

Electronic Data Interchange (EDI)

Increased effectiveness through electronic data interchange

Electronic data interchange (EDI) is an internationally standardized process that can be used to significantly reduce the number of changes of media in logistics. Despite its many advantages, EDI is not widely used in logistics because of its high implementation costs. Instead, Internet-based variations are increasingly being used. These options make it easier for small and mid-sized companies to exploit the strengths of EDI: This is the so-called Web EDI.

The characteristics and application areas of EDI

Electronic data interchange (EDI) is a broad term for all electronic processes for the asynchronous and fully automatic transmission of structured information between application systems of various institutions - this can include companies or government agencies, among others. The information is transmitted in several independent steps, and the data are cached several times en route.

EDI reduces the number of human work steps. A fixed structure for the transmitted data is laid down by the system. The prepared data are presented to a human user only after an application system has integrated the information sent by EDI, for instance within the framework of enterprise resource planning (ERP).

The term "EDI" is used only when at least two different partners are involved in the process - data interchange within an organization is called enterprise application integration (EAI). Once different partners become involved within the framework of EDI, a contractual arrangement becomes necessary. Among other factors, the contract's complexity is related to the number of contract parties - such as external IT companies - and the different characteristics among the participating companies.

Typical information transmitted by electronic data interchange includes:

- Reporting and planning data such as point-of-sale information, warehouse data, forecasts, advertising measures and new product introductions
- Transaction data such as orders, shipping notes and invoices

The strengths and weaknesses of EDI

The benefits of EDI

Data interchange with EDI accelerates reaction times to customer requests. In addition, electronic data transmission creates the possibility of making the latest point-of-sale data from the entire supply chain available at any time. This increases planning and disposition security. Furthermore, eliminating manual data entry creates very extensive cost-cutting potential, e.g., by reducing errors and avoiding changes of media as well as multi-entered data. EDI is very important to logistics companies, whose daily work frequently involves a high share of repetitious business processes. Thanks to the automation of entire business processes, costs can be significantly reduced. For instance, when retail inventories fall below a minimum level, orders can be automatically transmitted to the supplier's production system. The information

is sent from there to the logistics service provider who organizes the delivery. This eliminates the need for telephone calls, faxes and e-mails.

The drawbacks of EDI

Significant costs are associated with implementing and operating EDI systems. This is because solutions available in the market must be adjusted to a company's own needs and employees must be trained. In addition, a pilot phase or an initial parallel operation is frequently necessary. The result is that small and mid-sized companies in particular avoid EDI and rely on traditional forms of data transmission instead.

Furthermore, processes in a company must undergo significant changes before EDI can be applied. For instance, a company may normally receive its goods before an invoice is sent in the mail. But if EDI were used, the invoice would arrive before the goods were delivered. Accordingly, processes must be adjusted in such a way that invoices can be processed by the company before the goods have arrived.

EDI and the Internet

EDI has been available in this form for several decades. The leading data standard at the moment is EDIFACT . It was first developed as a European standard in the middle of the 1980s and was then adapted to American regulations. Since then, EDIFACT has become the central standard for communications between applications systems particularly in Europe as well as increasingly in other regions. One exception is the banking and financial sector.

With the help of the Internet, the efficiency of EDI systems has been increased further. For instance, the data format standard XML facilitates the display of hierarchically structured files in the form of text files. "XML" stands for "eXtensible markup language." As a result, graphics in a text format can be exchanged between different applications and processed further. This enables all sorts of business transactions to be displayed.

The Internet offers an open, fast, widespread and low-cost environment for managing data traffic, particularly in the areas of transport, retail and administration. In this way, even smaller companies that want to avoid the high investments associated with the development of a "classic" EDI can profit from the benefits of electronic data traffic. One shortcoming of the so-called "Web-EDI" with XML can be the need for encryption mechanisms.

Recommended reading

Logistik| Vahrenkamp 2007

References

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