BOOK INDUSTRY COMMUNICATION

EDI BEST PRACTICE

Management Guide

February 2023: Please be aware that since this report was written, e4books (www.bic.org.uk/e4books.html) has been incorporated into the main BIC website. Minor changes to terminology and other website links have also been made.

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CONTENTS

1   INTRODUCTION

Electronic trading within the book industry is now well established and is a successful method of conducting business. Over the past decade a comprehensive set of standards has been developed and adapted to match the book industry supply chain way of working. These standards are no longer in their infancy and should be considered to be mature and therefore do not carry the risks of more ground breaking and emerging standards. The standards cater for all common transactions that retailers, wholesalers and suppliers will need to conduct B2B (business-to-business) trading. The EDI standards provide a common structure and trading protocol between all parties within the book industry supply chain.

A critical mass of book industry EDI adopters exists at various levels of implementation. However, there are still many businesses that are yet to adopt EDI as a mechanism for electronic trading.

This 'best practice' guide is to support the implementation and running of EDI within the UK book trade. The 'best practice' should not only be helpful to first time implementers of EDI but also useful to more mature adopters. Consequently, it has been developed on two levels:

1. **Management Guide** – this is aimed at decision makers and is intended to make clear the success criteria for preparing and implementing EDI.

2. **Developers' Guide** – modular technical guide that has all the information necessary for a developer to set up and implement any of the messages in any of the commonly used formats.

2 EXECUTIVE SUMMARY

EDI – 'Electronic Data Interchange' - is the direct communication of trading messages between computer systems, using national and international telecommunications networks, including the Internet.

The scope of this document is limited to the implementatio n of Electronic Data Interchange (EDI) messages using the book industry Tradacoms and EDIFACT message formats. This is only part of the overall book industry electronic commerce framework (for more information about universal e-commerce within the book industry click on http://www.bic.org.uk/e4books.html).

In the book trade, as in other business sectors, computers and telecommunications networks have been used very successfully for many years to send orders from customers to suppliers. The majority of EDI within the book trade is currently conducted via VANs (Value Added Networks) and is normally chargeable by volume of transactions. A few large book industry companies use other non-book industry-specific VANs. The Internet is providing an alternative transport mechanism for electronic messages, the attraction being a lower cost transportation mechanism for B2B electronic trading; however, this is less mature and will require investment of time and money to set up supporting infrastructure and processes. Currently, the VANs provide a reliable store and forward service with a common method of sending and retrieving transmissions between trading partners. In addition to this, most trading partners are likely to have a dedicated fixed communication line to the VAN service provider which is private and secure. The management processes, reliability and security of the VAN service costs money to implement and this is reflected in the ongoing running cost. It would be wrong to assume that this comes for free via the Internet and budget should be set aside to cover these costs if this becomes the transport mechanism of choice.

This document covers and promotes the exchange of structured transactional messages within the book industry as this is a well established and recognized method of conducting business. A critical mass of book industry trading partners exchange electronic transactions every working day of the year. The costs and risks of pioneering this mechanism have already been borne by the early adopters, who in turn are now looking at other alternatives through the Internet. It is envisaged that Business-to-Business (B2B) EDI using Tradacoms and EDIFACT structured messages will be a viable method of conducting business for the foreseeable future. The costs associated with establishing and maintaining a B2B service are front loaded as investment is required in setting up the infrastructure and processes necessary to ensure a reliable and robust service is maintained. The incremental cost of expanding the trading partner base is low and thus highly beneficial cost savings will be made with each subsequent trading partner added year on year.

A well designed EDI implementation will integrate seamlessly with business systems, ensuring that data related to business transactions will not be duplicated or keyed more than once. An order triggers a set of events and business transactions; the diagram in section 4.2.2 graphically represents this. Data is reused as electronic transactions are exchanged. This data is stored in either the supplier's or customer's database. The transactions form part of a logical sequence of events that make up the supply chain process.

The book industry uses more than one standard for conducting electronic business. The most widely implemented standard in the UK is Tradacoms. Although this is a UK national standard used by most industries the book industry has embellished this standard for its own use to make it accurately reflect the way the industry transacts business. This extension to the standard is with the full agreement and sanctioning by the appropriate standards body. EDIFACT is an international standard partially adopted within the book industry and is most widely used in Europe. This has been slow to be adopted within the UK book industry outside the library community, but some specific messages have been written in EDIFACT, such as the returns request and authorization used in the Industry Returns Initiative. In the same way as natio nal Tradacoms standards have been extended to reflect book industry implementations, so EDIFACT standards have been modified to fit the book industry way of working. It is likely that any trading entity in the book industry will be using a mixture of Tradacoms and EDIFACT. These standards are static but change can take place through mutual discussion and consent within the book industry.

EDItX XML is an emerging standard within the book industry and is now a viable alternative between trading partners. This standard will enable open and flexible electronic trading through the Internet and should be considered by IT Directors in their strategic roadmap moving forward. Follow this link for more information on EDItX XML: http://www.editeur.org/.

EDI trading messages can be as basic as orders and invoices, but EDI can also develop into a much more sophisticated information exchange, so that trading partners manage their whole supply chain more effectively. In many businesses, however, EDI has opened up new opportunities for trading partners to share fuller information about supply and demand, to the benefit of both parties. Electronic communication facilitates `just in time' delivery of new stocks, either for manufacturing or for retail outlets.

There is plenty of commercially available software for PCs or mainframes which will manage EDI communication. Many enterprises are using EDI very effectively with no more than a PC. It should be noted that the communications mechanism (e.g. VAN or Internet) used for EDI is independent of the messaging standard engaged (e.g. Tradacoms or EDItX XML).

Paradoxically, the most important element is the application processing at each end of the EDI interchange. Experience shows that most of the hard work involved in the successful introduction of EDI comes in re-thinking and re-shaping internal procedures. Exchanging

electronic messages is relatively easy. The challenge is to rethink business processes so as to reap the real benefits of EDI. This needs to be a joined up approach with consideration and impact assessment on the end-to-end process of the supply chain as a change to incoming data can impact the information subsequently sent out to a trading partner. The rule is: garbage in = garbage out.

The book industry has several peculiarities associated with the ordering and handling of goods. Detailed information that is necessary to inform the supply chain is only partly catered for within the baseline version of UK Tradacoms or EDIFACT. BIC has worked persistently in defining, obtaining approval and publishing book industry specific extensions to the standard.

New scenarios or business circumstances necessitate the modification or further extension of the BIC standards but at all times effort is made to agree solutions that do not require costly or disruptive changes to systems.

3   THE NEED TO COMPLY WITH EDI STANDARDS

Adherence to the book industry Tradacoms and EDIFACT standards implies that structured EDI messages will be exchanged between trading partners. These structured messages are underpinned by agreed standards across the industry and use common codes and conventions across all trading parties. This avoids the need for specific supplier/customer conventions, which would work out to be expensive and difficult to manage in the long term. Adding further electronic partners is made easy if common and agreed conventions are used. Structured EDI messages enable this, avoiding the need to change systems and processes each time the customer or supplier base is extended.

Further benefit is realised when using a VAN by transmitting multiple files to a common destination point (the hub) and from there trading partners (the spokes) can pull files via an incoming transmission into their EDI environment. This is known as the hub and spoke principle and is vastly more efficient than several point-to-point arrangements.

A common standard needs to cater for a very broad spectrum of parties within the supply chain, each with many different trading scenarios. In order to implement a standard that meets all these needs it is necessary to have an extensive and flexible baseline for the standards. Large parts of the standards will be rarely utilised by each trading party and therefore may appear to be verbose in their presentation. This is a small price to pay for the major benefits that adopters will reap upon successfully implementing structured EDI across a critical mass of trading partners. In reality, once implemented for a few trading partners, EDI is easy to extend to the rest.

If a specific trading scenario cannot be satisfied between trading partners then two options are available for resolution:

1. Agree a specific trading partner process or convention that is understood by the two parties. The advantage is a speedy and accurate resolution of the problem. The downside could be that if too many of these specific arrangements exist then change will become difficult to manage for each party.
2. Raise the issue with BIC and ask for an industry-wide solution that will become a book trade standard. This may take longer to develop and implement but will provide a common solution that can be implemented across all trading entities.

4   SETTING A STRATEGY FOR EDI WITHIN YOUR ORGANISATION

Like all investments within a company, a positive business case should be made to secure funding for the introduction and development of EDI within your organisation. This business case will be made up from both tangible (cost savings, revenue enhancement) and intangible (staying competitive, enhanced trading partner relationship) benefits. Your application systems are a valuable asset to your business and to get the most out of them they will have to be efficiently integrated to avoid data duplication and the need to manually re-enter data. In order to maximise the benefits of implementing EDI a review of the application systems interfaces is recommended in order to streamline the processes and information flow.

The implementation of EDI is pervasive, not something that can be fully outsourced to a systems supplier. In order to get a good understanding of the knock-on impact of implementing or even further extending EDI within your company it is recommended that you make reference to one or two other organisations that have been through the same process. A systems supplier can lead you through the technical and analytical activities of EDI implementation but only your internal staff can fully appreciate the impact on business processes and culture. On an ongoing basis, the need for change can come from several areas, for example:

- A system supplier may upgrade their software and this may (positively) impact your EDI implementation.

- A trading partner may ask for changes to the trading partner agreement. This may lead to a few minor EDI configuration changes.

- The BIC standards may be adjusted by common consent.

This change needs to be managed but normally it should not be necessary to implement the changes immediately. A person needs to be made responsible for keeping abreast of the need for change and subsequently managing these into the organisation in the most efficient manner.

A small organisation may be able to conduct EDI through an inexpensive, PC based business systems solution connected to either a VAN or the Internet. The less sophisticated the system the less flexible it is likely to be. A medium to large sized business is likely to be running comprehensive and integrated application systems or packages, such as order processing and financials. These systems will need interface to your EDI translation software. This translation software will act as a gateway between your application systems and the method of sending and receiving EDI transmissions.

As the larger book trade businesses look to reduce their cost base wit h suppliers, the more they will insist on efficient and automated end-to-end business processes. Any business

not embracing electronic trading over the next few years will find it difficult to remain competitive and may encounter reluctance from existing trading partners to continue supporting manual processes.

4.1   Cost/benefits of EDI: the Business Case

At its most basic, EDI increases the speed and accuracy of trading communication and cuts costs. EDI will give you better and more up-to-date information on which to make business decisions if you are a publisher or bookseller, or budgetary commitments if you are a librarian. EDI can link your business operations more closely to those of your key suppliers and customers, to the benefit of all parties in the supply chain.

The general principles behind making a business case for EDI are as follows:

Costs:

- One-off costs to redefine your business processes
- One-off costs to engineer your application systems to meet the business processes, general book industry standards and trading partner agreements. Subsequent to this, ongoing costs to update systems to stay in line with incremental enhancements to standards and new requirements from trading partners.
- One-off and maintenance costs for translation software and effort into mapping messages.
- Ongoing maintenance and support contracts for software and subscriptions to services used.
- Ongoing VAN costs, including traffic-related costs.
- Ongoing costs for staff to run the EDI process.

Savings:

- Reduced headcount or reallocation of staff to more productive activities. Staff may be able to be redeployed to other parts of the business where they can add increased value. Effort will be saved in reducing manual activity, re-keying of data, reduced post and faxes. Less effort to be expended in chasing supply related issues.
- Savings associated with faster turnaround of orders, collection of cash and thus improved cashflow.
- Improved customer service. It will be possible to handle greater volumes of data with ease.
- The elimination of secondary keying with its associated reduction of errors and improved knowledge of stock situations.
- Improved efficiency of staff time and usage, accurate scheduling, and the minimisation of turnaround times.

- More effective use of storage space and more efficient stock handling, with reduced warehouse and storage costs, reduced administration costs, and shorter business lead times.

Intangible benefits:

- Staying competitive – your ability to respond to your customers needs as efficiently as your rivals.
- Moving towards an exception based end-to-end process within your supply chain, concentrating human effort on areas that improve efficiency and customer service.

It is quite common for business cases to be over optimistic in the savings associated with reduced staff. Care needs to be taken to ensure that in freeing up staff time from onerous manual work, their time is reassigned to more productive and measurable activity. The cost base for the savings listed above needs to be clear prior to the implementation of EDI. This will require a good understanding of the current and the planned new business processes in order to be able to calculate likely savings. It is recommended that prior to compiling the business case a broad but shallow feasibility study be conducted to clarify the thinking behind the EDI processes and options. Part of the rationale for the business case should be the ongoing expansion of the EDI trading base year on year. In short, more customers and more messages should be driven through this mechanism on an ongoing basis in order to reap the benefits of the initial investment. The incremental cost of driving-up the message volumes is small as the hub and spoke infrastructure will be in place and it is just a case of forging new trading relationships or expanding on existing partnerships.

4.2   Book industry supply chain

Before embarking on the introduction of EDI it is important to understand the current status and planned future development of relationships between you and your trading partners. Areas to explore are:

- Volume of trade - this will help you identify the most beneficial areas to be automated.

- Revised cost/charges as a result of benefits to be gained through EDI.

- Locations to be serviced, i.e. centralised EDI services or distributed EDI across locations.

- Plans to change the VAN or a switch to a different communication network. This will help you build in the change at a lower cost from the start.

Several trading partners go to make up the supply chain which feeds the end consumer Efficiencies gained by each party within the supply chain go to make-up a cumulative gain that will ultimately benefit both suppliers and customers.

EDI simply automates long standing business transaction processes. Typically, EDI is conducted between two trading partners who have a set of agreed rules and agreements upon which the business relationship can be built. In a typical customer/supplier scenario the supply chain can be represented as shown in the diagram below.

4.2.1   Trading Partner Agreements

Any EDI trading relationship must be based upon agreements between the trading partners which confirm the contractual status of EDI messages within the trading relationship and specify the procedures, defaults and technical options which the partners will adopt. The EDI trading relationship should address both operational and commercial aspects. The operational aspects will cover areas such as frequency of transmissions, coding of data unique to the two parties and procedures for processing exceptions. The commercial part of the trading agreement will focus on reviewed supply charges as a result of cost savings through automation.

Examples of procedures, defaults and technical options which will need to be specified include:

(a)   What level of change the customer will accept in an ordered item without requiring the supplier to notify the change and await approval (e.g. substitution of the ordered edition by another, percentage tolerance on price increase).

(b)   Whether the default is for dues to be recorded or not.

(c)   Whether in the case of order lines specifying multiple copies the default when supplies are short is that the customer will or will not accept the supply of a part of the order.

Identification of trading partners. It is essential that the parties to an EDI transaction are identified by recognised codes. BIC has adopted the GLN (Global Location Number), a 13-digit numeric code including a check digit, as the book trade standard.

At EDI file and message level, GLNs should always be used. BIC has secured the allocation of a block of numbers for book trade use and has arranged for them to be administered by the UK ISBN Agency (3rd Floor, Midas House, 62 Goldsworth Road, Woking, GU21 6LQ, email: isbn.agency@nielseniq.com), to whom application for the issue of not more than five numbers per company or organisation may be made. Companies or organisations needing more than five numbers should apply direct to GS1 UK (formerly e-Centre) for details of membership, which includes the right to a block of location numbers.

As in all EDI trading, a key aim is to use **coded data** to ensure that message processing can be fully automated and that the messages themselves are as concise and efficient as possible. Text which merely supports and duplicates coded data should not be carried in an EDI message. General text fields should be avoided, although there are instances where supplementary information is required.

Within book industry electronic trading there are many options for which agreed defaults are set within electronic messages. Typically, some of these options may be standardised across a particular application while others will be specific to a trading relationship and will need to be held as a customer or supplier 'profile' within the respective application system.

4.2.2   Book Industry supply chain: message flow diagram

The following diagram depicts the book industry supply chain and highlights the most commonly used transaction types. It can be seen that there is a logical flow of messages that reflect the way that business is conducted. It is not mandatory to implement the full message set and a subset of the most beneficial transactions can be agreed between trading partners. The most beneficial transaction types will be those that are high volume (not value) between trading partners and are currently the most expensive to process (manually intensive).

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CUSTOMER

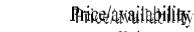**SUPPLIER**

Price/availability
- *Update customer with bibliography and availability of product*

Order
- *new order*
- *order cancellation*
- *order chasers*

Order Acknowledgement
- *Reply to order*
- *dues status report*
- *reply to chaser*
- *reply to cancellation*
- *stopped account*
- *picking discrepancy*
- *acknowledge substitute product*

Delivery Note
- *advise content of delivery (relate to multiple part orders)*
- *advise content of delivery (relate to single order)*

Invoice
- *Invoice customer, invoice can correspond to multiple part orders*

Returns - Request for Authorisation
- *[see Edifact message]*
- *customer requests approval for impending returned goods*

Returns Authorisation
- *[see Edifact message]*
- *supplier approves request for impending returned goods*

Returns - Confirmation
- *[see Edifact message]*
- *customer confirms the goods that have been returned*

Credit Note
- *Credit the customer for non supplied goods or returns*

5   IMPLEMENTATION OF EDI

5.1   Getting started

Obtain commitment from key management - the business case

As previously described, it is necessary to get commitment from key management in your organization before taking on the implementation or further significant advancement of EDI development. This can be achieved through the conventional **business case** (see section 4.1 above) route but more extensive publicity will be necessary throughout the company in order to gain acceptance. Once approval has been gained that the initiative is worth funding and money has been set aside for the year-on-year ongoing running costs, then a structured and agreed plan needs to be developed and implemented. A stepwise approach is set out below; this follows a conventional project management approach

Establish a plan

A project plan template is shown in appendix 11.4. As in all good project plans the following project imperatives need to be clear before setting out on the project:

- Timescales – over what period of time does the project extend, and when does it become 'business as usual' for ongoing EDI further rollout?
- Resources – who will work on the project and what will their roles and objectives be?
- Budget – how much you are willing to spend and over what period of time? This should be split between capital expenditure (hardware, software package etc) and revenue (mainly people costs). A year by year cost needs to be built into ongoing budgets and if possible should be allocated to parts of the business that own the cost, e.g. operations, finance.
- The project plan template which can be found on page 24 suggests a stepwise approach which starts with the formalization and approval of a business case. This will help set expectations at a realistic level when it comes to establishing initial costs, timescales and payback period. It will also help in clarifying the roles and responsibilities that will need to be permanently established to run EDI as a Business As Usual (BAU) activity. Following the approval of the business case a pilot should be established with one or two trading partners. Initially, this pilot should be run in parallel with existing manual processes, until the new EDI process is proven to be largely error free for at least two consecutive months. This pilot should not take on more than two transaction types (one in either direction), as this is sufficient complexity to test the overall EDI process. It is possible that the pilot could be uni-directional and not rely on a two-way exchange of transactions; for instance, the invoice transaction could be introduced in isolation.

Following the successful pilot you are then well positioned to roll out the piloted transactions to further trading partners. There will be a need to establish specific

trading detail such as reference data, but this is within an overall framework that you have already established. This time, it is recommended that a short pilot period be completed before fully going live with the trading partner, perhaps just over a month in duration. This is to ensure that the end-to-end process is fully working between the two parties before switching off the existing manual processes.

The planning activity should cover the following:

- **Appoint a project manager.** The Project Manager will be the person responsible for driving through the tasks agreed in the project plan. He or she will be responsible for ensuring that activities start and complete by the agreed times and within the agreed budget, will ensure people give the commitment originally agreed and will escalate issues if necessary to the predefined escalation points. The Project Manager should not be seen as the person to blame if things do not go according to plan, as the support of all members of the project team will be required. In reality, the Project Manager will be the most focused and dedicated resource to the project and will be best placed to construct and manage through the project plan.
- **Appoint a Project Sponsor** - The Project Sponsor will be responsible for obtaining funding and commitment from the business and will also be responsible for taking decisions in the event of conflict or the need for prioritization.
- **Set up a project team**. The project team will include IT developers, IT operations staff, logistics, sales, third party systems providers, suppliers, distributors plus others. Inevitably, their involvement will be part time but their commitment must be assured and planned for outside their normal day jobs.
- **Determine EDI business contact(s).** Identify EDI business contact(s) both within the company and intended trading partners. Also, identify EDI technical contact(s) within the company, at EDI software and network service suppliers, and within intended trading partners' technical departments.
- **Brief appropriate staff.** Although EDI will be familiar to many people in the business context, it will be necessary for them to understand the impact on their roles and business processes that have to be followed when implementing EDI. Processes should be documented and training notes compiled so that standard practice is followed across all staff. This documentation may need to be updated or modified in the early stages as lessons are learnt.
- **Identify legal issues for agreements with network service suppliers and with trading partners.** Identify legal issues for agreements with network service suppliers and with trading partners and in respect of taxation authorities. The main area to consider (and confirm) is the inclusion of a VAT summary to be sent to HMRC (TAXCON message) when including more than one EDIFACT invoice message in an EDI transmission.

5.2 Scope and objectives

It is important to start with a clear view of the scope of your ongoing EDI project and the benefits which you expect to get from it. For example, you could choose to

implement one partner for multiple transaction types or perhaps only a single transaction type.

Decide what parts of the trading cycle you wish to handle by EDI, short and longer term.

- Identify the benefits which you expect to obtain from EDI.
- Determine implementation priorities, and hence the scope of your initial EDI project.
- Identify prospective initial trading partners. This could be driven by the state of readiness of a potential trading partner, pressure applied by your customer trading partner, or prioritising the most commercially beneficial trading partners for early implementation.

5.3   Planning

To get the full benefits of EDI, it will be necessary to change existing business systems. In any event, existing data formats must be mapped on to the relevant EDI standard messages, and interfaces developed between internal systems and the software that will convert messages to and from Tradacoms/EDIFACT and manage the communications process.

- Secure appropriate EDI reference materials (e.g. EDItEUR EDI Manual).
- Review internal systems and business procedures.
- Review data content of messages to be exchanged.
- Determine what optional content will be required to meet your business needs.
- Review EDI software options (in-house development, third-party package etc).
- Review communication options.
- Prepare an overall system design and development plan.

The most cost effective EDI implementation will treat the whole EDI process as a standard package that is not there to be tinkered with to suit quirky business exceptions or trading partner processes. Cost savings will start to be eroded the more bespoke solutions are adopted. Although your EDI implementation will be largely driven by your trading partners' needs, you should resist being driven into the acquisition of multiple third party solutions or packages.

5.4   Trading partner review

Agreement must be reached with initial trading partners on the scope and timing of EDI implementation, the communication option to be used, any features such as the use of optional data elements or code lists in the first set of messages, and how terms of trade will be applied when messages are sent electronically rather than on paper.

- Review plans with selected trading partners.
- Set up trading partner agreements.
- Agree test procedures with trading partners.

5.5   Systems development and testing

Having confirmed with trading partners the scope of the first implementation and the correctness of those aspects of the system design which relate directly to message content and communication, you will need to install, develop and test the software and network connections.

- Determine network and software option(s) to be used, and contract with suppliers.
- Train technical staff to use the chosen network and software.
- Install, develop and test all necessary software, including modifications to existing internal business systems.
- Implement network connection(s).
- Follow the testing approach set out below.

Testing. The normal cycle of testing should be conducted to ensure error free implementation of EDI across trading partners. First time EDI implementers or established EDI practitioners making extensive changes should take the following approach:

1. Developers should **unit test** their software code.
2. Dummy transmissions should be set up and a **link test** conducted to test the EDI translation software and configuration. This will prove the concept of an incoming transmission file being reformatted and presented to the application system for processing.
3. **Systems test** the incoming dummy transmission. Run it through the translation software, into your application systems and test that the expected data is output and written to your database. Invoke error procedures for negative testing.
4. Produce the agreed reports in test mode and involve the end users in UAT (**User Acceptance Test**). The end users will have specified the requirements in the first place (in line with standards) and will be responsible for signing off the test results as meeting the business need.
5. Set up the real-life fixed reference data for your trading partner to enable you to take a test transmission.
6. Conduct an **end-to-end test** with your trading partner. Receive and send production-like transmissions and run them through your translation software and into your (test) application systems. Repeat until error free results are obtained with the two-way transmission.
7. Finally, conduct an **end-to-end acceptance test**. This will be run in parallel with your existing processes and will test both parties' systems, infrastructure and business processes. Run this as the start of the pilot. After an acceptable period of error free running, turn off your manual processes and rely on the automated EDI process.

If new transaction types are introduced after a period of successful running then the above tests will need to be rerun. Note the following:

- You should be able to separate your live and **test environments** to avoid corrupting existing data or processes when introducing change.

- You should **Regression Test** your existing processes when introducing change. For example, if you are successfully placing EDI orders and you now want to start accepting electronic invoices, you should not only test that the invoices you receive work and reconcile with your orders but you should also test that the standard ordering process is in no way negatively impacted by the new changes. Regression testing is designed to test whether unexpected problems have been introduced to what may appear to be unrelated areas.

If you are simply adding a new trading partner and plan to use existing messages and processes then you should only need to set up relevant reference data and execute testing steps 5-7 above. There should be no need to re-test your infrastructure as this shouldn't have changed.

5.6   Security considerations

The incidence of security breach within EDI in the book trade is very low, if not non existent. The traditional method of either point-to-point or dial-up for connecting either directly to trading partners or via store and forward through value added networks has an excellent record of secure trading. More extensive use of the Internet as a lower cost, more flexible transport mechanism for EDI transactions has opened up the opportunity for potential security breaches as a worldwide community uses a publicly available network infrastructure.

Whereas to date, security has been a non-issue for EDI in the book trade, it is recommended that all trading partners planning to use the Internet for trading - EDI messages via the web, emails, or FTP of files - should ensure they have a security policy for trading through the Internet. This need not be onerous as diligent use of readily available software or techniques will go most of the way to prevent security breaches. Take advice on switching on encryption through the Internet, as well as authentication and intruder detection. Good audit trail and reconciliation will form the last line of defence in detecting a breach. Be aware that a high percentage of security breaches are not necessarily for commercial gain but are intended to cause disruption or bad publicity.

In summary:
- Encryption: switch this on to ensure that your in-flight data cannot be read.
- Authentication: implement common techniques to be able to authenticate that the party sending or receiving the transmission is who they say they are.
- Controls and reconciliation: to confirm that what was received was exactly what was sent.

6   LIVE OPERATION

Following cut-over to live operation with the initial trading partners, the next stages should include extending the first implementation to a wider group of suppliers and customers, and in due course moving on to the introduction of EDI for other parts of the business cycle.

- Implement daily procedures for sending and receiving EDI transmissions.
- Monitor success versus expected benefits. This should be in the form of measurable Key Performance Indicators (KPI's) and a baseline should be set before implementation so that you can chart the ongoing progression of benefits.
- Review procedures for future implementations.
- Add more trading partners.
- Plan extension of EDI to other trading messages.

6.1   Monitoring your service

6.1.1   Roles and responsibilities

In order to run your day to day EDI operation you will need to establish new roles or responsibilities. There should be no need to recruit new staff but you may need to formally redefine existing roles. The roles to be covered are as follows:

- ✓ **Business Users:** check exception reports and resolve issues with the trading partner. Agree and set up new trading agreements.
- ✓ **Service Providers:** provide a secure and performant hub and spoke network. Inform of planned outages in advance.
- ✓ **Trading Partners:** map your resources that deal with EDI to their peers within your trading partners' organisation. Ensure that they understand their roles and responsibilities. Be proactive in chasing and resolving exceptions that occur in the EDI process. If the volume of exceptions becomes too high to manage then review your processes in conjunction with your trading partner.
- ✓ **Computer Operations:** will run and monitor the technical aspects of the day-to-day EDI operation. They will ensure that transmissions are successful and will deal with the Service Provider to ensure the Service Level Agreements (SLAs) are adhered to. They will deal with their peers in the trading partner organisation to ensure completeness in the sending and receiving of transmissions.
- ✓ **Developers:** will keep abreast of changes in the EDI standards and will make changes and test agreed modifications to those already implemented.

6.1.2 Audit Trail and reconciliation

One area that presents ongoing problems for the recipients and senders of EDI (transactional) data is how to ensure that the data being received is both complete and accurate.

There are two strands to ensuring this:

1. The files received should follow a set numerical sequence. The sequence should be incremental (ideally in steps of one), and be unique to the transaction type and the customer. The level of control that the user has over the sequence will be dependent on the type of software used to construct and transmit the EDI data. Account will also need to be taken of the BIC EDI standards and implementation guidelines - specifically the use of sender's reference and file generation numbers.

2. As an added measure, the recipient of the data should be able to report back to the EDI trading partner by simple means details of files received over a given period of time. The report should detail by sender's reference and file generation number the quantity, date and value of documents received.

By complying with the above, trading partners not only ensure the complete and timely delivery of data, but are able to identify issues that could at a later stage have a detrimental impact on customer service, operations or cash flow. The purpose of this type of reconciliation is not to drill down to document level (with financial transactions, this would be a full account reconciliation by the appropriate sales or purchase ledger), but simply to provide a high level overview of whether the recipient of the data did in fact receive the data in its entirety.

See the Developers' Guide for more detailed information on how this could be implemented.

6.1.3 Reporting

Over and above the audit trail and reconciliation, other areas that could be reported on are:
- Messages that fail translation.
- Messages that fail validation in the recipient's application system.
- Report on anything that falls outside the agreed business rules between trading partners, e.g. incorrect codes or code usage, application of overrides in the EDI message that exceed the agreed approval limit.
- Incorrect context of content.

7 MESSAGE STANDARDS AVAILABLE

This table summarises the book trade messages that can be used in EDI and an indication in which standard they are made available.

TRANSACTION TYPE	
Order	**Tradacoms** - For ordering book trade material or cancelling an order
Acknowledgement of Order	**Tradacoms** - Acknowledge the receipt of the order and update on its status
Delivery Notification	**Tradacoms** - Details of shipped goods, used for receipting goods
Invoice	**Tradacoms** - specific message **EDIFACT** - use common message for invoice and credit note
Credit Note	**Tradacoms** - specific message **EDIFACT** - use common message for invoice and credit note.
Statement/Remittance Details	**Tradacoms**
Returns - returns request	**EDIFACT** - Use RETANN message
Returns authorisation and confirmation	**EDIFACT** - Use RETINS message
Taxcon message (VAT summary)	**EDIFACT** - One message per invoice file as a total of the VAT paid. Not relevant for Tradacoms as is an integral part of Tradacoms message set.
Book trade Price & Availability Updates	**Tradacoms** - Periodic updates on the availability of titles, their publishing status or substitution information.

8 CODE LISTS – OVERVIEW

As mentioned earlier in the document, a key aim, as in all EDI trading, is to use **coded data** to ensure that message processing can be fully automated and that the messages themselves are as concise and efficient as possible. GS1 UK (formerly e-Centre) has published extensive lists of Tradacoms code lists and values for use in general EDI trading. Several subsets have been developed for use within the book trade for EDI, more accurately reflecting the specialised method of trading within the industry. These subsets can be further updated with additional agreed codes if necessary. If it is felt that a new code may support a business scenario, members are encouraged to table the issue with BIC.

For more information on Tradacoms code lists follow this link: www.bic.org.uk

For more information on the EDIFACT code lists follow this link:
http://www.editeur.org/

The EDIFACT D.96A directory enhanced by the book trade EANCOM and EDItEUR subsets go to make up the book trade EDIFACT code list standards.

9 BOOK INDUSTRY FORUMS AND THEIR RELEVANCE

Abbreviation	Description	Role	Relevance to EDI	Who
	BIC EDI Implementation Clinic (or equivalent forum)	To review and resolve real-life book industry EDI implementation issues across the supply chain	Opportunity for all EDI adopters to bring problems and issues to this book industry wide forum for resolution. Good way of meeting all other supply chain players.	Open to all BIC members
BIC	Book Industry Communication http://www.bic.org.uk/	Book Industry Communication is an independent organisation sponsored and part-funded by the Publishers Association, Booksellers Association, the Chartered Institute of Library and Information Professionals and the British Library to promote increased efficiency in the book and serials supply chain – physical and electronic – through the application of standard processes and procedures and e-commerce.	Formulation, development and publication of book industry supply chain standards in line with national and international standards	Membership open to Publishers, Booksellers, Distributors, Libraries, Library suppliers, system suppliers
EDItEUR	International book trade standards body	Coordinating the development, promotion and implementation of Electronic Commerce in the book and serials sectors. EDItEUR is a truly international organisation with 90 members from 17 countries, including Australia, Canada, USA, Korea, Japan and most of the European countries. EDItEUR acts as an international umbrella body for the various national EDI book sector EDI groups, many of them set up with help from EDItEUR.	Formulation, development and publication of international book industry supply chain standards.	Membership of EDItEUR is open to individual enterprises with an interest in EDI in the book trade, and to relevant associations

9.1 Project Plan template

ID	Task Name	Guidance Notes	Duration	Predecessor	Start	Finish	03/
							M
1							
2	**REQUIREMENTS & BUSINESS CASE**		**70 days**		**Mon 03/01/05**	**Fri 08/04/0**	
3	Scope out transaction types to be used		5 days		Mon 03/01/0	Fri 07/01/0	
4	Scope out number of feasible trading partne		20 days	3	Mon 10/01/0	Fri 04/02/0	
5	Impact Analysis on technical infrastructure	Costs & complexity	15 days	3	Mon 10/01/0	Fri 28/01/0	
6	Impact Analysis on business processes	Redefined roles & responsibilities	25 days	3	Mon 10/01/0	Fri 11/02/0	
7	Assess required roles to manage EDI		10 days	6	Mon 14/02/0	Fri 25/02/0	
8	Write Business Case		15 days	7	Mon 28/02/0	Fri 18/03/0	
9	Approval for Business Case	Agree to investment, benefits & scope	15 days	8	Mon 21/03/0	Fri 08/04/0	
10							
11	**PILOT IMPLEMENTATION(1-2 trans types)**	**Limit to 1-2 transtypes e.g. order and ack**	**130 days**		**Mon 11/04/05**	**Fri 07/10/0**	
12	Agree timetable/scope with pilot partners		15 days	9	Mon 11/04/0	Fri 29/04/0	
13	Write Technical Specification		15 days	2SS+5 day	Mon 18/04/0	Fri 06/05/0	
14	Redesign, document & agree business procs	Including roles & resposibilities	30 days	6,12	Mon 02/05/0	Fri 10/06/0	
15	Develop software & technical processes		40 days	13	Mon 09/05/0	Fri 01/07/0	
16	Install & test technical infrastructure		20 days	13	Mon 09/05/0	Fri 03/06/0	
17	Test internal solution		20 days	15,16	Mon 04/07/0	Fri 29/07/0	
18	Test end-to-end with trading partner		20 days	17	Mon 01/08/0	Fri 26/08/0	
19	Go-live with pilot		0 days	18	Fri 26/08/0	Fri 26/08/0	
20	Pilot assessment period		30 days	19	Mon 29/08/0	Fri 07/10/0	
21							
22	**FULL IMPLEMENTATION**	**Increase number of trading partners**	**60 days**		**Mon 12/09/05**	**Fri 02/12/0**	
23	Agree Trading Partner terms		20 days	SS+10 day	Mon 12/09/0	Fri 07/10/0	
24	Agree scope of trans, reports, volume		20 days	23SS	Mon 12/09/0	Fri 07/10/0	
25	Add reference data, update tables etc..		15 days	24	Mon 10/10/0	Fri 28/10/0	
26	Pilot period with partner - validate transactio		25 days	25	Mon 31/10/0	Fri 02/12/0	
27	Go-live with new trading partner		0 days	26	Fri 02/12/0	Fri 02/12/0	
28							
29	**FURTHER ROLLOUT**	**Introduce further transaction types**	**80 days**		**Mon 05/12/05**	**Fri 24/03/0**	
30	Write Technical Specification for new trans		10 days	27	Mon 05/12/0	Fri 16/12/0	
31	Redesign, document & agree business proce		15 days	27	Mon 05/12/0	Fri 23/12/0	
32	Enhance software & technical processes		25 days	30	Mon 19/12/0	Fri 20/01/0	
33	Test internal solution		10 days	32	Mon 23/01/0	Fri 03/02/0	
34	Test end-to-end with trading partner		10 days	33	Mon 06/02/0	Fri 17/02/0	
35	Pilot/parallel run new transaction		25 days	34	Mon 20/02/0	Fri 24/03/0	
36	Go-live with new transaction type		0 days	35	Fri 24/03/0	Fri 24/03/0	

9.2   Typical architecture & process

Step 1

Customer inputs order

Step 2

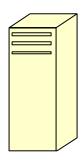Customer's application System processes & outputs to EDI extract file

Step 3

Customer's translation software formats data and transmission file is written

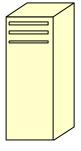**Step 4**

Send transmission to supplier via VAN or Internet

Step 7

Order is picked, packed & despatched to customer

Step 6

Supplier processes order in their application system. Exceptions reported.

Step 5

Supplier receives transmission & processes and validates through translation software