Guide to e-commerce

This guide explains book trade e-commerce, the main types, the business messages, and more detail about the different methods of e-commerce ordering and invoicing

1. Explanation of e-commerce

E-commerce is literally electronic commerce or electronic trading. This means that the messages (e.g. a purchase order or an invoice) used to conduct business between a buyer and a seller are electronic, i.e. produced by some piece of technology, usually a computer (but you can also use some other devices such as a PDA - portable digital assistant - or even a push button telephone).

For example: a bookshop sends an electronic order and this is received by a publisher/distributor. Because the order is already in digital form, i.e. in a format that a computer can read, there is no need for the publisher/distributor to re-type it. The order can be fed straight into the publisher/distributor's system. This saves the publisher/distributor the cost of typing the order into their system; it avoids errors which sometimes occur when orders are re-typed; and it removes a lot of potential delay in that the order can be processed immediately instead of waiting in an in-tray for typing. The result is faster deliveries, better stock availability for the bookshop and fewer sales lost.

At peak times such as Back to College or Christmas when publisher/distributors used to have to take on lots of temporary staff to type in orders received in the post, there was the danger of long delays. Now orders can be keyed in just once at the retailer and the order can be processed in the same day. The books are very often delivered on the next day. Speed of order fulfilment has improved dramatically over the last twenty years and where a retailer used to quote four weeks to get a book for a customer they now expect it in just a few days. Electronic ordering has speeded up the book supply chain.

2. Confusions about supply chain e-commerce

Supply chain e-commerce should not be confused – as it often is – with online shopping - where the customer visits a website for the purpose of buying goods online. The supply chain is the linking of transactions in the book trade from the author of a book at one end to the reader of the book at the other end. The various players in between are publishers, printers, distributors, wholesalers, retailers, libraries, schools etc, whose role is to facilitate the connection of the author's work to the reading customer. Supply chain e-commerce describes the links in this supply chain across which business messages are sent electronically instead of on paper.

It is another common misunderstanding that email is a form of e-commerce. It can be, if the message or an attachment is structured in such a way that the content can be automatically processed by the recipient's computer, but that is rarely the case. Email is an efficient, cheap and quick way of communicating electronically, but that's all.

True e-commerce involves a minimum of human intervention at either end of the transaction. Though original data probably needs to be keyed, subsequent use of that data in messages to and fro in the supply chain should be automatic and untouched by human hand.

3. So what are the business messages in supply chain e-commerce?

Almost any communication between different organisations within the supply chain can be sent using e-commerce. For example:

- A bookseller sending an order to a distributor for a certain number of copies of a book; or
- A distributor sending an electronic invoice to the bookseller for books supplied.

There are also messages for the supply of product information which enable a distributor to inform a retailer of changes in the availability of a particular title.

Booksellers and distributors can also improve their returns processing via electronic messages: a retailer can request permission to return a book and a distributor can send back a message giving authorisation to return it. The following table shows a number of the most common messages in use in the book trade. Please note that we differentiate between publisher (the role of publishing a book) and distributor (the role of distributing a book). In this context many companies will be both publisher and distributor. Wholesalers have dual roles as retailer and distributor in that they buy books from distributors and they sell books to booksellers.

Message	From	To
Product information	Publisher	Retailer or data aggregator
Price and availability updates	Distributor	Retailer or data aggregator
Order	Retailer	Distributor
Order acknowledgment	Distributor	Retailer
Delivery note	Distributor	Retailer
Invoice	Distributor	Retailer
Credit note	Distributor	Retailer
Statement	Distributor	Retailer
Returns request	Retailer	Distributor
Returns authorisation	Distributor	Retailer
Returns confirmation	Retailer	Distributor

Please note this table is not a complete listing of all the possible messages but it does show the main book trade messages and who is involved in sending and receiving them.

If you look at your business you may be surprised how many business messages there are and how many can be exchanged electronically. Any message which is exchanged in a standard way frequently or routinely may be suitable for e-commerce. Book Industry Communication (BIC) has ensured that the standard messages cover a wide range of possible uses by employing a set of codes to cover many eventualities. So if the message you want to send is "This book is reprinting and will be due out in October 2007", there will be a message and a set of codes to say this.

In 1970, messages were almost all exchanged on paper via the postal system. Over the last thirty-five years this has changed so that a large proportion of these messages are now exchanged electronically. Initially, the fax machine was used instead of the post. With the widespread adoption of EDI (Electronic Data Interchange) bigger companies started to exchange these messages electronically. This was done by sending electronic messages from their computer systems to their trading partners' computer systems with no human intervention in the middle. A similar shift has started to affect the business letter, which is now increasingly communicated by email.

Over the last five years there has been a huge expansion of the Internet and, with the spread first of ISDN and now Broadband (also called ADSL), many businesses now use the Internet routinely as part of their work. Even the smallest companies often have a PC with Internet access via broadband and this can be used for "surfing" the World Wide Web for information purposes, exchanging email, or using business-to-business web services. This last development is relevant for e-commerce as there are now several competing services in the book trade available to booksellers and publishers.

4. Ordering

One of the key transactions between a bookseller and a distributor is the order. There are many different ways to place an order (a purchase order) on a publisher, distributor or wholesaler. These include sending a letter or order form, sending a fax, sending an email, using a web service or other electronic services, using EDI or even IVR (Interactive Voice Response - a new term used to describe telephony systems which use voice recognition or push button technology). The telephone itself is widely used to place orders on suppliers. All of these methods carry a cost even if it is only the cost of the time taken to place the order itself. Some methods can be perceived as virtually free: for example, if a bookseller already has a broadband Internet connection with a monthly fee (fixed cost) then using a web service which charges nothing extra means that the order itself is virtually free (zero variable cost). Other services make a traffic charge, either the time taken on the telephone, a charge for the size of the order

in terms of kilobytes of data sent, or sometimes a charge per order placed regardless of size.

This variety can lead to complexity and confusion when trying to choose an ordering method which suits a business. There may also be charges incurred by the trading partner at the other end of the chain - by the supplier - to be considered. Some ordering methods cost the supplier far more than others, some are more reliable, some impact on the supplier by making it necessary to have extra staff available at peak times (e.g. to answer the telephone). This section will try to set out these methods and costs as clearly as possible with approximate pros and cons. First a basic description of the main methods of ordering:

TeleOrdering

Many booksellers use or have at least heard of TeleOrdering. This service, which is nothing to do with telephone ordering, has been in operation for more than 20 years and it has one job - enabling booksellers to place orders on suppliers - which it does very well. The retailer sends TeleOrdering a file of orders. This can be done in a number of ways. For example, you can use TeleOrdering's Teelix software (provided by TeleOrdering) to input your orders and then dial into TeleOrdering via your PC's modem (over a normal telephone line). You upload the orders to TeleOrdering and usually get back a confirmation file within a few seconds. When ordering many titles you can assemble the file using a bibliographic CD-ROM and then upload the file when ready. Chains usually output files of orders from their EPOS systems. An order file will contain the ISBNs of all the titles required and the quantities ordered, together with a Standard Address Number (SAN) which identifies the bookseller's delivery address. TeleOrdering will use its database, which is updated several times a day and holds information about books supplied by over 40,000 publishers, distributors and wholesalers, to identify the correct supplier for each title ordered. The order is then routed to the correct supplier. Smaller suppliers, who in the past received orders by fax or post because they currently lack the systems to receive their orders electronically, have now been upgraded to a service which enables them to collect their orders from a web site when alerted to do so by email.

EDI Ordering

EDI stands for Electronic Data Interchange and describes the process whereby messages are transmitted between trading partners' systems using dedicated networks. This is the way most major companies communicate with their larger trading partners. The sender's computer has to know where and how to send the order and a series of electronic trading relationships are set up between major trading partners. This can be a major undertaking but once it is done the EDI network can handle huge volumes of orders. Because the idea is to let the orders flow without intervention, major distributors have installed systems to check the orders coming in against a set of rules and sideline any which fail these rules. Only these orders are then looked at by staff at the distributor. The

objective is to enable major distributors to handle very large volumes reliably and at low cost.

EDI ordering is very effective for placing large volumes of orders from an EPOS (Electronic Point of Sale) system to a distributor. EDI can also handle reply messages, such as the Order Acknowledgement, which will automatically inform the bookseller that a book is not available and the reason.

Web Ordering

Increasingly the Internet is being used as a medium for ordering. Web services such as PubEasy or Nielsen BookNet Web enable the retailer to key order information (an ISBN, the number of copies of the required book and a means of identifying the originator of the order) into a browser on their Internet-capable PC and then click to send it. The order can be fed straight into the distributor's system without delay or re-keying. One of the advantages of ordering via a website is that you can usually see the latest price and stock availability information on the screen just before you place your order. You can therefore be very confident that you will receive the order. Most distributors who have signed up to PubEasy supply a confirmation email, which tells you that your order has been received. On Nielsen BookNet Web you can look up your orders and see where the system has sent them (usually via TeleOrdering) and whether there were any problems with the orders. The responsiveness of these web services is one of the most useful characteristics of web ordering. Web ordering has been adapted to cater for larger volumes of orders using clever tricks like the copy and paste facility deployed by both PubEasy and Nielsen BookNet Web. For example, this enables a bookseller to take a list of ISBNs straight from a customer, or from an electronic catalogue, website etc. and "fire" it at the web service to check prices and availability of all the titles in one go. All these facilities are available to any bookseller with an Internet-capable PC and a web browser.

For larger companies these web services have both developed a bulk input/output facility so that booksellers can connect their EPOS system to the web service and send and receive information. PubEasy calls this TRANSACT and this can put PubEasy and PubEasy distributors' data seamlessly online to a web-enabled EPOS system. In this case booksellers no longer use a browser but instead use their EPOS system to send and receive data via PubEasy. NBNWeb has a similar application, which enables bookselling chains to access NBNWeb from their EPOS systems. These facilities are effectively copying EDI ordering but doing so via the Internet.

Fax ordering

Please note: a faxed order is an electronic message from the retailer to the publisher's fax machine but it then gets printed out on paper. This then needs keying in again and it could wait for some time in the publisher's in-tray before it is processed. It is much quicker than sending an order in the post but it does not have all the advantages of full electronic ordering. So it is a step forward from the post but is not a proper form of e-commerce.

Telephone ordering

Ordering by telephone is very common right across the supply chain but it can be expensive and time-consuming as well as being liable to lead to error and misunderstanding. At peak times, it is not always possible to get an outside line in a busy bookshop let alone get a call answered at a busy distributor. Telephoned orders have to be received by distributor staff, often under pressure at peak times, and then the orders have to be keyed into the distributor's systems. In contrast, a file of orders received electronically at a distributor can go straight into their warehouse system with no delays and no chances for errors to creep in when being keyed in.

Cost comparisons between ordering methods

Method	Cost to Retailer	Cost to Supplier	Pros	Cons
Telephone	5p per minute + labour cost	5p per minute + labour cost - hard to predict number of staff needed	Easily understood, ubiquitous - top supplier numbers can be stored in the phone, Phones are cheap and often installed all over the bookshop	Expensive in time, expensive for the supplier to process the orders (answer the phones and keying in) not a quick service unless using a hotline
Fax	5p per minute + labour cost. Can be a lot of standing about waiting for a fax to go through.	5p per minute + labour cost - hard to predict number of staff needed	Easily understood, Ubiquitous	Can sometimes be illegible. Can get lost. Fax paper orders need to be processed so in-tray delay.

Web Service	Once broadband paid for usage can be free (PubEasy)	Systems and service costs	Integrates up to the minute price and availability data with ordering process	Often not linked to EPOS system at the bookseller. Supplier may find web services expensive.
TeleOrdering	£500 per annum for all you can eat!	Up to 4p per order line (any quantity of books)	Can lower staff costs as retailer can fire a big file of orders and TeleOrdering will do all the looking up and sending on.	Base system not good at acknowledging and confirming order status/delivery. This can impact on customer service.
EDI via VAN	About 3p per order (any quantity of books)	Roughly 1.5p per order line. Other costs associated with VAN service	Cheaper than TeleOrdering but hidden traffic costs and retailer has to have EDI relationship with each supplier. Reliable and secure	IT costs and other costs.
EDI via Internet	Once broadband etc is paid for, no traffic charges	Once broadband etc is paid for, no traffic charges	Much cheaper than the EDI via VAN etc.	IT costs + Some costs of relationship management and standards control

5. Invoicing

The other key supply chain transaction is the invoice. This too can be made much more efficient by using e-commerce. Major booksellers have invested in e-commerce systems to help them process their invoices more effectively but even small booksellers can benefit from e-commerce invoicing/payment systems.

Businesses, which invest in EDI capability, can use their EDI service to exchange invoices, credit notes, statements and other business messages with their trading partners.

Both sides of the supply chain benefit from exchanging these messages via e-commerce. Larger booksellers can feed electronic invoices into their accounting systems and reduce their administration costs. Distributors can benefit from more prompt payment and fewer disputed invoices.

For many years the book trade has been fortunate to have a payments clearing system called BCH (Booksellers Clearing House). The principle behind this service is very simple. To reduce the number of payments made to publishers and wholesalers, a bookseller can make one payment to BCH and have BCH pay several hundred distributors and wholesalers on the bookseller's behalf.

This service has now been largely superseded by a web service called Batch.co.uk. Batch is effectively BCH online for booksellers and publishers. Batch is owned by the Booksellers Association and is designed to take cost out of the receipt, processing and payment of invoices. Booksellers (members of the Booksellers Association) can use Batch free, and small publishers can use Batch via a low cost basic service. Larger publishers pay for the Batch service but obtain larger benefits from the ability to load remittance information into their systems automatically, saving a lot of sorting, matching and keying in.

It is worth booksellers looking at their business and at the number of trading partners they trade with in any one year. They should also look at the number of payments they have to make each month and at how much staff time is dedicated to invoice processing and payments. All this work is very necessary but effectively it is dead time and it is completely unproductive. E-commerce helps to reduce the costs involved in this area of business.

Publishers should look at their business in a similar way and look at the number of trading partners they have. How many invoices do they issue and how much staff time is taken reconciling cheques and inputting remittance advice information into their accounting systems. Where the number of invoices and remittances is high enough and the staff time used is great enough there is potential for e-commerce to reduce costs.

The traditional way for a distributor to send an invoice to a bookseller is in the box with the books. But this can lead to invoices being lost. It does not encourage consolidation of payments and many independents and chains now have separate accounting departments and invoices are often delayed in transit between goods in or the shop floor and the accounts department. A better way is for an electronic copy of the invoice to go the accounts department and be loaded automatically into the accounts computer. It is easier and cheaper for the bookseller to check a figure sent electronically by the supplier than for the bookseller to have to key it in.

Large bookselling chains have invested in sophisticated invoice processing systems, which match invoices against deliveries. Given the complexity of terms, discounts and special deals and the large volumes involved e-

commerce has proved to be the only way in which large booksellers can provide prompt payment at reasonable cost. Publishers who trade with these large chains are being encouraged to provide invoices via e-commerce. It may be that in future, chains will only order on publishers and distributors who can trade in this way. If you were a publisher who trades with these companies it would be prudent to understand which systems they use and how to keep these important customers happy at reasonable cost. There are low cost ways of sending electronic invoices to big chains.