Final farewell to the paper chain?

Anyone visiting a large importer or shipping line will be struck by the amount of paper in its offices. All these documents are painstakingly completed, printed, couriered, opened, checked, handed on, stamped, stapled to other documents and finally filed for eternity in some vast archive.

Such has been the way of trade since the letter of credit and bill of lading were invented in the 16th century and, despite the technological development of the last 20 years, it is still the way of trade now. The UN Centre for Trade Facilitation and Electronic Business estimates the annual cost of this administrative effort to be US$ 3 trillion! Small wonder that a number of companies see a business opportunity in applying new technology to the problem.

Secure on paper

But what is all this paper for anyway? In brief, it provides a secure means for trading parties to buy and sell goods without meeting face to face. In other words, it is a substitute for trust.

The outline process is very simple: the buyer prepares a letter of credit in favour of the seller. When the seller can prove, with the aid of other documents, that the goods requested have been packed and shipped, the buyer's bank (or its correspondent) will pay the seller. Typically the documents required to cash a letter of credit include a commercial invoice, a packing list, a shipping line's bill of lading and an inspection certificate. The buyer's bank inspects all these documents to ensure that they are in order and that they match the requirements of the letter of credit. This pile of paper is then couriered to the buyer who uses it to arrange customs clearance and to claim his goods from the carrying line.

Two very important things happen during this process: the first is that the seller is paid for the goods; the second is that the title to the goods passes from buyer to the seller. This transfer of ownership is in most cases embodied in the negotiable bill of lading, which, like a bearer bond, is a document of title.

But is this approach really appropriate today and what security does it really provide? Does it really make sense for a shipping line document, which in many respects is little different from a courier's receipt, to be a document of title? What confirmation does it actually provide that the requested goods have indeed been shipped? If goods are packed in a full container load at the seller's premises, the bill of lading states "Shipper's Load, Stow and Count," which is another way for the line to say: "We have no idea what is inside this box."

Moving away

Over the past 15 years, the lines themselves have made attempts to move away from this state of affairs with the development of the Sea Waybill. This document is a receipt and evidence of a contract of carriage, but is not a document of title. However, despite its comparative simplicity and ease of administration, the use of the Waybill has grown only slowly. This is primarily because of the continuing prevalence of the letter of credit as a means of payment.

More recently, large amounts of money, time and brainpower have been devoted to applying modern technology to this area and to creating new, efficient, paperless, ways to trade. The challenge has been to create something flexible and easy to adopt, which is at the same time demonstrably at least as secure as existing systems. Central to this is how to deal with documents of title.

Bolero International Ltd, which was formed in April 1998 by the Society for Worldwide Interbank Financial Telecommunication (SWIFT) and the TT Club, was the first to take up the challenge. Trading as Bolero.net (*www.bolero.net*), the company has created an open platform that allows all trade documents to be handled online from the creation of the initial contract through to change of title, payment and final delivery of the goods to the buyer.

The Bolero Core Messaging Platform allows the exchange of messages and documents, while the Title Registry supports on line change of ownership. This functionality was enhanced in late 2001 by the addition of SURF (Settlement Utility for Risk and Finance), which provides document compliance checking.

Trade transaction

A trade transaction through Bolero using the SURF settlement application looks like this:
● The buyer sends a purchase order to the seller through the Messaging Platform and the seller confirms.
● A SURF proposal (similar to a letter of credit application) is made and agreed online by the buyer and seller and SURF automatically requests a payment undertaking from the buyer's bank.
● SURF validates the payment undertaking and ensures that this comes from a bank approved by the seller. The details of the conditional payment undertaking are then forwarded through the Messaging Platform to the seller.
● With all agreements in place, the seller organises the electronic presentation of the trade documents required under the conditional payment undertaking. Some of these he can prepare himself (eg the commercial invoice and packing list) and some he can request from a third party through the Messaging Platform. These documents are presented to SURF.
● If a bill of lading is required, this is also presented electronically and, title is now transferred to SURF.
● If the documents presented are compliant with the payment undertaking, SURF notifies the seller and the buyer's bank and transfers title and documents to the buyer. If there are discrepancies, SURF notifies the parties, who either amend the documents or agree to accept the discrepancies.
● The transfer of funds from the buyer's bank to the seller is handled by existing banking systems.

The Bolero Rule Book provides the legal infrastructure that underpins this process. Security is provided by the latest encryption technology, message validation and a rigorous registration procedure for prospective members. The Messaging Platform and Title Registry are both operated by SWIFT.

The Bolero platform has successfully signed up seven of the world's top 10 banks as well as carriers such as K Line, Cosco, Evergreen and Kühne and Nagel. Large users include BHP Billiton, Rio Tinto, retailer Otto Versand and The National Federation of Coffee Growers of Colombia.

Original approach

For all the service providers in this field, signing up a wide range of players is essential. As seen from the process above, the platform requires the participation not only of the buyer and seller, but also of the banks, carriers and other service providers involved in the transaction. Ease of adoption will be key.

This is a central part of the approach adopted by Originals Online (*www.originalsonline.com*), which operates a virtual document exchange in the USA. This facilitates the creation and online exchange of legal negotiable documents including bills of lading, commercial invoices and letters of credit. Originals Online's aim is to allow trading partners to gain the benefits of using digital equivalents of paper originals without changing underlying business processes.

Todd Middagh, CEO of Originals Online, explains how it works: "Each participant creates the Electronic Original exactly as they do today - from their own internal computer system. Instead of sending the document to a printer, the user submits it through Originals Online, giving it a digital signature by swiping a smart card through a card reader.

"The shipping lines we work with input their documents in two different ways: Some create a bill of lading.pdf (Adobe portable document format) file. Others are more sophisticated and have their own online electronic bill of lading creation software. Similar processes are used for the other documents involved in a trade transaction."

Change of title is handled through Originals Online's Trusted Custodial Utility (TCU). This allows a seller to place the documents required by the letter of credit in escrow, allowing viewing by the buyer and his bank. When payment is confirmed, the seller releases the documents to the buyer.

At each stage, an authorising digital signature is required. The TCU also maintains extensive audit records that establish the trail of evidence and ownership for an electronic original and its revision history. These processes are compliant with the requirements of US legislation (E-Sign and Uniform Electronic Transactions Act) and similar legislation is in place in most major trading countries.

"The key to our approach is that customers' underlying processes stay the same. We just help them improve speed and efficiency with new technology," says Middagh. "Implementation is simple and quick. After signing the subscriber's agreement, the user receives the smart card and reader and downloads a driver for the card."

Originals Online is being used by US barge operators, bulk commodities shippers and the US Department of Agriculture.

Keep it simple

CCEWeb (*www.CCEWeb.com*), which is piloting @GlobalTrade, has also aimed at ease of implementation. CEO Jacob Katsman points out that "International buyers and sellers have been operating the same way for more than 70 years, so a new system has to be easy to use and integrate seamlessly into existing workflows."

Like Originals Online, @GlobalTrade provides a full trade document handling service using Adobe electronic documents. It also exploits Adobe Acrobat 5's ability to support XML. "We're taking out unnecessary steps," says Katsman. "There's no need to constantly rekey information. XML data can be pulled from Adobe.pdf files for processing by the back office systems of various parties in a trade chain." For example, documentary credit fields are automatically mapped onto document instruction templates for the service providers involved in a transaction.

A transaction through @GlobalTrade would look like

@GlobalTrade exploits Adobe Acrobat 5's ability to support XML. "There is no need to constantly rekey information," says CCEWeb CEO Jacob Katsman (right)

Ease of adoption is crucial. FNC completed its first live export transaction across the Bolero system only five weeks after joining Bolero.net
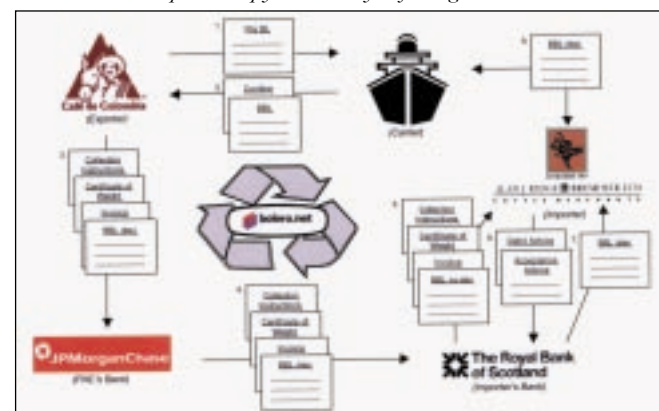
Originals Online allows trading partners to use digital versions of paper originals without changing underlying business processes

this: Service providers are able to download the information from @GlobalTrade and use their existing computer systems to create documents. Once the documents are created, they are converted into Adobe .pdf files, signed with service providers' digital certificates and uploaded to the exporter via the @GlobalTrade system. The exporter verifies the correctness of these documents as per credit terms and can easily communicate with respective service providers via @GlobalTrade to request changes to documents. The exporter then presents documents electronically to the bank for payment.

CCEWeb has paid particular attention to the role of the banks in the process and how @GlobalTrade can make their processes more efficient. In particular the company says that as well as improving the processes of individual banks, @GlobalTrade will facilitate the outsourcing of this work among the banks, thus releasing significant economies of scale. Dresdner Bank and Overseas Union Bank are among the pilot participants.

In the @GlobalTrade model, it is the trade specialists at the Documentary Clearance Centres who, after checking compliance with the payment undertaking, coordinate payment and change of title.

CCEWeb is also working on changing the way letters of credit work. The eLC Card (electronic letter of credit card) and FastTrack Electronic Documentary Credit (eDC) will allow companies to combine the convenience of credit card purchasing with the financial security of an irrevocable letter of credit.

Greatest challenge

Ron Wells of Chevron Texaco Global Trading, which has been piloting @GlobalTrade, says, "The greatest challenges facing these service providers is driving adoption among the wide range of players needed to make these tools work properly." These include everyone who provides a document in the current transaction: banks, buyers, sellers, shipping lines, inspection services etc. If one link is missing, the value of moving to an electronic platform is greatly reduced.

The scale of this challenge can be gauged by considering the number of partners a small importer might trade with. Assuming goods are moving from five origins with two suppliers in each and that the traffic is shared among three carriers, this gives 10 sellers, possibly 10 lines' offices, five or more inspection companies and 10 banks. Extrapolate this to larger companies and the task becomes immense.

In meeting this challenge, it seems likely that ease of adoption will prove crucial, particularly for organisations that have a large and changing trading partner base. As Wells points out, "Bolero has been successful with large commodity groups where there is a stable chain in place. Where trading relationships are not stable, a more flexible solution that is quick and cheap to implement may well be more appropriate."

Bolero has shown that it can meet this challenge. The National Federation of Coffee Growers of Colombia (FNC) completed its first live export transaction across the Bolero system only five weeks after the organisation joined Bolero.net. Bolero's Peter Scott regards this as very important. "The speed with which this transaction chain was pulled together was impressive. From workflow analysis to implementation of local user software through parallel running to live operations all in the space of five weeks. This sends a big message to companies around the world that the benefits of Bolero.net can be quickly realised."

But how is the mammoth task of contacting and signing up all the necessary trade service providers to be accomplished?

Trade Card (*www.tradecard.com*) has taken this particular bull by the horns and explicitly sets out to recruit trade service providers with the slogan "Join our Growing Network – Expand Your Customer Base." The Trade Card site lists numerous service providers in logistics, inspection, cargo insurance, money movement, payment assurance and banks that are members of the Trade Card network.

Bolero is now planning to tackle this issue through the banks, which between then have access to a large part of the target customer base. As an example, JP Morgan is now extending its partnership with Bolero to enable it to licence and distribute Bolero.net's platform to corporations and financial institutions on a private-label basis. Bolero will be a so-called "white label" product that stands behind this, in an approach similar to Visa in the credit card market.

Along similar lines

As indicated earlier, shipping lines, the creators of the key document of title, have also been working to move away from paper. As Thomas Eskesen of Maersk Sealand says, "We see value both in automating existing ways of doing things and in seeing how we can use better processes in future." He adds that 40 per cent of Maersk Sealand's traffic is now moving on Waybills and that growing numbers of customers are using electronic bills of lading.

For some years, lines have allowed remote viewing and printing of bills of lading by authorised customer users. Chris Holt of OOCL reports rapid growth in the use of these services. "We have already seen a high level of adoption in the US and growth is particularly rapid in Europe now," he says.

Maersk Sealand, APL and other lines are now taking this to the next stage. For example, APL's recently launched E-BL Print allows exporters to transmit encrypted negotiable bills of lading via the Internet directly to multiple third-party providers such as forwarders, consignees and banks. Eskesen sees this development process continuing. "There is far too much paper in international trade now and we have to find ways to work smarter. We see growing support for this not only among customers but also in customs authorities and banks," he says.

This progress could affect the other service providers adversely: if their customers see improvements in accuracy and speed from using new bill of lading services that are being provided free by the lines, they may think twice before investing the extra time, money and effort to go completely digital.

How will this unfold? The lesson from previous e-business developments in this industry is that adoption will take time. This leads to two key questions. First, will Bolero, with its head start, be able to establish a significant lead over the other service providers before they can build momentum? And second, who has got the cash to stay the course?

But whoever the winners are likely to be, the days of paper in international trade appear, finally, to be numbered. ❑