

Beginner's Guide to EDI in Libraries

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Introduction

This guide was requested by librarians at a NAG/CYMAL seminar in Llandrindod Wells, Wales on 17 June 2009. Several Welsh library authorities stated that they had not yet started implementing EDI and that they would benefit from a guide/template project plan to help them. This guide takes absolute beginners through a step by step process starting with a definition of EDI, looking at the Library Management Systems and Library Suppliers and then outlining a simple project plan to help libraries implement a successful EDI project.

What is EDI?

EDI stands for Electronic Data Interchange and it covers the exchange of electronic messages such as orders and invoices between trading partners, such as libraries and library stock suppliers. Note that EDI should be about computer to computer communication without any human intervention.

If you are starting to develop EDI in libraries now it should be a fairly straightforward process. All major LMS suppliers and library stock suppliers are already capable of doing EDI and should be able to help their library customers to get started. This guide follows a simple step by step process and it should help libraries to feel more confident about developing and implementing EDI.

Step 1. Your LMS

(LMS stands for Library Management System – also called ILS (Integrated Library System) – and is the system used in libraries to control stock, borrowers, orders etc.)

Answer the following question: My LMS supplier is...?

If your LMS is supplied by one of the following companies it is very likely that your system is already fully capable of EDI.

Axiell-DS (*e4libraries accredited*)

Civica

Infor (*e4libraries accredited*)

SirsiDynix

Talis

If your LMS is not EDI capable or your LMS supplier is not on this list it may be straightforward to upgrade your system to enable you to do EDI. It is not possible to do EDI without an LMS as EDI is the exchange of messages between computer systems. You should consider investing in an LMS but this is a major investment outside the scope of this guide. If you need to upgrade your LMS or purchase a new LMS then you would need to seek the necessary funding and then start with a process of tendering with suppliers for the right system at the right price. Even if it is not possible at this time to start such a process, it may be that eventually you will upgrade your LMS. Assuming that you plan to do this, make sure that the LMS you purchase is EDI capable and that EDI functionality is given as MANDATORY in your tender documentation.

BIC would be very interested to hear from any libraries which have problems getting their LMS supplier to implement EDI. EDI is now considered a core function of an LMS, and any LMS not capable of doing basic EDI should not be considered fit for purpose. Please inform BIC of any issues of this nature via email at peter@bic.org.uk.

Step 2. Your stock suppliers

Once you know that your LMS is EDI capable, consider your major stock suppliers as these will be your EDI trading partners and they will need to be able to receive your EDI messages.

So ask 'who are my suppliers...?' (Consider including books, DVDs and Audio-CDs and other materials that you wish to trade using EDI.)

If you use one major stock supplier it is best to start with them. This will enable you to go live with maximum EDI volumes and gain the most benefit as quickly as possible. All these major library stock suppliers are able to handle most EDI messages. Some are also accredited by BIC as part of the e4libraries accreditation scheme which means that they have demonstrated considerable capability in this area and they should be easy to trade with using EDI.

Askews (e4libraries accredited)

Bertrams Library Services (e4libraries accredited)

Blackwells

Coutts (e4libraries accredited)

Dawsons (e4libraries accredited)

Holt Jackson (e4libraries accredited)

Peters (e4libraries accredited)

YBP (e4libraries accredited)

Additionally, the following are able to do some EDI (mostly orders): BBC Audio Books, Browns/Books for Students, Cramer Music, Dandy Booksellers, G.A. Turner & Co., Kent Book Company, Rondo, Library Multimedia Supplies, Macaulay Library Supply Co, Magna, The Stationery Office, Ulverscroft Large Print Books, and W.F. Howes.

Contact your major supplier(s) and ask them if they do EDI with any libraries which use the same LMS as you do. This is a very important point which will enable you to identify both the best way to do EDI and also one or more suitable colleagues who have already done EDI and from whom you can learn. You should get an answer like this:

Example

If my LMS is Infor Vubis and my major supplier is Bertrams Library Services then I am looking for a library service which uses this same LMS and supplier combination and which also has considerable experience of EDI.

Answer: As at 2009, Essex Libraries uses Infor Vubis, trades with Bertrams Library Services and is accredited under e4libraries. (Essex Libraries has implemented the following EDI messages: Quotes, Orders, Order Responses and Invoices and they are also testing Order Fulfilment)

This tells you that you are not alone - others are already doing EDI with a combination of systems and suppliers similar or identical to yours. This should help raise confidence levels and assist in avoiding any poor decisions or other pitfalls. Why not contact one or more of these library authorities and ask them about their EDI progress? Most libraries are very willing to help and to point out any issues which exist.

One way to see which libraries and stock suppliers are exchanging which EDI messages is to look this information up on the Internet. Later in this guide we will consider which EDI network to use. One network option is called Nielsen BookNet and you can search the Nielsen BookNet website database by library name or library stock supplier and view all the EDI messages that are currently being exchanged via Nielsen's network – take a look at www.nielsenbooknet.co.uk (Click on the User Directory link at the bottom left of the page. Select library or library supplier in the pull down and then search and you will see which libraries and library stock suppliers exchange which messages over the Nielsen network.) Note that this will not show you libraries and stock suppliers which trade using EDI via other networks.

Hopefully, you have now identified that one or more of your suppliers is capable of doing EDI with libraries using your LMS. (If you cannot find any libraries using your LMS and trading with

a stock supplier via EDI you should talk to your LMS and see if they know of any of their library customers doing EDI. If your position is unique then you could still develop EDI and trade with any EDI capable suppliers. Your LMS supplier may be willing to work with you to develop this capability at a reasonable cost. Your stock suppliers should be willing to help too. BIC would also like to know about any LMS which is not already doing EDI or some kind. Please email peter@bic.org.uk.)

Step 3. Plan your strategy

Before you start to implement EDI you should look at your business and work out, possibly with reference to other libraries, how EDI can be exploited to benefit the business. Don't just look at reducing communications charges, postal and telephone costs etc. Think also about staffing, processes and procedures and how you can use EDI to improve your service to your end-users, your library patrons. Some libraries have used EDI to rationalise the way they select and order stock, they have reduced headcount or re-allocated staff to more customer facing roles. They have speeded up receipt of stock onto the shelves and improved stock availability etc. Talk to colleagues in other library services and ask them how they have exploited EDI and maximised the benefits gained. Think of EDI not just as a technology but as an enabler for other beneficial change.

Don't forget to consult with staff before implementing any major changes and ensure that all levels of management and staff understand the scope of the project and feel part of it. Above all don't implement EDI onto an unwilling workforce. Win hearts and minds first and get people to contribute to the process, generating ideas and generally being part of the project.

Many libraries have treated implementing EDI as an ICT project requiring a budget and a cost-benefit analysis to justify any costs. You may have procedures which you have to follow such as tendering. At this early stage it is sensible to understand the potential costs of the project such as systems development, testing, network software, network charges and so on. Colleagues in other libraries should be able to give you a clear idea of these costs in advance. They will also be able to help you with forecasting the benefits.

Most EDI projects lead to a significant reduction in costs, usually from reducing headcount and postal and telephone charges. You may wish to split this budget reduction between your authority and your library service so that you retain some part of the benefit to spend on improving the library service in other ways. It may be sensible to be cautious in your predictions of savings so that your forecast is enough to justify the project but understated so that the benefits actually gained are greater and the authority's expectations are therefore

managed appropriately. Don't forget that to maximise the benefit of EDI you need to maximise the volume of messages sent and received. You may wish to go live with your major supplier but afterwards immediately seek to go live with additional smaller suppliers. This requirement should be included in the research that you do and in your plan.

EDI Messages

You can now start to plan your detailed strategy. You know that you are not alone and that other library authorities with your LMS have managed to implement certain EDI messages with your major supplier. So now you need to plan which messages to implement.

Look at the main EDI messages listed below and consider which of these is most important to your organisation and which would be of most benefit. Consider here the opportunity to implement supplier stock selection and shelf-ready stock as well as simply looking at EDI orders. The advice from BIC is that libraries should work towards implementing full-cycle EDI i.e. all the following EDI messages. Your plan should show which messages you plan to implement first and with which suppliers.

Quotes – A message sent from the library stock supplier to the library with suggested products to order, items selected by the library from the supplier's website, standing order items (e.g. popular fiction authors) or listing items selected in a showroom visit etc.

Orders – A message enabling a library to order items from a library supplier or to confirm items suggested in a quotes message

Order Response – An acknowledgement of an order with information about the likelihood and timing of supply or reasons for non-supply

Order Fulfilment – A response message containing information needed to enable swift receipting of a delivery so that the books can get onto the shelves as quickly as possible.

Invoice – An invoice listing items purchased and needing to be passed to the authority financial system for payment

Credit Note – This message is not widely used and is effectively a negative invoice. (Could be used for items not supplied or defective/damaged.)

You may wish to begin where many other libraries have started which is to do Quotes and

Orders first. Optionally, you could add Order Responses. These three messages alone would give your library significant benefits, reducing costs, speeding up deliveries and improving information about orders placed.

This is an excellent combination of messages especially if you buy books from a showroom visit and your supplier can supply the contents of your visit selection in a Quotes message. If you plan to implement supplier stock selection (where your library stock supplier takes on the role of supplying products within rules and budgets set by you) then it would be advisable to look at implementing EDI quotes as this message fits very well with supplier stock selection. Note that the decision to implement supplier stock selection should be separate from the decision to implement EDI.

If this is all too much for a first implementation you could just start with Orders and then implement additional messages later. However, if each message is implemented separately this may require additional sub-projects and separate funding and it may be quicker and less expensive to implement say the first three EDI messages in a single project working closely with your major stock supplier rather than attempt to implement them separately.

You may find that different areas within your organisation are attracted by the benefits from different EDI messages, for example:

- Finance may be most interested in implementing EDI invoices (and in integrating your LMS with the authority finance system which is an additional piece of work which can deliver significant benefits but is not strictly part of EDI.)
- "Goods receiving" will benefit most from shelf-ready stock helped by the order fulfilment EDI message. (Note that this message may also be known as "Catalogue Services" or "Item Load" for historical reasons depending on which LMS supplier/stock supplier is involved.)
- Acquisitions will benefit most from quotes, orders and order responses. The order response message is useful because it tells you what will not be supplied in your order (together with the reason for non-supply) and you can then use this information to inform a library user about their reservation etc. This response information about non-supply can also be used to prompt you to order a substitute book or to use the available budget for a different purchase.

You should talk to your internal team at this point and obtain their views and the necessary

commitment from Finance, IT and other relevant departments to implement EDI. It may also be worth noting that implementing EDI to industry standards used by all the major players should be seen as going a considerable way towards conforming to newer methodologies around corporate procurement and related purchase to pay (P2P) systems. EDI is designed to make the library supply chain more efficient and ultimately to provide an improved service to library users.

Step 4. Consulting your suppliers

You have now researched a bit about EDI and learned that you are not alone and that others have already implemented EDI in similar circumstances. This should be very encouraging. You should now contact your LMS and your major stock supplier(s) and tell them that you wish to implement EDI. The library stock supplier should be happy to do this for you and to help with planning and testing. Your LMS may be pre-configured to do EDI and it will then need minimal set up to start. However, your LMS supplier may need to undertake some work to get your system up to speed to be able to send and receive EDI messages but they should be able to do this quickly and at very little extra cost. For example, you may need to download some files to enable your LMS to communicate with your chosen network. (We discuss networks in the next section.)

However, some LMS suppliers may see this as an opportunity to charge for an EDI module that perhaps you have not already purchased or which is not already a core part of your system. If there is a charge for EDI and you can't persuade your LMS to implement EDI for free then you will need to do a cost-benefit study to justify the investment. Bear in mind that your LMS may already be fully capable of EDI so any development work should already have been done previously for others. You should therefore only have to pay a very modest cost and not the cost of a major upgrade. Check that your EDI cost covers all the EDI messages that you plan to do in the short term as you don't want to be charged extra later for each EDI message. Some LMS suppliers may not charge for development (which has already been done) and implementation (which should be very straightforward) but they may instead want to charge you consultancy fees to help you through the process. Your product data may need to be cleaned up or some other requirement may be identified which will attract a cost. By consulting with colleagues you should be able to recognise which costs are reasonable and build them into your budget. It may be tempting for an LMS supplier, aware that your library service is going to save a significant sum by implementing EDI, to believe that as your LMS they deserve a share of this benefit. It is up to you how you deal with your LMS supplier but the advice is to talk to other libraries and your consortium partners to discuss how best to handle this.

To discover what the benefits might be, talk to the other library services which have been down this road before. They should be able to help with some figures and you can scale these up or down to account for the size of your authority compared to them. Hopefully the benefits easily outweigh the implementation costs. Make sure that any development, implementation or consultancy costs are a one-off and not an annual charge!

Step 5. Deciding on an EDI network/service provider

You now need to choose a method of sending and receiving EDI messages. EDI messages have to be transmitted across a network and there are three main ways of doing this. Again, take advice from the other authorities and your suppliers (who will have to be at the other end of any network you choose) as to which method works best for them. All these methods have some costs involved so build these into your cost-benefit analysis.

1. Nielsen BookNet's EDI Service
2. FTP via The Internet
3. Talis EDI Gateway

Let's look at these methods and examine some of the costs and the pros and cons of each.

Nielsen BookNet's EDI service (formerly known as First EDItion) is the market leader and is still widely used by libraries. It is robust, capable of handling any traffic you give it and it is reliable. It has an audit trail although you may want to ask what this consists of and to see an example of an audit trail file so you can work out whether this is worth having. Nielsen BookNet will charge you some form of service charge or mailbox fee and in addition you will pay traffic charges. Traffic charges may include a small charge per message and in addition a charge of a few pence per kilobyte of data. This might mean that an average order you send to your supplier should cost you just a few pence in traffic charges. This may sound very modest but it can build up as your volumes increase. Note that Nielsen does not actually own the EDI network used and that this is supplied by a third party (called GXS) but that Nielsen is the book industry service provider for that network. Nielsen employs staff to assist you with any problems you might have and they have a lot of experience of setting up and running EDI services for libraries and should be able to provide additional information which could be useful when you first start. Nielsen will also help with testing. At the present time many libraries use Nielsen and seem happy to pay for this service.

FTP stands for File Transfer Protocol and it is essentially a way of sending an EDI message over

the Internet from your LMS to your stock supplier's system. The traffic costs of sending or receiving a message are free but a certain amount of work has to be done in setting up the FTP service and in day to day management, exchanging files with an FTP site and processing them, for example. Your IT department may be able to help you in evaluating these costs. If you don't have the resources to cope with this then the Nielsen approach may be easier to budget for and control.

The third EDI method applies if you use the Talis LMS. Talis has a product called Talis Gateway and it manages the EDI exchange for you. You should make sure that you know in advance what the ongoing charges are for this service and whether they include traffic charges etc. Talis Gateway may be the only way that Talis users can do EDI.

It is very important that the EDI service supplied is cost effective. If you are concerned about the cost of doing EDI you should consult with colleagues at other libraries to be sure that you are paying a reasonable rate for what should be a well-established core service not a special development unique to your library.

The best way not to be drawn into buying the wrong service or paying too much for an existing service is to talk to people who have done all this before. Ask lots of questions and spend the time looking for a second or third opinion rather than just accepting the first answer you get. Probe a bit and you will soon be able to work out which alternative is best for you. Don't be afraid to ask.

It is far better to use a service that your Library Stock Supplier already uses with several other libraries for the messages you wish to exchange rather than to start with a new service and try to pioneer your own way forward.

The only exception to the above advice about network options would be when the technology occasionally takes a major forward leap. This could be about to happen with something called XML web services. However, being on the leading edge of a new technological development is usually expensive and problematic and unless there is a very good reason why your library should be leading the field in this area, the advice is to follow the well-trodden path and leave it to others to lead.

Step 6: Deciding on the content and format of EDI messages

It is very important that your LMS supplier and your stock supplier talk to each other early on in the project (and you need to be there to keep control). They will need to agree the format of

each message to be sent or received. There are BIC standards which can be very helpful in this process.

But there is some flexibility in the standard to accommodate the differing ways that businesses choose to communicate. Some messages contain extra data, some data is for the sender and will be sent back unprocessed by the receiver (an example of this could be an order reference which the sender needs to receive back in order to identify the stock). Some data fields are mandatory and these MUST be provided whilst other fields are optional. The LMS supplier should know what data your system needs to send and receive and your stock supplier should know what data they need in order to process an order. This meeting should take into account a number of different requirements: your LMS, your stock supplier, your own organisation, the BIC standards etc. and all these should combine to enable all parties to agree on the precise data required for each message. These are important decisions and it may be difficult when just starting EDI to grasp the potential benefits which could come from re-working your current workflow. You will be making decisions on certain priority codes and when and if to use free text to deliver your exact requirements. If possible it is always best to stick to the standard but you should seek detailed advice from your LMS supplier and your major stock supplier(s) who will know in more detail how others have already solved these issues.

EDI messages exist in two main formats:

- Tradacoms
- EDIFACT

Tradacoms messages are older and UK-centric. EDIFACT messages are international and were developed later. If in doubt EDIFACT is preferable to Tradacoms simply because it is newer and may not have been developed by some LMS suppliers which have come to the market with more recent implementations. Generally, take advice from your stock supplier and your LMS and from colleagues and agree which format your messages will use, and if given a straight choice go for EDIFACT. UK guidelines of both standards are maintained by BIC and a technical clinic is held several times a year to resolve issues of interpretation and practice.

Above all, don't re-invent the wheel. Everything you can possibly imagine has probably already been done somewhere by someone so use their experience and expertise and don't invent or accept a non-standard solution unless you are absolutely sure that this is the only way to get what you need and that your situation is genuinely unique.

So let's recap.

You have researched other authorities which use the combination of your system and your stock supplier(s). You have looked into the method of EDI message exchange and agreed the message format. You have met with your internal team and discussed EDI and you have produced a simple cost-benefit analysis.

Step 7. Implementation Project Plan - Summary

Every organisation is slightly different so this project plan is very generic and will need to be adapted for your use.

The idea is to be able to go live with the EDI message of your choice, sent from your LMS and received by your stock supplier (or vice versa) via your chosen exchange method. To do this you need to:

1. Undertake preliminary research as described in this EDI guide
2. Produce a project plan with your LMS supplier and stock suppliers
3. Develop/implement the necessary functionality to send or receive chosen EDI messages
4. Test the LMS and send/receive test messages
5. Train staff
6. Go live with first EDI message
7. Exploit the benefits of EDI by implementing more streamlined workflow, goods-in etc.
8. Track the benefits and budget reductions
9. Tell others about your successful project. Write case study, gain any PR benefits
10. Go back to 4 to implement the next message/next supplier.

Your LMS supplier should be able to do much of the technical work for you and your role should be to manage the process and coordinate with your supplier(s) to send/receive test messages, reply to test messages etc. You will need to agree with your LMS supplier whether you will be responsible for setting up the necessary parameterisation of the system – inputting codes and parameters to prepare the system to do EDI or whether this will be done by the LMS as part of your implementation. Ensure that you have discussed this with your LMS so that it is clear who is doing what. Note that some LMS suppliers can provide User Documentation to help libraries set up EDI (including what is required to send/receive messages, help on setting up your system, what book suppliers require etc.) Be sure to discuss this help with your LMS supplier early on so that you gain the benefit of their experience.

When testing your system, ensure this is tested “end to end” so that orders are input to the LMS and EDI messages are output successfully and received and processed correctly by

suppliers. Also be careful to ensure that test orders are identified correctly as test and not actually processed and supplied in error as real orders by the supplier.

When testing the receipt of an incoming message such as quotes or responses, be sure to identify that these messages are also test messages. Ensure your system can receive, load and process these messages without crashing etc.

Your LMS supplier should be able to test the functionality fully perhaps on a test system and then cut across to the live system when you are ready to go live.

Step 8. Other points to consider

Consortium

If you are part of a consortium it would be well worth asking other consortium members about their strategy for EDI and in considering a consortial approach to EDI systems development and traffic costs etc. Some consortia have succeeded in driving down the costs of stock purchases but have not yet applied this to systems development and service implementation.

BIC E4libraries accreditation

Apply for BIC e4libraries accreditation. This is a free accreditation scheme which is awarded to libraries which deploy beneficial technology such as EDI. The scheme is designed to encourage libraries and their suppliers to implement beneficial technology, to reduce their cost base and improve their service. The accreditation says that the organisation is modern, up to date, invests in the organisation to improve its service and give better value for money. Libraries apply in confidence and the scheme is completely free. If the library does not succeed in getting accreditation at first, then BIC offers free consultancy to explain what other steps the library should take in order to gain accreditation. Only successful applications are publicised. For an application questionnaire, or to find out more, visit www.e4libraries.org.

Conclusion

If in doubt, don't develop your own unique solution. Ask someone how they already did it and imitate them. They won't mind. There are published standards which describe how things should be done and there are case studies and other information available to show how others have developed successful EDI solutions. Good Luck!