

A Technical Framework for Libraries

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1. Introduction

This report attempts to define a standard technical framework to which libraries should aspire and to which their systems and service providers should subscribe. The purpose of such a framework is to deliver cost savings which enable libraries to deliver a better service to their customers.

Libraries can benefit from technological developments such as full cycle EDI and RFID. However, it is often difficult to persuade libraries to invest in these technologies either in part or fully so as to derive all the possible benefits. There are many reasons for this. These technologies can lead to significant changes in the way libraries are staffed and managed. There can be HR issues with changes in job content and staff reductions. Above all there needs to be a motivating force to persuade libraries to take on these challenges and to invest in the technologies.

Unlike retail businesses, libraries lack a purely commercial driver and are expected to provide sometimes uneconomic services for the benefit of their communities. Investing in technologies is not without risk and libraries which benefit from savings in their budget will want to derive some additional benefits rather than just the knowledge that they are costing less.

These cost saving benefits could be invested in an improved library, longer opening hours, additional services etc. It could be that these benefits more openly described and supported by actual case studies will persuade library leaders to take the risk and invest in the technologies. E4libraries will collect and publish case studies to support beneficial innovation.

2. Relevant technologies

Improvements in the services provided both by academic and public libraries could be made through the implementation of technology. The technology itself offers some benefits in terms of workflow, efficiency, improved ambience etc. but it also offers significant cost saving which could pay for these improvements, e.g. longer library opening hours, more book stock etc.

It is important that the budgeting, tendering and procurement processes enable the costs to be fully understood and the savings identified, and also that at least some of the savings are available to the library rather than swallowed up by central cost saving. It is important to motivate a library with improved services and more efficient workflow and not solely to see the exercise as a way of cutting budgets.

There is a danger that resources will be diverted to new and more exciting areas such as the digital delivery of resources and away from books. It may already be difficult at this time to ask for funds to invest in EDI/RFID to improve acquisitions/cataloguing and stock management of books while we are at the start of a new digital revolution, but surely the need for improved and efficient management of books has never been greater. Perhaps this is a last chance to get books in libraries sorted out and if we fail to take this chance then the future will be digital and printed books will disappear from libraries over the next few years.

What technological or practical strategies should be deployed to achieve the necessary cost savings to deliver these suggested improvements?

EDI

- Full cycle EDI (where each additional message contributes to the total available benefit)

Quotes (vital for efficient supplier stock selection)

Orders

Order Response

Order Fulfilment

Invoice

- Library systems suppliers should ensure that their systems are fully EDI-compliant and capable of managing all relevant messages.
- Additional web-based services which provide information, accept orders etc. should be encouraged. Several of the library stock suppliers (both academic and public) have developed innovative services of this kind and where these add value to libraries they should be promoted through the e4libraries project.
- Adherence to BIC standards for EDI messages. The standards need to be reviewed in the light of actual practice. A new introductory overview document needs to be produced to ensure that libraries start by asking for standard solutions rather than starting with a blank sheet and then possibly developing non-standard solutions.
- Automated links between library management systems and Local Authority or other institutional finance systems to ensure that invoice approval and payment is carried out in the most efficient way.

RFID

- Currently used mostly for self-service, self-issue, self-return and automated fines, proper deployment of RFID technology can deliver substantial additional savings over extended periods. It can also be used to:
 - reduce stocktaking time;

- improve stock checking;
 - help with mis-shelved books;
 - identify books that a user is taking out of the library;
 - help to keep stock records on the LMS up to date.
- Deploying RFID technology can also free up space in the library by removing what some see as an intimidating central service desk and provide an opportunity to redesign the layout of the library
 - Ensure that the tasks performed by library management systems and RFID systems do not overlap, leading to conflicting information held in two places with resulting problems of updating/duplication. Libraries should not see RFID systems as a back-up for the LMS for those rare occasions when the LMS goes down. It is better to limit service for that one evening a year when books cannot be issued due to a system fault than to build a duplicate capability via RFID.
 - Encourage the use of standards in RFID and prevent the use of proprietary solutions which lock libraries into a developmental dead end.

Stock management

- In order to reduce reliance on an expensive local cataloguing function (duplicated all round the country), it should be considered good practice to obtain product information from certain external agencies which are certified to deliver high quality appropriate information and for this information to be automated to fit into LMS, OPAC etc.
- Supplier stock selection has been shown to deliver cost savings by reductions in the acquisitions team and workflow simplification, but this is mostly focused on new titles. There remains a need for an acquisitions function to purchase books for customer requests, local needs and to manage stock.
- Standardise and minimise servicing requirements. Libraries should evaluate what they or their users actually gain from heavy levels of servicing. Although there is a potential problem in placing new reduced-servicing books alongside more complex serviced books, the focus should be on why each element is included in a servicing specification: identification on the shelf, identification outside the library, protection, security and so on. Some of these elements may now be provided by RFID and other solutions. Are many libraries duplicating these facilities? A saving of just a few pence on servicing a book could amount to a significant saving given the many thousands of books purchased each year by a consortium.
- Current bibliographic supply reflects the traditional way in which libraries have always catalogued and purchased books. Now with supplier selection, out-sourced cataloguing or bought-in

bibliographic feeds, it may be time to look again at the traditional division between acquisitions and cataloguing. Could these functions, the systems which support them and the data feeds that serve them be more fully integrated? Is the level of cataloguing still appropriate for users and their needs? Is Dewey to the nth decimal place still necessary when almost nobody searches by classification any more? Could the shelves still be kept in order if the number of decimal places was reduced? Modern Internet searching has developed significantly over the last ten years in its sophistication. Similarly the data available to search has moved from basic metadata to the full text of many of the books and resources. Often library catalogues are still driven by extremely precise but restricted metadata via MARC feeds. Do library catalogues and OPACs now deliver sufficient content and value to users? It is possible that acquisitions and cataloguing are still separate functions simply because the systems developed to support them were geared to these two separate functions. Starting from today would not a systems supplier develop a new acquisitions function and automatically feed a full rich catalogue record straight into the LMS/OPAC?

Other possibilities

- Much more could be done to promote the library service both to existing customers and non-users. A range of innovative online services might be made available to members. (In theory, libraries could have data and access that supermarkets would kill for, although they may be prevented from leveraging these assets by policy or data protection rules. This could perhaps be overcome in future by using an 'opt in' approach so that users can give permission to libraries to use their information to provide them with better services.)
- Libraries should be alert to the opportunities for better interaction with their customers by providing online catalogue access, using email or SMS text to promote library use, recommend titles, show cover images and maybe a 'search inside' facility; enable customers to reserve books; or host virtual reading groups.

Academic libraries

- Much of the focus of this report is on the public libraries but academic libraries can also benefit from this technical framework although some of their requirements will be different.
- Academics and lecturers need to input to library purchase decisions and this can be done efficiently by library management systems offering metadata and approval screens which ensure that orders are not delayed by an over-complex approval process.

- Academic libraries already provide long opening hours and sophisticated self service and self issue, often via RFID technology. Ensuring that their suppliers adopt appropriate international standards will help academic libraries share and collaborate with other academic libraries or local public libraries as appropriate.
- Academic libraries often have even more stringent cataloguing requirements than public libraries but given that the student body is now completely used to searching online for resources, is this cataloguing detail necessary or cost effective?

3. Accreditation

The intention is that this framework should lead to an accreditation scheme for the library supply chain. This will enable academic and public libraries, systems suppliers and stock suppliers to demonstrate to their users, customers, trading partners and stakeholders that they are modern, technologically capable, efficient organisations, and will in many cases simply reflect and reward the work which has been going on in many of these organisations for years. In particular, accreditation will draw attention to the fact that EDI is much more than just orders or orders and quotes. The scheme will emphasise the need for full-cycle EDI (according to library stock suppliers adopted by no more than 15% of libraries).

From the perspective of libraries themselves, the core elements of such a scheme would be:

- Full-cycle EDI to industry standards
- Electronic links to corporate finance systems

Qualitative judgements would additionally be made, based on such things as:

- Use of bought-in catalogue data
- Use of supplier selection for mass-market new titles utilising library stock suppliers' online services to manage library acquisitions profile and integrated with EDI Quotes message
- Standard servicing requirements
- Self-service check out using bar codes or RFID
- Additional RFID functionality
- Other technical innovations

- Other service enhancements aimed at improving the user experience (e.g. shelf-ready processes leading to quicker availability of new titles).

Service providers (systems suppliers, stock suppliers and bibliographic entities) will need to demonstrate their ability to facilitate these requirements.