



The Virtual Museum - who needs it?

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Abstract

Electronic public access to museums has become a reality - not as a result of a national, centrally controlled, network of museum collections but as a by-product of the growing popularity and availability of the Internet. This paper examines the growth of electronic access to museums and their collections by the specialist, the general public and by schools and asks some pertinent questions. Can such a serendipitous beast as the World Wide Web really deliver the "virtual museum"? What about "virtual objects"? Who will visit the "virtual museum" and what will they get from it? What can educational groups get out of the "virtual museum"? Is this the end of school visits to "real" museums? Are these "real" questions or are we driving up a "virtual blind alley"?

1 A 'compendious index'

Electronic public access to museums has become a reality - not as a result of a national, centrally controlled, network of museum collections but as a by-product of the growing popularity and availability of the Internet. Before the advent of the World Wide Web, electronic access to museum collections was envisaged by the museum world as being made possible by a national centralised catalogue, although no such catalogue was ever set up.

National and local authority museums have always been under pressure to make collections more accessible, both to governments for inventory purposes and to the public who, through central and local taxation have paid for many of the objects in care and, it can be argued, have a right to be able to share in and enjoy as much of their material heritage as can be made available.

The idea of sharing museum information had been around a long time. In 1888 one of the newly established Museums Association's primary objectives was the establishment of a "compendious index of the contents of all provincial museums" (Platnauer and Howarth (eds.) 1890). In the 1960s the Information Retrieval Group of the Museums Association was established (Roberts and Light 1986). This group, and later the Museums Documentation Association, was concerned with data standards and terminology control, both fundamental to the establishment of a national index and to the dissemination of collections' information over national networks.

In the UK the use of communications networks by museums has, until recently, been restricted to those who have close links to university departments with access to the UK Joint Academic Network (JANET). The Ashmolean Museum in Oxford has made the Beazley Archive available over JANET to selected researchers using JANET since the early 1980s (Delouis, D. 1993) and the Science Museum and the Natural History Museum have had access to JANET through Imperial College also since the 1980s. But examples like this are few. Lack of national standards in museum computer systems and, perhaps more fundamentally, lack of computer systems in museums at all has meant that the

opportunity to create an electronically accessible national catalogue of museum objects simply has not been there however much the will might have been.

2 Object records and the World Wide Web

The Museums Association estimates that there are approximately 2,500 museums and galleries in the UK (MA Museums Briefing number 15, March 1997). An estimate in 1985 (Roberts, 1985) proposed a figure of over 100 million objects in the care of the nation's museums. In a recent survey 257 UK museums reported a total of 9 million records on computer (Gill, T. and Dawson, D. 1996). If each museum were to make its object catalogue available as a searchable database on the Web it could be argued that, with appropriate hyperlinks, this would form one, large, national database.

Today the Internet, or more precisely, the World Wide Web presents an opportunity to create a national catalogue of sorts. A brief look at each of the UK museum web sites (130 in March 1997) listed on the Virtual Library Museum pages (note 1) revealed twelve museums (four of these have archaeological collections) with inventory or catalogue records available on-line. It is likely that in total these records amount to no more than 100,000. Put simply, the number of object records available on the World Wide Web from UK museums is probably less than point one percent (.1%) of the total number of objects cared for by UK museums.

The fact is that of those UK museums with their own Web site, most have no object records available on the Web and those that do, with very few exceptions, make only a few selected records available. Why, after more than two years of Internet activity and 'hype' has so little apparent progress been made towards on-line collections? Putting aside the problems of entering large backlogs of data, and for many museums this is still a major problem, there are other obstacles. Firstly there are problems with the data itself. Few museums, if any, have 'clean' data in their computerised catalogues and curators are understandably reluctant to put erroneous or sketchy data on public display. Secondly,

although tools that can link large relational databases to Web pages are available and relatively easy to use current licensing policies tend to make these tools expensive. Copying the data to an inexpensive, Web compatible database, may be cheaper but will require the services of technical staff who understand both the native database and the Web software. The cost of repeating this process periodically to keep the Web version current should not be forgotten. Thirdly, security across the Internet is a real problem -- no museum wants to risk having their collections catalogue compromised deliberately or by accident.

None of these problems are insurmountable as a visit to the Hampshire County Council Museums Service Web site will demonstrate (note 2). This site has 80,000 object records from its MODES database available for searching on the Web -- so it can be done, providing a museum has the necessary technical resources on hand and the courage to risk criticism from its peers. Another exceptional, and one might even say heroic, effort is the SCRAM project in Scotland which aims to have 1.5 million records on-line by the year 2001 (note 3).

Although the majority of UK museums may not be able, or willing, to make complete object databases available on the Internet for some time to come, they can add contextual information to selected inventory or catalogue records and create 'virtual exhibits' on-line as the Science Museum has done (note 4) with its on-line Flight exhibition and Treasures of the Science Museum (Gordon, S. 1995, 1996).

3 Virtual Objects and exhibits

The 'virtual exhibit' (both on CD-ROM and on the World Wide Web) and its surrounding 'hypermedia cloud' of information runs parallel to the way in which museums present their collections to the public in the real world. Gone are the rows of objects in glass cases with labels that might only be understood or appreciated by the specialist. Fewer objects, with more supporting information presented in different ways, cater for a wider range of visitors in terms of age, background and learning preference. Electronic object labels now include video and sound clips, simulations or animation to provide a rich supporting programme for the objects on display.

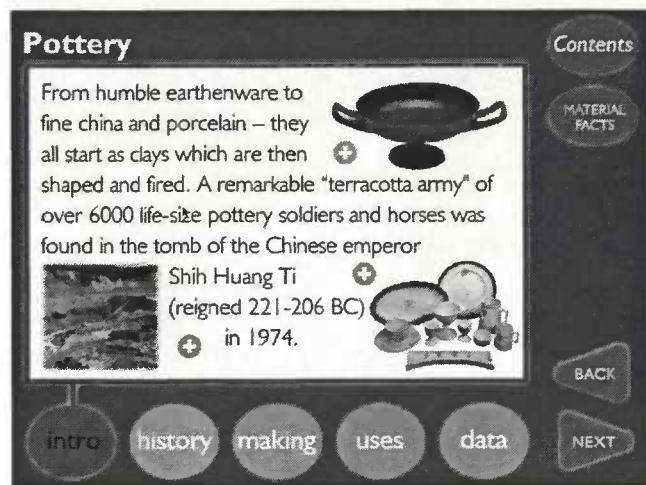


Figure 1. A screen shot from one of the Science Museum's Challenge of Materials gallery Information

Stations. (copyright The Trustees of the Science Museum).

In contrast with a more traditional approach to exhibition development many museums now provide their visitors with a far wider range of information about objects on display than that contained in the average inventory or catalogue record. For example, the Science Museum's Challenge of Materials gallery includes multimedia Information Stations with screens like the one shown in Figure 1.

The visitor to the Challenge of Materials gallery can choose to go into as little or as much depth about the subject as they wish by navigation through the Information Station screens. The multimedia nature of the interface encourages the visitor to explore and find out more about the material on display in the gallery than they might have otherwise been inclined to do. The addition of a quiz further encourages the younger visitor or those who are a little reluctant to use a computer. In a gallery setting, this kind of information provision is just one of the many ways in which the visitor can start to be drawn into the subject of the exhibit. On the other hand, viewed in isolation on the World Wide Web or on CD-ROM and without the real objects for reference there is a danger that this kind of high-tech interface becomes the focus of attention rather than the content that it is meant to deliver.

With that caveat in mind there are some good examples of virtual exhibits on the World Wide Web. The Natural History Museum's Science Casebook presents factual information about a small number of objects and invites visitors to play detective and solve a mystery (note 5). On the way the 'virtual' visitor gathers background information about the real object, learns about discoveries made by real scientists and about the way in which the museum works behind the scenes.

A different kind of virtual exhibit is illustrated in Figure 2. This Quicktime VR Movie (note 6) allows you to pan through 360 degrees and zoom in on the astronaut's controls of the Apollo 10 Command Module. The inside of the capsule is inaccessible to the visitor in the real museum and this is the only way a member of the public can see the instrumentation close up. This sequence also gives a good impression of the cramped conditions experienced by the astronauts.

4 Remote audiences

In the real world museums already have remote audiences. Outreach programmes usually involve paper publications, open days and site visits, teaching programmes of one kind or another or visits by museum staff to talk to groups of people about the work of the museum. All of these outreach activities are designed with a specific audience in mind. Whether it is academics, school children, community groups or groups with a common interest.

A museum World Wide Web site offers the possibility of attracting remote visitors from all of these groups plus a new, mass audience many of whom do not have any particular interest in museums. This new audience is potentially global, may not speak the same language as you

and its attention span is likely to be measured in seconds rather than minutes.

A survey in December 1996 (note 7), one of an on-going series by the Georgia Institute of Technology in the US, revealed that the most popular activity on the Web is browsing, followed by entertainment. In other words most of the visitors to your Web site are most likely not looking for any specific information or outcome from your pages -- just the mental stimulation provided by a constant parade of nice images, clever animations and perhaps a little interesting text. This perhaps sounds a little harsh -- why bother to take the time to create a Virtual Museum on the Web at all? The answer is that even if only a small percentage of visitors to your Museum Web site stop long enough to gain something lasting from their visit this still represents a very large number of actual people. For example in April 1997 there were over 25,000 visits to the Science Museum Web site. This figure is not the number of 'hits' or pages downloaded (which is much greater) but an estimate of the number of individuals visiting the site. This is about a quarter of the number of 'real' visitors to the 'real' Science Museum and, as such, is not an insignificant audience.

5 Educational visitors

What can educational groups get out of the "virtual museum"? Last year about a quarter of a million school children visited the Science Museum. Some of those children are lucky enough to have access to the World Wide Web either at school or at home. According to the National Council for Education Technology 5,500 schools were reported as being connected to the Internet in November 1996, although many of these will have just one PC connected via a modem. Given government support, and that of businesses such as BT, most schools and colleges are likely to get connections over the next few years.

One way Museums can help and encourage this process is to provide well thought out resources and appropriate material that are aimed specifically at teachers and students. A project called Science Resources for Teachers and Educators in Museums (STEM) has been established on the Science Museum's Web site which aims to create one such resource (note 8). This project encourages schools who have visited the real museum to create their own Web pages and to link these to a search facility on the Museum's pages. Teachers from other schools can then search across a range of material produced by many different schools on topics related to exhibits in the Science Museum. This project and a similar one called COMO have both attracted considerable interest from sponsors. The Science Museum has also participated in the MUSENET project, which has enabled the museum Education Department set up video-conferencing facilities and run events with schools and other museums using the equipment. The Museum has also run several e-mail conferences (note 9) where students exchange e-mail messages with a range of experts in universities and research centres in the UK and further afield.

Looking forward to the future, the Science Museum's Education department is keen to set up a web based Multi-user object oriented virtual environment (a MOO) for

schools to help build and to use for collaborative work with the museum. This, if it happens, will be a real 'virtual' museum if that is not a contradiction. A small beginning has been made with the creation of a virtual reality environment which represents the Science Museum's Education services (Fig. 3). The 3D world (note 10) is populated with objects such as tables, notice boards and imaginative sculptures. Each object leads to one of the Museum's conventional Web pages. More virtual rooms are planned together with the introduction of avatars (icons that represent real people) and chat facilities to allow the participants to talk to each other.

6 New environments and interfaces

Three dimensional virtual environments have some advantages over the simple text and image Web site. The visitor can move around the hypermedia space using familiar metaphors such as doors, rooms and everyday objects rather than hypertext links. Applied to the virtual museum, 3D virtual environments may make access possible or at least easier for certain groups. For example, those whose first language is not English (currently the most predominant language on the Internet) or whose reading skills are minimal including very young children. The 3D virtual environment is already familiar territory to children who play computer games. Some adults on the other hand have problems with interfaces that do not present clear instructions and limited choices. They may give up before they worked out what it is they are supposed to do rather than explore on a trial and error basis.

7 Conclusion

What of the future? National or even local on-line catalogues or inventories on anything but a small scale are still some way off. In fact they may prove too costly for some time to come.

Museums have always been about communicating with audiences and about giving and receiving information about the objects in their collections. If museums are to compete with other leisure activities they will have to make sure that they capitalise on the physical experience provided by seeing, touching and smelling real objects and on the opportunities that they provide for real social interaction.

In comparison with a real visit to a real museum a virtual visit to a 'virtual museum' is a poor experience. On the other hand, today's technology offers museums the opportunity to communicate with new audiences on an unprecedented scale. It also offers the opportunity to extend the quantity and depth of information presented in a way, which may not be possible in the real gallery. However, we must face the fact that the technological novelty and passive stimulation provided by the computer display, whether 3D or not, will be all that many virtual visitors will be looking for. How to take people beyond this entertainment threshold and into a deeper more rewarding world where they can begin to learn about the past is a real challenge to museums.

Notes

1. <http://www.comlab.ox.ac.uk/archive/other/museums/uk.html>

2. <http://www.hants.gov.uk/museums/index.html>
3. <http://www.scran.ac.uk>
4. <http://www.nmsi.ac.uk/>
5. http://www.nhm.ac.uk/sc/sc_front.htm
6. <http://www.nmsi.ac.uk/on-line/apollo10/>
7. http://www.gvu.gatech.edu/user_surveys/survey-10-1996/
8. <http://www.nmsi.ac.uk/education/stem/index.html>
9. <http://www.nmsi.ac.uk/education/paper.htm>
10. <http://www.nmsi.ac.uk/education/>

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