ELECTRONIC DATA INTERCHANGE
Streamlining Business Communications

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The paper discusses the following aspects:

1) The evolution of EDI(Electronic Data Interchange) and the role it can play in international business.

2) The structure and contents of an EDI transmission and the elements which can improve its speed and reliability.

3) Examples of how EDI can be used to link together a variety of trading partners and how it is used to improve business communications.

4) The standards for message formats: ANSI X.12, EDIFACT (EDI for Administration, Commerce and Transport) and the recently developed Interconnect Mailbag Structure standard.

5) A new protocol for EDI document transfer, known as P-EDI, that allows the message is bundled within an X.400 electronic envelope.

An EDI transaction consists of three main elements: the structure of the digitized document; the format or syntax of the message, and the method of transmission.

An EDI message must meet the following criteria:

- replicate a standard business document
- appear in a machine-readable format
- communicate from one computer to another.

In order to achieve these tasks an EDI message must include:

- headers: units of information attached to the message that are used to control the delivery of the message

- headings: the information that is found at the top of business documents, such as the billing address

- transaction details:description of what is being shipped, ordered, billed, etc.

- link control data:information that helps identify transmission errors.

The basic unit of an X.12 EDI message is called the transaction set. Approximately 48 different transaction sets have been adopted or are being reviewed by the X.12 Committee. Examples of transaction sets are:

- Payment Status Inquiry
- Shipping Schedule
- Purchase Order Change Request

Security for EDI

Data communications technology and equipment have developed rapidly, but the means to secure sophisticated networks from a variety of transgressions has not kept pace. It is known that public communication systems are designed not for security but for efficiency, reliability, and availability purpose to the largest possible number of users.

The vulnerabilities can be counteracted, in theory, by encryption techniques to scramble the data so that eavesdroppers cannot read it, and by algorithms that help verify the authentication of a message. Encryption is usually used in addition to some other methods of checking whether the user is authorized to get access to the information.

The Electronic Messaging Services Task Force of the American Bar Association has prepared a document called the Model Form of Electronic Data Interchange Trading Partner Agreement and

Commentary.

A consortium of users and vendors has been organized to explore security issues. The Information Security Foundation, how it is called, has considered establishing a spin-off of the accounting community's set of standards known as the Generally Accepted Accounting Principles; the security community's version would be known as the Generally Accepted System Security Principles.

Security protocols are being developed that will work at the logical layers of the OSI Reference Model. OSI-compliant networks have several general ways of ensuring security, including cryptography, physical isolation of links, and audit trails.

The digital signature, a unique string of bits that serves as a source of authentication for transmitted messages, must be read with a coded key. One relevant standard used for electronic messaging by the banking industry is called ANSI X9.17 Financial Institution Key Management (Wholesale) Standard.

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