

Electronic data interchange (EDI)

Definition EDI

Electronic Data Interchange (EDI) refers to the computer-to-computer exchange between different companies via electronic communication channels. It refers to an external data exchange from one's organization's system to the system of a trading partner, e.g. with business documents like orders, confirmations or invoices.

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With the evolution of the [supply chain management systems](#) (SCM) from functional SCM (1950's-1980's) over integrated SCM (1980's-1990's) to value network (1990's-today) the requirements towards the communications along the supply chain changed significantly.¹⁾ Nowadays collaborative planning beyond the enterprise asks for tools to include contract manufacturers, key customers and supplier directly and efficiently into the supply chain to ensure direct communication and planning. This development was facilitated by the development of EDI, as this allows an automatically generated sending and receiving between two enterprises. EDI is not just a transfer of data but also a direct interaction where one system can initiate action on the computer of the counterpart. The data transmission nowadays mainly takes place via internet. There is no more need of participation of "real people" in the operational data processing. Only the administration has to be done by IT people. Compared to previous communication methods via hardcopy (fax, letters, etc.) or data storage medium EDI has the big advantage of faster communication and additionally the reduction of media discontinuity or and the prevention of multiple data entry.²⁾ EDI can help to deepen customer or supplier partnerships by reducing the supply chain costs associated with manual processing. If there is the need to connect more than one business partner there is the possibility to use internet-based e-marketplaces or e-portal platforms, which leads to an efficient trading between the parties.

Examples: Applications

- ERP-Tools ⇒ Enterprise Resource Planning, e.g. SAP
- [E-Procurement](#)
- [B2C-marketplaces](#)

Requirements

As all the data and workflows has to work automatically and without the involvement of people in the data processing, there is the need to ensure that all the frameworks, workflows and processes are determined precisely and correctly when setting up an EDI interface. All the data, specifications, regulations and the legal issues have to be clarified in advance. After initiating such EDI the remaining required manpower is limited mainly on administration and framework adjustments. To enable a data transfer between different organizational systems there is the need of standardization of the formats

and structures, that the system can communicate with each other, and also does recognize the relevant data. There are different types of standards, which are explained in the next chapters.³⁾ When sharing confidential data it is necessary to secure this data, e.g. by using digital signatures, VPN tunnels and data encryption programs.

EDI standards

At the beginning of EDI (1970's) there were no standards for the data format. When companies decided to establish EDI with a business partner, they agreed bilaterally which format to use. To reduce this complexity and the efforts, time and costs involved there where introduced the first standards in the 1980's. Since then many standards have evolved, like generally used standards like UN/EDIFACT or BMEcat, or branch specific standards like RosettaNet, Odette or SWIFT.⁴⁾

- **UN/EDIFACT** ⇒ most common standard, implemented by the EU (United Nations / EDI for Administration, Commerce and Transport (UN/EDIFACT))
- **ANSI ASC X12** ⇒ US standard
- **VDA** ⇒ implemented standard of the German automotive industry
- **Odette** ⇒ standard of the European automotive
- **RosettaNet** ⇒ consortium of companies mainly from the electronic branch of trade with the aim to create an open E-Business standard for marketplaces etc.
- **BMEcat** ⇒ standard for the interchange of product catalogues, based on XML
- **SWIFT** ⇒ data interchange between cross-border money transactions
- **ELSTER** ⇒ German Electronic Income Tax Statement

Advantages and disadvantages

Key benefits:

- Speed
- Data transfer in real-time, no time shift (⇒ almost no time shift between sending and receiving)
- Reduction of human failure rate by re-keying data
- General cost saving (no more people, no more paper, faster data processing, etc.)
- Reduced purchasing costs
- Reduced cost by effective information processing ⇒ rationalization
- Greater flexibility
- Saved time
- Better information
- Better collaboration
- Higher transparency

Disadvantages:

- Adaption of different interfaces between different companies (need of data mapping/converting)
- Costs in changing procurement processes
- Cost for transaction/subscription fees
- Business partners might have too deep insight in one's business figures

Reference

Literature

- **Deutsch, Markus:** Unternehmenserfolg mit EDI: Strategie und Realisierung des elektronischen Datenaustausches. Braunschweig, Wiesbaden: Vieweg, 1994.
- **Kalakota, Ravi ; Whinston, Andrew B.:** Frontiers of Electronic Commerce. Reading u.a.: Addison-Wesley, 1996.
- **Muzumdar, Maha und Balachandran, Narayan:** The supply chain evolution – Roles, Responsibilities and implications for Management (aspentech), published in: APICS The Performance Advantage, October 2001
- **Stahlknecht, Peter ; Hasenkamp, Ulrich:** Einführung in die Wirtschaftsinformatik. 11. Aufl., Berlin, Heidelberg, New York: Springer, 2005.

¹⁾

Muzumdar, Balachandran, 2001, p. 2

²⁾

Stahlknecht, Hasenkamp, 2005, p. 399 f

³⁾

Kalakota, Whinston, 1996, p. 335

⁴⁾

Deutsch, 1994, p. 5

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