

Paperless Letters of Credit and EDI on the Internet

The purpose of this paper is to build a better understanding of the operation of a Letter of Credit (L/C) in the transportation of goods. Related and of growing importance are some recent developments in the areas of Electronic Data Interchange (EDI) and the explosion of globally internetworked computers on the Internet. The commercial viability of Internet is explored along with security and other traditional roadblocks to EDI on the information superhighway. I close with a future outlook for Internet EDI in the transportation of goods.

Also known as a documentary credit, the L/C is a key instrument in the settlement of payments in an import/export transaction. It's historic roots date back

** by Matthew W. Galland
University of San Francisco*

some 3000 years and is well described in the case *Voest-Alpine International Corp. v. Chase Manhattan Bank*, 707 F.2d 680 (1983), whereby: "... [it] involves three separate and independent relationships - an underlying sale-of-goods contract between buyer and seller, an agreement between a bank and its customer (buyer) in which the bank undertakes to issue a letter of credit, and the bank's resulting engagement to pay the beneficiary (seller) providing that certain documents presented to the bank conform with the terms and conditions of the credit issued on its customer's behalf."

A very simple case would involve seller Sam in Spain, and buyer Bruna in Brazil. They sign a contract for the sale of goods and, to cover their respective exposures to risk (nonpayment and non-delivery), agree to call for a L/C. Bruna applies (similar to other business credit application processes) for the L/C from her Brazilian Bank I (for Issuing). Bank I has a standing agreement with Spanish Bank C (for confirming or advising). When Sam provides Bank C with documentary evidence (such as a Bill of Lading) showing that he has fulfilled his contractual duties to Bruna, Bank C will confirm the transaction with Bank I, who will then wire Bruna's payment to Sam's Bank C. A done deal.

Electronic Data Interchange

No definitive answer exists as to the question, 'What is EDI?' It can range from a simple fax transmission, to shared databases, and to networked computer systems, both large and small. The use of paperless documents is the theme that they all share. These virtual documents can be of any type, including invoices, price quotes, export declarations, bills of lading, and L/Cs.

We all know of the success of American Airlines' Sabre electronic reservation system. At its core are the founding principles of EDI: paperless transactions.

Other examples include SWIFT (Society for Worldwide Interbank Financial Telecommunication) and the credit card payment clearinghouses. Automobile manufacturers and government agencies have been using EDI to help manage JIT inventories and to cut out redundancy and slack in their supplier chain.

An Electronic L/C

An early (1989) example of the use of EDI in the international transportation and trade industry was made possible by Singapore's Trade Development Board and its TradeNet program. With an emphasis on import and export declarations, EDI reduced average processing time from three days (for paper) to less than 30 minutes [1]. The latest trick has been to implement an automated system for the generation of letters of credit and bills for collection. As of 1993, Citibank has: "... a customer-based system that allows for a multi-geography, multi-product electronic delivery service. Customers have a single window platform which they can use to access any of the transactions they have with the bank: trade, cash management and securities. Citibanking allows customers to inquire into their import and export letters of credit, and documentary collections information, initiate transactions, monitor them, check their financial obligations and generate reports." [2].

Forwarders and brokers have taken to EDI by electronically applying for a foreign draft with the use of a personal computer [3]. At least one forwarder has electronically automated its entire air freight export process, benefiting from a January 1994, U.S. Customs ruling that abolishes the requirement for a paper form of the commercial invoice. One express courier is establishing an EDI link with its customer such that when the customer (a retailer) receives an order, the information is automatically relayed to the courier's network, producing bills of lading and shipment labels without the hassle of rekeying [4].

Several other benefits are seen from using Electronic Data Interchange technology, namely [5]: reduced material cost, reduced labor cost, reduced human error, faster response time, and improved customer relations.

EDI User Friendliness

It has been estimated that some 40,000 U.S. companies routinely utilize EDI (Verity, 112). Yet these examples of EDI have traditionally been limited to closed-circuit, leased-line value-added networks (VANs). Like it sounds, this implies exclusivity and a rigid paid membership/usage fee structure. Further obfuscating the universal acceptance and availability of EDI was a lack of standards. Way back in October 1993, it was stated that, "The diverse electronic standards that exist create a situation calling to mind the confusion and pandemonium of the Tower of Babel." [6].

While certain sectors of the commercial world (namely giant corporations and government agencies) have been reaping the benefits of EDI, the rest have been left to muddle in the inefficiencies of paper-based systems. Studies estimate that with EDI, small- and medium-sized international trade businesses could lower trade paperwork costs from \$ 300 billion per year [7] to \$ 100 billion per year [9]. Now, imagine the other small- and medium-sized businesses conducting non-trade related activities. The potential is there.

Welcome Internet

Internet is rapidly becoming a household name that we all recognize. It is a global network of many thousands of computers (Web Servers or Internet Gateways), all connected by phone lines that link tens of millions of users from all corners of the earth, political and social boundaries notwithstanding. Last November's population count was some 22 thousand commercial and 20 million private users. At the bare minimum, Internet fully supports e-mail service to and from anyone, anywhere (152 countries), any time. [10]. Depending on your computer system and your access to a line, you can freely download (i.e. copy to your computer) Internet productivity tools from other Web Servers.

Best known of these productivity tools is Mosaic, an Internet navigation program that allows users to 'browse' (i.e. look into) servers in 75 countries around the globe, all at the push of a button! With Mosaic, the Net has a seemingly limitless wealth of free information from virtual 'window shopping', to business, legal, social, cultural, technological, educational and other resources. Indeed, numerous articles attest to the popularity of Mosaic (see reading list). But there's been a little snag, keeping businesses and consumers alike from actually buying into the system. Internet has no regulatory controls and the material contained therein is generally considered public domain. As a result, information on the Internet

has been limited to material that is not time- or content-sensitive. While companies had been trying to implement a feasible alternative to private network EDI systems, new entrants held back from the Internet [10]. But everything changed last month.

Welcome Netscape

The absolutely most important development of today's Internet is that Mosaic is being replaced by Netscape, an enhancement on the former that allows commercial (i.e. non-military) grade Internet security by the use of encryption and digital signature technology. The program's development was facilitated by the work of CommerceNet, a consortium of electronics design, manufacturing, supply and distribution companies. Their goal is to provide Internet users with the same EDI capabilities that large companies now enjoy [11]. Using RSA Data Security, Inc.'s proven technology called public and private key data-encryption (already a standard with SWIFT, the U.S. banking industry, and other large organizations), the program will protect the authenticity, validity, and integrity of Internet transmissions.

Internet Security

It is generally accepted that connecting a private network of computers with one that is public usually leaves the former vulnerable to invasion or attack. However, measures can be taken to reduce this threat to a system's data. Developers have devised various software and hardware schemes [12], but it appears that the winning technology is RSA public key cryptography. Suddenly, Netscape has changed the whole 'landscape' of business on the Internet. The protection of, and ability to charge for, intellectual property that's delivered over worldwide networks - not to mention the ability to do wire transfers and stock trades - lies just around the corner [13]. In fact, Bill Gates, Chairman and CEO of Microsoft, says, "RSA is undoubtedly the best choice for security in today's networked world, and it's a very important part of our future. [...]"

A Paperless 'Documentary' Credit

Beyond facilitating payments in an international transaction, L/Cs are recognized in all legal systems of the world [14]. Standardized legal rules are documented in the Uniform Customs and Practices for Documentary Credits (UCP), established by the International Chamber of Commerce. An important revision to these rules (called UCP 500) was just implemented in January 1994, promising to address modern trade practices. But however current, it has been noted that, "it does not address every issue that may

arise in a letter-of-credit transaction" [15]. As we have seen, a lot has happened since last January and UCP questions will most certainly be raised.

Questions regarding the legal standing of paperless L/C will grow in relation to the importance of the underlying transaction. The consensus is that "the formation, operation, and enforceability of electronic trade transactions depends largely on the reliable creation, validation, processing, communication, and retention of electronic transaction records" [16]. And given that no real laws currently exist, it has been suggested that letter-of-credit law is not poised to embrace the technological and communications revolution, still too attached to the notion of 'paper' [16]. Even the U.C.C. § 5-103(1)(b) (1989) states that a "'document' means any *paper* [emphasis added] including document of title, security, etc."

Thanks to the accepted principles of contract law, it appears that all these doubts and questions about the electronic commercial transaction can be solved by contractual agreement. Such agreements have come to be known as Trading Partner Agreements (TPAs). In fact they are considered "fundamental to the EDI trade relationship" since they resolve either party's questions of enforceability, clarity, and liability, among other things [16]. The Comité Maritime International (CMI) has established special rules to follow if you enter into a TPA to transact business using EDI [14].

Summary and Implications for the Future

While not fully tested, companies of all sorts have already accepted, to at least some degree or another, that there is such a thing as a paperless letter of credit. It can further be stated that most will agree that the paperless transaction (EDI) will play an increasingly important role in commerce. In this paper and its many supporting articles (cited or not), I have demonstrated that Internet is well positioned to be a major player in EDI networks of the future. And since the Internet offers such a vast, global market - secured by encryption technology - companies that cross international borders (namely those in the transportation industry) will stand to benefit the most from Internet connectivity. ■

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* *Matthew W. Galland (gallma10@usfca.edu)* is an international business MBA and Internet consultant at the University of San Francisco, USA.