FROM VISITOR INFORMATION SYSTEM TO CD-ROM:
A CHALLENGING JOURNEY

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1.   INTRODUCTION

The journey towards the 'Information Society' in Europe terms or the 'Information Super Highway' in U.S. is now well under way - certainly if one believes only a small part of the type associated in the 1990s. Future historians will undoubtedly make their verdict on this 'fin de millennium' phenomenon. Engaged as we are on this journey, it is not easy to discern its true nature.

This paper reports on an initiative in an area of particular interest since it is in the intersection of two worlds:
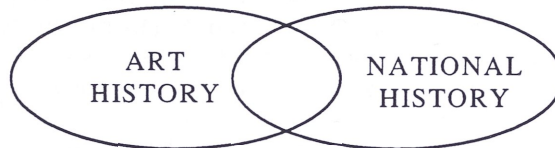
This is due to the rare nature of the Scottish National Portrait Gallery (SNPG). As described in section 2, this institution is one of the few Art Galleries devoted solely to paintings of key people in the history of a nation.

The paper is a case study of the Scottish National Portrait Gallery's progress in two of the early stages in the journey towards 'access anywhere, anytime' to its collections.

The first of these stages, a Multimedia Visitor Information System (Prototype) is described in Section 3. Evaluation especially by users, was given priority attention are the subject of Section 4.

The CD-ROM field is currently in a period of relative disillusionment both from user and producer viewpoints following the euphoria of the early 90's. However, it was decided to press on in a cautious manner to produce a low-cost 'promotional' CD-ROM as described in Section 5. The completion of this CD-ROM fortuitously coincides with EVA Berlin 96, at which it is being demonstrated for the first time.

A major potential benefit of the work in these first two stages is the existence of a set of high quality digital images and accompanying text. The ensuing possibilities of creating a 'Reusable Multimedia Resource Base' are described in Section 6.

The final section 7 concludes with a discussion of:

- Organisational and people issues,
- lessons learned and
- future opportunities for the Gallery, especially within the framework of the Scottish Cultural Resource Access Network

We hope that the paper will be useful to others engaged in the journey.

2. THE SCOTTISH NATIONAL PORTRAIT GALLERY

The Scottish National Portrait Gallery was founded in 1882 by John Ritchie Findlay, proprietor of *The Scotsman* newspaper, who gave a large sum of money for its establishment on condition that this was matched by an equally large sum from the government. The financial arrangements in place, the well-known Scottish architect Sir Robert Rowand Anderson was commissioned to design the red sandstone, Venetian Gothic building which the Gallery still occupies today, complete with statues of famous Scots on the outside, Clio, the muse of History, above the main entrance, murals inside showing stirring scenes from the nation's past and a painted frieze of eminent men and women marching in procession high above the Front Hall.

The Scottish National Portrait Gallery was opened to the public on 15 July 1889, by which time it had been agreed that the separate National Museum of Antiquities of Scotland should occupy its eastern half, an arrangement which has continued until now. The Gallery itself is one of the National Galleries of Scotland, which are funded by a grant from the Scottish Office Education and Industry Department, and run by a Board of Trustees appointed by the Secretary of State for Scotland. Its collecting criteria are, rather different from those of its sister institutions, however. The National Gallery of Scotland and the Gallery of Modern Art collect paintings for aesthetic and art historical reasons, whereas the Portrait Gallery acquires pictures on an historical basis, asking not, 'Is this a beautiful painting?' but 'Is the sitter a famous Scot?' It is very nice, of course, when the answer to both questions is 'Yes.'

The collection comprises just over three thousand items, ranging from full-length portraits in oils to miniatures, sculpture, drawings and engravings as well as photographs from life. The earliest paintings date from the mid-sixteenth century, the most recent from the present day. At one time, for reasons of diplomacy, only paintings of dead Scots were hung - the notion being that if one living politician were represented, then all the others would clamour for wall space too. Following the example of the National Portrait Gallery in London, however, this rule was abandoned some years ago and the Gallery now actively commissions portraits of distinguished living Scots.

Each summer, to coincide with the Edinburgh Festival, there is a special exhibition, usually of portraits borrowed from other collections, on historical and art historical themes, and there are small photographic displays throughout the year. A large Reference Archive of more than 30,000 black and white photographs of portraits in public and private collections in Britain and beyond is available too, and the staff receive a steady stream of enquiries from authors, publishers, students, genealogists and members of the public with historical interests.

For the most part, the Gallery is hung in a chronological way, with the major introductory display in the large ground floor room telling the story of the Stewart Dynasty, the kings and queens who ruled Scotland from 1371 until 1714 and were direct ancestors of Her Majesty The Queen. The exhibition was devised jointly with the National Museums of Scotland, and so it includes not only portraits but objects - furniture, jewellery, medals and personal memorabilia.

3. THE VISITOR INFORMATION SYSTEM PROTOTYPE

When, following support from the responsible Government body, it was decided that the National Galleries of Scotland should venture into the world of multimedia, the Stewart Dynasty exhibition was chosen as a suitable basis for the pilot scheme. It fits perfectly with the Scottish National Portrait Gallery's brief, it was put together in collaboration with the National Museums who worked on the multimedia project, it includes portraits of the highest quality, contains a variety of both two and three dimensional objects and tells the story of historical figures who are at the centre of Scottish national consciousness. The staff would learn how Information Technology can serve an important collection of paintings, and the resulting Visitor Information System prototype would hopefully have a broad public appeal, both historical and art historical.

As reported in Edwards and Buddle (1996), a Visitor Information System was thus developed in a pilot study with the following formal objectives:

- To use portraiture to enhance interest in and increase public knowledge of Scottish History in general and of the Stewart Monarchy in particular
- To stimulate awareness of paintings as a prime visual source for the study of social history
- Through personalising individuals and contextualising their costumes, jewellery and other accessories, to extend the two dimensional experience of the portraits.

However, the underlying main objectives may be seen from the National Galleries of Scotland's perspective as an endeavour to explore the potential upsides and downsides of multimedia. In this section, we try to complement the

previous paper with attention to, inter alia, to the fusion of the national historical perspective with that of the art history - the latter being the prime focus of the Edwards and Buddle paper.

Firstly, understanding, learning about and enjoying the history of a nation as embodied in its leading people. John Ritchie Findlay founded the Scottish National Portrait Gallery because of his strong conviction that the men and women of his own day should be able to gaze upon portraits of their famous forebears and be inspired to go away and emulate the deeds of these enterprising Scots. His was an attitude typical of the late nineteenth century, deriving in part from Victorian notions of self-improvement, in part from Scotland's proud boast that through her educational system an able lad could make a good career for himself no matter how impoverished his background (Careers for women came later).

The general outlook has changed considerably since then and for a time, in the 1960s and 70s, traditional heroes fell from favour and the notion of imitating admired successful establishment figures was viewed with some scorn. Nevertheless, Scots retained a deep interest in their country's history and as the end of the twentieth century approaches, their sense of national identity seems stronger than ever. As a result, the Scottish National Portrait Gallery has always enjoyed an advantage over its sister institutions in that its collection is more accessible, both emotionally and intellectually. Many people find abstract art, for instance, difficult to understand, while others are deterred from entering galleries because some art historical writing has generated a mystique which they feel they cannot penetrate. Most Scots, however, have grown up with tales of their nation's past, and when they walk through the rooms of the Portrait Gallery - or navigate through the Visitor Information System Prototype - they find immediate points of reference: Mary, Queen of Scots, Bonnie Prince Charlie, James Watt, inventor of the steam engine, Andrew Carnegie, the world famous philanthropist or Muriel Spark, the contemporary novelist. When they view a picture of one of these familiar figures, visitors often feel a unique sense of recognition, even of ownership, which they do not experience before the most beautiful work by Titian, Velasquez or Francis Bacon.

This is only the starting point, of course. History consists of far more than the biographies of long-dead men and women, but the visual representation of an individual from the past gives a sense of scale, a feeling of human involvement, and a realisation that, beneath the fancy wigs and the outlandish costume, our forebears were men and women like ourselves. This was never more noticeable than during one of the Gallery's Festival exhibitions, on the theme of seventeenth-century childhood, when young twentieth-century Scotswomen with their babies stood before paintings of strangely clad seventeenth century mothers with infants and felt a strong sense of kinship. Again, such portraits contain a wealth of detail and are now appreciated as a vital source of historical evidence. By pointing out this detail and supplying additional information in the form of labelling, lectures, publications and, most notably, CD-ROMs, the curator can lead visitors on to a deeper understanding of both history and art.

Learning by the National Galleries of Scotland was established as a key underlying objective at the outset and this was substantial. Likewise the multimedia designers learnt a considerable amount about Scottish History and improved their already strong knowledge of multimedia aesthetics of art.

The design included innovative elements such as morphing the probable skull cast of Robert the Bruce into a statue. Two important strands are interwoven in the CD-ROM, the history of Scotland's monarchs and a continuing discussion of portraiture. No portraits from the early medieval period in Scotland have survived, if they ever existed, the figures on coins are images of kingship, not of individual monarchs, and so to supply the lack, artists have sometimes invented entirely imaginary pictures of historical personages. In the 1960s, however, one particular sculpture, C.D.'O. Pilkington Jackson, attempted to use authentic evidence and took the case of the skull believed to be that of Robert the Bruce as the basis for a large statue he had been commissioned to produce. In the sequence introducing Bruce and the theme of portraiture, both skull and the head of the statue are shown, and those devising the programme realised that the accuracy of the result could best be judged by morphing skull into head. The resulting piece of interactivity shows that the sculptor had been entirely meticulous in his measurements.

The project costs were £80,000 plus NGS staff time estimated at some 6 person months
Duration up to Prototype readiness for User Trials was 15 months. The work was carried out by a consortium of the National Museums of Scotland, MPI, a leading London multimedia producer, and VASARI Enterprises working together on a project basis with the National Galleries of Scotland.

4. USER TRIALS & OTHER EVALUATIONS OF THE PROTOTYPE VISITOR INFORMATION SYSTEM

Evaluations of the Visitor Information System were carried out at various stages throughout the development process, including:

- National Galleries of Scotland senior management and steering committee reviews
- Gallery peer reviews (i.e. curators and other staff)
- Technical Quality Assurance review by the multimedia systems company MPI
- External technical and 'advanced user' reviews at EVA London Exhibition in July 95 at which the system at an interim stage was demonstrated and feedback invited. This was also carried out at the Museum Documentation Association November 95 Conference in Edinburgh including by one of the leading US specialists in the field, Peter Samis of the Museum of Modern Art of San Francisco.

These evaluations led to a flow of improvement and change suggestions, the external reviews being very positive and encouraging. However, the main evaluation was an eight week period between 19 September 1995 and 16 November 1995 during which the final prototype version was installed in the Entrance Hall of the Scottish National Portrait Gallery. For this user evaluation, various methods were considered including the use of a videocamera but finally a simple questionnaire method was selected with the following questions posed:

1. How interesting and enjoyable did you find the programme?
2. Did you find the programme easy to use?
3. Did you like
   - the images?
   - the music?
   - the written commentary?
   - the voice overs?
4. Would this programme encourage you to visit the Dynasty Exhibition?
5. Would you buy a CD-ROM of the Royal House of Stewart?
6. How often have you used multimedia before:
   - at home?
   - at work?
   - in other galleries and museums?

In addition, there were 3 questions on age band, sex and residence. The responses appeared at first sight very positive to the Steering Committee. For example, only 3.6% of the over 200 respondents did not like the prototype with over 75% viewing it as very or extremely interesting and enjoyable and over 90% liked the images.

However, upon reflection, some members of the Steering Committee queried the responses commenting:

- 'The results are potentially wholly dismissible'
- Will 'the opinions of people to whom all this is even newer than to ourselves give the definitive guidance on which we should base our future policy'?

There is a very thoughtful discussion of such issues in Buddle and Edwards (96), including consideration of the nature and characteristics of the visitors to the Portrait Gallery - over half over 35 and new to multimedia. These questioning views with regard to Visitor Survey results in general reflect those of many in UK museum management positions according to McManus (1996). Since according to Miles (96), the UK is ahead of the rest of Europe in following North American practice in Visitor Studies, it would appear that their management colleagues across Europe have similar questioning attitudes. It is outside the scope of this paper to enter into a discussion of this important topic, however there is one point we shall raise:

- If the same questionnaire had been applied to a number of other Visitor Information Systems and the results compared or 'benchmarked', then perhaps they would not have been viewed as 'potentially wholly dismissible.'

This comparative benchmarking type of approach with regard to usability - question 2 - is now provided by application of the SUMI method developed in an EC supported research project, MUSiC - 'Measuring Usability in Context.' The SUMI method involves a simple questionnaire on usability aspects and the results are compared with numerous other results of software evaluation stored in a database held at the University of Cork. In the last year or so considerable effort has been applied to extending this approach to image and multimedia visitor information systems. If a particular prototype then scores well or badly compared to other similar applications then perhaps the results of such surveys will

not be regarded as 'potentially wholly dismissible.' The results and views of the Prussian State Galleries from their work in the MAPI (MUSiC Applied to Process Improvement) project of the EC should prove interesting. However, there will always be - and rightly so - scepticism of 'Lies, Damned Lies & Statistics'.

Nonetheless, the results of the user trials and the other evaluations were sufficiently encouraging for the project to be moved forward to the next phase of producing a CD-ROM as discussed in the next section.

5. THE PROMOTIONAL CD-ROM

The staff who worked closely on The Royal House of Stewart found it an endlessly fascinating experience and welcomed the opportunity to make additions and improvements to the programme, albeit within a strictly limited budget of £30,000 plus curatorial time estimated at one person month. This was carried out by The Portrait Gallery, MPI and the National Museums of Scotland.

Additions and improvements were in three main areas. First of all, and most importantly, it was decided to alter the help sequence. Visitors had written some extremely useful comments on their questionnaires, and these made it clear that people who had never touched a computer before had found it difficult to navigate from one section to another. Navigation between sections is by means of a bookmark which lists the options and can be called up at the right of the screen. Some people had not found it at all, and so it obviously had to be given more prominence. MPI rapidly came up with a characteristically lucid and elegant solution which makes the system much more user-friendly.

The second desire was to increase the amount of music available. The Royal House of Stewart tells the dramatic and sometimes poignant story of the lives of the people in the portraits, and music can enhance these miniature biographies in an eloquent way. Rather than having the music playing in the background, it was decided to make it interactive, so that the user does not hear the music until he or she clicks on a word or two of hot text. The curators working on the CD-ROM felt strongly that the music could not merely be atmospheric - it should have a strict relevance to the text and so, for example, when users read about the execution of Mary, Queen of Scots they hear a passage from a doleful lament by William Byrd, the famous sixteenth-century English composer when they click on the appropriate area of the screen.

For financial reasons it was not possible to add a great deal of music, but although the Edinburgh stores never did success in producing an authentic bagpipe dirge for the Bonnie Prince Charlie sequence, they did yield a disc with church bells playing 'Why should I be so sad on my wedding day?', just as they did in Edinburgh in 1707 when the Scottish and English parliaments decided to unite. Much effort had to be spent on dealing with all the reproduction rights involved and eliciting the appropriate credit lines from the various record companies. The Gallery staff had been well aware that reproduction rights for paintings form a complicated area, but they discovered that clearing permission to use brief snatches of music is even more time consuming.

The third and final set of additions to the pilot took the form of extra screens and interactivity. A view of Dunfermline Abbey was added, to give variety to the opening sequence, the interactivity of the execution scenes was tidied up and the King Robert the Bruce sequence was completed in an entertaining and informative way. Robert the Bruce was Scotland's great patriot king who preserved the nation's independence after a long struggle with England. He was not a Stewart himself, but his daughter Marjorie married Walter, the High Steward of Scotland and they adopted Stewart as their surname, from his occupation. Their only son eventually became King of Scots, the first of his dynasty

Robert the Bruce seemed a good starting point, not only because he is perhaps our most famous monarch - after Mary, Queen of Scots - but also because the Scottish National Portrait Gallery, by a happy chance, possesses two casts of his skull. The skull was accidentally dug up at Dunfermline Abbey in 1818, and a well-known sculptor was summoned to make the casts. By showing the skull, the fact that no portraits exist from such an early period (Bruce died in 1329), could be emphasised and the modern attempt at showing how he might have looked could be investigated.

In 1964, six hundred and fifty years after his famous victory at Bannockburn, the National Trust for Scotland decided to place a statue of him on the site of the battle. The well-known sculptor, C.D'O. Pilkington Jackson, produced a bronze equestrian statue on a heroic scale, fourteen feet high on a thirteen foot high granite plinth, basing the head on one of the skull casts. The statue was photographed and MPI put into our multimedia pilot a satisfying sinister sequence of helmeted head morphing into skull. This proved extremely popular with the visitors who tried out the pilot.

Shortly after the visitor survey had been completed, a fascinating article appeared, describing how a team of forensic experts had recently reconstructed the head of George Buchanan, the sixteenth-century Scottish neo-classical scholar, from his skull. Dr Iain Macleod, Consultant Honorary Senior Lecturer in Oral Medicine and Radiology at Edinburgh Dental hospital, said they could certainly undertake the work for us. Indeed, they were already working on another historical reconstruction, a prehistoric man for the National Museums. Dr Macleod's Department sent to Italy for several gallons of dental wax and new wax casts were made from Portrait Gallery cast and sent to Newcastle Dental Hospital, where Mr Brian Hill, who is in charge of the Department of Medical Illustration, produced a splendid and