

Interoperability issues for systems

Previous research has shown that the book industry currently relies on a large number of different systems, front office, back office, EPOS, publishing, accounting, warehouse, ERP etc. Some of these systems are now quite old and some systems suppliers may be struggling to find a large enough market to warrant upgrading their functionality. Many of the smaller booksellers and publisher/distributors will not be actively pushing to develop supply chain e-commerce facilities and without this obvious demand some systems suppliers will be unwilling to develop their systems to take advantage of e-commerce and comply with the e4books initiative.

Other systems are already capable of e-commerce and are fully Internet-enabled and it is these systems which are likely to deliver the necessary benefits to users in the future. For example, the time and cost taken to place an order or send an invoice has reduced over the last few years. It is likely that in the future there will be an increasing demand for speedy product information, more reliable ordering, instant information on pricing and an immediate response to returns requests. This can only be delivered cost effectively in future by e-commerce services. An EPOS or publishing system, which cannot communicate with the Internet or exchange e-commerce messages, will be disadvantaged.

Over recent years a number of e-commerce providers have developed services which use the Internet to enable bookseller and publisher customers to connect and exchange data. These services were built initially for PC and browser access via the net and there was no integration with EPOS or back office systems. However, early on it became apparent that using these online ordering and lookup services and then rekeying data or seeking to synchronise data with host EPOS systems was problematic at best. For some retailers, failure to synchronise the data meant duplicated orders or unexpected deliveries and led to some chain retailers banning their branches from ordering on these services.

The ideal solution for booksellers was to use their EPOS system to enquire or order on the e-commerce solution via the Internet but without using a separate PC and browser. This means that the EPOS system had to be capable of linking to the Internet and managing this requirement. PubEasy developed its TRANSACT solution, and Nielsen BookNet developed an API link for BookNet Web. Several systems suppliers developed their systems to cater for these solutions including Booksolve and The Book Partnership. Integrating with these services as well as e-commerce message exchange via EDI, FTP or AS2 requires systems development on the part of the systems supplier. Very often systems development work is undertaken in house to deliver requirements for specific customers. Sometimes not enough attention is paid to external relationships and any developments being undertaken by trading partners and intermediaries such as e-commerce service providers. If everyone is only concentrating on their own system and how it works and is not taking the time to see what is going on or being planned around them,

then development will always be reactive and customers will wait much longer than necessary for improved data and functionality. Essentially we are talking about the supply chain for books and it is exactly that, a chain. In order to improve the interoperability of the systems in this supply chain we have to look at developments throughout the chain and plan to have e-commerce facilities enabled throughout. Recently several leading systems and service providers have implemented new web service solutions utilising the new BIC [web services standards](#). These solutions enable the rapid exchange of information in the form of a question and immediate answer. This is ideal for price and availability queries and urgent orders requiring an immediate answer etc. Systems suppliers are strongly urged to investigate these solutions and see how their own systems can take advantage of this work.

The ideal is to eliminate completely the re-keying of data throughout the supply chain. So from the moment that a publisher keys the title of a book into a computer system and the title is confirmed, then this title data will spread through the business and out through the supply chain and NEVER be re-keyed by anyone; not for the cover artwork, not for the catalogue, not for the website. Similarly, from the moment that a bookseller places an order on a distributor by keying in (or scanning or copy/pasting) the ISBN of a book, that ISBN will not be re-keyed when the order is received, nor when it is acknowledged, nor when the invoice is sent. When the distributor issues the invoice and updates their accounting system, this order on this invoice should NOT be re-keyed.

With publishing/distribution systems the same ideal applies as for EPOS systems. Orders should be received electronically, order acknowledgements sent and invoices raised without human intervention so long as the order and the customer is valid. Many smaller distributors (publishers who do their own distribution) find themselves keying data into their accounts package because the systems don't talk to each other. In addition, some publishers use internal product and location codes rather than international standard ones like ISBN or GLN. Any intelligent interface software linking a publisher's accounting system to an e-commerce service will therefore need to provide mapping between ISBN and internal product code. Distributors who have more advanced systems which incorporate full accounting functionality in the system and thus integrate order processing and sales ledgers etc will have a big advantage, although these tend to be the more expensive systems.

Recent attempts made to integrate systems and e-commerce solutions have raised a number of issues:

1. Cost and the customer's reluctance to pay
2. 'If it ain't broke, why fix it?' (making unnecessary changes to systems is seen as very risky)
3. Lack of a comprehensive solution. A bookseller or publisher could join an e-commerce service, agree to do some integration work with the systems supplier and e-commerce provider and end up with a

solution capable of performing only part of the whole, e.g. of inputting orders but not returns requests or outputting invoices but not returns authorisations.

BIC's e4books project proposed the following solutions to these problems:

1. Work closely with systems suppliers and e-commerce solution providers so that a standard solution for integration is developed which will cover all the main messages and all the main e-commerce services. It has not been possible to develop a single integrated solution which can link all the various systems e.g. publishing, EPOS and accounting systems. Many organisations are involved and it would be wasteful to develop multiple solutions. Instead, a more pragmatic approach has been to support a small number of market leading integration solutions which have been shown to provide benefit e.g. batch.co.uk, Atlas Products and Freeway Commerce, and the best hope for the future may be the widespread take up of web services technology using BIC standards.
2. Get the systems people together to discuss the subject and agree a way forward.

Some systems companies who have not already done so are working on enabling their systems for the Internet. Some are working on incorporating possible external sources of data and therefore new functionality, and developing new technologies to improve data sharing (web services, SOAP XML etc.). Systems organisations are urged to join in with BIC's work on web services development. Visit <http://www.bic.org.uk/21/Web-Services/> for more details.