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Physical vs Virtual Astronomy Libraries — Overview

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Abstract. With the ever increasing substitution of electronic resources for print materials, the replacement of personal service by desk-top delivery, and the prevailing (false, of course) notion that anyone can successfully search the web for anything, astronomers and students are increasingly bypassing the physical library (including staff) in their research activities. The diminished role of the librarian and the neglect of valuable print resources can result in lower quality literature searching by researchers and less support for the library as a whole. The invisible role of the library in providing virtual resources and services compounds the problem.

Is there anything that we can do about these and other negative effects? A brief description of the current state of affairs and a short list of measures taken by some libraries are given.

1. What Has Changed

1.1. Journals

Two developments in journal publishing and distribution have caused the biggest impacts on our libraries recently - the production and stabilization of electronic journals and the maturation of NASA's Astrophysics Data System into a full capability indexing and linking service. One result of these important and valuable enhancements to the literature is that users often go directly to ADS for electronic journal articles instead of coming into the physical library or accessing the journals through the library's web site. The fact that the most recent articles available through ADS are paid for by the library and would be unavailable if the library did not manage the licenses and access, is probably lost on most users. Nor do users often come to the librarian for assistance with any difficulties.

1.2. Preprints

Paper has been dying as a common medium for preprints for some time now. Astronomers are not only relying on e-prints and not looking at the paper ones, but they are often relying on the e-prints and not looking at the journals either! The latter may lead to them overlook important articles and to refer to obsolete versions of articles.

I am not at all suggesting that the loss of paper preprints is regrettable, just that the library is no longer the vital preprint centre that it once was.

1.3. Astro Catalogues on the Web

Many astronomical catalogues and other data and reference materials are published on the web by observatories and departments, or distributed to users through data centres. The equivalent print or CD versions are usually less convenient to access and use.

1.4. Electronic Books

Electronic books are just beginning to come into their own. So far, electronic book publishing is concentrated on business, computer, popular interest, reference and undergraduate textbooks. National Academy Press, Springer and the other e-book services are beginning to publish more scholarly books but they are not yet serious competition for our print collections.

2. What is the Impact?

2.1. Traffic

Use of the physical library has gone down; walk in traffic is lower at most libraries than it used to be. (Visitors to the parent institute are still happy to use the library terminals and other facilities.)

E-mail communications do replace personal visits to the library in some cases, as do visits to library web sites and use of electronic subscriptions etc. Increased visibility on the web usually results in an increased number of inter-library loan requests.

The virtual library has taken up the traffic lost by the physical library.

If contact with the physical library is diminished, however, and the role of the library in providing virtual services is invisible, then astronomers are less likely to call on the expertise of librarians, nor will they remember to consult potentially valuable materials that may be found only in print. Financial and other support for the library may decrease.

2.2. Workload

The impact on workload of staff varies according to whether a library is part of a university, larger institution or consortium. For example, licensing and maintenance of electronic journals keep some librarians busy while for others the centralization of these tasks (away from the local library) reduces their workload.

Some librarians do extensive web page construction and maintenance and others little or none.

In most cases human resources have been redirected to the functions of the virtual library (with retraining) and in some cases human resources have been reduced.

But print journals still have to be paid for, checked in, processed etc. Books still must be ordered, paid for, catalogued and processed. (This may change in the future if and when e-books become more dominant.)

2.3. Space

Because of the reduced importance of the physical library in the eyes of some institution's directors and user communities, extra space for the continuing inflow of print journals and books is often not given priority, nor even considered important at all.

2.4. Archiving

Another unsolved issue of importance bigger than any individual library or group of libraries is that of archiving the journals. No astro library that I know of has canceled print subscriptions, due to the fact that paper (along with microform) is still the only reliable archival medium. As electronic versions incorporate more electronic-only features and multi-media, however, print does become an unsatisfactory archival medium.

3. What can we do about it

3.1. Some comments and ideas from colleagues:

- issue electronic announcements and reminders as often as they are tolerated
- put the emphasis on our participation or involvement in the virtual library; point out to users the library's role in providing services such as recent journal subscriptions through ADS
- remind users that we have various expertises in searching ADS (if appropriate), in identifying and searching other relevant databases, with various technologies etc., and are ready and willing to help them
- to increase traffic in the physical library:
  - at one institution a large lounge near the library is a significant factor in keeping people in the library- it is even used for small meetings
  - promote the library; e.g. a 'tea' in the library, a brochure
  - have a book-giveaway day or sale (books donated by retiring staff etc.)
- have a web site which includes:
  - the library catalogue and links to good web resources, of course
  - compilations of publications of interest beyond local (e.g. a history of your observatory or a biography of a famous local astronomer)
  - a list of electronic journals available (the advantage of this over ADS is that non-astronomy journals can be included); make such a list indispensable to astronomers by updating it often and providing special local access notes, etc.
- personally steer individuals to the library web site

- provide new services such as electronic distribution of astro news, IAU circulars and lists of web sites of interest
- participate in staff meetings; offer to give colloquia when appropriate

3.2. Some More General Solutions in the Larger Realm

Many e-journals offer 'branding' - displaying a library's logo and name on the journal home page when accessed by members of their community- but that doesn't help much at the sub-institutional level.

In some special business libraries there is a trend to reduce or eliminate the physical special library altogether and have librarians work with various project teams onsite. (Of course these are businesses whose interests are in current information only, not in historical resources.) Strongly promoted intranets replace or supplement the physical library.

In public libraries physical space is still valued, but for expanded purposes such as internet-access computers.

One response among both public and academic libraries to the preponderance of electronic resources is 24 hour (or extended service) Digital Reference Service. This is achieved by creating a web site whereon users may ask questions and a librarian responds by sharing screen space with the users and guiding them through various resources. Of course this type of shared service is feasible for library consortia or large libraries only; it is not feasible for a small library on its own. Apart from the staffing issues, the software is expensive. Librarians in small libraries can and do answer e-mail queries though, and can be part of a larger digital reference service project, acting as a subject specialist.

Roy Tennant discusses these and related problems and proposes a set of solutions involving significant changes to the way libraries work, which would require a major international cooperative effort to achieve. (Tennant 1999) We can take some hints from him in the meantime though, for example by including tables of contents in our catalogue records and enhancing search results with book reviews. (Tennant 2001)

Finally, although the emphasis is changing from physical entities to virtual services, libraries are not becoming obsolete. According to Tenopir and King, "An average university scientist reads three times more library-provided articles than in 1977, and scientists in other organizations average seven times more." (Tenopir & King 2001)

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