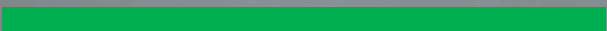




THE CASE FOR EDI/B2B IN THE MODERN SUPPLY CHAIN

White Paper



The Case for EDI/B2B in the Modern Supply Chain



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This paper will introduce the reader to the concepts of Electronic Data Interchange (EDI) and give them a broad overview of the technology and business of EDI, with a special focus on the modern supply chain. The reader will understand some of the historical successes of EDI and how it is being utilized in the context of modern technology and globalized supply chains. EDI has played an important role in creating “organized supply chains” in the developed world, and it is now finding an increasingly significant role by helping organizations across the world gain more efficiencies and security within their supply chain while improving the customer's experience. The addition of modern technologies within the EDI framework is only making EDI adoption wider and more ubiquitous

What is EDI/B2B & why is it important to supply chains

Electronic Data Interchange (EDI) describes a set of collaborative business processes between Trading Partner organizations. Supply chains, by definition, include multiple trading organizations who are linked together and need to interact either manually or digitally for moving product, information, and money.

Within the context of commerce and supply chain, EDI usually involves digital exchanges of data between enterprise buyers, sellers and service providers collaborating within a set of pre-defined business processes with the help of automated data exchange. Business-to-Business (B2B) is simply a more modern term to describe EDI, but it is also often used to describe B2B e-commerce. The end result, however, is the same and the two terms are used together as “EDI-B2B integration” between organizations who are collaborating to execute the delivery of a “perfect order.”

Meaning & relevance of the modern supply chain

It is important to note that EDI is often confused by the underlying technology that has been popularly used to support: ANSI x12 in North America and EDIFACT in Europe. While EDI was synonymous with x12/EDIFACT a few decades ago, today EDI represents a set of collaborative process which may be supported by several new technologies and data protocols.

Ultimately, EDI/B2B is underpinning the modern supply chain which needs to be highly predictable, visible and integrated. The modern economy has been described as the “API Economy”, which simply means that everything and everyone is connected via devices, software and Application Programming Interfaces (API). Supply Chain is no different. With the rise of virtual commerce and supply chain organizations such as Amazon, Uber, and Alibaba – virtual retail has led to the rise of virtual supply chains and virtual logistics. As the number and importance of physical stores have rapidly declined, the rise of digitally integrated eco-systems of buyers and suppliers has risen at an even faster pace. Storefronts and retailers are being replaced by marketplaces that are owned and operated by diverse entities from established manufacturing Brands to financial institutions. Everyone is jumping into the retail game.



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Industries that utilize EDI/B2B:

Several industries have traditionally utilized EDI/B2B within their supply chain and customer management processes. Some of these include:

- Retail & CPG
- Manufacturing
- Wholesale/Distribution
- Construction & Engineering
- Logistics
- Healthcare
- Banking & Insurance (Financial Services)
- Mining Resources
- Government & Public Sector

EDI-enabled business processes for Commerce & Supply Chain Management

The end-to-end supply chain requires several enterprises and a number of cross-enterprise players to collaborate by providing accurate data for distributed IT systems to interpret and take action correctly. Some of the important business procedures and processes that are supported by EDI are as follows:

- Catalogue Data Management
- Drop Ship Management
- Warehouse Management
- Transportation Management
- Supplier Management
- Customer Order management

The process of managing a purchase order (PO) between a buying organization and a supplier could be orchestrated as follows:

- Supplier provides an EDI / **electronic catalog** of products she wishes to sell to a buyer [EDI 832]
 - Buyers use the e-catalog data to set up items he wishes to purchase through the buyer's inventory management system or e-commerce application.
- Buyer transmits a **PO** to the supplier using EDI [EDI 850]
- Supplier receives and acknowledges the PO at a line item level (she acknowledges UPC accuracy, unit cost, requested ship date and other details of the purchase order). This is a **PO Acknowledgement** [EDI 855]
- Buyer receives the PO Acknowledgement, potentially with changed data from the supplier and sends a **PO Change** to supplier rejecting/confirming these changes as the finalized purchase order [EDI 860]
- Supplier ships the order and transmits an **advance ship notice (ASN)** for the shipment. The shipment may be a "drop ship" to the final consumer of an e-commerce order or a drop shipment to the buyer's store. [EDI 856]
- Each ASN is accompanied by a printed serialized shipping container code (SSCC) label, which may take the form of a GS1 MH-10 label (common in retail).
- Supplier can then send **invoices** which correspond to the ASN. [EDI 810]
- Buyer sends payment or remittance information, with details for each invoice paid [EDI 820]



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Modern Technologies that support EDI/B2B for commerce & supply chain

EDI has traditionally been supported by ANSI x12 in North America and EDIFACT in Europe. However, several other technologies and data transfer means have since become popular. All of these can be broadly categorized into two streams.

1. **File or API Integration:** includes file formats such as EDI x12/EDIFACT, XML, CSV/flat files, Excel files and Application Programming Interfaces such as REST/JSON or SOAP Webservice. EDI file data has been exchanged using secure protocols such as SFTP/FTPS, AS2, AS3 and other similar protocols.

2. **Web Portals:** these are web portals that allow trading partners who cannot or do not wish to support system-to-system data exchanges (as described in File/API integration methods). Some examples of specialized EDI web portals are as follows

- A **Catalogue Portal or New Item Listing Portal** allows a buyer to provide her many suppliers with a web-based solution to upload their UPC or GTIN based catalog data. This data may include any item attributes such as pricing, images, description, dimensions and other information.
- A **supplier portal** allows a buyer to provide his many suppliers a rules-based, web application to receive and process his orders without requiring any sophisticated technology.
- A **customer portal** allows a brand/manufacturer/distributor to provide his many "small buyers" an effortless way to submit orders and track order status. Usually such an "order management portal" is less expensive to implement than a B2B e-commerce application.

- A **logistics portal** allows a third-party logistics service provider (3PL) to provide customers an easy-to-use portal, submit warehouse orders, manage warehouse inventory and track status of customer shipments, all without expensive integration.

3. **Blockchain:** This is an emerging technology application, within which EDI processes and existing technologies fit very well. The blockchain is record-keeping for today's digital world, providing a shared record of transactions that are secure, unalterable, and digitally permanent. Many authorized entities can participate in a blockchain. Since EDI fundamentally powers cross-enterprise transactions, while Blockchain provides irrefutable record keeping of these transactions, modern EDI is expected to fuel the growth of Blockchain and vice versa.



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The Relevance of EDI in the world E-Commerce & the “digitally enabled” supply chain

With the rapid expansion of e-commerce, EDI is being used more intensively to manage the flow of information between buyers, sellers and service providers, with the objective of reducing inventory costs while providing a superior customer experience. Amazon has set the bar high as a buyer that relies heavily on technology interaction with its suppliers to manage these objectives.

Other major advances in technology, a critical mass of Cloud, Big Data and Machine Learning/Artificial Intelligence are leading to the “thinking supply chain.” Cloud has made it easier and less expensive establish large trading partner communities that are collaborating and exchanging data with common objectives, which is leading to the creation of Big Data within a supply chain. The application of machine learning principles and technologies to this big data is leading to the use of predictive analytics that are helping organizations sense demand and fulfill it with the right product at the right time for the right price.



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