

## What can e-libraries learn from e-business?

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***Abstract:***

*Libraries were arguably early entrants into the e-business arena. When libraries made their online catalogues available via the Internet in the late 1980s, this was among the first instances of organisations marketing their products and services through the Internet. Now many libraries in the corporate environment provide most of their services electronically, pursuing a knowledge management strategy and managing the information content of the corporate intranet. However, have libraries done all that they can to capitalise on e-business developments? This paper will examine trends in e-business, and suggest how libraries can utilise these in enhancing their services.*

## Introduction

Libraries are arguably early entrants into the E-business arena. When libraries made their online catalogues available via the Internet in the late 1980s, this was among the first instances of organisations marketing their products and services through the Internet. Now many libraries in the corporate environment provide virtually all their services electronically, pursuing a knowledge management strategy and managing the information content of the corporate intranet. However, have libraries done all that they can to capitalise on E-business developments? This paper will examine trends in E-business, and suggest how libraries can utilise these in enhancing their services.

Two terms are used in this area: e-business and e-commerce. E-commerce is the marketing and distribution of products and services in electronic environments, especially the Internet. E-business is the wider concept of managing organisations electronically. While e-commerce is the term widely used in the literature, in discussing the issues we need to be aware of the wider implications of E-business.

E-commerce is about transactions, and is broadly classified according to the parties involved in the transactions: businesses or consumers. Many of these transactions apply to libraries. Libraries are involved in Business-to-Consumer (B2C) transactions when they make their catalogues available online, allow online renewals, make databases available to their clients remotely, etc. B2C transactions may be external, as in the case of public libraries offering their services to their community by electronic means, or internal, where corporate libraries are marketing their services to their organisations. Digital reference services are a prime example of libraries taking up B2C approaches.

Libraries are also involved in Business to Business (B2B) transactions, with database, serials, and book suppliers. This has gained added importance with the growth of licensing, rather than acquisition, of materials. E-business strategies also apply when libraries are seeking funding and sponsorship for specific initiatives from corporations.

E-business is also about managing the organisation's web presence – what can we learn from the world of e-business? How can library websites better promote their online services, and ensure that their web-based services are easily located?

Some have argued that we should follow the e-business model of Amazon.Com in designing our libraries – for instance the customisation of responses (“On your last visit you borrowed X, people who borrowed this have also borrowed Y”) and reader recommendations etc. Many libraries have pursued links with major e-commerce players such as Amazon.com and Barnes and Noble – what are the issues and potential benefits of this?

I will start by giving a quick overview of what has been learnt about conducting e-business, then examine library operations from both a B2C and a B2B viewpoint. I will conclude by examining the lessons that libraries can learn from e-business.

## Electronic Business: a quick overview

In the last decade, electronic business has been extensively studied. Much of the research about electronic business has been concerned with determining appropriate uses for the ability to conduct commercial transactions electronically. Business to Consumer (B2C) transactions, where individual customers purchase from online shops, were initially seen as the basis of e-commerce, and the foundation of the dot.com boom. However as e-business has matured, the importance of Business to Business (B2B) transactions, where businesses handle transactions between themselves, has been realised. B2B E-commerce has a longer history, under the guise of Electronic Data Interchange (EDI), which set standards for the electronic exchange of orders, invoices, payments, etc.

One reason for the attraction of B2B transactions is that businesses now have internal electronic database systems, which manage the production, dispatch, invoicing and payment of goods and services. The attraction of linking these between organisations with B2B technologies is obvious. However, an issue with B2B transactions is the potential incompatibility of systems between organisations. This has given rise to a new role in e-business, that of “message brokers”, technology that allows systems in different organisations to communicate. It also gives rise to the importance of standards that enable systems to communicate together electronically. While electronic business predates the web, it was the near universal acceptance of the HTML standard that brought electronic business to life. Newer, more sophisticated standards such as XML are likely to make e-business even more viable. In this connection, libraries must keep abreast of new standards in e-commerce transactions, and give library based input where necessary.

The strength of e-business is that it enables organisations to utilise information effectively in their business processes. Rosenbaum (Rosenbaum 2000) identifies three information imperatives for electronic commerce:

- Information generated by e-commerce activities must flow rapidly and effectively through the entire organisation – a concept familiar to knowledge management practitioners. This underlines the added value of e-commerce: that digital transactions can provide information that is not available from conventional transactions. This point has implications for corporate libraries: that they should utilise e-commerce information supply so that maximum benefit for the organisation is obtained.
- Organisations have a responsibility to carefully manage the information gathered from their e-commerce activities.
- Organisations must work to build trust into their relations with customers and business partners.

The last point is significant. Librarians, from their experience in evaluating information resources, are familiar with the concepts of authority and credibility. It is not surprising that these are important concepts in e-commerce, particularly in the B2C arena. How can a consumer be assured that their transaction is with a legitimate organisation, and not with a fly-by-night concern? Some aspects of authority and credibility for E-business are:

- Is the business what it claims to be? If it appears to be the digital storefront for a well-known “real world” business, is this really the case?
- Does the digital business have physical contact details, for example postal address, fax, and phone number?
- Are transactions with the electronic business secure? Will only the agreed payment be debited, and will credit details not be released to other parties?
- Are transactions private? Will browsing and purchase patterns, contact details be recorded and/or shared with other parties?
- Are goods and services as they are claimed to be? Are the representations on-screen the same as the physical goods?

Libraries must be prepared to utilise the information gained in digital transactions with their users, but manage this information in ethically responsible ways, so as not to damage the image of libraries as being authoritative and trustworthy.

Navigation and usability of websites has also been identified as a key factor in e-commerce (Lohse & Spiller 1998; Nielsen 2001). If customers can't easily navigate the process of identifying goods, they will not complete transactions, or return to the site. This is an area where e-commerce can learn from libraries' experience of organising objects in a findable manner. It has been argued (Cooper & Chen 2001) that studies of library catalogue use can be extended to the prediction of electronic commerce buying decisions.

Another attraction for users of e-commerce is the availability and convenience of the digital environment: that e-businesses are open 24/7 - for 24 hours a day, 7 days a week. Also, they offer the potential for one-stop shopping, as portal sites integrate a number of e-businesses seamlessly. This has implications for the web presence of libraries, as users get used to 24/7 service and integration of services. Library web sites will increasingly be the first point of call for our users, and our users will be expecting models based on e-commerce sites, for instance an interface and responses customised to the particular user, and 24/7 availability.

Some concerns for e-business which have parallels in the library world are: intellectual property issues, payment systems, and the discovery of resources.

Many of the goods offered through electronic commerce are digital in nature: music and e-books for example. This raises issues of intellectual property and digital rights management that have parallels with digital libraries. In addition, e-businesses are concerned to protect the intellectual property of their means of doing business: domain names, website designs, etc.

Where the growth of B2C e-business may affect libraries and the Internet is that the development of payment systems for goods and services on the Internet may reduce the expectation that the Internet is a source of free information. As users get used to virtual transactions, and the mechanisms for these become widely available, the ethos of "information wants to be free" may disappear. While this may give rise to opportunity for

the provision of value added services by libraries and information organisations, it may undermine those libraries such as public and academic, which are founded on information being free to the end user. With the development of e-commerce systems, and their application to digital libraries (Schutzer 1996), it is possible that digital libraries may run on more commercial lines than their traditional counterparts.

From an information retrieval point of view, one interesting aspect of e-commerce is the need for search engine optimisation, for websites to be “findable”. Since search engines are the main way in which users locate sites, getting an e-commerce site near the top of relevant searches is vital for an e-business. Techniques such as the creative use of metadata, ensuring that relevant terms appear as text (rather than graphics), reciprocal links, using submission services to the best advantage, etc have become important, and a whole sub-specialty of web site design, site optimisation, has grown up to cater for this need (Coopee 2000). There is some evidence that the structure and organisation of Internet search directories does not facilitate the finding and collocation of e-commerce sites (Spiteri 2000).

Do libraries need to be concerned about search engine optimisation as well? As we move into the virtual library environment, our customers are going to come to us on the web, rather than to physical buildings, and it is important that library web sites can be found by entering a few key terms in a search engine, the method of choice for most users. It is instructive that at the time of writing, a search on Google by someone ignorant of Melbourne’s library services but wanting to find a public library, might be “melbourne public library” – this brings up the web site of the public library of Melbourne, Florida! Library web sites must be easily findable by our patrons, using common search engines and Internet directories.

The importance of metadata in e-commerce has been appreciated (Rust 1998), not just for location of information, but also for digital rights management. Unfortunately the needs of the library community for information retrieval metadata does not coexist easily with the digital rights management interests of the e-commerce community, and it is likely that further issues will need to be resolved here.

## **B2C transactions in libraries**

As mentioned, libraries have been providing a wide range of B2C transactions through OPACs and intranets. This can include:

- Placing reservations online
- Online document delivery services
- Access to subscription databases online
- Online availability of reference and information services – virtual reference service.

Of particular interest is the evolution of virtual reference service as a B2C transaction. Initially online reference service meant an email link that enabled users to send messages to reference staff. This progressed to the use of HTML forms, which allowed the information request to be structured, and ensured that useful information such as previous

references, etc were gathered. Early on, librarians realised the limitations of these asynchronous services. This led libraries to explore the potential for real time communication between an enquirer and the librarian afforded by synchronous “chat” software. Some services have progressed to using dedicated software evolved from helpdesk software applications, which allows for queuing and prioritisation of queries, rostering of librarians, etc (Broughton 2001). The use of live help technology in virtual reference services is a good example of how e-commerce technologies can be applied to libraries’ existing processes.

The parallels between libraries and e-commerce are closest in the book trade. The implications of e-commerce for libraries have been accentuated by the advent of Amazon.com – an online bookseller that some have suggested should be exploited as a model for libraries (Coffman 1999). Features of Amazon.com that could be imitated by libraries are:

- The virtual warehouse model, where a large stock is listed, but less commonly requested books are obtained from suppliers only when they are ordered. Of course, libraries moved partly in this direction when they started to integrate catalogues through the Z39.50 protocol, but there is scope for libraries to make this integration transparent to the users, together with document delivery and interlibrary loan processes.
- Customisation of interactions, so that a library patron would be reminded to put their name on the waiting list for the latest book by their favourite author, etc.

The human aspect of service is important in both libraries and e-commerce. The emphasis in e-commerce has been on the automation of transactions; however libraries, due to the wide variety of transaction types that they handle, have emphasised human service. In the e-commerce arena, there has been interest in “human web assistants” (Aberg & Shahmehri 2000), a form of human-computer collaboration in which users browsing an e-commerce site had a human assistant to call on. This technology could lead to applications in libraries, perhaps leading to a closer integration of OPAC software and virtual reference services.

Academic libraries are increasingly involved with services to distance education students, where service is increasingly digital, and there are many parallels to B2C e-commerce. It has been claimed (Lang & Zhao 2000) that e-commerce will transform the existing model of distance education, automating many learning processes. These changes will have significant impacts on academic libraries, in particular. Many UK academic libraries are putting e-commerce facilities in place to handle transactions with their students (Aird 2001).

## **B2B transactions**

Libraries are in fact heavily involved in B2B transactions, many of which pre-date the concept of e-commerce. These fall into three classes:

- transactions with other libraries, and library based institutions
- transactions with suppliers
- sponsorship and partnering in various forms.

Transactions with other libraries include digitally based document delivery and interlibrary loan. Document delivery, of course, is also a B2C transaction in cases where libraries are moving into providing virtual services for their customers. Other library-based institutions include bibliographic utilities, which are essentially managing the transaction of supplying bibliographic records to libraries.

Libraries' relations with suppliers are increasingly based on digital transactions (Scheschy 1999): acquisitions of books and serials are increasingly managed electronically, and as a higher proportion of journal subscriptions are through full text online sources such as ProQuest and EBSCO, these transactions will be purely digitally based. The advent of e-book supply will bring these changes to monographs as well. An issue to be faced by corporate libraries may be the increased ability of individuals and groups in organisations to order information products directly through e-commerce, bypassing the library (Pedley 2000).

Another type of B2B relationship for libraries is relationships with sponsors. Libraries are increasingly seeing e-commerce opportunities in the area of sponsorship and fundraising (Clarke 2001). Libraries are funding their digital ventures by partnerships with commercial entities (Scott 1999). This can be as simple as allowing corporate names to appear in connection with sponsored online library services. It also includes the use of banner ads, where the library gets a payment for each "click-through", or receives a commission on resulting sales. Amazon.com has been active in partnering with libraries (for example the library of Australian National University), encouraging libraries to provide links to the bookseller's site, and returning a proportion of book sales to the library. Do these activities endanger the ideal of non-commercial, unbiased library service? Providing that library managers keep professional roles and principles in mind in choosing commercial partners, and separate decisions about content from commercial sponsorship decisions, there are opportunities here for libraries to overcome funding problems. However, there are clearly issues here that the library community will need to debate.

## **Conclusion**

Michael Schulyer (Schuyler 2000) suggests that the new frontier is cyberspace, and that for libraries to be recognised in the new frontier, they must have a presence in cyberspace that matches anything e-businesses do.

A lesson from the e-commerce success (if not the financial success) of Amazon.com is the promotion and recognition of a "brand". Perhaps, as argued by Jose-Marie Griffiths (Griffiths 2000), libraries should look to the lessons of e-business in promoting the brand "library": the structure and authority that libraries can bring to the currently chaotic world of cyberspace.

Organisations developing e-business strategies must develop goals. Lesley Ellen Harris (Harris 2000) argues that libraries should look at their goals and decide how these can be

assisted by an e-commerce strategy. Typical areas where an e-commerce strategy might apply are:

- Increased revenue through commercial partnerships and provision of e-commerce services
- Resource savings through increased efficiency
- Increased access to databases
- Development of new information resources and value-added services
- Better service quality: faster delivery times, off site and 24/7 services.
- Better marketing of services
- Improved support for teaching

So what can e-libraries learn from e-business?

- Many library operations are already a form of e-commerce, and we need to be aware of technologies developing on “the other side” that can be applied to our existing processes. The use of live help technology in virtual reference services is a good example of this.
- We need to recognise that library web sites will increasingly be the first point of call for our users, and that our users will be expecting models based on e-commerce sites, for instance an interface and responses customised to the particular user, and 24/7 availability.
- Library web sites must be easily findable by our patrons, using common search engines and Internet directories.
- Libraries should work together to provide seamless portals to information.
- We must be prepared to utilise the information gained in digital transactions with our users, but manage this information in ethically responsible ways.
- We must keep abreast of new standards in e-commerce transactions, and give library based input where necessary.
- We should utilise the image of libraries as being authoritative and trustworthy.
- E-commerce relationships such as sponsorship and partnerships should be clearly separated from decisions about information content, and should not endanger the perception of libraries as trustworthy and authoritative sources of information.
- Corporate libraries should utilise e-commerce information supply so that maximum benefit for the organisation is obtained.

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