

Is Anybody Out There?

(museums, audiences and the World Wide Web)

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Introduction

'Is anybody out there?' was one of the first questions that came to mind when I was asked to set up a World Wide Web server for the National Museum of Science and Industry in September 1994.

To begin with I was sceptical. The three museums that together comprise the NMSI already have a high profile in the UK. Between them they have over 2.5 million visitors a year. The Science Museum in London must have been visited by almost every school child in the UK at least once. The National Railway Museum in York is a Mecca for railway enthusiasts world-wide. The National Museum of Photography Film and Television in Bradford is one of the most popular provincial museums in the UK. The academic output of the NMSI is impressive. Staff lecture and broadcast widely and serve as national officers or consultants to over 100 bodies and organisations. Many serious academic books and papers are published each year. In 1993 the Science Museum, jointly with the Imperial College of Science, Technology and Medicine, established the first Professorship in the Public Understanding of Science. Two new institutes, the Institute for the History of Technology and the Institute of Railway Studies have been established in the past eighteen months, both joint ventures with UK universities.

So, what function could a World Wide Web server fulfil? Surely the only people listening on the Internet were academics who already knew what NMSI was about and 'net' enthusiasts who didn't care. And anyway, wasn't it true that most access to the Internet was via slow links that took half an hour to deliver a photograph to the desk-top let alone live video?

National newspapers, computer and science magazines and, more interestingly, a report on the Information Superhighway by the CCTA, the UK Government Centre for Information Systems, told a different story. Regardless of the current Internet audience, international commercial interest in global networks had started a ball rolling that would not be stopped by minor local technical difficulties. The

lure of the global mass market was too bright and shiny for commerce and consequently governments to ignore.

The promise of high speed digital networks made possible by the de-regulation of telecommunications industries and investment by both the public and private sectors on both sides of the Atlantic would provide the infrastructure that would lead to the creation of a global market hungry for services of all kinds - including those that could be provided by museums.

Our Audience?

James Hemsley, in his paper 'Design and Development of Systems for Museums and Galleries' (ICHIM '93) said 'Knowing the audience/market end user is priority one, two and three.'

For museums contemplating becoming World Wide Web information providers this principle is particularly apt. However, it also poses a problem - the Web's embryonic and inherently fluid state coupled with the uncertain future of the Internet conspire together to make any attempt to define the Web's 'audience' meaningless. But we can try to define our short- term potential audience. For the NMSI this is principally: museum professionals, schools, potential customers for goods and services, potential sponsors, researchers in other disciplines and members of the public wishing to make enquiries.

Many organisations concerned with museum matters, for example the Museum Documentation Association, the International Documentation Committee (CIDOC), the Computer Interchange of Museum Information Committee (CIMI) and the International Council for Museums (ICOM), have a presence on the Internet either as information providers or as moderators of electronic mailing lists. The MDA has its own Web pages and a growing number of UK museums are also becoming Web sites (an up to date list can be found on the World Wide Web at <http://www.comlab.ox.ac.uk/archive/other/museums.html>)

Our neighbour in South Kensington, the Natural History Museum, was probably the first museum, and certainly the first national museum, in the UK to become an information provider on the World Wide Web in the summer of 1994.

Initiatives by the British Government to improve the access of schools to the Internet were also underway at this time. The reported intention was that all schools at secondary level have access by the end of 1995. NMSI has close links with the education establishment and it became clear that the Web provided a very real opportunity for the Museum to improve and develop its services to audiences in the under 18 age group.

The establishment of a customer base for the sale of Museum goods and services via the World Wide Web depends on several things. We are promised that secure financial transactions will become possible on the Web very soon but how can we carry out market research and what should and should not we sell? For the time being we can experiment with order and booking forms as is the Bodleian Library in Oxford.

As the commercial world gets connected to the Internet, the World Wide Web becomes a shop window, not just to sell goods and services but also to attract potential sponsors. Similarly, as a government funded body, how we present ourselves to the Department of National Heritage is very important and as the UK's leading institution concerned with the public understanding of science we should be seen to be exploring the potential of a new mass communications medium.

So, although the composition of the World Wide Web audience is unknown, NMSI's potential audience, in the short-term at least, can be tentatively identified. In addition, interest expressed in the World Wide Web by other influential bodies means that this is a medium that a national science museum cannot and should not ignore.

The Challenge

Setting up a World Wide Web server for the National Museum of Science and Industry was a challenging prospect:

- The NMSI enterprise wide network was only nine months old and a planned link to the UK Joint Academic Network (and therefore the Internet) had yet to be commissioned.
- Very few members of staff had used or knew what the Internet and the World Wide Web were.
- Growth in interest about the potential of the World Wide Web had been so fast that no budget allocation had been made in the current financial year.
- The server and a set of pages had to be in place within six months. A project, managed by the Science Museum's Science Box team, had just begun to create a temporary exhibition on the Information Superhighway. The intention was to establish the NMSI Web server and a set of pages by the time the exhibition opened in March 1995.
- The Information Systems Section was understaffed and in the process of recruiting. This turned out to be an unexpected benefit as we were able to recruit a very able person with experience of Internet related services.

- The Museum was at a very early stage in developing a policy for electronic publications.

On the plus side a programme of connecting staff to the network was already in hand to provide electronic mail facilities. The planned purchase of the server hardware was brought forward. We obtained the necessary Web server software, compiled it for our Data General Aviiion 5500 and installed it. The secondary connection to the UK Joint Academic Network (JANET) via Imperial College was completed and our domain name registered. This gave NMSI access to the Internet.

With the necessary infrastructure in place, the problem of gathering support from staff, many of whom had heard about the World Wide Web but not experienced it, became urgent. If a respectable number and variety of pages were to be produced, authors from throughout NMSI would have to be recruited. To inform staff about the World Wide Web the Information Systems Section held an 'open day' to demonstrate the Web to whoever was interested. Word spread and much interest, helped by the current media hype, was generated. A working party was set up in January to co-ordinate and produce a set of experimental pages. Our deadline, subsequently put forward to April, was achieved with over 120 pages of information made available about the Science Museum, its galleries, exhibitions, collections and facilities offered to visitors, researchers, educational and other groups. By the time the pages were launched 'officially' on 10 May, they had grown to over 140 in number and were fully indexed. The pages also included those from the National Museum of Photography Film and Television, the National Railway Museum and the Science Museum Library.

The working party also put forward a proposal for the creation of a full-time post for editing and marking-up Web pages. This proposal was accepted by senior management in June. This has made possible regular updating and monitoring of the pages and has helped new ideas to be realised with the minimum of delay.

Benefits and Evaluation

It is essential that the Museum evaluates the effectiveness of its World Wide Web pages. To do this, the potential benefits of the Web pages need to be identified. Here are some of the benefits to the Museum that have been identified:

- Raised profile in the national press and world-wide on the Internet.
- Publicity for existing enquiry services, for example Library services.
- Creation of new routes for enquiries, for example departmental E-mail addresses.

- Ability to reach new audiences: non-visiting public, commercial sector, people in other countries.
- Improved access to Museum information and resources for existing audiences, for example schools.
- Improved opportunities to develop collaborative multimedia projects.
- Improved opportunities to promote the 'cutting edge' image of NMSI.
- Fast and cheap publication of conference proceedings, occasional articles and other non-chargeable scholarly works.
- Raised staff awareness of the benefits and accessibility of information technology.
- Development of staff skills in related areas. For example, hypertext authoring and mark-up.

Possible benefits to the Museum in the future include:

- Sales via electronic order form and e-mail (for example, souvenirs, gifts, publications, and reproduction rights sales) and direct booking of museum events and facilities using electronic booking forms. The practicability of these features depends largely on improved security for financial transactions over the Internet.
- Subscription sales to electronic journal publications. Examples are becoming available via the Web: the Council for British Archaeology are developing a multimedia journal that will only be accessible by subscription over the Internet and will include 2D and 3D still images, video, sound, databases, simulations and virtual reality.
- Feedback from surveys and questionnaires. Our Comments and Suggestions page already provides some useful suggestions. However, serious market research is unlikely to become a reality until a sufficiently wide cross section of the consuming public become regular users of the Internet.
- Exhibit based activities. For example, live video and remote control of interactive exhibits located in one or other of the NMSI museums.
- Virtual activities. For example, tours of virtual galleries including interactive exhibits and simulations. This would require considerable investment in software development.

Programs such as Netscape and Mosaic provide an easy to use interface through which to access the World Wide Web. We intend to use Netscape as an access point to other NMSI computer systems, both for the public and for staff.

Plans are in hand to make subsets of Museum catalogue and image data available to the public via our existing Web server. However, staff will have full access to these and other systems through a separate Web server used for internal information services - telephone, fax and e-mail address lists; departmental guides, handbooks, newsletters, etc.

The potential benefits of being a provider on the Web are considerable but how do we measure our performance?

Apart from measuring income generation from Web related sales, existing methods can be employed, such as recording the rate of enquiries via existing services like the telephone and relating this to the publication of information on the Web pages. Traditional visitor surveys and market research can include questions about the Museums Web pages. The number of collaborative projects that the Museum is involved in is already used as one of the indicators of the Museum's academic performance. Those that make use of the Web can be highlighted.

A number of software utilities to record usage statistics and performance of Web sites are available on the Internet.

Maintaining Our Web Pages

The Museum's pages are currently of a very high standard. To maintain this good quality the content must be kept up to date and accurate. The links must work and the page design and hypertext structure changed periodically.

Unlike paper publications, both the content and design of World Wide Web pages may be changed at any time. This ability to change is one of the strengths of this medium. A site whose pages change frequently is more likely to attract a regular audience than one whose pages remain uninterestingly the same for weeks or months on end. Web pages should be a source of entertainment as well as information.

Although the overall hypertext structure of the pages is flexible insofar as new features can be incorporated easily, alteration of the structure can be time consuming and may require many links on many pages to be changed and text rewritten. The hypertext structure is also reflected in the location of files containing pages on the server. Any changes to the structure can necessitate moving files to new locations on the server. New directory trees may have to be created and, as the structure grows, ultimately, extra disk space may have to be purchased.

The aim is to balance frequent change, to maintain audience interest as well as factual accuracy, against the resources available to carry out the necessary mark-up and image and text production.

Resource Implications and Future Developments

The introduction into NMSI of the World Wide Web as a medium for disseminating information about, and stimulating interest in the Museum was initially achieved without an 'official' budget. Costs, for the most part were 'hidden'. Staff contributed many person hours as unpaid overtime, software used was in the public domain and obtained at minimal cost, hardware would have been purchased anyway to support the forthcoming E-mail project, and the Museum already owned the copyright of images used.

Future development of the NMSI's Web pages, however, will incur 'real', hard cash, costs, not only in terms of staff time but for equipment, software, image processing and specialist and consultants' fees.

Equipment and software costs will be incurred as the number and complexity of pages grow, the number of images increases and video and sound clips and ultimately 3D images, simulations and virtual reality features are included. All these will place demands on the existing equipment and software that will make upgrades necessary.

Purchase of commercial versions of server and client software will be necessary to ensure security for electronic fund transfer and other features not available with public domain versions of software.

Specialist services and consultancy will be required for many tasks, for example: training for authoring staff in HTML mark-up; development of 3D images, video-clips and sound-bites and conversion to suitable format; development of simulations, virtual exhibits, virtual gallery tours, order and other forms based pages.

Conclusion

Although we have set up our World Wide Web pages relatively quickly and inexpensively their future development and therefore effectiveness depends upon the resources available. In the short term there are benefits to be had, although they may be difficult to measure. The real investment is in the skills and knowledge of the staff for the next millennium and in the reputation of the NMSI as a forward looking institution.

In one respect, whether anybody is out there looking at our pages on the Web today is irrelevant. If we accept that interactive, multimedia, global communications are on the horizon, the experience gained by becoming and maintaining a World Wide Web site will stand the National Museum of Science and Industry in good stead in the future. The chances are that any organisation whose life blood is its audience will need all the know-how and experience it can get. The multimedia nature of the Web as it is and the advertising potential of the Information Superhighway as it will be leads to the conclusion that one day museums may be as driven by audience ratings as television networks are today.

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