



Whitepaper

Magic Software presents:

Magic xpi EDI service platform



Introduction

EDI is a computer-to-computer exchange of business documents in a standard electronic format between any discrete entities - customers, partners, branches, subsidiaries, or departments.

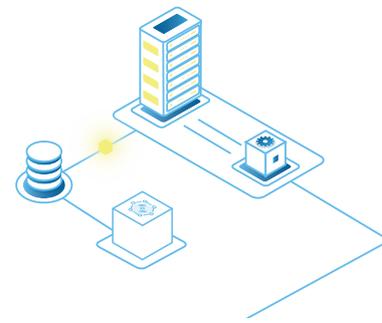
By moving from a manual exchange of business documents to one that is fully automated with EDI, organizations see multiple benefits from reduced costs, faster document processing, fewer errors, and smoother relationships with partners and customers.

This document is designed to provide everything you need to know about getting started with an EDI environment.

Content

What is EDI?	3
The basics of EDI communication	4
Common EDI Message Standards	5
European invoicing standards	7
Common Communication Standards	8
Overview illustration for electronic data exchange	10
Useful EDI terminology	11
Advantages of the digitization of business receipts	14
Getting Started with the Electronic Data Exchange	15
Introducing Magic EDI service platform	15
What advantages can Magic Software offer you?	16
Industry overview of the Magic EDI Service Platform	16
Plug & Play principle	17
Data protection and compliance standards	17
Interested in an expert discussion?	18

What is EDI?



EDI describes a computer-to-computer exchange between application systems using electronic connection standards (such as AS2, FTP, X.400, etc.)

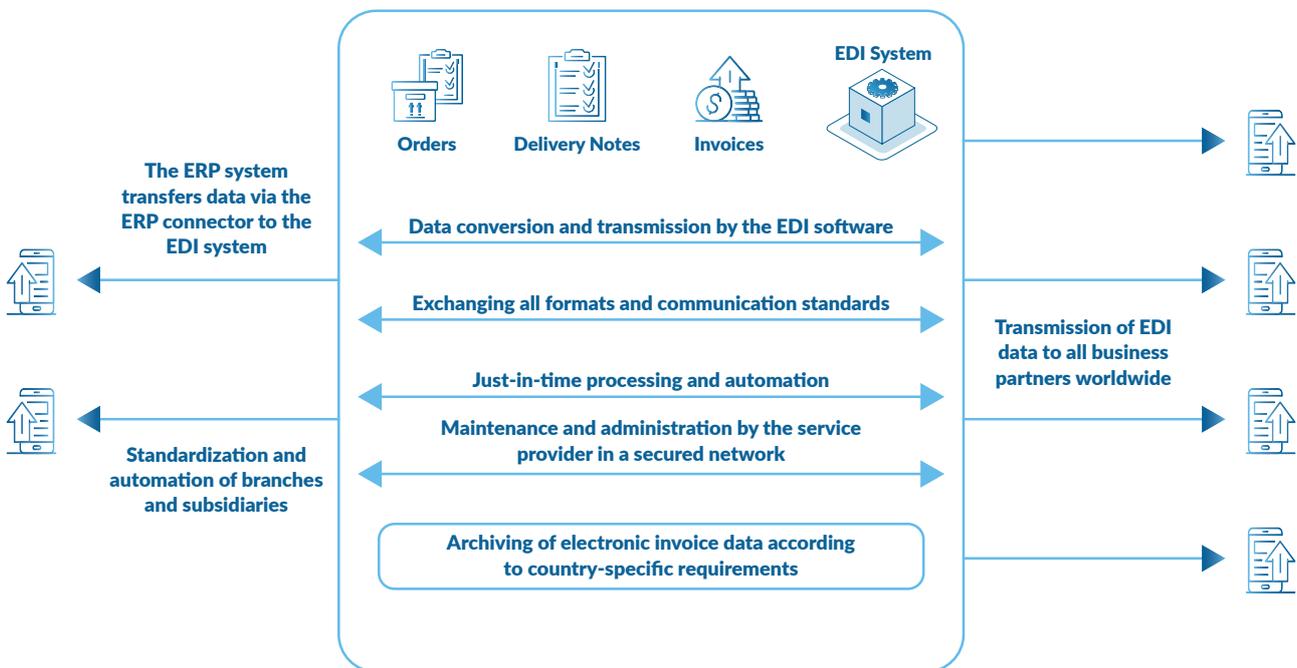
Computer-to-computer exchange is the key here. EDI replaces any kind of manual processing of documents via fax, mail, or email with a fully automated workflow that doesn't include manual actions.

While email is also an electronic approach, the documents exchanged via email must still be handled by people rather than computers. Having people involved slows down the processing and also introduces errors.

EDI enables employees to store business documents (such as invoices, orders, and delivery bills) in an in-house system or application, automatically exchanging data electronically via a secure and encrypted network with partners, vendors, or other departments within the organization.

EDI workflows are fully automated and real-time. Documents can flow straight through to the appropriate application on the receiver's host or application (e.g., the Order Management System) and processing can begin immediately.

Here is a simple illustration showing how the electronic data exchange between your enterprise resource planning and your business partners would run with the help of a service provider:



The automation of different processes across different branches and even national subsidiaries is simple with an EDI solution and can provide many advantages that save time and money.

The basics of EDI communication

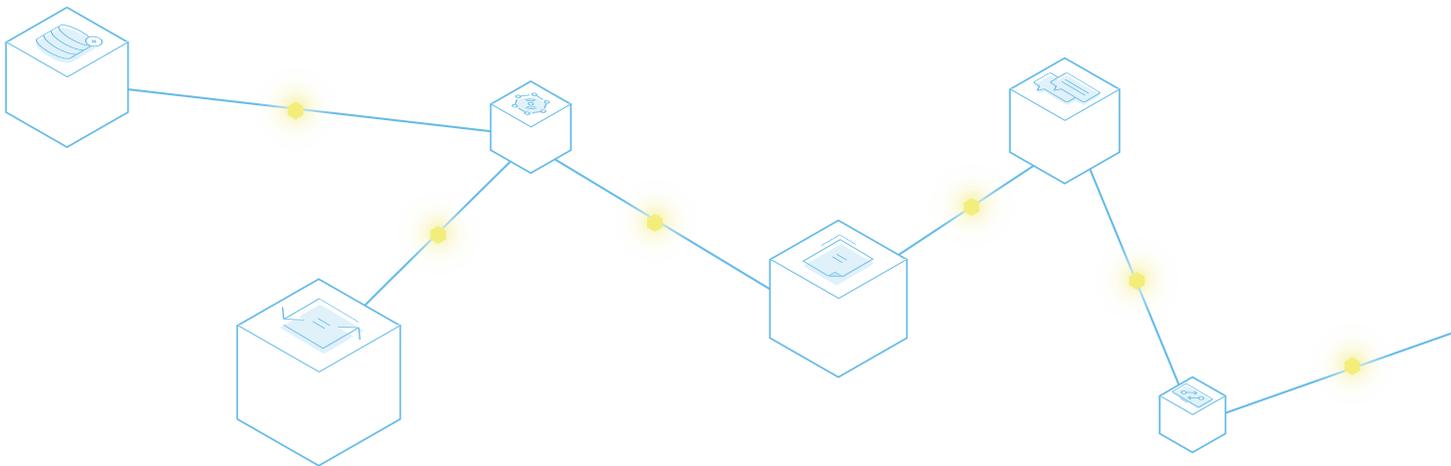
Rigid standardization is one of the most common stumbling blocks when integrating EDI. However, this very same standardization makes it possible to maintain and scale enterprise data exchanges.

To be successful, the communication for data exchange must be synced between the entities involved on three questions:

- 1 How will the data be formatted? (syntax)
- 2 What will it say? (semantics)
- 3 How will Magic exchange the data? (communication path)

In other words, it must be specified which message and communication standard is used to exchange the structured data on a secure path in both directions. In most cases, the message standards are specified by a business partner and the communication path can be chosen accordingly.

With communication standards (also: communication protocols) it is essential to convert the data into the standard preferred or supported by the partner. With EDI, once the communication standard is agreed upon, all that is usually required is a firewall whitelisting and short communication between the business partners to initialize the exchange.



Common EDI Message Standards

There are many EDI standards some of which address the needs of specific industries or regions. An overview of the common standards and their explanations follows below:

UN/EDIFACT United Nations Electronic Data Interchange for Administration, Commerce, and Transport, is a cross-industry, international standard for electronic data in Business transactions as defined by the UN.

XML The Extended Markup Language, is a cross-industry, international standard for electronic data in business transactions, in which the values (and also groups of values) can be given their own names (tags and attributes).

ANSI.X12 Mainly used in North America; responsible by The American National Standards Institute Accredited Standards Committee X12 and is, along with UN/EDIFACT, one of the largest document standards in the field of EDI worldwide.

CSV Comma-separated values is a cross-sector, international standard that has values separated by commas (or other characters).

TRADACOMS An early EDI standard from the British retail sector and predecessor of EDIFACT and was maintained and extended by the UK Article Numbering Association (now GS1 UK).

VDA Format of the Association of the German Automotive Industry, thus for each of the German automobile manufacturers and thus also all medium-sized and large suppliers.

ODETTE

A standard of the European automotive industry, which is used in the areas of logistics, EDI and Partner Relationships Management.

EANCOM

EAN + Communication - A standard and a subset of EDIFACT, which is used worldwide in the consumer goods industry.

IDoc

Intermediate Document - This is an SAP-specific standard that utilizes Structural data to transfer data both between SAP applications and between SAP and external systems.

GS1

A network of non-profit organizations that set global standards for Develop, negotiate and maintain cross-company processes The Global Trade Item Number (GTIN) in the EAN barcode, which is used on all retail products and the Global Location Number (GLN) are among your main developments.

RosettaNet

Non-profit consortium (>600 companies globally) from IT & electronics for standardized electronic data exchange, with the aim of standardizing Data transmission interfaces.

HIPAA

The Health Insurance Portability and Accountability Act is a US-based standard governing electronic transactions in the national health care system and regulates in detail the confidentiality, access and disclosure of all patient information.

ebXML

e-business XML is an open standard sponsored by UN/CEFACT and OASIS for Use of XML for electronic business processes and to reduce Entry barriers.

European invoicing standards

To reduce the complexity and legal uncertainty around [e-invoicing](#) and make cross-border trade relations easier, the EU is developing and enforcing its own invoicing standards and variants. This has resulted in a wide spectrum of European EDI standards, which will expand significantly in the coming years. Here are the most common e-Invoicing formats found in Germany and Europe:

ZUGFeRD (2.0)

The Central User Guide of the Forum elektronische Rechnung Deutschland is a data format for electronic invoices and includes an XML invoice plus a PDF, which makes the XML data readable to the human eye.

XRechnung (Germany)

The term XRechnung (format in XML) describes an electronic invoice issued, transmitted, and sent in a structured electronic format. In Germany, the XInvoice format for public administration is received at the federal and state levels.

Factur-X (France)

An invoice PDF with embedded XML metadata, basically a French variant of the current ZUGFeRD standard with the same content under the consideration of the legal requirements of the country.

FatturaPA (Italy)

A national standard in Italy. Every company that operates in Italy is registered or has a branch office, must adhere to the standard. All Invoices via the government platform Sistema di Interscambio (SDI) are transmitted in this format, digitally signed, and archived with special booking stamps.

PEPPOL (EU)

A standard that provides a set of technical specifications and artifacts to enable cross-border eProcurement between disparate systems across Europe.

Common Communication Standards

Here are the most important standards for the transmission of electronic data that are used in EDI communication:

AS2

AS2 is a protocol for secure message transmission to B2B partners and is used in many industries, and is most frequently used for EDI.

AS4

AS4 is a B2B interface based on web services for the exchange of data and documents between trading partners. The main field of application is currently the PEPPOL-network.

HTTP(S)

The Hypertext Transfer Protocol (Secure) transfers files via the Internet/other networks. Often used for payment transactions & sensitive data.

OFTP/OFTP2

The ODETTE File Transfer Protocol is mainly used for EDI data exchange in automotive industry.

(S)FTP

The File Transfer Protocol is a standard network protocol for exchanging data between client and server applications.

X.400

X.400 is the most widely used standard mail protocol for message transmission via owned, dedicated networks. To participate and use this network, you need to buy an own Business-Telebox, which will be provided by the Telekom.

SMTP

Simple Mail Transfer Protocol (in German: Einfaches E-Mail-Transportprotokoll). A classical Email dispatch procedure, which is also used for data exchange.

POP3

The abbreviation POP3 stands for Post Office Protocol 3. is mostly used for sending e-mails and also partly for electronic data exchange.

IMAP

The abbreviation for Internet Message Access Protocol, stands for a classic procedure from the email dispatch, which is also used for the transfer of business documents and other data.

VAN

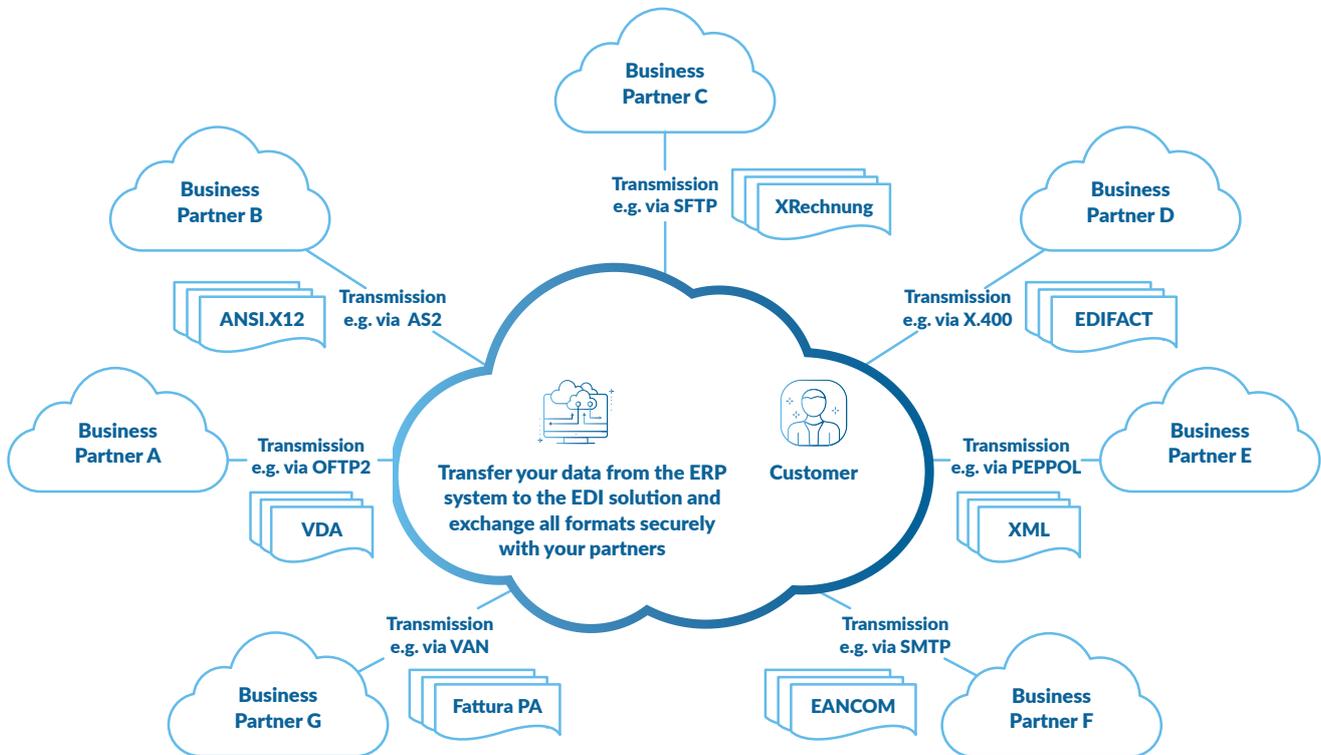
A value-added network (VAN) is a private, hosted service that provides companies with a secure way to send and share data that is commonly used in EDI.

PEPPOL

A specially designed network for XML dispatch, which only allows AS2/AS4 transfer within the network, to send XML invoices or documents. Also efficiently between companies and institutions to be able to transport them is PEPPOL (Pan-European Public Procurement OnLine).

Overview illustration for electronic data exchange

Now you are familiar with most data formats and communication protocols. Our OnDemand solution shows how to manage such a huge amount of requirements simply with a B2B solution and the variety of possibilities:



EDI OnDemand Solution connected to your ERP system

- 1 Converts data into the desired input/output format
- 2 Securely sends and receives the data of the respective business partner worldwide and at any time
- 3 Data security and service by providers and partners 24/7
- 4 Connect once, do it all!

Useful EDI terminology

Magic have compiled a list of must-know terms that frequently come up during EDI projects.

APPLICANT/ USE/USER RIGHTS

Permissions that are granted to a user of an interface, network, or portal. Rights can be extended or limited to allow the user to edit the data or receive view-only permissions.

ADMINISTRATION/ ADMINISTRATOR (short: ADMIN)

The person plans installs, configures, and maintains the IT infrastructure of a company.

(EDI) ARCHIVING

An EDI solution that is archiving your data automatically and stores/moves it into an audit-proof archive.

BUSINESS MONITOR

A tool that helps with analyses and presentations of time-relevant business processes in organizations. For example, electronic invoice data can be converted into a readable PDF document.

FILE COPIES/ BACKUPS

The copies contain the current content of the EDI message and can be used for repeated processing in case of errors.

ELECTRONIC SIGNATURE

With the electronic signature, a transmission code is sent together with the document. This guarantees the authenticity of the sender and the integrity of the content.

ERROR REPORTS/ PROTOCOLS

These reports contain errors that occurred during the conversion and can be of semantic and/or syntactic origin.

FIREWALL

A security system that protects a network or a single computer from unwanted access via a network connection. Usually, IP addresses for EDI communication must be whitelisted in the firewall settings beforehand.

IP-ADDRESS

IP stands for Internet Protocol. Every computer, server, device, cell phone etc. connected to the Internet is assigned a worldwide unique IP address. This allows the data packets to be transmitted correctly.

CONVERSION

The primary function of EDI software is to convert data between a company's internal format and a corresponding EDI standard format (e.g. EANCOM or XML). This includes both the conversion of received EDI messages from business partners into the appropriate in-house format and the conversion of in-house data back into the EDI format.

MONITORING (TOOL)

Monitoring is the supervision of processes such as the correct transfer of business documents. The tool described is the user interface used to view EDI data.

MESSAGE PROTOCOL

This log contains a complete record of every EDI message. Specific identification values enable exact-match search, making audit trails simple.

NETWORK

A network is the connection of several computers or groups of computers for the purpose of data communication. Networks connect different systems with each other to enable data exchange between them.

ON-DEMAND

services, goods or similar, which are to fulfill requirements or demands promptly. The on-demand systems and processes must be flexible, as they are often subject to real-time demands.

PRODUCTION

Usually describes the production environment of the respective exchange partner, in which the business-relevant data and messages are exchanged.

SEND & RECEIVE PROTOCOLS
(also: Dispatch Protocols)

These give an overview of the messages sent and received (including confirmations). The protocol should include the type of data and the time of sending or receiving, the length and status of messages, etc.

INTERFACE

The EDI software serves as an interface between the EDI standard used and the company's internal in-house application (ERP system). The EDI software only transfers the data to the enterprise resource planning system (receiving and sending), but does not process it there.

SERVER

a computer that performs certain tasks for other systems connected to it in a network and on which they are totally or partially dependent.

STAGING
(also: TEST)

Usually describes the test system of the respective exchange partner in which the business-relevant data and messages should be tested.

STATUS REPORT (S)

Status reports include the status of message processing, e.g. a message was sent, received, translated, any errors that occurred.

SUBSET

Used in relation to message standards and means that it is a subset of a certain standard. Example: EDIFACT → EANCOM (Subset).

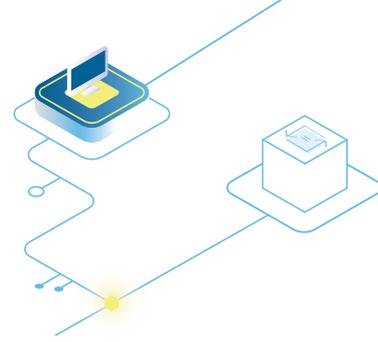
USER

Describes the user of an interface with specific access permissions to the EDI tool. Usually, a user is generated based on an email address.

WebEDI

Browser-based EDI solutions that are suited for small volumes of business documents and are usually appropriate for organizations with limited IT resources. WebEDI doesn't require an ERP or other system connection and has access to the email interface to push and pull data from. WebEDI enables companies with small document volumes to exchange business data over the Internet.

Advantages of the digitization of business receipts



When it comes to document processing, digital transformation has enormous potential for reducing costs while at the same time providing better service to your business partners and customers.

The reduction or complete elimination of paper receipts, as well as innovative technology and efficient communication, also help to reduce the burden on the environment. Electronic workflows also boost efficiency and reduce errors by eliminating manual processes from the mix.

Quantitative benefits

- Reduced shipping and order processing times due to streamlined processes
- Reduced logistics overhead through automated packaging proposals
- Savings in administration and processing costs due to reduced manual handling
- Increased output in shipping through the loading equipment optimization, increasing the efficiency in the use of storage space
- Fewer incorrect deliveries as well as lower freight costs for any subsequent deliveries
- Optimized assignment of pallet labels during the picking process
- Less hands-on customer service required, significantly reducing costs

Qualitative benefits

- Less paper consumption and conservation of the valuable resources
- Reduced CO2 emissions through better utilization of transport capacities
- Reduced energy consumption due to more efficient processes
- Error-free handling through automated processes
- Delivering better service, giving the organization a competitive edge
- Greater customer satisfaction and stronger customer loyalty through a transparent supply and communication chain

Getting Started with EDI

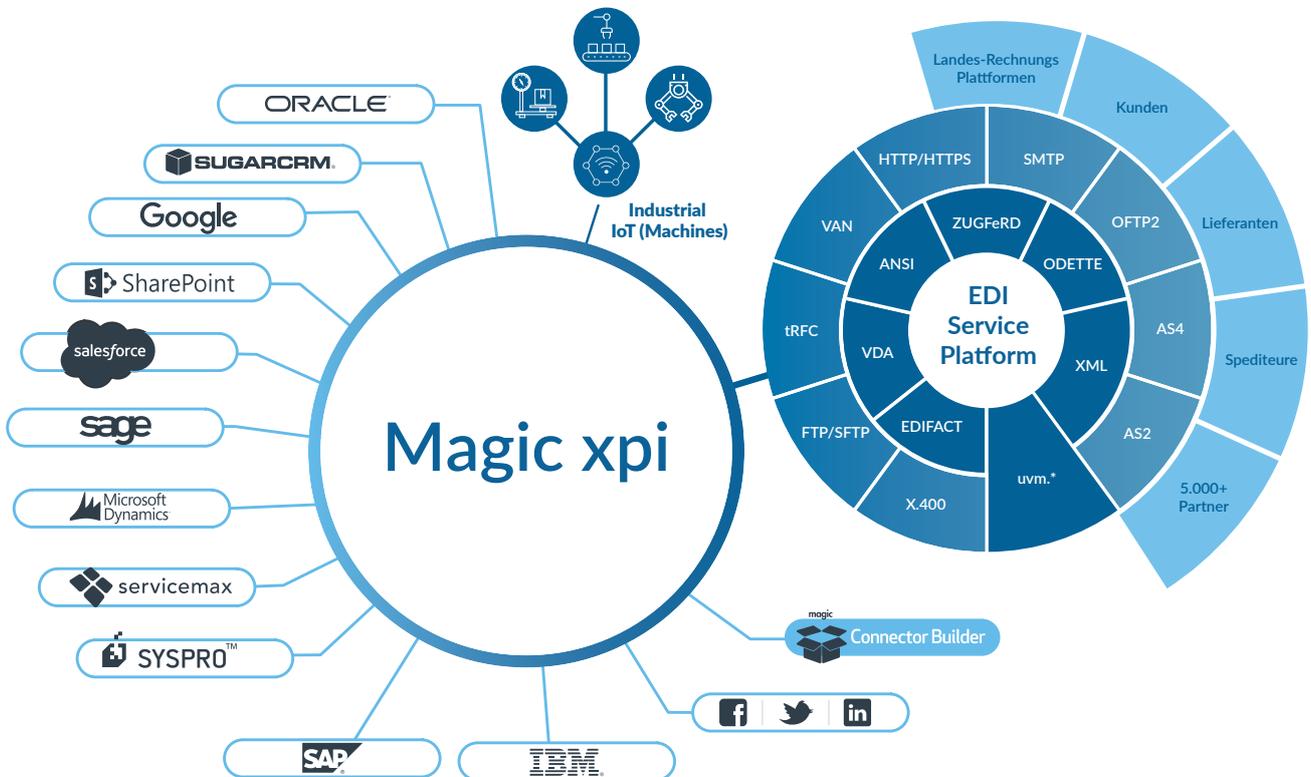
As you can see, there are a multitude of message and communication protocols and standards used in EDI communications. The lack of a true EDI standard that would dictate a universal format is one reason why APIs have not, and will not, replace EDI when it comes to B2B-type data exchanges.

Introducing Magic xpi EDI service platform

Magic Software develops and operates high-performance, reliable EDI software to connect businesses effectively and efficiently. Since the 1980s, Magic Software has been involved with electronic data exchange and electronic invoicing worldwide and has extensive know-how to ensure that document exchange is both digital and automated.

Magic's EDI Service Platform can digitize the entire supply chain using state-of-the-art in-memory technology. Whether e-commerce, audit-proof archives, business monitoring, or stationary trade, every data structure, and transmission protocol can be supported by the platform.

With the help of license-free tools, companies of all sizes and requirements are supported to optimize their supply chain management. Once customers connect their business processes to the platform, they can exchange data with business partners and systems faster and cheaper than ever before.



The advantages Magic Software can offer you

As an EDI provider, Magic makes the digitization process easier for our customers not only by offering innovative software but also by providing expertise and ongoing support.

Instead of managing and maintaining countless connections in your environment, you only need to connect your business processes once and Magic takes care of the rest for you.

Embrace digital transformation with Magic EDI Service Platform, and enjoy the numerous advantages of electronic data exchange:

- Single interface to ERP, with all business partners & countries accessible from a single UI
- Mappings are always up-to-date in the most current version
- Harmonization & automation of processes & systems
- All worldwide formats and protocols are supported
- Innovation: By utilizing the leading technology combined with our subject-matter expertise, Magic can empower you to achieve 100% digitalization and automation based on your existing workflows
- Plug & Play: Connect to the platform once per process and quickly connect with all business partners
- Magic takes care of the conversions of documents into the corresponding format for your business partners and customers. Worldwide.
- Save time & money: connect all your processes quickly and achieve tremendous ROI
- Full flexibility: Simply add or remove customers. You get full flexibility and cost transparency.

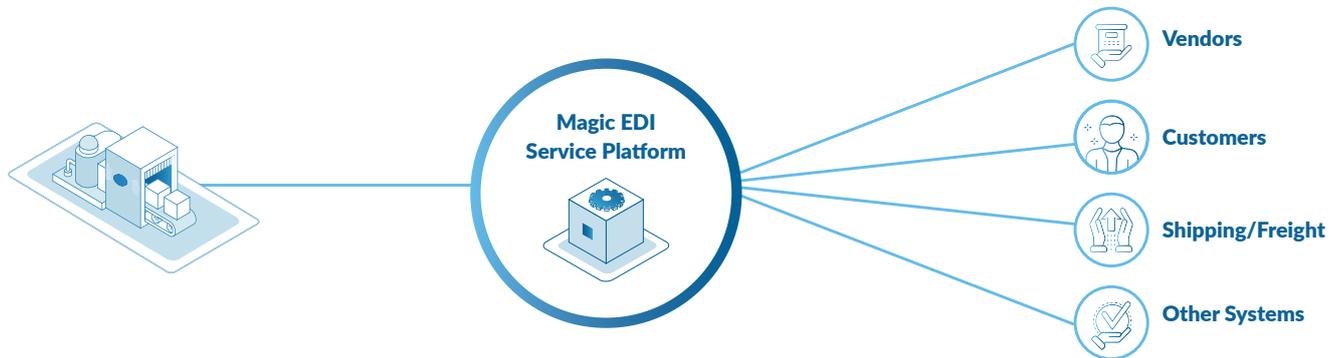
Industry overview of the Magic EDI Service Platform

Magic EDI is a cross-industry platform with customers and know-how from a wide range of sectors:

- | | | |
|---------------------|--------------------------|------------------|
| ① Automotive | ⑤ Electronics | ⑨ Production |
| ② Chemical Industry | ⑥ Healthcare | ⑩ Transportation |
| ③ Do-It-Yourself | ⑦ Mechanical Engineering | ⑪ Technology |
| ④ Retail | ⑧ Public institution | |

Plug & Play principle

Once you connect your business processes to the Magic EDI platform, you can immediately exchange data with business partners and systems.



- One-time connection to the Magic EDI Service Platform per process (e.g. order, dispatch advice and invoice)
- Harmonize, understand and maintain process content for each exchange partner
- Maximum resource savings through a high degree of standardization
- Faster connection of new business partners worldwide
- High flexibility and scalability by adding and canceling partners

Data protection and compliance standards

To ensure customer satisfaction and provide the highest quality of service Magic is constantly striving to innovate, improve the user-friendliness of our offerings, and invest in up-to-date security solutions.

Software Made in Germany seal of approval

The German Federal Association for IT Medium-Sized Businesses (BITMi) has awarded us with the seal "Software Made in Germany". According to the association, this seal is an international synonym for the highest quality and satisfied customers.

Software hosted in Germany seal of approval

In addition, Magic EDI has also been granted the "Software Hosted in Germany" seal of approval, which is given to companies that keep the necessary data protection regulations up to date and compliant with German standards.

Fully compliant with German laws and regulations

Thanks to competent partners, Magic Software is able to provide our customers with an on-demand service with the highest security, compliance, and data protection standards

About Magic Software

With over 35 years of experience, Magic Software has established its position in the market as a global software provider, present in 24 regional offices, with millions of installations worldwide, and strategic alliances with global IT leaders, such as IBM, Microsoft, Oracle, Salesforce, and SAP.

Magic Software is part of the Magic Group (NASDAQ and TASE: MGIC), a global provider of proprietary application development and business process integration software solutions and related professional services, and a vendor of a variety of IT professional services.

The Magic team collaborates closely with our customers and over a thousand business partners in over 50 countries, as we believe that our community is our biggest asset.

We welcome all of our customers, developers, partners, investors and prospects to learn more about our solutions and invite you to take part in our continuous journey to help companies digitally transform, making the most out of their data and technology.

Speak to an EDI expert

Contact us here:

<https://www.magicsoftware.com/contact/message/>

And one of our Magic xpi EDI experts will be in touch with you shortly.

