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## Wiring the Muse: Problems and Issues of Integrating Networked Information into Museum Operations

### INTRODUCTION

Unlike most writers on the current networking scene, whose difficulty is to compress an enormous amount of networking information into a few readable pages, my problem as a reporter of museum networking is that I have little to describe. Museums, frankly, are not heavily into the networking game. Furthermore, except for a few institutions connected to technologically minded universities, museums show relatively little inclination to move onto the playing field at all. Curiously enough, it was not always so, but it is so now. This is ironic given that it is only now that the real possibilities for effective networking exist, and others are standing in line for the privilege. Museums are firmly on the sidelines.

The skeptic who is immersed in network talk might well wonder whether this assessment can be true. He might think it more likely that I am simply ignorant of activity in the museum community. That, of course, is possible, but frankly unlikely, in view of my recent history. I should describe my connection to the museum information world in order to establish my qualifications to speak.

A dozen years ago, after 15 years of art library and museum curatorial jobs, I began in earnest to investigate museum information with a dissertation at Columbia University in the late lamented School of Library Service on the topic of art historians' information seeking in museums and colleges. This topic became the focus of teaching and research at Syracuse University and Catholic University, with a brief stint spent as executive director of the Museum Computer Network (an organization that, despite its name, does not maintain an electronic network). In the natural course of events, I edited two of the (nonprofit) journals where the largest proportion of discussion on museum information issues has appeared: *Art Documentation* (from the Art Libraries Society of North America) and *Spectra* (from the Museum Computer Network).

I have been visiting museums over the past few years specifically to find out about their information management practices while working on publications on that topic. Additionally, I have organized sessions on the topic of museum information, and specifically its automation, at conferences run by the American Society for Information Science (ASIS) and the American Association of Museums (AAM), and participated in countless other panels at the meetings of the Society of American Archivists, the Visual Resources Association, the (U.K.) Museum Documentation Association, the International Federation of Library Associations and Institutions' (IFLA) Art Section, regional museum associations, and other organizations.

What have I heard there? Promises, promises—and these mostly from consultants, vendors, library school faculty, library network staff (most specifically, the Research Library Group), and the employees of the *sui generis* J. Paul Getty Trust. From museum professionals themselves, one hears very little. Does that really mean that museum people have little to report? A reasonable question, especially in light of the fact that museum professionals, unlike library and information scientists, have a fairly small professional literature and do not readily report therein their every passing thought or action. Furthermore, their managerial interests, as indicated at conferences and in conversation, include a wide range of other topics more compelling to them, such as display techniques, security, and fund-raising. Information management, although reasonably considered here as fundamental to museum work, is not yet a topic that museum people themselves are particularly aware of or used to addressing. That said, I am convinced that the lack of reportage does indeed reflect lack of networking activity.

Many in library circles are surprised to learn that electronic networking in museums is in a rudimentary stage, indeed, that automation of information generally lags far behind library norms. Librarians see museums as kindred institutions to their own, with largely similar missions (traditionally to collect informational materials and to encourage informal education through making these artifacts available to the public) and similar professional issues (collection development, cataloging, classification, preservation, storage, and access). This characterization, while true for many though not all museums, ignores those elements of museums that make them very different from libraries and help to explain their very different attitude toward automation.

The significant uniqueness of museums, in contrast to libraries, in addition to the different natures of their collections, lies in at least two areas. The first deals with mission. A major responsibility of museums lies in the presentation of their material to their publics. This function involves value judgments, interpretation, and explanation through visual and textual means. Museum people are thus engaged in a teaching function in relation to a body of professional knowledge and material to a degree largely subordinated in libraries. The library-like functions of collecting, cataloging, etc., are only supportive of this scholarly activity and are not fundamental in themselves to the institution's *raison d'être*. The second difference, growing out of the first, is the institutional framework in which museum professionals work. A review of this framework, with emphasis upon the tradition of informal (nonelectronic) networking, would help to explain the difference in these institutions.

## THE INFORMAL NETWORKING TRADITION IN MUSEUMS

**Funding and Governance**

Museums in the United States—and in this country the term includes institutions for the exhibition of art objects, historical artifacts, and objects of natural history—are almost entirely self-sufficient entities. Their sources of funding are frequently a mixture of private endowment and public funds, but the policy making of the institution lies firmly in the hands of boards of trustees, often self-perpetuating and more or less representative of community establishment (including, these days, representation of the minority establishment). The expertise of trustees is typically concentrated in banking, real estate, business, and the law—in brief, not in museum matters and certainly not in the museum's information management *per se*. Though local government funding plays an increasingly large part in museum financing, local government officials play almost no direct role in governing museums. The relationship of museums to funding sources in government contrasts sharply with that of libraries in the public sector where the director typically reports to a local government body, or in academic settings where the library director reports to an academic administrator. Few museums experience oversight of this sort.

**Formal Alliances Among Museums**

Legal connections of any significance among museums are exceedingly rare, though talk of such alliances has been heard recently. It is true that very loose alliances of institutions in local regions have sprung up in recent decades, such as a newly active alliance centered in Philadelphia or New York State regional affiliations, but the formation of these groups very often represents a transparent attempt to obtain financing from a local trust or state government that professes interest in cooperative action. Such motivation lay, for example, behind the formation of the always optimistic but perennially underfunded Museum Computer Network (Vance, 1986, p. 40). Within the institutions involved in these marriages of convenience, such alliances have almost no presence and even less real effect in the member institutions.

A notable exception of closely allied museums is the largely federally financed Smithsonian Institution (SI), where meaningful managerial connections exist, but these links are not particularly welcomed by the constituent museums (I am telling tales out of school here as a former SI employee), and initiatives at the centralized level are sometimes undermined locally through intentional, mulish adherence to bureaucratic procedure. The SI, though prominent in the public eye by reason of its geography and collections, does not play the leadership role in relation to other American museums that the Library of Congress exerts in relation to American libraries. No U.S. museum has assumed the comparable leadership role for the museum world, despite the renaming in recent years of various institutions as "The National Museum of This-and-That."

It should be noted in passing that a few museums in academic institutions have legal affiliation to other educational entities, but these museums are

relatively few in number and considered by museum professionals as somewhat outside the mainstream of the museum profession. Ironically, it is here, in academic settings, that electronic facilities are in relative abundance, and some of the most advanced museum networking is taking place (Besser, 1990).

### **Professional Associations**

Museums have, relative to libraries, few professional associations, and membership in them is uneven and unpredictable. Most museum professionals—curators and administrators alike—come from an academic discipline, such as medieval history or anthropology, and belong to an appropriate scholarly association. Their first allegiance is probably there. Secondarily they might belong to a professional museum organization.

Many administrators and some curators of small museums belong to the American Association of Museums, an organization showing increasing emphasis upon activities of persuasion “on the Hill” and interest in “professionalizing” museum work through such outward signs as accreditation and statistics gathering. The directors of major art museums are more likely to put their energies into the Association of American Art Museum Directors. The staff of small historical societies turn frequently to the American Association for State and Local History, an organization struggling for stability following a few troubled years of overly ambitious expansion. Science and natural history staff, and zookeepers, have comparable professional organizations that deal with the administrative problems of their peculiar collections and publics.

A strong emphasis of all of the professional organizations serving the highly varied museum field is on helping individual members and their institutions increase their support base—often through programmatic activity—so that, ultimately, museums can raise money and manage their affairs effectively, thus ensuring their survival. Program-directed networking as is basic in libraries, designed first of all to meet clients’ needs, is not uppermost in the minds of museum association staff or members. That is not to say that members of museums staffs are self-serving but rather to point out that survival of museums is far more precarious than that of any kind of library (except perhaps the Library of the New York Historical Society, which has the misfortune of looking for its support to a museum). The effort to keep afloat must be a preoccupation of museum staff.

### **Professional Training**

Much of the information “networking” that librarians engage in begins with their graduate school experience, where relationships to faculty and to fellow students take root. Despite the vociferousness of the numerous, small, and new academic programs in museum studies operating at the master’s level, the truth is they prepare only a small proportion of museum staff. Museum workers, even in what one might think of as professional positions, are likely to come from any and all backgrounds, with preparation ranging from high school to doctoral programs in their disciplines. There is no clear criterion for professional status, and this status is achieved as often through longevity

and performance as through formal qualification. It is folklore in this subculture that the most prestigious museums prefer academically trained staff, particularly from the avowedly old-fashioned programs at Harvard and New York University's Institute of Fine Arts, to those who have been trained in museum management in the newer museum training programs. Even in those newer "professional" schools of museum training, the curriculum varies greatly from one program to another, and from year to year. (There is, for example, no standard approach to teaching the cataloging of museum objects.) The most meaningful informal (social) networking that can be gained from these professional museum management programs, many museum professionals believe, comes from the in-museum internship segment of these programs.

### Publications

Oddly enough, there are fewer than a handful of publications that deal with managerial issues of museums, and of these almost none recognize information management as pertinent at all to the museum profession. The American Association of Museums (AAM) publishes *Museum News*, which as the major publication of the largest professional organization in the field is roughly comparable to—though slicker than—*American Libraries*. *Museum News* consists of largely invited articles that address a single theme per issue, at a popular level. *History News*, a more modestly produced vehicle from the American Association for State and Local History (AASLH), contains a mixture of subject-oriented articles, "how we do it good" descriptions, and one highly informative and well-researched, brief, detachable centerfold insert per issue devoted to a professional function. This journal is widely and carefully read, as are the practically oriented monograph publications of the AASLH. More theoretical and more fully researched curatorial and to some degree managerial issues are treated in the refereed journal *Curator* published by the American Museum of Natural History. Judging from citations and from conversation with museum people, I would guess that *Curator* is not widely read, though it is known to the museum intelligentsia (if I may be forgiven an elitist characterization). Even more abstract and international in its focus is the little-known *Museum Management and Curatorship* produced in the United Kingdom—the kind of offbeat journal, incidentally, that publishes my sort of contribution.

The topic of electronic information is treated directly in two journals with short histories and always uncertain futures: *Museum and Archives Informatics*, published by David Bearman's basically-one-person consulting firm, and *Spectra*, which is the official journal of the peripatetic Museum Computer Network. Almost all information that exists in the public record relating to electronic networking in museums can be found in the latter two, somewhat irregular, publications. The circulation of the latter two journals is probably in the low hundreds—circulation figures on proprietary publications are not readily available—and relatively few of these subscriptions are maintained by libraries where the potential of a wider readership might exist.

### ELECTRONIC NETWORKING IN MUSEUMS

The foregoing review of the tradition of information networking in museums might lead one to conclude that there is no electronic networking

in place. That is not the case. A small amount of fairly predictable networking exists. Electronic networking made its way into museums usually first through museum libraries, then—particularly in large historical museums—in archives where these collections are substantial. More recent for many museums is networking in relation to object catalogs (known as collection management systems) and in relation to development office address files, though in both cases networking is in-house at best. The use of networked information for management purposes is almost unknown in actuality, though discussed in some of the more theoretical literature produced by information specialists who advise museums. A few other networking applications have cropped up, but despite the enthusiasm of their proponents, these projects, relating to visual resources for example, should not be interpreted as indicating a ground swell of networking activity. Some specifics would be useful here.

### Libraries

The Research Libraries Group (RLG) made a determined and successful effort in the 1980s to enroll art museum libraries as special members, at relatively modest rates. The result has been commitment to RLG among many institutions to develop a rich database of holdings, to develop ancillary tools such as a database of auction catalogs, and more recently to use RLG electronic mail (e-mail) as a communication device. It should be understood that only fairly large museums have been able to avail themselves of this resource, and of these it is primarily art museums that have signed on. OCLC is found in other larger museum libraries, though many museum libraries have no automation at all, not even stand-alone systems. E-mail, except for RLG, is still quite unusual even in museum libraries.

It should also be clearly understood that the appearance of automated information handling in libraries has not had notable influence on the rest of the museums (with a handful of exceptions including the Boston Museum of Fine Arts and Winterthur). Most museum staff, other than librarians, still do not communicate electronically with anybody; indeed the largest number of museum staff do not work with automation at all except perhaps through stand-alone word processors. In larger museums, some staff might work with collection management systems, but access, even where systems exist, is by no means assured to all professional staff even within such a fortunate institution. Collection management systems in many institutions are seen primarily as registrars' tools.

As extensions of libraries, in terms of function if not in organizational structures, visual resource collections should be mentioned. The story is brief. Automation has been slow to take hold here, due in part to lack of standards of description, classification schemes, and vocabulary control, even within single institutions. At least one commercial vendor is offering the potential for communication among his customers, and while enthusiasm for such networking is high among visual resource curators, effective "realization," as the French say, does not yet exist (Roberts, 1985).

### Archives

In quite a number of large history museums, and in a very few major art museums (parts of the Smithsonian Institution, the Philadelphia Museum

of Art, and the Boston Museum of Fine Arts, for example), archivists are showing interest in the exchange of electronic collections records. Some institutions are actually contributing to the Research Libraries Information Network (RLIN) Archives and Manuscripts Control (AMC) file. This step is quite revolutionary for museums in that it requires adherence to one descriptive standard, that is, the AMC format. The adoption of a national format for communication is quite a new step for museums, one that has not yet occurred in relation to museum objects themselves.

Several museums that have seen the utility of adhering to a nationally recognized format are using the AMC framework to build an in-house archival database using proprietary software that incorporates many aspects of the AMC standard. There is some question as to how many of the records thus built would be truly exportable to a combined national archival database. It should be understood that the AMC standard is itself relatively new, and its application in museums specifically has a history of only a few years where it has been adopted.

RLG has invested several years' work in the development of a full archives and records management system, known as AMIS, that could be used for museum objects as well (Research, 1991). This system would allow communication of data among institutions. It is not at all clear at this point, however, what kind of market exists for the high degree of sophistication and high cost that will be characteristic of this product.

### Collection Management Systems

After an ill-fated cooperative attempt on the part of several major New York museums in the early 1970s to build mainframe-based object-cataloging systems with some potential for communication, museums were gun-shy about automation for at least a decade (Stam, 1989). With the appearance of the personal computer in the early 1980s, several museums undertook small-scale, stand-alone cataloging projects, but these often bogged down under the weight of data and inadequacy of technology. The lack of tradition concerning standards of description was an additional problem in these automation attempts, as it still is today. Another serious inhibitor to collection management systems is the lack of acceptable and inexpensive visual-imaging technology, a vital requirement for the museum field. In brief, there is not yet a national database of museum object information, or anything like it.

In-house collection management systems, consisting of something like a library catalog combined with processing and circulation records, exist in quite a significant number of larger museums. In almost all cases, the software has been licensed from a proprietary source, and its code is a carefully guarded secret. (Many of these companies, incidentally, are virtual mom-and-pop shops, with short histories and little capital behind them.) The software comes typically with field labels and processes defined (with some modest tailoring allowed). While the overall needs of museums are somewhat similar, and therefore their record structures for collection management fall into a few clear patterns, there are no recognized standards of description, communication formats, or tools of vocabulary control. Each system is unique, and at this point incapable of

communicating with any other—even in some cases with other systems in different departments of the same museum. Meaningful electronic networking relating to collections between the library and the registrar's office is almost unknown in this country, though it does exist occasionally elsewhere (van der Wateren, 1988). The kind of integrated systems that are now commonplace in libraries are hardly dreamt of in the museum context.

A few vendors of collection management systems speak of networking, but what they mean is that two of their users who might configure their products similarly can query one another's files or could theoretically intermingle data. Given the utter lack of standards, this possibility is at best remote.

There is hope for better communication on the distant horizon. Two projects now in early stages (and both lacking firm institutional foundations and funding) might improve this situation. One is the Art Information Task Force, which is working on descriptive standards; the other is the Computerized Interchange of Museum Information (CIMI) Project, which has as its goal the identification of technical standards for the exchange of museum data (Perkins, 1992). Other task forces are emerging to deal with descriptive standards for museum fields other than art. In all cases, official, sanctioned national leadership is, however, conspicuously lacking. Also lacking are standards for the transmission of visual imagery, an absolute necessity to the museum profession given its preeminent visual orientation.

### **Administration**

It is a curiosity in the museum field that the current enthusiasm for improving management practices does not include significant reference (in AAM publications or in the curriculum of the prestigious Museum Management Institute, for example) to the management of information. Almost nothing is said, and even less is done, about using modern information technology to aid in gathering, analyzing, and using information for institutional benefit (Stam, 1992). It is true that some automation occurs in the development office, in the form of donors' address lists, and this information is beginning, in a very few cases, to be shared in-house through local area networks. The sharing of data across the profession is barely conceived of as being desirable. Even the cooperative design of loan forms, so that comparable information is required from one institution to another, has taken years of still uncompleted work; the electronic transmission of such forms—beyond the fax—is almost inconceivable in this community.

The AAM contribution to network development has thus far been to contract with a communications company to provide better telephone rates for AAM member institutions than single museums can negotiate and to start on the path toward providing the technological means for data exchange should that be seen as desirable. Many American information people look admiringly at Canada, where the Canadian Heritage Information Network has all but overcome the "tyranny of distance" affecting Canadian institutions through its shared cataloging and communication links, but it should be recognized that the system is underwritten by the Canadian government (Sutherland, 1992). No such cultural centralization or funding pattern occurs in this country.



What does exist as museum community networking is the scantily subscribed electronic discussion list known as MUSEUM-L. The questions that are posed there indicate an ill-defined need for advice of all kinds and little understanding, at least among the electronically "vocal," of where they should look for professional information relating to management issues. If their librarians read the list, I suspect that answers would be forthcoming from them, but there appears to be little cross-function readership in the subscribers to this list.

### Networked Art

Curiously enough, in the museum world it seems to be artists who are most venturesome in using computer networks (Loeffler, 1992). This development is very new and strongly dependent upon the recent development of visual-imaging technology. Artists use electronic networking to create joint art projects, to reach large audiences, and to explore such fundamental questions about art as the functions of time, or space, or art institutions themselves (Shipe, 1990). While their pursuits might be seen as a threat to the central place of the museum itself in the art world, it can also be seen more benignly as a phenomenon of new museology where issues of communication, audience need, and the museum's "aura" and values are being questioned (Stam, in press).

### CONCLUSIONS

Why are museums so slow to take to networking? The old explanations—not enough money, not enough expertise, and inadequate technology—no longer hold water. Time and technological developments have solved some of these problems. It is quite obvious, however, that some barriers remain. The inhibitions to museum networking that are relevant today fall into two categories: those internal to the museum profession and those external to it—and, incidentally, central to our concerns as information professionals (Bearman, 1992; Zoekler, 1991).

First, the internal barriers—they are primarily expressed here as deprivations. Museums still lack an authoritative body and leadership to coordinate efforts toward cooperative use of automation technology and information management. Museums also lack standardization in practice from one museum to another and standards for data formatting and transmission. Museums lack a sense of direction and imagination about how networked information might help fulfill their missions and improve their management practices to that end (Neufeld, 1992). And finally, the museum community lacks opportunity through contact with other pertinent communities to get into the networking loop. These hiatuses the museum world must deal with primarily by itself.

Other barriers to museum networking can best be overcome by professions exterior to the museum world—most specifically information professionals. Museums need, for example, models for the functions of producers, owners, marketplace, and payment in the network environment (Bearman, 1992). They need standards for the transmission of visual information and laws to govern

the use of such media. They need help in articulating their needs and making demands of the automation marketplace. They, like other potential network participants, need ongoing education about the power of the networking phenomenon. And they need models for decision making and leadership in networking activities.

Wiring the muse can be done and probably will be done eventually. How soon and how well museums become wired to the national networking scene will depend to some extent on their own efforts as a community. To a larger extent, however, it will depend on the ability of the information community that is designing the "net" to recognize and accommodate the kind of visual and object-oriented cultural information that has been traditionally associated with museums but that in reality should be of interest to us all.

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