using volunteers in major archive projects) the GSU contributed hugely to the development of the dCam program which enabled the efficient capture of images. This will be a benefit for the archive community as it will open up the prospect of further digitisation programs.

The use of Internet as a delivery means for archive information has proved much more cost effective than dealing with physical visitors. It cannot provide the same level of personal service for customers, but by providing self-help tools and facilities, it enables more people to find out more about themselves, their communities and their history than they could by conventional means. In this way, the project will go on helping to stimulate tourism development in Scotland at no additional cost.

As the e-Commerce part of the website is working well, the income stream fro the wills will help to offset future costs of maintaining the service.

9. Marketing Activity

The decision to enroll in Scottish Enterprise's Marketing Advance Programme played a crucial role in facilitating the project to identify and define its market segments, fix a viable price point and inform its longer-term marketing strategy. The programme also gave the project access to a Scottish Enterprise Business Adviser who advised upon business development strategies and who identified local enterprise grants that the project may be eligible for. [View market analysis report]

The Scottish Documents website was also awarded best 'Not for Profit' website in the Winners at the Web 2003 competition.

The decision to contract with specialist Public Relations and Event Managemen Companies was critical in ensuring the success of the project showcase event and for raising the public profile of the SCAN project both within and beyond th

Scottish archival community. The event was well attended and feedback was very positive. The event attracted a lot of publicity and was featured on nation television news, national and local radio and national and local newspapers.

[View marketing review report]

9.1 Usage Statistics

9.1.1 Expected Usage Summary

During the application to HLF for funding we were asked to provide projections for the anticipated usage of the various parts of the planned SCAN website. We consulted with several archives already running websites and scaled our anticipated usage based on their experience. We expected that, based on existing experience, the increase in number of users of websites compared to actual visitors would range from a two-fold to a ten-fold increase. The projections at the project planning stage used the terms 'accesses' and 'visitors'. The corresponding term for 'accesses' use at the present time for website statistics is 'page views' and the term 'visitors' is equated with the number of "visits" as defined by the Webtrends software used to analyse usage figures. The figures below are a summary of the expected usage we anticipated for each of the sites main features.

	High	Medium	Low
Totals (hits)	19,548,000	9,878,000	6,010,000
Total (visits)	257,000	130,000	79,000

9.1.2 Actual Usage Summary

It is difficult to accurately subdivide the statistics for specific parts of the site in the manner predicted to derive correspondences to the expected usage figures As a whole however, we can compare like for like. The table below summarises the number of accesses to the SCAN websites.

	Hits	Visits
SCAN site	11,246,524	328,812
Scottish Documents site	17,799,759	701,638
Totals	29,046,283	1,030,450
Totals as percentage of predictions	149%	401%

The figures are for the year 1 January - 31 December 2003.

9.1.3 Catalogue Usage Statistics

The above figures do not include figures for use of the online catalogue, which was launched in October 2003. Statistics for use of the online catalogue are on available from January 2004, but a projection from data collected in December 2003 provides the following figures:

	December 2003	Projection for 2004
Hits	27,709	332,508
Page Views	23,913	286,956
Visits	1,670	20,040
Visitors	780	9360
Searches	14,351	172,212
Help Requests	216	2592

The projection for 2004 is conservative (based on the December 2003 figure) a the online catalogue has yet to be fully publicised.

Usage has clearly exceeded even the high end original estimates. This has bee partly due to the active promotion of the site by the Internet Resources team building on lessons learnt at the Scottish Enterprise marketing courses. This ha shown that where, for instance, a newsletter is sent out to existing customers there is a direct correlation between that and increased sales. This should be noted by other archives as there is now far more potential to publicise virtual resources that an archive may have. This resulting higher profile is something that archives have long desired. The additional usage did not cause any issues for the performance of the website or link. Our specification for the server hardware was well in excess of the anticipated high end usage and, in addition the equipment itself was well capable of dealing with a level of usage even beyond that. In practice the more likely bottleneck would be internet bandwidt but with prices for this falling, we were able to lease a 2Mb connection which proved more than adequate for our needs. During the lifetime of the project, therefore, SCAN was able to benefit from the technological improvements in server performance and bandwidth availability to cope with the increase in actual usage over anticipated usage.

10. Stakeholders

10.1 Directors

SCAN Ltd was set up as a company limited by guarantee and was responsible for all the contractual relations between HLF, NAS and GSU. The company was set up with the Keeper and his staff intentionally in a minority. Appointing directors from diverse backgrounds also helped to throw different perspectives on the way the project should develop. The directors included a representative of the participating archives, a director representing archive users, a representative from the research community and a representative of archive owners.

10.2 Participating Archives

Relations with the participating archive group and the smaller participating archive working group (PAWG) were complex at times. There were concerns that the project would make it more difficult for other Scottish archive project gain HLF funding and that the concentration of resources in NAS was misplace Early staff recruitment in SCAN had, by necessity, been restricted to NAS staff and there was some resentment of this. Later recruitment, including the projec manager post, was open to all and was more satisfactory for participating archives. Comments were received that the level of communication was either too much or too little. Participating archives wanted more control over the project. To meet these concerns, one of the SCAN Ltd directors was appointed to represent participating archives and more responsibility on training needs

(including finance) was devolved to the PAWG. Despite these difficulties, the project was able to retain its momentum and gained commitment from all parties to ensure the projects success.

Towards the end of the project the participating archives were consulted to identify the elements of the SCAN project which they perceived to be the most useful or important to maintain and develop. Their recommendations are detailed at Appendix 1.

10.3 User Group

The User Group has been very supportive of SCAN and has provided valuable feedback on various aspects of the project. The User group participated in several evaluations of SCAN products such as the website, image quality and the e-Commerce site.

The User group included several members from the education sector and they were instrumental in helping to develop the educational resources in SCAN. In addition, the SCAN user group formed part of the focus group selected the NANURG evaluation.

Even though the HLF project has been completed, the User Group are keen to continue their role and maybe broaden it to consider other archive projects in Scotland.

11. Conclusions

On every measure the SCAN project has been a success. All the key deliverable identified in the PID have been delivered and the project has completed within budget.

The Online Catalogues sub-project has established a catalogue that comprises fifty two archives throughout Scotland and is likely to form the basis of a more extensive cataloguing conversion project in the proposed Mac2A. Many archive have received their first computer equipment courtesy of SCAN which will allow them to develop their own content and add to the rich mixture of Scottish archives on the internet. With the extension of licences for CALM to more than 20 archives throughout Scotland, the project has contributed towards cohesion and consistency in cataloguing that also has enormous potential for further development. The Internet Resources sub-project has developed websites that attract over 1 million visitors a year with overwhelmingly positive feedback fro the public. They have created a knowledge base of Scottish archive material which has been fully illustrated with sample images of authentic documents. In addition to the originally proposed deliverables they have created research too such as a palaeography website and also an attractive set of education module They have also used the resources granted to SCAN to accommodate other related organisations with both websites and digitising projects undertaken. Th websites will continue after funding has been completed and have been constructed in a fashion to facilitate additional material.

The Testaments sub-project has completed a very ambitious undertaking and i the process created the very real possibility that access to all archive material could be opened up beyond the confines of the buildings in which they are held In co-operation with the GSU they have established a way of working that help solve the paradox of preservation and access at a cost that is at least comparable to previous methods of photocopying and microfilming. The level c access to these digitised documents has proven that there is a huge amount of

interest in Scottish archives. In addition to the above SCAN has also made significant progress in demonstrating both the need and potential for archives market themselves and their material. Whilst this cannot be to the detriment of the documents, digital access has shown that it is possible to provide a high quality service to far more people than could ever be accommodated in the searchrooms of Scottish archives. It should be noted that, whilst the original aim was to open up access to Scotland's archives, in practice family historians have been the principal users. As a result marketing work and promotion has been tilted towards that.

SCAN has transformed public access to archives, substantially improved the capacity of the archives domain in Scotland, and provided a model for developing archive services in the twenty first century.

11.1 Recommendations

11.1.1 Extend Catalogue Access

The Scottish archive community should build upon the SCAN project and seek funding to extend the on-line catalogues to item level, in order to make the country's rich documentary heritage even more accessible.

At the end of the SCAN project there is an unprecedented opportunity to build on the foundations laid by the SCAN Online Catalogues and the NAS eCat projects and extend the level of electronic cataloguing throughout the participating archives to item level. The NAS eCat project, building on the experience of the A2A project in England, has established all the working practices to enable a high quality archival markup of paper catalogues and have them converted into a format that is electronically accessible and searchable. SCAN has provided PCs and cataloguing software as well as having the starting point of each collection level record already in place. There could be very significant economies of scale in this project involving all the participating archives and making them available, at least initially, through the SCAN website until the archives themselves are in a position to take over the responsibility. This would be a major breakthrough for archives and researchers.

11.1.2 Standardisation of Catalogues across Scottish Archives

The Scottish archive community should actively work for common standards of description, based on the rules agreed in the SCAN project, in order to improve cross searching by customers, and the export and exchange of catalogue data by archives.

The Scottish archive community is now well placed to develop further standardization of its catalogues. The cataloguing guidelines developed by SCAN for the fonds level records should be further developed in the Scottish archive community to deal with other levels of description and other types of records. there is to be an increase in the level of electronic catalogues available for searching it is important that the content standards are developed to ensure that this enables a meaningful search to be conducted against very diverse collections.

11.1.3 Development of Other Online Resources

The Scottish archive community should continue to work together to compile and maintain up to date the Knowledge Base entries created by SCAN, in order to help customers and improve access to the archives.

The development of the knowledge base and other resources that exist to help

across institutions should be further developed. It is becoming increasingly evident that traditional barriers between organisations make little sense to the general public. The resources developed here could be of benefit to all staff in search rooms throughout Scottish archives.

11.1.4 Develop Digital Resources

Scottish Archive Community should consider using the resource established in SCAN for other large scale digitisation projects in Scotland.

The SCAN project has established good working practices that are sound from preservation viewpoint are very effective in throughput and represent good value for money. If Scottish archives begin to plan, and the HLF are to fund, other digitisation projects they should consider using the SCAN model. This would prevent duplication of effort with other projects. Other digitisation projects should also consider the conservation requirements of their scanning projects.

11.1.5 Encourage Further Development of SCAN

The HLF should link future archive grants in Scotland to participation in Scottis Archive Network.

With such a significant investment by the HLF it is important that the archive community generally is encouraged to invest in this shared resource. The main requirement for any additional participating archives will be for them to provide or develop a fonds level catalogue to the same standards as SCAN has already developed.

11.1.6 Marketing of Archive Resources

HLF should require other archive projects to develop a marketing strategy

HLF should require other archive projects to develop a marketing strategy (where appropriate). This was a crucial development for the SCAN project and has opened up a new area for archives to promote their existence and worth.

11.1.7 Genealogical Tourism

Scottish Archive community should develop further resources that will help promote Genealogical Tourism

Recognising that family history is the most popular topic among customers of Scottish archives, and that tourism linked to it has been identified as a significant niche market by VisitScotland, the Scottish archive community shou work to provide high quality services for residents and visitors, and look for partnerships at all levels to promote this.

11.1.8 Educational Resources

Scottish archive community should work with educational authorities to develo sets of archive material in electronic form for use in education

Following the model pioneered by SCAN, the Scottish archive community shoul
work with educational authorities to develop sets of archive material in
electronic form for use in learning, particularly at the school level, in order to
support the curriculum, aid pupils in discovering the history of their
communities and promote knowledge of the documentary heritage.

Appendix 1 Participating Archives Survey

Summary of Participating Archives Survey Results (March 2003)

The participating archives have ranked the following elements in order of
importance:

Online Catalogues:
1. Maintenance of SCAN's collection level description. (100%)
2. Development of other catalogue levels. (95.5%)
3. Setting up a Scottish CALM User Group (80%)
4. Technical Support for CALM (76.1%)
5. Archival Support for CALM (70%)
6. General consensus that the NAS should maintain and expand the name
authority files and provide online access to all participating archives.

Digital Imaging:
1. Provide a digital imaging service (78%)
2. Provide local access to digital images of Testaments for your region (70.8%)
3. Provide a subscription service (39%)
4. Other digital imaging services which the NAS could provide:

- Advice on standards/Technical Advice
- Digitising records throughout Scotland that are most at risk of destructio
  or dispersal.
- Use of digital imaging for producing preservation copies of key records a
  part of disaster planning.

Internet Resources:
The participating archives have rated the following features in terms of
importance:
1. Archive directory (95.8%)
2. Glossary (62.4%)
3. Guide to Record Types (58.2%)
4. Knowledge Base (58.2%)
5. Gazetteer (41.6%)

The participating archives have rated the following services in order of
importance:
1. Useful Links (87.4%)
2. Family History Guide (66.6%)
3. Online Exhibitions (45.7%)
4. Virtual Tours (24.9%)
5. Discussion Forum (16.6%)
6. Bookshop (12.4%)

The participating archives rated the following proposed additions to the SCAN
site in order of importance:
1. Database indexes of other record series (74.9%)
2. Digital version of other record series (54.1%)

Other Useful Services and General Comments.

Other online services, which may be of value:

- Information as to the purchase of equipment and professional supplies and advice on conservation matters would be really useful as would guidance on access (or closure) of record series and types (specific cases) under the legislation on Data Protection and Freedom of Information. It would really aid a consistent approach to know NAS policy on an issue-by-issue basis.
- Any health records/databases/source lists/links etc. i.e. Organisational/institutional records such as health boards, health authorities, hospitals, clinics, remote services etc.
- Should be a section relating to promotion of archives to schools and colleges of further education etc.
- Research on scottishdocuments.com also useful, could the two be continued on a single site.
- Online sources are correctly aimed at users, not at archives. The main use we have for Internet resources is to help users find sources and addresses. Gazetteers and Administrative histories would be useful.

General comments:

- The highlighting of documents, advice on handwriting, FAQs and information about archival events are all valuable features of the website that should be continued. Highlighting changes in archival legislation or other significant new matters affecting archives would be useful to add to the site.
- The Scottish handwriting tips/tutorial on the Scottish documents site & currency converter are very useful and several of our users have found then useful. It would be good to see more practical features like that.
- Wider links - HE Hub, aim 25 etc - seamless searching for researchers.
- Online advice to owners of records to assist the work of NRA(S) in disseminating information on their care and possible deposit in an appropriate repository.
- Important to retain the momentum SCAN has so ably provided. Who can foresee what possibilities technology might provide in the mid-term - Scotland's archive provision needs to be well placed, through SCAN's experience, to benefit from them.
- Advice to owners on care of records and deposits in local repository, help available from local archives.

Appendix 2 SCAN and HLF Credits

As has been noted in the report, one of the critical factors in ensuring the successful completion of the project has been the contribution made by the staff involved. Some have been involved a little, others a lot, but the project is the sum total of all their work.

SCAN Staff

Ishbel Barnes	Project Manager
George MacKenzie	Liaison with NAS
Rob Mildren	Project Manager
Bill Paton	IT Officer
Niall Taylor	IT Officer

Stuart Low	Project Administrator
Kirsty McKay	Project Administrator
Alex Holstead	IT Officer
Alan Borthwick	Online Catalogues Team Leader
Jo Peattie	Online Catalogues
Rachel Third	Online Catalogues
John MacKenzie	Online Catalogues
Caroline Brown	Online Catalogues
Jenny Cutts	Online Catalogues
Helen Kemp	Online Catalogues
Alison Diamond	Online Catalogues
Nicola Mills	Online Catalogues/Wills & Testaments
Mark Mulhern	Online Catalogues
Gordon Pentland	Online Catalogues
Catherine McDonald	Online Catalogues
Katie Russell	Online Catalogues
Jane Jamieson	Online Catalogues
Andrew Jackson	Online Catalogues
Lesley Doig	Online Catalogues
Alistair Hunter	Online Catalogues
George Anderson	Online Catalogues
Joanna Baird	Internet Resources Team Leader / Project Development Manager
Robin Urquhart	Internet Resources Team Leader
Sam Scanlin	Internet Resources
Victoria Miller	Internet Resources
Clive Birnie	Internet Resources
John Malden	Internet Resources
Gary Clelland	Internet Resources
Maxine Wright	Internet Resources
Gary Young	Internet Resources
Hazel Anderson	Wills & Testaments Team Leader
Margaret Fox	Wills & Testaments
Jane Hill	Wills & Testaments
Charles Kelham	Wills & Testaments
Paul Hopkins	Wills & Testaments
Ralph Moffat	Wills & Testaments
Peter Dickson	Wills & Testaments Conservation
Dagmar Hinz	Wills & Testaments Conservation
Ann Gibson	Wills & Testaments Conservation
Jim Oakley	GSU Supervisor
Bob Blakely	GSU Volunteer
Louann Blakely	GSU Volunteer
John McLaws	GSU Volunteer
Nancy McLaws	GSU Volunteer

Wayne Brossard	GSU Volunteer
Alice Brossard	GSU Volunteer
George Kayser	GSU Volunteer
Marolyn Kayser	GSU Volunteer
Larry Upham	GSU Volunteer
Mary Upham	GSU Volunteer
Jay Daines	GSU Volunteer
Lucy Daines	GSU Volunteer
Stephen Jackson	GSU Supervisor
Gayle Guinn	GSU Volunteer
Diane Guinn	GSU Volunteer
Gloria Chaston	GSU Volunteer
Norton Chaston	GSU Volunteer
Grant Miller	GSU Volunteer
Arlene Miller	GSU Volunteer
Kay Marshall	GSU Volunteer
Ray Marshall	GSU Volunteer
Leland Maylin	GSU Volunteer
Sharon Maylin	GSU Volunteer
KD Smith	GSU Volunteer
Jacqueline Smith	GSU Volunteer
Glen Butterfield	GSU Volunteer
Lois Butterfield	GSU Volunteer
Bob Erskine	GSU Volunteer
Joy Erskine	GSU Volunteer
Michael Mitchell	GSU Supervisor
Elno Fluckiger	GSU Volunteer
Karen Fluckiger	GSU Volunteer
Arlene Baker	GSU Volunteer
Moe Baker	GSU Volunteer

HLF

Michael Smethurst	Project Monitor
Seamus Ross	Project Monitor
Jane Stancliffe	SCAN Project Case Officer
Henrietta Ryott	SCAN Project Case Officer
Beverley Peters	SCAN Project Case Officer
Helen Wheatley	SCAN Project Case Officer
Caroline McIntyre	SCAN Project Case Officer

Appendix 3 Impressions

Below are a range of different views of the SCAN project. A number of people were asked to contribute their views of the project whether positive or negativ and comment on how the project had an impact on them. We asked views fror former employees, participating archives, members of the user group, GSU volunteers, outside organisations that were involved in the development and

customers. All comments have been included unedited.

Cathy Black, Scottish Enterprise Edinburgh & Lothians

Scottish Enterprise became involved with The Scottish Archive Network at the time when the project was in its infancy. SE's role was very much to be a sounding board for the strategic development of SCAN and also to provide practical assistance with respect to marketing and IT issues. Through Scottish Enterprise, SCAN secured the assistance of an ecommerce adviser who helped to pilot the site to a select group of known users. This was done in order to test the on-line ordering process and also the internal systems within SCAN for monitoring the project. With some initial teething issues ironed out, SCAN launched the site worldwide. It is all credit to the team at SCAN that they took unique project idea and turned it into a commercial reality.

Iain Flett, Dundee City Council Archives

Our experience of the Scottish Archive Network here in Dundee has been totall positive. The generous offer of website provision and design to both the Aberta Historical Society and to the Friends of Dundee City Archives, both of them charitable societies who would have been hard pressed to envisage hosting them on their own resources, has generated interest in all of their respective activities. The FDCA website has indeed generated so much interest and feedback that it is now causing the Friends welcome problems on how to deal with this. A computer, printer and scanner have been provided for public use in the searchroom, for which all members of the public have been incredulously grateful that such a facility is freely available to them to continue their archiva search on the internet, as well as searching the databases which the FDCA hav created. A SCAN member of staff also spent a substantial term converting the old foolscap typed catalogues into electronic form, again an exercise which Dundee City Archives would never have had the resources to carry out. The SCAN website facilities of the archive directory, of the research tools, and of th online catalogues have made life a lot easier both for ourselves and for our enquirers, and we hope that SCAN will continue to be developed for the greate good of Scottish education and historical understanding. While appreciating the usefulness of present and future pay-as-you-go sections such as Scottish Documents we would be concerned that the ethos of any future SCAN development will be free access to information for all members of the community. Yours sincerely, Iain Flett

Glenn & Lois Butterfield, GSU Volunteers

We have enjoyed working with the SCAN project for basically two reasons beyond the enjoyment of associating with many of the fine and dedicated personnel employed by SCAN.

As serious genealogists since 1958 we have seen the resources develop from a few thousand microfilms to the marvelous technologies of digital imaging and instant on-line gratification of information. It has been exciting to be on the leading edge with the SCAN project. Our second focus comes from having been extractors from documents others have filmed. Now, we have participated at the beginning of the process and appreciate the work that goes into document preservation and recording. From our point of view the SCAN project is an example to the world of research. The standards of quality and variety of material available is recognized by the thousands of hits on the web system.

Caroline Brown, University of Dundee Archives & Former SCAN Staff

The SCAN project was unique in Scotland as it was cross-sectoral. As such it

allowed public, university and archives of other organisations to work together towards a shared goal. As a worker on the project, this was an aspect that I particularly appreciated. It allowed the already close archival sector to move towards a common standard on several issues. On a personal level I appreciated the closer ties that my time with SCAN gave me with colleagues throughout Scotland. Although at times it seemed that the project would be much bigger than staff resources would allow, the completion of the project has provided a solid base on which to found future developments.

Stephen Jackson, GSU Supervisor

This was my first experience of digital imaging for commercial / archival purposes and even the cameras were new to me. The project had been up and running for over 12 months when I arrived and so any initial problems had been addressed e.g. colour balance. It was a very rewarding time for me being able to supervise the GSU volunteers and work closely with SCAN and NAS personnel, and to see and participate in the 'behind the scenes' work. Having been involved with microfilming for more years than I care to remember I know the importance of reducing the handling of documents and having had the experience of working at SCAN can see the great potential and problems digital imaging has.
.
It was obvious a great deal of thought and effort had been invested in the planning of the project, and listed are some of the points (in no particular order) that I believe have helped to make the Testament project such a success
1 File name same structure as catalogue entries;
2 Database entries having unique references;
3 Metadata database with all relevant data of volume, camera settings etc.
4 Capture of three images R G B to produce a colour image instead of single shot;
5 The final use of images both for internet use and search room use
6 The software systems in use have been robust enough to have a number of extras incorporated that became evident with time would make entering data easier for the volunteers
7 The mechanism for selling images over the internet.
8 The cooperation of conservation, archivists, reps, physical facilities, I.T. personnel, and volunteers.

For me it was a very rewarding and enjoyable experience and I would like to thank all those I worked with for their kindness and help.

Ishbel Barnes, Initial Project Manager

SCAN has now achieved what it set out to achieve. It has done it within budget and virtually within the projected timescale. Its effect on the study of Scottish history will be, I believe, very great as its potential is gradually realised by everyone interested in the history of our country. On a personal note I am very proud of the work of my former colleagues. It is perhaps invidious to single out individuals in what was essentially a team effort, but I remain especially grateful to Mrs Hazel Anderson, Ms Joanna Baird, Dr Alan Borthwick, Mr Robin Urquhart and most of all to Mr Rob Mildren.

Ray Marshall, GSU Volunteer

I write as one of the GSU volunteers working on the SCAN Testaments digitizing project. At the outset, let me just say that when we first learned we would be working on the project, as volunteers, working in Scotland, we were truly excited. When we arrived in Scotland and met the SCAN staff we were made right at home, and after a short time to get up to speed, found ourselves

immersed in the project.

I suppose some people would find little excitement or interest in turning a page and capturing an image, but to us it was much more than that. Our immediate focus was the books, but the real interest was in the people whose lives were documented in those books, and the influence they had on modern day Scotland and the Scottish people. We didn't have time to read much of the material, but in the few seconds it took to capture each image we did have the chance to briefly scan the pages we were capturing. When something of real interest caught our eye, we would stop to read a little. We know that this affected our productivity a little, but as volunteers we considered this a little payback for the effort we were putting into the project. The things we read as we captured wills and testaments truly opened our eyes to the rich heritage of the Scottish people -- their loyalty to their country, their love of their families, and their faith in God. In a modern day when all three of those are under attack, it was refreshing to look back on the rich heritage of Scotland, and feel some satisfaction that much of that heritage shows through to modern times, despite appearances as reflected in the media.

We were pleased with the administration of the project and the great care taken to be sure that we were comfortable and our needs were met. It was therefore a truly enjoyable experience, from all aspects.

Elizabeth Gabriel, Customer

It is difficult to find anything on the down-side to say about this site. It is a marvellous research tool and window into the past. The image quality is excellent (allowing for the condition of the originals which necessarily varies) and when it comes to the older manuscripts, it is even more like looking at the original with all the stains of time.

The content naturally varies tremendously in both length and interest. It can be disappointing, especially for those who died intestate, where the document merely lists assets and debts for tax purposes, but gives no leads. Others are a gold mine of information, leading to unknown relatives and showing the almost invariable thrift of our ancestors, nearly all of whom seem to have had savings deposits at some of the many banks even when obviously not well off. The lists of contents of their houses can be quite fascinating, from 8-day clocks to buckets of coal.

I have just two small criticisms regarding the mechanics of the site which I would like to see adjusted: When you have an unsuccessful search, but wish only to alter perhaps one word, or the court concerned, you have to start from scratch each time - it would be helpful for the initial input to be left for alteration.

(b) when you get to the foot of a page of wills, it would be helpful to be able to go back a page without having to go to the top of that page first.

Otherwise, a gem of a site.

Keith Withington, Account Manager Genealogical Society of Utah

The Genealogical Society's involvement in this project has from the outset been one of a steep learning curve. Some five or more years ago the Society was considering there should be a move towards digital imaging rather than microfilm as a means of accessing information. The SCAN project has assisted that decision making process. From its early days when our staff considered how they would fill their time to the present day when they could use more

hours we have gained experience and knowledge. We are better equipped ourselves to commence, with confidence new imaging projects. A number of ou employees have gained valuable skills that can be used in our organization, as will be manifest in another joint project soon to commence. The project has als been a great vehicle for introducing many archivists to new technology and allowed them to understand more fully the role of imaging and then Internet access of the images.

As an organization we have always received good feedback from all the staff involved. Concerns have been dealt with promptly allowing the throughput of work to continue in a timely manner. Importantly information has been shared so that all concerned could learn from the project as a whole. From a personal point of view it has been a pleasure to work with SCAN personnel.

Ann Laird, Chair SCAN User Group Report

Thanks to SCAN, there are Scottish Wills and Testaments, as well as "Finding Aids" for archival holdings in 50 Scottish archives, now globally available on internet websites, with on-line support from an expert "knowledge base" and tutorials in historic handwriting. The User Group has observed the commitmen skill and high standards of the SCAN team in moving Scottish Archives into the world arena.
Throughout the project, SCAN has consistently taken its liaison with its User Group seriously. Wide-ranging interests, including genealogy, local history, schools, tertiary sector, national archives and ICT were represented in those invited to join, and occasional joint meetings with the Participating Archives group were very productive. While providing a "reality check" for the expenditure of large sums of public money, User Group members have been able to enjoy a close-up view of a major innovation, with the opportunity to influence it.

Feedback from the User Group informed a SCAN decision to invest in educational materials: a set of primary sources from Scottish archives can now be accessed on-line, with learning materials suited to Scottish schools. User Group members participated directly in specifying and implementing this work.

From the User Group perspective, HLF Monitors have appeared overly bureaucratic and slow to grasp opportunities to improve the project as it developed. HLF funds are for the people, and everyone wants to ensure that public money is spent efficiently - but HLF will find it difficult to source appropriate work in future unless it can develop a more collaborative approach and use a 'lighter touch' in its monitoring methods.

User Group meetings have become approximately quarterly and attendance settled to a regular handful representing the main interests. Other members attend occasionally, make email responses, and are contacted directly by project staff. As Chair of the group, I feel our contribution to the main project has been genuinely valued: we are now interested in developing an effective support role in the post-project phase.

Jay & Lucy Daines, GSU Volunteers

We remember with fondness our time spent working on the SCAN project. The first several months while we were figuring out how to get the equipment working properly was, of course, a bit frustrating. Since returning to Utah we have received many positive comments from people searching for Scottish ancestors, and there are many people here doing just that! The technology tha was developed for the project will most certainly be highly valued now and in the years to come.

Lynn Beaumont Tods Murray - SCAN Legal Advisors

Tods Murray (Lynn Beaumont and Richard Findlay) have acted as legal adviser to SCAN since 1998 and have been involved in each stage of the project - from setting up the company and documenting the funding, documenting arrangements with National Archives of Scotland and GSU, right through to advising on aspects of the commercial site scottishdocuments.com.

One of the most interesting aspects of the project for us in the early days was intellectual property right licensing and ownership. As the first project of its kind, and at a time when the legal niceties of copyright in the digital era were perhaps less explored than now, it was very much a case of working from first principles. Particular issues for us included the use of Crown copyright materia in this context and ownership of copyright in digital materials.

From a personal point of view we have very much enjoyed working with Ishbel Rob and the rest of the team over the years - and our knowledge of matters such as finding aids and palaeography has increased tremendously as a result!

Hector L MacQueen, Chair; Scottish Records Advisory Council

The SCAN project is an exciting realisation of the potential of the digital environment to transform the way in which we access, use and understand the records of the past. The Scottish Records Advisory Council, which has a statutory duty to promote public access to, and understanding of, public record has long seen SCAN as a superb way to take this mission forward. From the point of view of the public, this is a quick and easy way to get into the records from the comfort of your own home, before making your way to the archive to examine the documents you have traced through SCAN. From the point of view of the teacher, whether in school, college or university, here is a wonderful opportunity to bring the records into the classroom. And from the point of view of the researcher, in particular the social and legal historian, SCAN opens the way into the wonderful centuries-long resource that is the wills and testaments It is to be hoped that SCAN is only the beginning of a new way of appreciating the wealth to be found in our public archives.

Appendix 4 Securing the Future for the SCAN Digital Assets

The SCAN project will be largely completed by end February 2004 and 31 Marc 2004 is the final date for project funding. NAS recognises the immense value o the digital assets the project has created with generous HLF investment, and is committed to maintaining and developing them for the benefit of all Scottish archive users.

The SCAN top-level catalogue effort will be largely complete by 29 February 2004, and NAS undertakes to complete any editorial work remaining when project funding ceases. Responsibility for updating entries will thereafter transfer to the participating archives, but NAS will maintain the catalogues and process new and revised top level entries. NAS is also committed to supporting the efforts of participating archives to deepen their catalogues to item level through projects such as Mac2A, and through providing training opportunities for Scottish archivists. NAS will continue to provide a Help Desk service to participating archives for any queries regarding their CALM installation.

NAS will take over and maintain the digital cameras from March 2004 and will offer a digitising service to participating archives and related heritage institutions in Scotland. Details are below. NAS will negotiate with the GSU to continue their involvement in digitising Scottish archives and expect to conclud an agreement to work on indexing and imaging church records.

NAS will take over the e-commerce service, Scottishdocuments.com, from March 2004. This will in time be transferred into the new Scottish Family Histo Service which NAS are developing with the General Register Office Scotland ar the Lord Lyon. Public access will be on the same principles as operate at prese with SCAN.

The on-line services will be continued by NAS as assets of value to all archive users in Scotland. NAS will continue to encourage participating archives to submit up to date information for the directories and the knowledge base, and will process and add these.

SCAN has sought the views of the participating archives on which aspects of th project they wish to see continue and in what form. NAS will take these views into account in its future work with the participating archives.

The directors of SCAN Ltd have agreed to investigate options for continuing the company in existence as a vehicle for encouraging further development of archives across Scotland. This includes backing the application by the Scottish Council on Archives for project development funding for Mac2A.

NAS Digitisation Service

NAS have agreed to take over and maintain the 5 digital cameras provided by the SCAN project with HLF funding, and to provide a digitising service for participating archives and related heritage institutions in Scotland. This note sets out the principles for providing that service.

SCAN has, with HLF funding and generous technical support of the Genealogica Society of Utah, developed sophisticated facilities for swift digitising from original archive documents. The key elements in this include the software for controlling the cameras and the workflow procedures, covering preparation wit appropriate preservation input, digital capture, quality control and, where appropriate, linking of images to indexes or other finding aids.

These facilities have up till now been used to digitise some 2.5 million images from Scottish wills, and during the second half of 2003 they will also be used fc poor law records from across Scotland and later for Kirk session records held b the NAS under an agreement with the Church of Scotland.

There may, however, be some spare capacity available, and NAS intends to us this to offer a service firstly to archives that participate in the SCAN project, ar secondly to related heritage organisations that require archive documents to b digitised.

The provision of the service to will be subject to pressure of work on the other material and at the discretion of the NAS. Material which, in the opinion of NAS conservation staff, requires treatment may be declined or require to wait until such treatment can be given.

NAS will maintain and repair the cameras as necessary for at least 5 years fror the time of original purchase, which represents the full period of depreciation. Beyond this period, NAS aims to replace the cameras when required and to continue to provide a digitising service.

NAS will require to recover all costs associated with providing the service, including any conservation work required, and this will be reflected in the price charged to institutions using the service.

Appendix 5 Project Monthly Reports

Each month the project sent a report to the HLF which detailed the finances, performance indicators and a commentary on major events in the project. Listed below are links to each of the reports which details many of the highs and lows of the project.

Each of the individual reports may be viewed on-line via the SCAN website...

http://www.scan.org.uk/aboutus/report.htm#app5

Appendix 6 Glossary

A2A	The Access to Archives project. This offers access to archives catalogues in England and Wales. http://www.a2a.org.uk/
ARKIS	This is the cataloguing software developed by the Riksarkivet in Sweden
CALM	CALM is a database for archive catalogues - http://www.ds.co.uk/calm.html#archives
DS	DS Ltd is the company responsible for developing CALM
EAD	Encoded Archival Description, a means for standardising the interchange of archive information. http://www.loc.gov/ead/
e-Cat	This was an NAS project to convert the entire paper catalogue into electronic form.
FDCA	Friends of Dundee City Archive http://www.fdca.org.uk/
	Genealogical Society of Utah - an organisation

GSU	dedicated to gathering, preserving, and sharing genealogical information throughout the world http://www.gensocietyofutah.org/
HE	Hub Higher Education Hub. The Archives Hub provides a single point of access to descriptions of archives held in UK universities and colleges. http://www.archiveshub.ac.uk/
HLF	Heritage Lottery Fund. HLF uses money from the National Lottery and give grants to support a wide range of projects involving the local, regional and national heritage of the United Kingdom http://www.hlf.org.uk/
ISAAR (CPF	International Standard Archival Authority Record for Corporate Bodies, Persons, and Families. This standard gives general rules for the establishment of archival authority records that describe the corporate bodies, persons, and families that may be named as creators in descriptions of archival documents. http://www.ica.org/biblio/isaar_eng.html
ISAD(G)	General International Standard Archival Description. This standard provides general guidance for the preparation of archival descriptions. It is to be used in conjunction with existing national standards or as the basis for the development of national standards http://www.ica.org/biblio/isad_g_2e.pdf
Mac2A	This is a proposed project for Scottish archives based on similar principles to A2A see above.
NANURG	National Archives Network User Research Group, a working group of the National Council on Archives carried out user evaluation research into the main strands in the UK archives network including SCAN http://www.resource.gov.uk/documents/nanurg.doc
NAS	National Archives of Scotland http://www.nas.gov.uk
NLS	National Library of Scotland http://www.nls.uk
OPAC	Online Public Access Catalogue
PAWG	Participating Archives Working Group
SCAN	Scottish Archive Network http://www.scan.org.uk
TNA	The National Archives http://www.nationalarchives.gov.uk/default.htm