NewEDI

EDI 101 — An Introduction to EDI
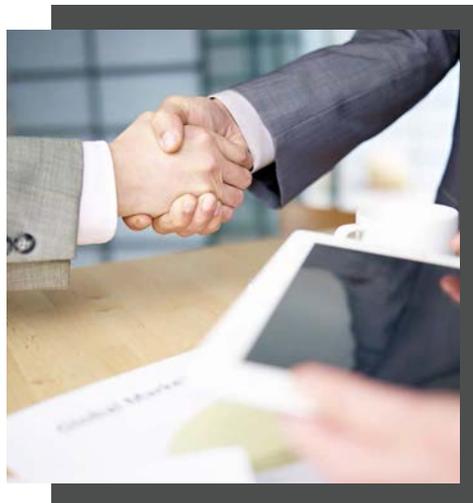
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Introduction

EDI is the exchange of "documents" – usually financially related documents such as purchase orders, invoices, etc. – between businesses, in a common format, from one computer to another computer. It has proven to be the best way to exchange business documents quickly and securely with any organization anywhere in the world.

That's probably why more than 85% of all electronic business transactions take place using EDI; it's used in almost every industry, and while large companies benefit the most, even small and medium-sized businesses use EDI to speed up accounts payable/receivable, and track orders and materials.

At NewEDI, we believe businesses of all sizes should have affordable access to the same Tier 1 level of EDI services that historically, only the biggest companies have enjoyed. We have introduced a new EDI pricing, buying and delivery model that is disrupting the marketplace, particularly for small businesses that were shut out of affordable Tier 1 EDI services. We partner with Tier 1 providers to resell their excess capacity to businesses of any size, cutting their EDI bills in half at the same time.

We have prepared this brief on EDI services to give you a basic overview of the technology, benefits, uses and methods of implementing EDI. Our goal is to help you understand EDI and help you get the best service for the lowest price. That's the NewEDI business model. We welcome your feedback and questions.

What is EDI?

EDI is the exchange of "documents" – usually financially related documents such as purchase orders, invoices, etc. – between businesses, in a common format, from one computer to another computer. EDI is considered the standard for exchanging these kinds of documents. The technology has been used for nearly 50 years and it's stable and widely accepted around the world.

Before EDI was widely adopted, documents were sent back and forth through the mail, via fax, and sometimes scanned and sent via email. Unfortunately, once received, the information still had to be manually rekeyed at the other end into the recipient's systems for processing, fulfillment, shipping, billing, etc.

EDI eliminates manual processing, replacing it with 'packets' of digitized, formatted data that is sent and received directly, computer-to-computer. With a fully integrated EDI system, the process can look like this—no paper, no people, and almost no time:

To Send an EDI Document:

1. Identify the data to be sent;
2. Convert data into EDI format using translation software;
3. Transmit the EDI document to your business partner

To Receive an EDI Document:

1. Receive the transmitted document;
2. Convert the EDI format into your internal format using translation software;
3. Feed the data into your internal system for processing.

We've prepared this buyer's guide to help you identify your needs and find the right kind of solution provider to take advantage of a technology that has been proven to help businesses succeed and thrive.

EDI is used in almost every industry, from retail to financial services to automotive, aerospace—you name it. While large companies find the biggest benefits, small 'mom-and-pop' businesses can also benefit by using EDI to speed up accounts payable/receivable, and track orders and materials.

What kinds of documents can be sent using EDI

Just about any document can be put into a format suitable for EDI; here's a partial list, for example:

- Order handling
- Material handling
- Transportation
- Financial services
- Tax services
- Warehousing
- Government services
- Manufacturing documents
- Delivery documents
- Engineering management and contracts
- Health and insurance documents & claims
- Product services
- Quality and safety documents
- Mortgage documents
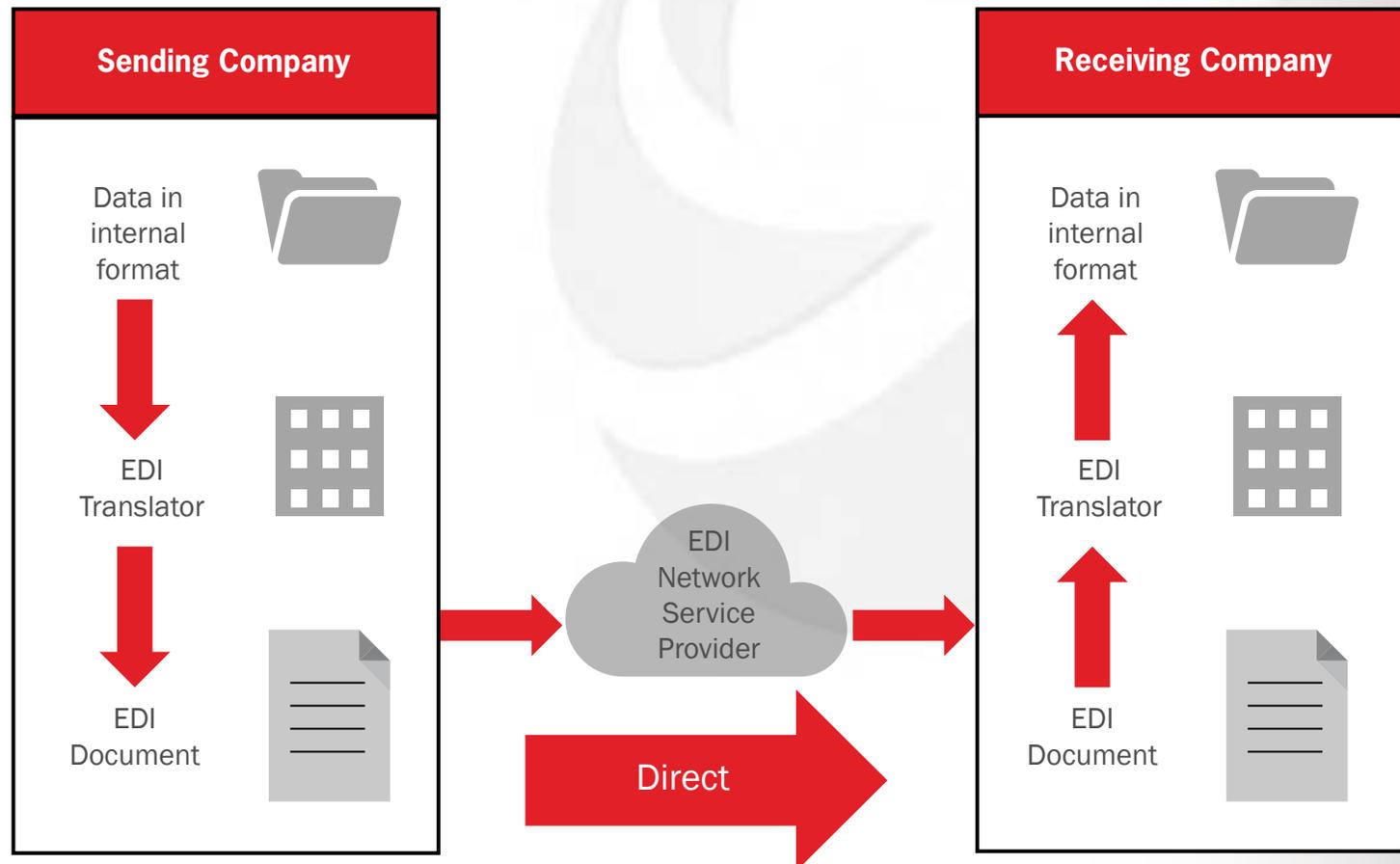- Student information

EDI Standards and File Formats

EDI standards define which pieces of information are required and which are optional for a particular document, and give the rules for the structure of the document. In the United States, organizations traditionally followed American National Standards Institute (ANSI) standards for EDI formats. The most common EDI standard is ANSC I ("X12"). EDI transactions represent one or more individual documents, such as a healthcare claim. In the ASC X12 standard, for example, each document type is referenced by a three-digit number, such as 837 for a healthcare claim, 810 for an invoice, and so on. Outside the U.S., the international EDI standard is EDIFACT (Electronic Data Interchange for Administration, Commerce and Transport), developed under the guidance of the United Nations.

EDI Guidelines

Beyond national or international standards, Individual trading partners have their sets of additional rules or guidelines based on their own needs and preferences. Ensuring that data being exchanged adheres to both industry standards and trading partner guidelines is referred to as 'mapping' – more about that later!

How EDI Works

Sending Company

Data in internal format

EDI Translator

EDI Document

EDI Network Service Provider

Direct

Receiving Company

Data in internal format
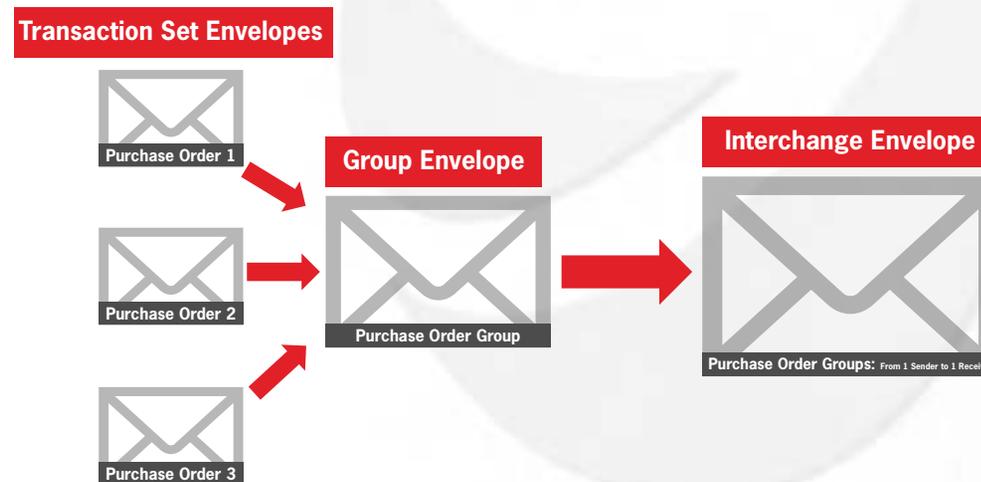
EDI Translator

EDI Document

In EDI terminology, a single business document, such as a purchase order, invoice, shipping confirmation, or payment, is called a "transaction set", which contains data elements, segments and envelopes. Let's break it down.

Data elements – these are the individual items of information within the document. For example, within many documents, such as the purchase order and invoice, you will find data elements such as city, state, country, item number, quantity and price.

Segments - data elements are combined into segments. For example, if you were filling out information on a purchase order, you would expect to see groups of related data, such as item number, quantity, price, etc. In an EDI document, each section of 'like items" is described by a particular segment. Once all segments are collected and put into a specific sequence, they form a complete transaction set (electronic document). Next, those sets must be placed into electronic 'envelopes' for transmission to other systems (internal or external).

Envelopes - just as paper business documents are sent in envelopes, EDI documents are exchanged using electronic envelopes.

Transaction Set Envelopes
Purchase Order 1
Purchase Order 2
Purchase Order 3

Group Envelope
Purchase Order Group

Interchange Envelope
Purchase Order Groups: From 1 Sender to 1 Receiver

o Message envelope – each transaction set is placed into an individual message envelope
o Group envelope – a group of transaction sets—a group of purchase orders, for example—is placed into a group envelope
o Interchange envelope – all group envelopes being sent from one sender to one receiver are placed into an interchange envelope

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There are three major processes involved in the actual exchange of EDI data: mapping, translation and communications. Mapping involves transforming an EDI document into another format (such as XML, a flat file, a delimited file, etc.). Translation is the process of accepting inbound EDI data, or preparing an outbound file for transmission. Finally, communications refers to the transmission of the EDI transaction. Here we explain each one in a little more detail.

Mapping

Data mapping converts outbound information into a file format that conforms to both the EDI standards and the trading partner's rules. The mapping tool converts extracted data into EDI using the assigned, pre-set maps. The software can also map inbound information directly into an application, into a readable document or some other form. EDI software allows you to map EDI data, and then save that map for future use.

Translation

Translation software performs a series of activities to verify and accept mapped files, for outbound and inbound messages. This is especially important because EDI transmissions often come in large batches that hold many different trading partners and transactions.

Communications

The actual transmission, or sending of EDI data, requires a secure communication connection. EDI standards are generally independent of communication methods. That is, EDI can be transmitted using any number of methodologies, also called protocols.

In general, there are two types of connections for sending and receiving EDI data: indirect or direct.

• Indirect connections with trading partners are done through use of a Value Added Network (VAN) provider. Often referred to as the "electronic post office," a VAN is a third-party service that transmits and stores data until it is picked up by the appropriate party. Since the EDI message contains addressing information, the VAN routes the message to the mailbox of the recipient.

Why Use EDI?

In an environment of ever-accelerating processes, ever-increasing data volumes, and ever-shrinking budgets and internal resources, there has to be a compelling reason to look at implementing a technology solution or upgrade. In our experience, we've found that companies put EDI in place for one of the following reasons (or all three!):

They Want To – a potential customer/supplier/vendor uses EDI as their preferred communication method

They Need To – internal productivity and efficiency are falling off due to legacy systems or manual processes that just don't work well anymore

They Have To – regulations (or customer requirements) demand that they use EDI

While wants and needs might start the conversation, you can't make a solid business case for EDI without putting it into terms your CFO, CIO and CEO will understand, so here are the factors you should consider:

Better Cash Flow

One of EDI's biggest selling points is that customer payments will be timelier when quotes, invoicing and payments are handled electronically.

Fewer Errors and Better Data Quality

Processing transactions manually means a greater risk of human error. When bad data makes its way into your internal systems, the results have a negative impact on your business. It has been estimated that data quality problems cost U.S. businesses more than $600 billion dollars a year.

More Efficient Use of Human Capital

Speaking of manual labor: if your staff isn't spending all its time on high-volume, low-value manual data entry, they can be reallocated to more value-added activities. In addition, many customers require vendors to use their own proprietary portals to handle communications. If you have many customers, logging in to multiple portals every day it can be time-consuming and inefficient. A direct EDI connection with trading partners eliminates 'portal overload' and saves staff time.

Happier Customers

If your customers are dealing with inefficient, broken systems or antiquated processes, they won't have much incentive to grow (or even keep) their business with you. Faster, more seamless trading partner onboarding
Legacy EDI systems can take weeks (or months) to onboard a new trading partner while modern EDI solutions can cut that time to mere hours or days. A quick, easy onboarding process allows you to be nimble and respond quickly to opportunities.

Searchable Database vs. Overflowing Filing Cabinet

In addition to automating manual processes, EDI solutions provide a searchable database that enables you to find and track documents from origination to destination and all points in between, by their EDI control numbers. No more overflowing filing cabinets and lost productivity.

Better Data Security and Audit Trails

With fully integrated EDI, data can be exchanged in a highly secure environment. Corporate auditing is made easier and faster since the EDI process eliminates many of the discrepancies inherent with paper-based systems. EDI transaction reports can be generated automatically, saving time and improving accuracy during audit activities.

Be More 'Green'

Many large corporations are now requiring their vendors to demonstrate corporate social responsibility and sustainability. EDI eliminates paper from the supply chain and replaces it with "green" electronic alternatives.

Supply Chain Visibility

Thanks to EDI companies and their trading partners can share information up and down the supply chain, enabling suppliers to plan for and respond to unexpected demand, modify inventory levels, and prepare for swings in demand. EDI is a critical part of today's just-in-time supply chain philosophy.

Management information

With EDI, management can access historical and real-time information quickly and easily to enhance decision-making. Data can be easily compiled and analyzed for trends, errors, redundancies, and insights.

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What EDI Solutions Are Available?

There are a number of different solutions for implementing EDI in your organization. You can choose to manage it yourself, in house, or contract with a service provider. Determining which solution to use depends on several factors, including how many trading partners you anticipate having; what types of transactions you'll be managing—and how often—and what level of resource you are willing to commit to managing the EDI system.

Direct EDI/Point-to-Point

Direct EDI, sometimes called point-to-point EDI, establishes a single connection between two business partners. In this approach, you connect with each business partner individually. It offers control for the business partners and is most commonly used between larger customers and suppliers with a lot of daily transactions.

Outsourced Services

Because running an EDI operation with installed software requires an investment in hardware and ongoing IT resources, companies that don't want to handle EDI in-house often choose to pay a third party to handle their EDI services. EDI service providers host and operate EDI software to handle the various aspects of EDI mapping, translation and transmissions. They also provide the services – sometimes called "managed services" or "professional services" – to manage the process. This includes the day-to- day monitoring of routine activities, setting up new trading partners, and ongoing support with you and your trading partners. This allows you to conduct business via EDI without the investment in the infrastructure needed to support it, so you can remain focused on your core business.

Value Added Networks (VANs)

Value Added Networks provide the go-between in EDI communications, receiving transactions and routing them to the appropriate recipient. One very important factor when considering a VAN is what service level they're providing: Tier 1, 2, or 3. The very highest level of EDI service—Tier 1—is typically controlled by four large providers and is sold to the largest customers—those who have a high annual spend and a willingness to commit to a long-term contract. However, there is a new breed of VAN suppliers, including NewEDI, who partner with Tier 1 providers to resell their excess capacity to customers who otherwise would be shut out of the Tier 1 market.

EDI via AS2, VPN, SFTP, FTPS

EDI can be conducted over the Internet using specific standardized communications protocols such as AS2, FTPs, VPN, and other protocols. Any of these can be used to connect to trading partners directly (Direct Point-to-Point) or through an EDI services provider (VAN)

Web Solutions

Companies that need to meet EDI requirements in a short time frame with minimal investment and few trading partners may prefer a web-based EDI solution. Unlike EDI via AS2 and other protocols, web-based EDI uses a standard Internet browser. However, while it is easy to set up and use, web-based EDI may not allow you to integrate EDI data into back-end business or accounting system. Web-based systems also typically require a greater level of manual intervention.

Need More Help?

EDI has been around a long time; it's stable, established, proven technology. Even so, if you're a small or medium-sized business considering implementing an EDI solution, it can be hard to know where to start. We're here to help.
NewEDI is a consolidator of world-class EDI VAN (Electronic Data Interchange Value-Added Network) services. We partner with established providers to offer easy-to-purchase, affordable, high-quality Tier 1 solutions:

- Industry-standard or higher
- Secure and reliable communication protocols and infrastructure – 99.99% up-time
- Secure AS2 connectivity
- Can manage all trading partner connectivity

From entry level to a full e-commerce solution, if you need to connect with trading partners, let us show you how to do it seamlessly and cost-effectively. Visit www.newedi.com for more information or to contact a NewEDI representative for a free bill analysis.

Glossary of EDI Terms

ANSI (American National Standards Institute): A voluntarily committee that coordinates standards. Its subcommittee, the ANSI Accredited Standards Committee (ANSI ASC) recommends a standard referred to as ANSI ASC X12 or simply X12.

IAS2 (Internet Applicability Statement 2): Specifies how to transport data and the means to connect, deliver, validate, and reply to data in a secure and reliable manner.

AS2 Software: Software that specifically supports transmissions using the AS2 protocol, such as AS2 Complete from 1 EDI Source.

CSV File (Comma Separated Values File): File format in which the data elements are separated with commas. Also known as a Comma Delimited File.

Data Element: The smallest unit of EDI information. A data element could be a code, a name, a quantity, or any other individual piece of information.

Data Mapping: The method by which information in one format is restructured to a different format.

EDIFACT (Electronic Data Interchange For Administration, Commerce and Transport): A standard different from X12. It is usually used in European countries and among the automotive industry.

EDIINT (EDI over the INTernet): The ability to send EDI data directly over the Internet without the use of a VAN.

Electronic Mailbox: Term referring to the place (located within a third party's provider system) where an EDI transmission is stored for pickup or delivery.

Flat File: A computer file that contains alphanumeric and/or numeric data but not control characters. It is most often used for transferring information from one program to another.

FTP (File Transfer Protocol): Standard Internet protocol for transferring files.

FTPs (File Transfer Protocol secure): Using FTP with support for encryption protocols TLS or SSL to provide greater security in transferring files.

Map: The pattern in which EDI information is to be arranged.

Protocol: Rules that determine the format and transmission of data between the sender and the receiver.

Segment: A grouping of one or more data elements that appears as a line of information within an individual EDI message.

sFTP (SSH File Transfer Protocol): Using FTP with the SSH (Secure Shell) security protocol for a higher level of security in transferring files.

Trading Partner: The business with which you are exchanging data.

Transaction Set: The electronic version of a written document.

Translator: A software tool that accepts an EDI transmission and converts the data into another format.

VAN (Value Added Network): A third-party EDI service provider that supplies a communication link between companies so that they may exchange electronic transmissions.

X12: A standard of EDI

XML (Extensible Markup Language): A simple, very flexible text format originally designed to meet the needs of electronic publishing.