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## Electronic Data Interchange (EDI) and International Trade

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**E**lectronic data interchange (EDI) is a relatively new phenomenon which is making an increasing impact in Australia and around the world. It is being used increasingly between trading partners, both in domestic trade and in international trade.

The technology which is utilised in EDI transactions has been available since the 1960's. However, its application to trading transactions has, until the last couple of years, developed slowly and more slowly in Australia than in some other parts of the world. That incubation period seems just about over, and the next couple of years is likely to see the widespread adoption of EDI in both the domestic and the international context.

EDI is sometimes called "paperless trading". In the trading context, EDI involves one business' computers talking to another business' computers in such a way that transactions between them, such as orders for supplies, invoices, customs and transport "documentation", are completed by the exchange of electronic signals between computer terminals rather than by the exchange of bits of paper.

Increasingly the financial side of the transaction will be handled in the same way — with both documentary credit arrangements and actual payments being transacted electronically.

### **Benefits of EDI**

EDI promises — and can deliver — great benefits. It can bring to a wide range of business transactions the speed and efficiencies which modern telecommunications make possible. "Documents" which once moved at the speed of paper now move at electronic speed. EDI enables the integration of a business' internal and external communications systems — EDI makes it possible for the details of an incoming order to enter the business' information system for all and any purpose without the need for re-keying, as would have been required if the order had come in other forms eg by facsimile, mail or telex. Equally it allows the business placing the order to automate its reordering processes, if it wishes, so that when stock levels have got down to a certain level (perhaps as determined electronically) new stocks are ordered automatically.

With appropriate controls and safeguards, EDI can help eliminate the errors that can creep in when orders are being taken by telephone or mail. EDI can overcome the problem of orders

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source is acknowledged.

being lost either in transit or "in the system". It can facilitate the application of "just in time" philosophy to an extent which would be impossible without EDI because of the communications efficiencies and information systems integration which it enables.

Prompt movement of money can also be facilitated — EDI holds the key to enabling businesses to be paid promptly for the goods they provide or the services they render.

### **EDI and "Incoterms 1990"**

According to "Incoterms 1990", the rules for interpretation of trade terms published by the International Chamber of Commerce (ICC), the main reason for the 1990 revision of Incoterms was the desire to adapt terms to the increasing use of EDI (p106, para 3). The objective of the changes is to ensure that where, for example, the electronic equivalent of a paper-based bill of lading is used, the buyer is in the same legal position as he would have been in if he had received a paper bill of lading from the seller (*ibid*). Bills of lading provide:

- (1) proof of delivery of the goods on board the vessel;
- (2) evidence of the contract of carriage; and
- (3) a means of transferring rights to the goods while they are in transit, by means of the transfer of the paper document to the transferee of those rights.

Work is underway in the Comité Maritime International in relation to the electronic transfer of rights to goods in transit, in anticipation of the replacement of paper-based bills of lading by electronic transactions in that area. It is expected that the paper-based bill of lading will be replaced by EDI procedures in the near future. "Incoterms 1990" has been drafted to take account of that expected development (p115, para 18).

"Incoterms 1990" only came into effect in July 1990. It is difficult to foresee any problems which will arise in its treatment of EDI transactions. The International Chamber of Commerce will need to be, and no doubt will be, alert to such developments and will need to be flexible in looking to address them. But the approach taken seems to be the appropriate one.

### **What's all this legal fuss about EDI?**

EDI is in many ways the child of transactions which for hundreds of years have been conducted by people exchanging bits of paper — quotations, order forms, offers, acceptances, contracts, invoices, bills of lading, documents of credit, bank drafts. So why do business people have to worry about contractual niceties in EDI transactions when ten years ago they relied on a few lines of writing on bits of paper? Those were questions asked by some of Australia's robust business people at a major EDI conference at the end of March 1990. These business people reinforced the point by stressing that, at least for starters, EDI relationships will be mainly between businesses with established relationships; businesses which trust one another; businesses which regard reaching a commercial resolution to any problems as more important than sheeting home blame or liability for some minor hiccup.

Because in so many respects, EDI is just the electronic analogy for the bits of paper with which business has dealt for hundreds of years EDI does not seem to give rise to any need for any radical rethink of established ways of doing trade.

Although there is force in the analogy between paper-based trading and EDI, however, there are also important differences. In the first place, over the hundreds of years that we have been buying and selling things with bits of paper, the courts in Australia and in the countries with which we do most of our trading have worked out most of the hard but important questions — like when an acceptance is made and thus a binding contract is entered — or conversely, the

**"if matters are not carefully spelt out in advance, there will be uncertainty about what might happen in the event of a dispute"**

latest time at which an offer can be revoked.

Some of that law translates readily enough to the electronic analogy of paper transaction (ie EDI). But some of it does not. For example, when is an acceptance effective where, for example, the acceptance is sent to an electronic "mail box"? Is an order which was automatically generated by a malfunctioning computer, without any human intervention, a binding offer or acceptance? Is the fact that an EDI transaction is recorded on CD-Rom, with electronic 'signatures' of the parties, sufficient to satisfy the requirements of laws like the Statute of Frauds which require that certain agreements be 'in writing' and 'signed' by the parties?. Do the *Uniform Custom and Practice for Documentary Credits (UCP)* and the *Uniform Rules for Contract Guarantees* apply to EDI-based transactions which in all other respects would attract their provisions (their drafting seems to envisage paper-based transactions — see, for example, UCP Articles 2, 4, 22(a), 25, 26 and 35 and Articles 6, 7, 8 and 9 of the Uniform Rules)?

If matters are not carefully spelt out in advance, there will be uncertainty about what might happen in the event of a dispute. Inevitably there will be disputes — EDI will be so pervasive that that is certain.

There is also the unhappy fact that businesses do fail. When a company goes into liquidation, for example, it becomes a vitally important question as to whether title to a particular shipment of goods had passed or as to whether a particular payment has been made, or is still incomplete and capable of being stopped.

The attitude that problems within industries should be sorted out by negotiation and without resort to litigation is probably to be encouraged. But our courts are full of examples of former trading partners unable to compromise and resolve matters without the intervention of the courts. In those cases it is vitally important to know just what the legalities are. Prudent business people will want to know that in advance. And they will derive little satisfaction from seeing their company's name in the court lists — even if in the end they prevail — when they reflect that a well-drafted agreement, negotiated at the outset might have saved all that trouble and expense.

Care will also need to be taken at the outset to ensure that EDI procedures are satisfactory from the point of view of any customs, taxation, banking and regulatory laws, and administrations which will be involved.

So, as we have seen there may be different legal consequences depending on whether a transaction is done by EDI or by traditional means.

### ***Evidence***

In their present state, Australia's laws of evidence are ill-adapted to cope with proving what happened in an EDI transaction. Those laws, which determine what can and what cannot be proved in a court, differ around Australia from one State to another. In some States the only 'evidence' of a paperless transaction may simply be inadmissible. The evidentiary problems are greater in common law countries like Australia than in civil law countries, according to analyses done by the TEDIS (*Trade Electronic Data Interchange Systems*) study begun in 1988 by the Commission of the European Communities.

So Governments as well as Australian traders wishing to take advantage of EDI's efficiencies need to overcome legal obstacles standing in the way of the realization of the benefits which EDI promises.

The Law Reform Commission reported in 1987 recommending reforms which would overcome the problem which now exists in proving electronic transactions and computerised records. Unfortunately those recommendations have, so far, fallen on stony ground.

The previous Federal Attorney General, Mr Lionel Bowen, said before his retirement that a Bill to give effect to them would be tabled in Federal Parliament

***"there is a danger that our guard will drop when we do these things electronically ..."***

for comment. That has not happened yet, and in any event the proposed changes were only to apply in Federal Courts, not State Courts. That approach is likely to further complicate the legal obstacles to adoption of EDI by Australia's traders.

### ***Risk Allocation***

In relation to certain transactions, the question of who carries the risk — and so, who bears a loss if one is suffered — will depend on whether the transaction is by EDI or by paper. The law of negotiable instruments (cheques etc) does not apply to the movement of money by electronic means. The law of negotiable instruments has well-established rules, which are generally conceded to be equitable, to allocate losses when someone is defrauded in a cheque transaction. But the law is not so clear, and may not be so equitable, in an EDI financial transaction. Under Article 18 of the UCP, for example, banks are not liable or responsible for the consequences of any delay and/or loss in transit of any messages, letters or documents, or for delay, mutilation or errors arising in the transmission of any telecommunications (Article 18 — see further below). A similar provision allocating to the customer rather than the bank risk and liability from problems with telecommunications is contained in US domestic law (*Uniform Commercial Code* ss5-107 (4)).

Reference has already been made to paper bills of lading for carriage of goods by sea which themselves confer title in those goods. The goods can be sold while at sea by selling and transferring the paper. What will the EDI analogy be? Will it be foolproof against fraud? Or at least as foolproof as the existing systems are.

That leads into the fourth point — the question of security generally.

### ***Security***

Security of EDI systems is very important. Such systems are only as secure as their weakest link. The obligations of all participants to maintain security should be clearly spelt out. Security is needed against the fraudulent and against the malicious. We have well-developed — albeit not totally foolproof — means of ensuring that an order for copper wire is authenticated and delivered to the correct address; and that the payment for it is sent to the correct person. There is a danger that our guard will drop when we do these things electronically — that we will fall into the trap of regarding the computer — including the telecommunicating computer — as infallible. Without adequate security, EDI systems are more vulnerable than traditional paper-based systems — as computer hackers have demonstrated.

Computer viruses are another danger. Their capacity to infect network computer system is all too obvious to those who read computing magazines and the telecommunications supplements of our daily newspapers. Such viruses could reek havoc if they got into the systems which keep business running. Increasingly those systems will be EDI systems. If anything, our vulnerability is increased as business embraces the "just in time" philosophy of management. Because EDI holds out the promise of greatly reduced response times, and the promise of the ability to monitor stock levels and movement of goods in transit, businesses which aim to be efficient are looking increasingly to working with reduced levels of stocks, spare parts and components. The danger is that a computer virus could create the situation in which, for example, our major motor vehicle manufacturers have to close down their assembly lines for days because something has gone wrong with the EDI relationship with a major component supplier.

The banking industry, which has had long experience with electronic transactions (initially by electric telegraph, and more recently by electronic funds transfer etc) has also seen numerous examples of error. Banking and security are synonymous. Bankers have always understood that where big sums of money are involved, both accuracy and security are vitally important. But even in banking

**"... EDI relationships require considerable ground work to be done in advance"**

with closed systems used only by bankers, there have been problems of fraud and problems of error which have cost enormous sums of money.

Some errors can be sorted out readily enough, particularly in an establishment industry like banking where there is a closed community and common traditions. Even in banking, however, some errors still cost somebody big money — for example, where money is transferred into the wrong account and some unscrupulous person makes off with it, or where money is paid without proper instructions to a company which then goes into liquidation. Somebody bears the cost of these things. The question is who.

Inevitably similar problems will arise with EDI transactions. For one thing, those transactions will give rise to large payment orders. Secondly, very valuable commodities will sometimes be involved in these transactions — for example a ship load of wheat or iron ore. The danger there is not so much that somebody will fraudulently make off with the cargo, but that somebody will fraudulently create the appearance that they have title to the cargo and will fraudulently sell it or raise money using it as security.

Security issues are important also in paper-based trading relationships. The possibility arises where trade is paper-based that, for example, payment instructions are forgeries, cheques are stolen, and that holders of bills of lading are not who they purport to be. Analogous problems can arise with electronic-based transactions, and need to be guarded against in EDI systems. If security — including electronic security, physical security, and personnel security — is not adequate, the way is opened for serious fraud and other malpractice — moneys paid to persons not entitled, goods bought from persons without title to them, people suffering loss as a result of relying on spurious 'documents' of credit. The greater speed and efficiencies of EDI systems bring increased vulnerability to large scale malpractice if we are not wary. Our guard against the security risks needs, I believe, to be given more attention with electronic-based systems than we were used to doing with paper-based ones.

#### ***EDI Trading Partner Agreements***

One of the reasons that the technology enabling EDI has not been adopted and applied more quickly and more widely is that EDI relationships require considerable ground work to be done in advance. For one business to start dealing with another by EDI is more complex than it is, say, to place an order by facsimile. An EDI relationship requires numerous matters to be sorted out in advance. The businesses proposing to enter an EDI relationship should, before they begin trading by EDI, agree on:

1. The categories of communication and transaction which can be conducted between them by EDI. The trading partner agreement should probably stipulate that each party will recognise the electronic messages and electronic signatures of the other, and should address other evidentiary issues which might arise.
2. Technical matters with protocols and standards, so that the "Tower of Babel" effect will be avoided.
3. Their respective obligations, and perhaps also the obligations of a third party, to record messages passing back and forth so that appropriate records will exist both against the contingency of disputes arising, to satisfy any legal requirements (eg under taxation, customs, banking and companies legislation) as to records required to be kept, and to ensure the adequacy of other 'audit trail' aspects.
4. Their respective obligations as to security, in all its aspects (including such things as use of encryption, authentication of messages, and call-back procedures).
5. Their respective obligations for ensuring that their own computer systems

***"the parties should not forget, of course, ... to resolve the non-EDI issues which become the standard terms in any on-going trading arrangement ..."***

are not only secure but also are reliable.

6. Their respective obligations when, for example, one of the businesses suffers a system failure, or when one of the parties receives a message which is incomprehensible or incomplete. The agreement might address the obligation of each party, upon becoming aware of any breach of security or system breakdown, to advise its EDI trading partners and to take appropriate steps to prevent damage arising as a result.
7. Dispute resolution procedures which are to apply in the event of problems arising.
8. Risk allocation and liability questions, and possibly also insurance. The liability questions will include whether, for example, the default of one party should expose it to liability for consequential damages suffered by the other resulting from any delay, omission or error on its part in relation to the electronic transmission or receipt of a message. Should liability depend on "fault"? What if neither party can be shown to be at fault?
9. The parties will probably want to agree in advance as to the communications networks and third party service providers whom they will use, especially because of the bearing which those things have on security, reliability and possibly on legal liability as well. Potential trade practices pitfalls arising out of Australian prohibitions on tying arrangements will need to be borne in mind in this regard.

The parties should not forget, of course, also to resolve the non-EDI issues which become the standard terms in any on-going trading arrangement — specifications in relation to the goods being traded, payment terms, time and transport requirements, force majeure, proper law clauses, and so on.

#### ***Players Other than the Trading Partners***

EDI trading arrangements involve more players than just the buyer and seller of the goods in question. For the telecommunications system to operate in EDI mode as intended telecommunications carriers, software suppliers, value added network providers etc link the businesses together. If their security is lax, for example, similar problems can arise as if the security of the trading partners themselves is lax. Likewise systems failure involving the communications links is likely to have the same — or even greater — practical impact as a system failure at one end or the other. Desirably, therefore, the mutual obligations which the trading partners take on (as to security, reliability etc) should also be accepted by these other players. Unfortunately, at least from the perspective of the trading partners, telecommunications carriers around the world — whether publicly or privately owned, and whether domestic or international — have traditionally refused to accept any liability for losses which their shortcomings might cause. That is regrettable because the entity controlling the telecommunications system is likely to be in the best position to effect risk avoidance and risk reduction. The failure by carriers to accept liability may discourage the adoption of EDI.

As EDI is increasingly linked into the financial side of the transaction ('documentary' credits, electronic funds transfers in payment for goods provided in an EDI transaction etc) the question of the liability of the banks, and their preparedness also to commit themselves to similar obligations as are accepted by trading partners under EDI trading partner agreements, becomes important. The ICC's "*Uniform Customs and Practice for Documentary Credits*" might need examination in this regard. Although the *Uniform Customs and Practice* requires banks to examine all documents with "reasonable care" to ascertain that they appear on their face to be in accordance with the terms and conditions of the credit, they include, for example, the following Articles:

#### **"Article 17**

Banks assume no liability or responsibility for the form, sufficiency,

accuracy, genuineness, falsification or legal effect of any documents..."

"Article 18

Banks assume no liability or responsibility for the consequences arising out of delay and/or loss in transit of any messages, letters or documents, or for delay, mutilation or other errors arising in the transmission of any telecommunications..."

Given those caveats on the banks' obligations, it becomes all the more important to ensure that EDI systems handling documentary credits and related documentation are secure and reliable.

***EDI and the ICC***

The ICC has played an important role in relation to EDI. In 1987 it adopted the *Uniform Rules of Conduct for Interchange of Trade Data by Teletransmission* (UNCID). A special joint committee of the ICC which prepared UNCID included special representatives of the United Nations Economic Commission for Europe, the Customs Co-operation Council, the UNCTAD Special Programme on Trade Facilitation, the Organization for Economic Co-operation and Development, the International Organization for Standardization, the Commission of the EEC, the European Insurance Committee, the Organization for Data Exchange via Teletransmission in Europe, and the Secretariat of UNCITRAL. UNCID's efforts were incorporated into EDIFACT as part of the United Nations Trade Data Interchange Directory. UNCID aims "at facilitating the interchange of trade data effected by teletransmission, through the establishment of agreed rules of conduct between parties engaged in such transmission" (Article 1).

There is a long way to go in developing an adequate legal and agreement framework for EDI. The ICC is an appropriate organization to work to ensure that the legal issues are tackled so that potential benefits of EDI to international trade can be realized.

*This article is an extract of a paper was presented to the Conference on "Developments In International Trade Practice" held by the Australian National Committee of the International Chamber of Commerce in Sydney on Thursday 26 July 1990.*

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