ELECTRONIC SERIALS IN BT: A CASE STUDY

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Until 1994 BT operated a fairly typical large corporate library at its research facility at BT Labs near Ipswich. This article describes the changes that were made as the Library transformed itself from a location-based service to an electronic library in which its location is of secondary importance, with information delivered directly to the user's desktop.

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Background

BT's library, located at BT Labs, Martlesham Heath, near Ipswich, provides technical library services to people throughout BT in a very traditional manner. The library, with 10,000 books and 600 periodical titles, provided both a physical library collection for the 3,500 BT people working at the Labs and also the foundation for a document delivery service providing photocopies of articles for BT people. The Library employed more than twenty people, including four people providing document delivery.

Like many special libraries, the BT Library faced a number of challenges.

Costs, especially journal costs, were rising well above inflation levels in a corporate environment where budgets were, at best, fixed year to year with no allowance for price rises and where extreme pressure was placed on reducing overheads. Unavoidable pressure to reduce costs was applied each year.

The Library's user community were working under great pressure to increase productivity and to reduce "unproductive" time such as browsing the library's collection, leading to a reduction in users of the physical library and an increase in demand for the less visible document delivery service.

A rise in demand for services, in particular the photocopying service, forced an increase in staffing to provide this service when business pressures were forcing a reduction on manning levels.

The interests and work areas of the Library's user base were changing rapidly and unpredictably, while the Library's collections and selection procedures reflected the more stable environment of the past. In particular, user interests were shifting from hard science subjects, like chemistry and physics, into software engineering, where users appear to be less likely to use the library, if it involves delays or additional effort.

In 1994, the Library's management team realised that it could no longer pursue the path of looking for incremental budget cuts and

saving. Radical change was needed. Benefiting from an extensive study of the usage of library material and building on increasing confidence in the in-house enhancements to library automation systems, the Library chose to fundamentally rethink the way it provided services to its users.

Shrinking the Library

During the early 1990s the Library began keeping extensive records of journal usage. These recorded information on end-user copying and browsing of journals so that the usage for each title could be determined, together with details of how this usage declined with time. This information together with journal price information, gave a crude estimate of the price per usage and an indication of how long copies of the journal needed to be kept.

Similar information from the Library's automation system was available on the usage of the book collection, showing which books had been borrowed in the last year and three year periods.

Armed with this information, the Library decided to concentrate on providing only a core collection of paper journals and books. This collection would contain material that was heavily used and that was cost-effective to own. Less-used and more expensive material would be sourced using document delivery services, such as the British Library. The Library cancelled the 75% of its journal subscriptions that it was not cost-effective to own in 1994. At the same time, the Library disposed of the half of its book collection that did not justify housing on site.

Backruns of the titles cancelled were offered to the British Library's BookNet service. Unwanted books were offered to BT staff in return for donations to charity. The latter, in particular, reassured users who were unsure that their information needs would continue to be met in the new Library.

While this was being implemented, a newly developed end-user driven inter-library loan system was introduced[1]. Rather than fulfilling requests for photocopies from our own collection or buying-in little used titles, the new system allowed users to request documents themselves from the British Library using the copyright cleared services. The Library bears the costs incurred in this, covering these costs by the much greater savings in subscription costs, labour costs, and accommodation costs. From the end-users point of view, if they notice a difference, they see an improved service. Requests for copies are transmitted straight to the British Library and the photocopies are delivered straight to the requester's desk. There is no processing of these requests by BT Library staff unless there are problems with the request.

The physical library is now one third the size it was in 1994. Its role has changed completely from a large storehouse, into a much more relaxed workplace focussed on serving the needs of those people who use it.

Introducing electronic journals to the Library

The Library's radical changes to its physical collection reflected the low use of some titles, due it part, at least, to user resistance to coming to the library in person and to the delays inherent in requesting a photocopy of an article. By 1995, with the internet firmly on the horizon, the Library's users were expecting instant satisfaction when they searched for information. If the Library was unable to satisfy their requirements, they would look elsewhere. At the same time, publishers such as Elsevier, were beginning to experiment with electronic journal delivery.

In 1995 the Library negotiated with Elsevier to receive twenty titles on CD-ROM[2]. In some cases these were in addition to paper copies in the library; in other cases the journals were to be received in electronic format only. Initially these journals were delivered as collections of TIFF images, with an associated text file. The text file gave details of the contents of each issue on the CD-ROM, such as article titles and bibliographic details, abstracts, and identification of the images associated with each article. Library staff developed scripts in Perl that converted the TIFF images to GIF, more suitable for the WWW, and built the individual images into articles that could be browsed from page to page. Although Elsevier now supply articles from their journals in Adobe's Acrobat format, eliminating the need for much of this processing, the skills learnt in writing Perl programs has proved a valuable resource for future developments in the Library.

At the same time, the Library took responsibility for putting the in-house journal, the

BT Technology Journal , online. Library staff were trained in converting basic text files received from the typesetter into html, scanning images from paper journals and converting them to GIF images, and putting these together into online editions. As with Elsevier, the Library now receives these articles as Acrobat files, but the skills, learnt by the support people in the library who performed this conversion for a number of years, increased their confidence at a time when they could see the radical changes underway in the Library.

In later years, access to online journals at publishers web sites have been provided from the Digital Library. Although these remove the computer support and storage requirements from the Library, they do introduce performance problems of their own since they are served over the internet rather than BT's own intranet. Perhaps more importantly from the librarian's point of view, there are also increased difficulties in measuring the usage of these electronic journals, since they are reliant on the publisher providing them with this information.

The latest tranche of electronic journals to be added to the Library are the hundreds of journals from the IEE and IEEE included in the IEL product and Bell & Howell's Proquest service. Acrobat files are received on a monthly tape from the IEEE, while Bell & Howell provide weekly text files via ftp.

The Digital Library now holds 450GB of electronic journals, totalling more than 1.5m articles online for BT people.

Promoting electronic journals

After eliminating such a large portion of its paper collection because this was not seen as a cost-effective way of providing library information, it was imperative that the Digital Library was designed in such a way as to promote usage of its electronic journal collection. Unused electronic journals are just as wasteful as unused paper journals sitting on library shelves, although they are less visible. A number of techniques have been put into place to measure the usage of electronic journals and to ensure that they are promoted in such a way that they are used as much as possible.

Simple promotional techniques included sticking brightly-colour labels on the covers of

issues of paper journals, advertising the electronic version available, fliers in the library, e-mails to frequent users, and entries in internal newsgroups about the electronic journals. The Digital Library's journal list was updated to include links through to electronic journals, providing another route for locating information on the web-site.

The most important way of encouraging users to read articles from electronic journals has been to build links in from the Digital Library's databases directly through to electronic articles where these are available. The search engine builds links through to articles available electronically as it builds the page of search results. As noted previously, the instant gratification that the Library provides through giving immediate access to journal articles is a significant boost to usage.

Linking the electronic journal collection into the document delivery system encourages further usage. When users request a paper copy of an article from the database, the document delivery system checks if it is from a journal that will be available electronically to us in the near future. For example there is often a delay between Inspec, one of the databases available in the Digital Library, including a record from an IEEE conference and the conference paper becoming available in IEL. When a user requests a copy of one of these conference papers, they are asked if they would like to be put onto a waiting list to be e-mailed when the electronic version becomes available as an alternative to the photocopy they have requested.

Impacts on staff

Radical change like that undertaken by the BT Library must be carefully implemented to ensure that library staff and users are committed to making the transformation successful. Staff and users were kept informed of the Library's plans through briefings. The results of discussions, suggestions and comments they made were fed back into the planning process.

Substantial training was offered to library staff. Support people, who had previously used no more equipment than the fax machine, were trained in using PCs and PC applications. They were given further training in web page editing and web site maintenance. This was so successful that, as the need for clerical support in the library

diminished, a number of these people were able to transfer out of the Library into more highly-paid jobs elsewhere in BT.

A number of the professional people in the library have developed their own computing skills, both through formal training and informal self-education, to such an extent that much of the development work on the server is now done in-house. As with the support staff, these people have learnt new skills, are more employable, and are doing work that has a higher status than before.

Future plans

There are a number of developments underway that will further encourage use of electronic journals in the Digital Library.

The Digital Library has developed a recommendation system, similar to that used by Amazon. The Library analysed the patterns of electronic journal readership and identified clusters of articles that have been read by groups of library users. Database records for these journal articles can be annotated to say that "Users who read this article have also read the following",

with links provided through to the other articles in the cluster. This recommendation provides an alternative to keyword based searching to find articles on a particular topic. Although this relies on only a passive quality assessment, it does provide at least some indication of what Library users consider to be good quality documents.

Conclusions

The last five years have seen BT develop an innovative Digital Library and improve the usage of library resources by making information accessible at the desktop. The main learning point have been that librarians have tremendous skills and capabilities. We just need to develop them and take advantage of them.

References

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