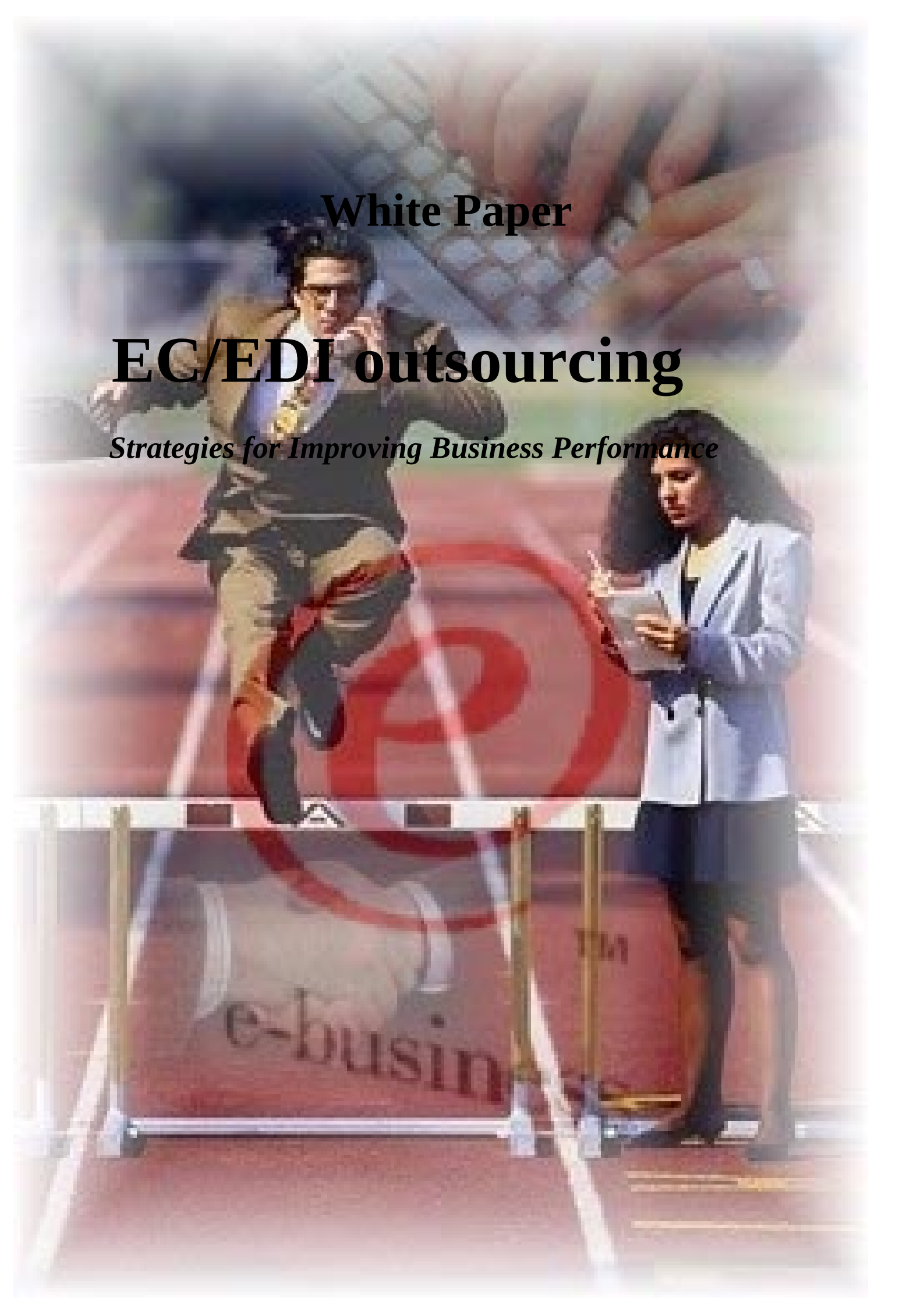




White Paper

EC/EDI outsourcing

Strategies for Improving Business Performance

EDI/E.Commerce Outsourcing White Paper

February 1999

Helmut Fritz
IBM United Kingdom Limited

On behalf of

EEMA

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Introduction

The Electronic Commerce market is booming fuelled by Internet Commerce and Web technology. Leading analysts predict more than a billion people on the Net by 2005. The value of goods traded over the Net is estimated around \$426 Billion in 2002¹.

In other words the business environment is changing as the Internet has become a viable business tool and organisations respond to customer demands such as access to products and services around the clock from virtually any place on the globe.

Consequently businesses are rapidly transforming from having a simple static presence on the Internet to **e-businesses** providing interactive applications and one-to-one marketing environments for customers. Taking orders from customers around the world certainly has enormous influence on how businesses operate. Order fulfillment and the interaction along the supply chain for example becomes a question of surviving in this global market place.

The identified management strategy for survival is to regroup enterprises around core competencies and to **transform organisations** into **e-businesses**.

And of course there are other challenges for organisations as well:

- w The threat of the Year 2000 bug hidden inside existing applications - a problem every organisation has to deal with.
- w At the same time on the international front the European Union is introducing the Euro as its new currency. Many business applications have to be changed to accommodate the new currency, even in countries outside of the Euroland.

Given the scenario just outlined, organisations involved in building an e-commerce infrastructure and having to cope with other time critical priorities such as the Y2K problem or the Euro changes at the same time, face enormous skill and resource shortage.

Building an e-commerce environment requires highly skilled professionals. Consequently companies with e-commerce projects such as EDI / Web EDI implementation must face either severe delays and miss business opportunities or apply alternative approaches.

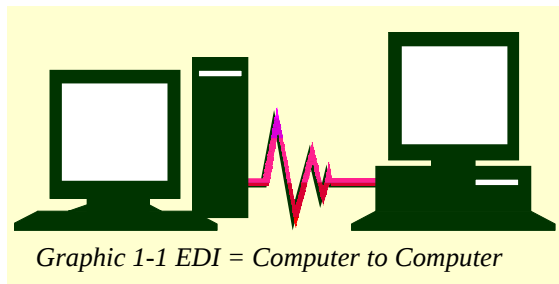
An alternative to building everything with internal resources is to outsource business processes. The advantage of this approach is that the internal staff can concentrate on core business activities while at the same time external services are adding to the value of the business.

¹IDC Global Market forecast 1998

The concept of Outsourcing has rapidly grown in popularity not primarily for staff shortage reasons but as a management strategy aiming for higher value and using the access to external resources to gain competitive advantage. Companies over the last 10 years have started to outsource peripheral business functions creating a \$ 100 billion market for outsourcing.

The purpose of this document is to discuss the concept of **Business Process outsourcing** applied to e-commerce and EDI.

EDI background



EDI can be defined as the Exchange of structured information between two applications residing on different Computer systems.

EDI from a functional point of view is one of the Electronic Commerce enabling processes. EDI has been around for more than two decades and is still growing over 24%² annually.

EDI history and outlook

The way EDI is implemented has changed significantly during that period.

w At an early stage data individually formatted³ was transmitted using direct links between mostly mainframe computers.

w In the late 70' early 80's, industry standards and Value Added Network services emerged. This made life easier for organisations within a particular industry and country. Standards meant no individual interface programming and the use of Value Added Network services made it possible to broaden the community.

w By 1985 the UN ECE⁴ decided to develop a standard that would overcome the limitation of the existing national and industry standards.

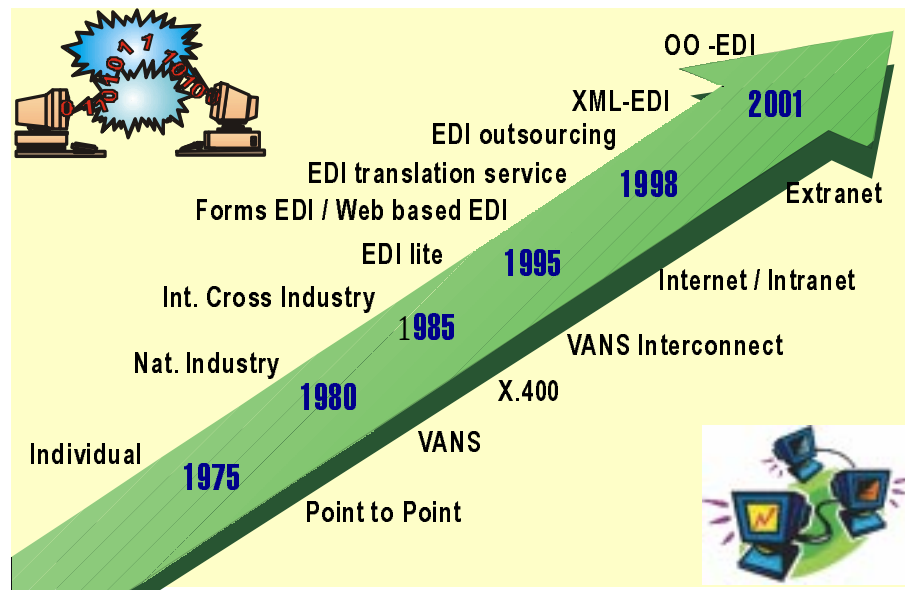
²IDC Market forecast 1997 - 2002

³Usually the database record layout of one of the parties was used

⁴Economic Commission Europe

This was the begin of UN/EDIFACT a truly international and cross industry standard for EDI.

- w The pace of change is ever increasing, today Forms Services and the Internet enable the use of EDI by very small companies without investing in expensive EDI systems. .
- w EDI Outsourcing and translation services enable companies to conduct EDI without going through the traditional trial and error stages.
- w In the near future (3-5 years) Object oriented EDI and XML EDI is going to change the approach towards EDI. Graphic 1-2 gives an overview over the developments in EDI.



Graphic 1-2 History and Trends of Electronic Data Interchange

Outsourcing explained



Outsourcing is a strategy by which an organisation employs third party services to perform work which otherwise would have been provided by internal resources.

Full-scope Outsourcing

By end of 1997, 90% of the Forbes 500 will have outsourced significant components of their business infrastructure

Yankee Group

The modern era in “full-scope” outsourcing -- where organisations outsource their complete IT systems -- began with Kodak’s groundbreaking agreement in 1989 for IBM to manage the company’s entire IT infrastructure.

With the Kodak agreement outsourcing changed fundamentally, becoming a proactive management strategy, not just a cost-cutting tool based mainly on data centre management, which it had been up to that time. Driving this evolution was a changing customer environment characterised by increasing competition, constraints on growth opportunities, changing marketplaces (often global), shareholder expectations and technology management complexity. Consequently, today most enterprises consider outsourcing as a way to become more efficient and competitive.

The market for outsourcing continues to explode is the headline of the Outsourcing Index⁵ predicting a 26% growth rate in the US. In Europe similar trends can be observed, such as IBM’s largest European outsourcing deal ever⁶ with Cable & Wireless signed in summer 1998.

Business Process Outsourcing BPO

Outsourcing is not all or nothing

Activities within companies can be divided in to business processes and companies have always used external specialists to perform certain tasks beyond the scope of the organisations. As business processes are restructured, the pool of activities considered to be core has been shrinking. This trend is continuing and picking up momentum.

EC/EDI outsourcing as BPO

The application of the Business Process Outsourcing concept to EC/EDI outsourcing is consistent with and complementary to the very nature of EDI itself.

⁵The outsourcing Index by Dun & Bradstreet and The Outsourcing Institute Second Edition December 1997

⁶three billion dollar over 10 years

EC/EDI outsourcing value proposition

EC/EDI outsourcing allows companies to implement EC/EDI solutions with their trading partners without having to invest in internal resources. The economics are compelling because a company running their own EDI department basically has to maintain EC/EDI experienced staff for the occasional changes in EDI messages and SW setup. A vendor providing such a service on the other hand can spread those resources across several clients and reduce the clients EDI operation costs by 25%.

EC/ EDI outsourcing drivers



In this section we will discuss the reasons why organisations decide to outsource their EC/EDI activities. Since no organisation is the same not all listed drivers will apply to every situation and certainly additional reasons can be found.

“EDI in our opinion -- and it seems the opinion of many -- is a very logical operation to move outside and let someone else take care of because it's rather self-contained.”

“It needs to interface to applications, sure but once you've built bridges to the applications, it's something that can be very neatly run on its own.”

Geri Spieler. Gartner Group

Reduce risk by eliminating existing EDI programs which can not cope with future demands, many of the currently existing EDI implementations are built on 1st generation EDI software usually in response to an urgent customer demand. As a consequence of such hurried implementations resulting in minimal benefits achieved and EDI proposes more a threat than a competitive advantage.

Outdated EDI Translation Software, in many cases EDI translator software can not cope with new syntax versions of EDI standards. A cost benefit analysis may show that outsourcing is more cost efficient than buying and implementing new software.

Strategic decision to outsource non-core business processes, companies are outsourcing their non-core business functions in order to concentrate on (usually) making or selling products. EDI is certainly an important factor for e-commerce and tighter Supply Chain integration, however the actual task can be delivered by someone else.

Access to world class capabilities, many organisations are disappointed with the results of their current EDI implementation in terms of number of partners and number of business transactions performed using EDI and therefore the ROI over all is disappointing.⁷ A service provider specialising in EDI can instantly deliver a better service. A service provider such as IBM has done it many times before, has access to the right technology, methodology and resources - simple because it's core business for IBM and it make sense to invest in its core competencies.

⁷See State of EDI

Resources not available:

EC/EDI specialists are hard to find and retain, and they are expensive. The cost of training in such a rapidly changing environment can be significant. To hire and train internal staff as an alternative is time consuming and may prove to be even more costly.

Free internal resources,

companies investing in new business processes such as ERP and CRM applications or migrating from legacy applications to a client server environment, face enormous resource pressure. Freeing resources by outsourcing EDI may be the answer enabling internal resources to focus on core applications and still achieving the EDI goals.

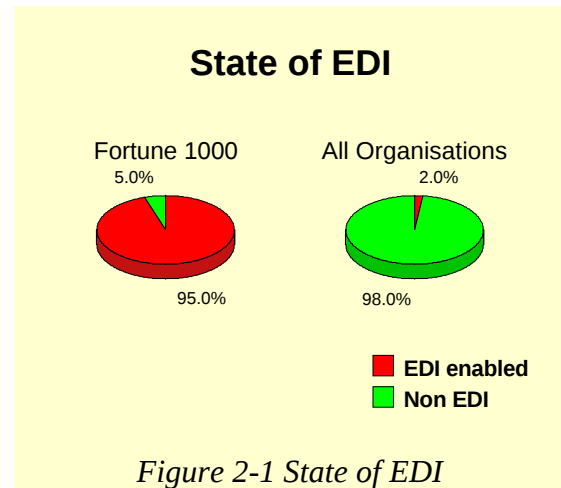
Implementation time: Especially with new implementations the time frame of an EDI implementation can be lengthy and circumstance may force a rapid implementation and roll-out program. Under such circumstances there is almost no other choice than to accept a service provider who has the expertise and can guarantee a required time frame.

Reduce operating cost and risk: an outsourced EDI operation can be treated as a monthly or annual expense. There is no capital investment. The burden of upgrading the Server and Software to the next generation (Year 2000 compliance) is no longer the client's responsibility, it is simply part of an outsourcing contract.

Reorganisation / Acquisition and Merger: structural changes in organisations may lead to a multi system environment and various stages of EC/EDI implementation. To maintain such an environment is costly and requires additional resources. A service provider can centralise the EDI operation and offer significant cost savings.

E-commerce growth strategy or 100% EDI: e-commerce and e-business are increasingly perceived as vehicles for gaining strategic advantage in today's business environment. Management therefore focuses on strategic implementation of such processes. EDI proactively implemented with the goal in mind to reach as many trading partners as possible will generate sufficient ROI for the business.

This is not what has happened with most existing EDI implementations - only a minority of trading partners are reached today via EDI.



An organisation wishing to increase the number of Trading Partners reached via EDI can also implement Web based technology using Electronic Forms and Web technology. Again this requires high EC skills usually available from Service Providers.

EC/EDI outsourcing versus outtasking

Outsourcing come in various flavours to accommodate the different requirements of organisations.

Not every company is prepared to fully outsource their EC/EDI operation rather then outtask specific tasks where an outside supplier can provide complimentary services.

Also business needs may be different depending on the size of the organisation and the volume of planned EDI transactions.

Difficult Questions waiting for an answer

An organisation wishing to embark on an EC/EDI project has to find the most appropriate way of becoming EDI ready.

Decisions such as, what to do internally, what to externally are eminent.



Do we have the expertise in Business Process re-engineering ?

Are we aware of the latest market developments ?

Do we want to externalise the translation task or run our own translation software ?

Do we have the necessary EDI skills or shall we subcontract the implementation and build our skills over time ?

Do we have the Project Management skills and do we want to manage the roll out of the EC/EDI program ?⁸

There is certainly no simple answer to the questions posed. But to provide a basis for a decision on outsourcing we will divide an EC/EDI outsourcing solution into single phases and further into task and discuss the individual options in the later part of this paper.

⁸Studies revealed that trading partner enabling can cost up to \$1500 per trading partner

EC/EDI outsourcing solution phases

In Diagram 3-1 a complete EC/EDI-outsourcing solution is divided into single phases and tasks which will be discussed individually. The completion of each phase is a prerequisite for the succeeding phase.

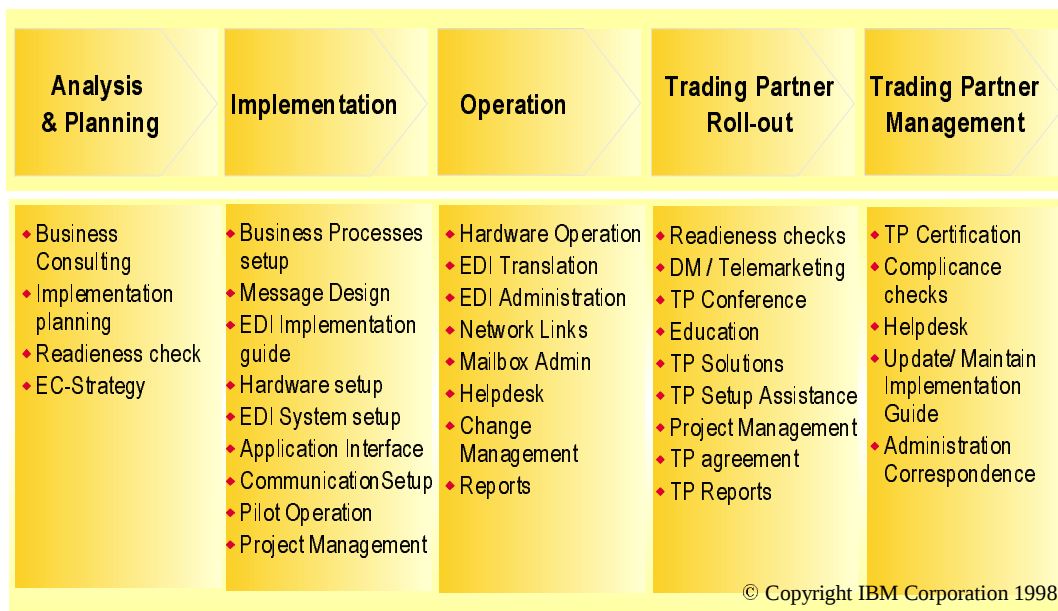


Diagram 3-1 phases of an EC/EDI project

Analysis and Planning

This phase of the project in our opinion is of major importance since the decision made at this stage influences all subsequent phases.

What to implement, which standard, and what technology to use must be answered before proceeding to the next phase. Decisions have to be based on the analysis of the Trading Partner community and the prerequisites of the industry the company belongs to.

The importance of the Analysis and Planning phase can be illustrated by negative examples where organisations who hastily implemented EDI programs (carried out on request of an important Trading Partner) failed to achieve the expected benefits due to the missing business strategy accompanying the EDI implementation

An organisation must decide during this phase to do the analysis internally or get outside help from a business consultant.

Business Consultancy



Experienced business consultants and EC/EDI experts bring the needed expertise mandatory for a thorough analysis of the business environment.

As well as custom tailored consultancy engagements, IBM offers a range of advisory workshops such as:

Business planning for Electronic Commerce

→ A one day workshop to help to understand e-commerce issues and then to set priorities and create plans to move forward.

Planning for EDI and the Internet

→ A one day facilitated workshop to review ways to extend an existing EDI system to use the Internet and Web Based EDI.

EDI Health check

→ Helps customers review their current EDI system and associated business processes.

EC/EDI Readiness Workshop

→ Instruction and materials for customers to conduct their own EDI readiness program.

EC/EDI Implementation Workshop

→ An IBM facilitated on-site program that guides customers through every aspect of an EDI implementation.

Goal of the Analysis and Planning phase

- } to have all major questions in terms of technology answered
- } to have the right strategy in place
- } to have a documented plan in place.

These workshops are lead by experienced e-commerce and industry specialists who work together with the appropriate levels within the organisation.

The workshops result in in-depth analyses of the current e-commerce situation leading to the development of a coherent EC/EDI strategy.

Implementation

The implementation phase of an EC/EDI solution includes all activities necessary to achieve EDI readiness within the organisation.

Prior to the beginning of the implementation phase a major decision has to be made in terms of solution architecture, either to install and run the EDI operation internally or to use a service provider like IBM who offers EDI outsourcing services ranging from a shared translation service to highly customised outsourcing solutions.

Since this document discusses the outsourced EDI process we will focus on the implementation tasks of an external translation server. The architecture of such a solution can be found in the next chapter.

The tasks required include:

- w **Business Process modification:** Such as changes in Order Entry, or Invoice generation
- w **Message Design:** EDI Message definitions are defined for broad application and must be tailored for the individual organisations need.
- w **EDI Implementation guide:** Once the message design has been completed a thorough description is needed that can be passed on as a working document for the trading partner community.
- w **Hardware setup:** Depending if new hardware such as Computer upgrade and modems needs setup but usually some additional hardware is needed.
- w **EDI System Setup:** Deals with all necessary tasks to implement the chosen EDI transaction and the Translator software customisation.
- w **Application Interface:** A typical EDI Software offers a certain input format and the application output has to be adapted to that format.
- w **Communication Setup:** Includes VAN's and Mailbox registration as well as transmission tests.
- w **Pilot Operation:** Is the first controlled operation test with selected trading partners. Only if this phase is completed successfully can further roll out take place.
- w **Project Management:** To coordinate all the listed tasks a comprehensive methodology and a structured approach is necessary carried out by an experienced project manager.

Operation

The operational part of EDI deals with the daily routine tasks of an EDI server and is tightly linked to the internal business processes. From the analysis and planning phase a decision will have been made to split the daily operation in tasks performed internally and tasks performed by the service provider.

To outsource the day to day operation of an EDI system means that the Service provider acts as the organisations EDI department.

Typical tasks of a daily operation include:

Hardware Operation: this is where the service provider creates lot of efficiency by running and monitoring several systems at once. Those cost advantages can then be passed to the client.

EDI Translation: is the translation of application data into defined EDI standard messages and visa versa.

EDI - Administration: Includes monitoring of the translation activities and rectifying any troubles that may occur. Minor changes such as translation tables are also part of the administration function.

Network Links: EDI always includes communication therefore network links and communications session have to be monitored.

Mailbox Administration: EDI is tightly linked to the business process therefore it is vital that EDI data sent to trading partner is collected on time and EDI messages posted in the mailbox are retrieved and processed.

Helpdesk: To handle all sort of queries from users.

Change Management: A typical EDI implementation changes along with the business environment. For example, use of improved business processes such as Evaluated Receipts Settlements (ERS) will lead to changes in the EDI message flow. A change management process in place ensures a smooth adaptation.

Reports: Part of the EDI administration is to supply management with reports on Trading Partner activities, messages usages, Network usage reports etc.

Trading Partner Roll-out

When a company has successfully completed the internal EDI setup including a pilot period with selected pilot partners they are ready to extend the EDI solution into their trading partner community.

Past experience has shown that many companies fail at this stage since they simply do not dedicate the resources and do not have the experience necessary to deal with the numerous tasks involved in a roll out program. Consequently this leads to an unsatisfactory number of trading partner links which prevents the organisation from achieving the expected benefits of the EDI implementation.



**You can't
do EDI
on your
own !**

Organisations should therefore consider outsourcing this particular responsibility and contract a professional service provider who has the experience and capabilities to extend the internal EC/EDI program successfully into the trading partner community.

Typical tasks performed by a service provider during the Roll-out phase:

Readiness check: Is the basis of the Roll-out phase. This kind of survey provides accurate information on the EDI readiness of the trading partner community. Based on the survey results a tailored roll-out program can be developed that offers the right level of support for the trading partner community. The expected time frame for the implementation can also be adjusted based on the findings of the survey.

Direct Mail & Tele-Marketing activities: To inform and win the trading partner community.

Trading Partner Conference: Is an efficient way to inform the trading partner community about the EC/EDI strategy and the plans to extend the link into the EDI community.

Education: Some of the trading partners may want to get some hands on training or basic EDI education.

Trading Partner solution: Trading partners may prefer a ready made solution that includes customised software. For small trading partners this could even be a forms solutions that supports the retrieval and creation of electronic forms via the World Wide Web.

Trading Partner setup assistance: A trading partner certainly goes through the similar stages to the company who initiated the project. They may therefore decide to get help for the setup or even outsource their EDI operation. A service provider who is already familiar with the project is certainly the better choice to be involved with the trading partner community as well.

Trading Partner Agreement (TPA): Defines the responsibilities of the parties to ensure a smooth operation. It is well worth to develop such an agreement in advance since experience has shown that it is rather difficult to resolve a dispute without a prior agreement. Frameworks TPS's are available from e.g. local EDI associations.

Project Management: Is vital to the success of the implementation part of the project. It is not enough to inform the trading partner community and wait for them to come back with the "ready message".

Trading Partner Reports: Generated from the Translation and Mailbox systems which provide vital planning and performance information. Those reports typically consists of accounting, volume and other statistical information.

Trading Partner Management

Once the Roll-out process is completed an ongoing Trading Partner Management process has to be put in place. To hand over the Trading Partner management to a third party can certainly be considered as an advanced stage of EC/EDI outsourcing although a logical conclusion and the next step once the translation service is outsourced and operated by an external party.

The tasks typically involved in Trading Partner management are:

Trading Partner Certification: Is a process which allows an organisation to classify their trading partners based on their level of EDI integration and the potential of business process integration. This is the basis of total quality management process.

Compliance checks: On an ongoing basis to ensure a smooth operation

Helpdesk - Is the first point of contact for the trading partner community. This means that a trading partner with questions and queries regarding an EDI transmission always contacts the support desk manned by the service provider who then resolves or investigates the problem.

Update and maintain Implementation Guide: To keep the implementation guide and cross reference lists current and automatically distribute the latest changes and requirements to the trading Partner community.

Administration Correspondence: The communication and update of the EC/EDI community regarding e-commerce matters such new message developments.

EC/EDI outsourcing solution architecture

Graphic 4-1 illustrates on a high level the typical building blocks of an outsourcing solution offered by IBM.

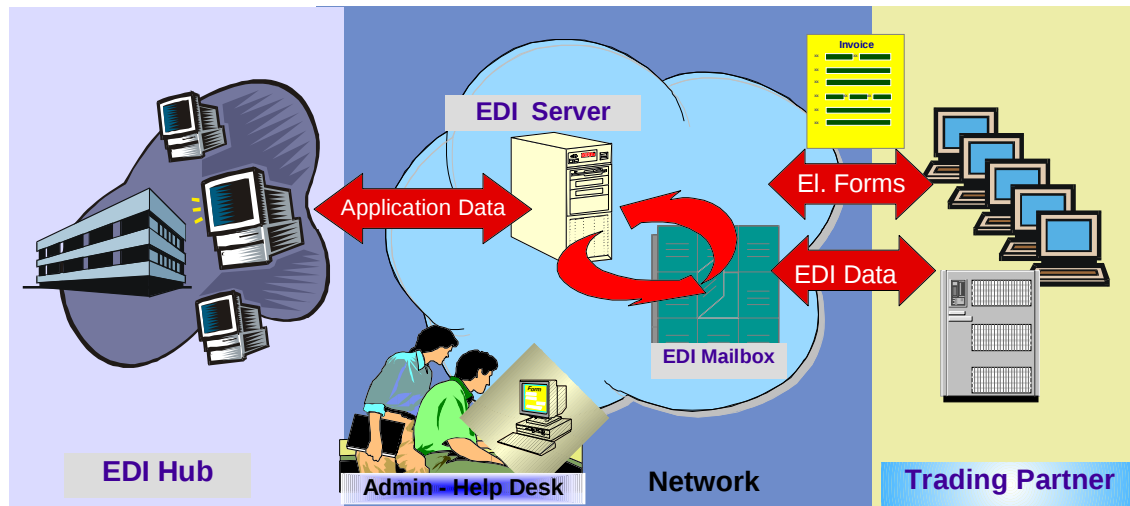


Diagram 4-1 shows the physical components of an outsourced EDI service

Client Application	Translation Service	Trading Partner Application
Core Business Processes	Network	EDI Translation
Communication Link	Mailbox Service	Browser (Forms)
	Communication Links	Communication Link
	Forms (Web EDI)	

w The EDI Translation Server is the centre piece of the outsourcing service operated on a 24x7x365 basis.

w This server can either operate dedicated or on a shared basis. The translation services provided are based on international standards such as UN/EDIFACT, ANSI X12 but also support national industry standards.

w The Mailbox Service is the secure and convenient interface for EDI data exchange with trading partners. IBM's Information Exchange Mailbox service currently links thousands of corporations around the world.

w The IBM Network provides the communication infrastructure between the Translation Server and the parties. The IBM Network, operates on a global basis and serves more than 40,000 customer enterprises in more than 850 cities and 100 countries. It is also one of the world's largest Internet Service Providers with more than 840 local dial access numbers in over 50 countries.

w A Forms component provides additional functionality for converting EDI transactions into Electronic Forms and vice versa.

Conclusion

Organisations face a wide variety of challenges in today's business environment. On one side companies have to cope with time critical challenges such as the Year 2000 problem, where as on the other hand they have to respond to the ever-increasing pace of competition in a global business environment.

The scarcity of qualified staff leaves companies extremely vulnerable with respect to existing EDI programs and makes it unlikely for them to grow and improve their e-commerce program. The old model of building every business function internally cannot meet today's requirement.

Business Process Outsourcing is a business strategy that can offer the required flexibility and efficiency.

It is for the business reasons that EC/EDI outsourcing is fast becoming a solution of choice for organisations of every size.

IBM Global Services with its 120,000 employees in 163 countries has targeted offerings to meet customers' networking, outsourcing, systems integration, consulting, education and training, and product support needs.

EC/EDI outsourcing from IBM provides organisations with the benefits of EC/EDI without the worrying internal implications.

.

Businesses must regroup themselves around core competencies and do what they are best at.

Outsourcing is here to stay, largely because there is no workable alternative.

The Yankee Group

Further reading

“Outsourcing for Competitive Advantage” *The Yankee Group Management Strategies Vol 7, No 14 - December 1997*

“Business Process Outsourcing: User Speak” *Management The Yankee Group May 1997*

Electronic Commerce in Europe: Opportunity or Illusion *The Yankee Group EuroScope Communications Vol 17, No.7 - September 1997*

The outsourcing Institute - various articles -
www.outsourcing.com/news

Electronic Commerce Report by *Business Research Group*

IBM Global Services at www.ibm.com

