

# Bit by Bit

**Electronic Data Interchange (EDI) and the X12 Format**  
by **Roy Heinz** (Washington Research Library Consortium)  
and **Joyce Ogburn** (Yale University)



**D**o you remember when you were trying to buy those socks, but had to wait at the cash register because the scanner would not read the barcode? You wondered why the clerk couldn't just ring up the price that was clearly marked on the tag and take your money. Welcome to the world of EDI.

The clerk needs the code because scanning it sets into motion a variety of transactions that take place automatically behind the scenes. The computer to which the cash register is connected encodes a series of short electronic messages which are stored, interpreted, and sent on to other computers. If the socks were on sale, a reduced price will be charged. The store's inventory is immediately updated and if its stock of blue socks is sufficiently depleted an order for more will go to the warehouse. A computer at the warehouse will respond that more socks will arrive at the store by next Monday on shipment #42 in box #4797. EDI not only eliminates a lot of paper shuffling, it also speeds up processing, makes errors less likely, and eliminates the need to rekey data.

Since the mid-1970s this type of electronic data transfer has become routine in a variety of industries such as transportation, grocery, banking, retail, health care and publishing. These businesses have developed a variety of "standards" for EDI and most of these were incompatible in their transmission formats. In 1979, the American National Standards Institute's (ANSI) Accredited Standards Committee (ACS) began to develop uniform, inter-industry applications, order placement, shipping and receiving. This EDI standard is known as X12 and is meant to supersede previous standards with a more concise and versatile format that can be used by all industries.

An example from publishing is the Book Industry Study Group's EDI format designed in the 1970s by the Book Industry Systems Advisory Committee (BISAC). The original BISAC standard was fixed-format and required one or more 80-character packets of data per transaction to be sent over the phone lines from computer to computer. By adopting the X12 format BISAC can use a variable length transaction record and send just the right amount of data faster and thus decrease telecommunication costs. Using X12 will also allow EDI communication between industries, so that B. Dalton bookstores could order stuffed animals or miniature reading lamps from the retail industry and K-Mart could order paperback books from publishers or wholesalers.

It would be inefficient and expensive to have permanent phone links between every publisher and every bookstore, so a number of

third-party, value added networks (VANs) have come into being which are like post offices. They are "gateways" that can receive, store and forward EDI data among various trading partners. These VANs can also translate data between standards, and can authenticate and encrypt messages.

There are already pilot projects investigating X12 communications between libraries and booksellers. An example is the announcement last July by NOTIS Systems, Inc. of two EDI projects. One is a joint effort with Blackwell North America to transfer book orders using the X12 standard. In a second project, NOTIS, the University of Minnesota and Faxon are experimenting with the X12 format to transmit serials' claim information. If these pilot projects are successful and prove to be economically feasible, you should expect to see much more news about EDI activity in large libraries in 1992. ☛