4. That the law relating to barter or exchange transactions is relatively undeveloped may be due to the fact that, on the domestic level, such transactions are apparently not very frequent. Where they do so occur, the provisions on sale will be made applicable by analogy in some countries or, in other countries, the comon law principles applicable to sales will apply. However, there is evidence that international barter or exchange transactions are now quite frequent and that their economic function and importance may be considerable. Thus, so-called "compensation" transactions, amounting to an exchange of goods, are often resorted to in order to ease foreign exchange difficulties.

5. It is submitted that the international barter or exchange transaction is of sufficient commercial importance to warrant further study. Such a study would probably show that a unified régime in respect of international barter transactions could not be satisfactorily established by merely widening the scope of application of the draft Convention on the International Sale of Goods so as to include such transactions. First, the provisions of that draft Convention do not, in every instance, meet the issues that are inherent in a barter transaction, and difficult problems of interpretation would arise because of the fact that goods or another consideration, not being money, are substituted for the purchase price in money. Second, the régime of remedies for non-performance would have to be adapted, in particular in connexion with the remedy which consists in a reduction of the price. Third, the sales provisions do not contain provisions relating to the supply of technical services and documentation in respect of the goods sold; under many international exchange contracts part of the consideration consists in the supply of such services and documentation.

6. It is suggested that the Commission retain provisionally the contract of international barter or exchange in its programme of work, pending a study by the Secretariat on the scope and contents of a possible uniform régime. Such a study could be submitted to the Commission at its twelfth session in 1979.

ANNEX III*

Note by the Secretariat: some legal aspects of international electronic funds transfer

INTRODUCTION

Background

1. At the Commission's fifth session (1972), in connexion with the consideration of the item "International payments", attention was drawn to the significant changes in international banking practices brought about by recent developments in electronic payment methods and procedures and the hope was expressed that the Commission's work in the field of international payments would take account of such developments.[a] At its third session, in connexion with its assessment of the desirability of preparing uniform rules applicable to international cheques, the Commission's Working Group on International Negotiable Instruments requested the Secretariat "to obtain information regarding the impact, in the near future, of the increased use of telegraphic transfers and of the development of telecommunication systems between banks on the use of cheques for settling international payments".[b]

2. The present note, prepared in the context of the Commission's impending consideration of its future programme of work, seeks to outline those legal issues in international electronic funds transfer with respect to which the Secretariat's inquiries among banking and commercial circles have revealed a need or a desire for action on the international level. It may be noted in this connexion that this subject was considered at some length at the last session of the UNCITRAL Study Group on International Negotiable Instruments (19-22 September 1977), a summary of which deliberations is included in this note (see paras. 36-48 below).[c]

The existing system

3. Electronic funds transfer (EFT) is a general term by which is comprehended all those developments in the field of payments which have as their objective, or effect, the total or partial elimination of the ordinary paper-transmitted order and the substitution therefor of machine-processible electronic impulses.

4. A numerous variety of electronic funds transfer systems (EFTS) have been developed or may be contemplated, many of which are currently in use in various countries, though largely for domestic rather than international transfers. These range from a simple system in which paper-born data is encoded by the first bank on to a magnetic tape for automatic processing by itself and subsequent banks to which the tape is delivered to such fully automatic and computerized system as the so-called point-of-sale transfer system; in the latter, the system's computer link-ups enable an authorized user, by inserting a plastic card into a terminal located at a payee-merchant's premises and punching the requisite entry in the keys, to cause funds to be transferred from his account at a bank to the merchant's account at the same or other participating bank almost instantaneously (i.e. in "real time", as it is referred to).

5. In the context of international payments, however, the two most common "electronic" means of transfer at present are still transfer by cable or by telex. These two modes of transfer may be illustrated by the following simple example. A buyer, B, wishing to transmit funds to a seller, S, in another country approaches bank X where he maintains an account and requests it to transmit for his account a specified amount to S. Bank X, having debited B's account for the amount in question or being otherwise put in funds, sends an order by cable or by telex to bank Y, its correspondent bank in the place where payment is to be made, requesting it to pay S the specified amount and debit bank X's account. Bank Y carries out the order by paying the amount personally to S, by forwarding a bank cheque to him or by depositing the amount in his bank account in bank Z, where this is known.

6. It may be observed with respect to these modes of transfer that they are at best only quasi-electronic, particularly as regards the cable transfer, in that the end-product contemplated is a piece of paper in which the payment order to bank Y is embodied and which is not directly susceptible of electronic processing by bank Y.

Future trend

7. The future trend is towards further reduction, if not eventual elimination, of the mediating role of paper in such transactions. This would not only speed up the process considerably but would lower costs by facilitating retrieval of information and by eliminating tedious manual checking of documents as well as opportunities for clerical error. A fully electronic transfer system would, in the example given above, envisage a link between the computers of banks X and Y and possibly Z either directly or, where such operates, indirectly, via a message-switching network embracing a large number of other banks. The payment order could then be executed almost instantaneously by means of credit and debit actions by the computers involved in response to electronic messages originating from the X bank computer.

8. A further requisite of a fully automatic and integrated EFTS is an arrangement for clearing of the transactions between originating and receiving banks such as is exemplified by the "automatic clearing houses" (ACH) which operate in the United States of America. These are regional associations of banks and other financial institutions each of which maintains facilities through which are channelled

---

Fifoot, *Law of Contract*, third Australian edition, by J. G. Starke and P. F. P. Higgins, p. 211.

[c] Halsbury, *Laws of England*, vol. 29, 3rd ed. (1960), p. 387.

* Originally issued as A/CN.9/149/Add.3 on 1 May 1978.

[a] UNCITRAL, report on the fifth session (A/8717), para. 57 (Yearbook . . . 1972, part one, II, A).

[b] Report of the Working Group on International Negotiable Instruments on the work of its third session (1975), (A/CN.9/99), para. 136 (Yearbook . . . 1975, part two, II, 1).

[c] Attention may also be drawn to the fact that at least one State (United States of America) has formally proposed the inclusion of the item on electronic funds transfer in the Commission's future programme of work. See chap. IV, para. 17, of the present report.

all electronic funds transfer communication between and among its members. Each such message is received, recorded and forwarded electronically by the ACH, which on the oasis of such records effects settlement, according to the association rules, between the members' accounts either immediately or, more commonly, at the close of each busines day or on the day following.

9. The automatic clearing function may, of course, also be performed by a bank, such as a central bank, at which all other banks maintain deposits. This is the case, for example, with the Federal Reserve System in the United States which for long has performed automatic clearing functions for banks on a regional basis and most recently has decided to link up these regional clearing facilities into a national network.[d] A similar automatic clearing function is performed in France by Banque de France. It does seem doubtful, however, that direct automatic clearing facilities between private banks could be easily established on the international level in view of the enormous political and economic policy questions that must first be resolved. Such a system is, however, feasible among central banks and others so permitted by the law of their own domiciliary States such as the banks members of the Bank for International Settlements.

10. Although no fully integrated and automatic funds transfer system exists so far at the international level, a noteworthy development along these lines is SWIFT—Society for World-Wide Interbank Financial Telecommunications. SWIFT, which is based in Brussels, is an association of several hundred banks including a number of central banks, in Europe and North America. Its principal function is to maintain facilities for automatic message transmission between its subscriber-banks via an electronic network linking the members' computers and other data-processing devices. While SWIFT does not itself function as an automatic clearing-house, its effect is nevertheless to provide such rapid communication between and among all the banks involved that near-instantaneous crediting and debiting of accounts maintained at such banks becomes feasible, subject only to subsequent settlement between the banks in an agreed manner.

Analysis

11. Two levels of issues arise in relation to electronic funds transfer in international payments: the first is of a general nature and the second relates to the legal relationship between specific parties to an EFT transaction.

Issues of a general nature

12. One concern that features prominently in any discussion of this subject is that of the security of EFTS from unauthorized, and particularly fraudulent, access. This concern is accentuated by the following generally recognized facts. Firstly, a computer-based system is extremely vulnerable to manipulation by anyone with the necessary expertise and access; many apprehended embezzlers, especially employees, have often indicated that they had been tempted to try by the seeming simplicity of the process and the large reward that could be reaped in a computer-aided fraud. Secondly, it seems very doubtful that a system could be devised that is completely fraud-proof, although the level of sophistication required of the thief could be made very high indeed. Thirdly, whereas computer fraud is relatively easy to commit, its detection can be very difficult and costly not only because there is no physical paper to examine for alterations, etc. but also because the computer can itself be commanded to "forget" (i.e. erase) any traces of the fraudulent transactions, leaving, as it said, no "audit trail".[e]

13. The problem of security is presumably made more difficult by the international linkages required to effectuate international funds transfer by electronic means. There are more points at which access can be gained to the system, the level of effective security available at the various points may be quite uneven, especially if, as is often the case, lines have to be leased from public carriers in the various countries linked; and such breaches of the security of the system as do occur may become even harder to track down.

14. A second concern frequently expressed relates to the effect which the development of computerized electronic data processing, of which EFT is an aspect, may have on the enjoyment of the right to privacy. The computer's immense capacity for gathering, storing, retrieving and extrapolating from, data about any and all subjects poses the risk, it is said, that no fact about participants in an EFT scheme could remain private and secure. This goes not only for the bank's customers but also for the bank itself.[f]

15. Such concern has led in many jurisdictions to strict laws regulating not only the kinds of information which may be collected or retained, but also the conditions for their use or publication. A recent example is the Federal Republic of Germany's Federal Data Protection Act of 27 January 1977.[g] The problem here for the international transaction, quite apart from the substantive one of the protection of privacy, is that individual jurisdictions may enact privacy laws which are divergent not only in the duties imposed on operators of an EFTS but also in the level of protection from dissemination accorded particular kinds of financial information. This would not only complicate the compliance situation of the banks involved but would make for uncertainty in a field which above all requires certainty, confidentiality and finality of transactions. Information which under the law of one jurisdiction was protection from disclosure might, by reason of a bank's involvement in EFT transactions with a bank in a different jurisdiction which did not accord similar protection to such information, become publicly available.

16. One other source of difficulty which would require cooperation on the international level relates to the legal status, particularly in litigation, of records generated by an EFTS. The large sums of money which may be at stake in such a litigation could make this issue a quite important one.

17. The problem arises because in place of the written paper record, the system substitutes in whole or in part electronic data stored only in machine-readable code form on magnetic or paper tapes, computer cards and memory devices. While this in general causes no problem under the civil law systems, which it appears, would have no difficulty admitting in evidence a properly-authenticated computer print-out, a different consequence may attach to this form of record under a common law or common-law derived legal system. First of all, business records are in general admissible only as an exception to the hearsay rule[h] and then only under certain strict conditions, such as that of entries in question must have been made contemporaneously with the event recorded, by a person who has personal knowledge of the transaction and is unavailable as a witness. The question thus is whether a computer-kept record can meet these conditions. Where, for example, one computer (the receiving bank's computer) is triggered to make complicated calculations and entries, even generate conclusions, by another computer (e.g. the ACH computer) which itself is activated by entries made in the terminal of a third computer (the originating bank's computer) at some far-off location, is the resulting record made by a person? What about the elements of personal knowledge of the entry and of availability of the maker as a witness?

18. Similarly the common law best evidence rule requires produc-

[d] See *The New York Times*, 17 April 1978, p. D1.

[e] Thus, in one case which occurred in the United States, access was gained by a competitor to a company's highly valuable trade secret by "tapping" from outside of the company's premises, the line by which the company's central computer communicated with equipment at an outside location. This example also makes the point that companies often have a proprietary interest in the security of their electronic communication system extending beyond simple protection of their funds.

[f] The fear that this would give central banking authorities a new source of information with which to monitor the international banking community is cited as one reason for the decision not to make of SWIFT a full-blown clearing system. See article by W. Hall in the June 1973 issue of the London magazine *The Banker*.

[g] Gesetz zum Schutz vor Missbrauch personenbezogener Daten bei der Datenverarbeitung (Bundesdatenschutzgesetz-BDSG) vom 27.1.1977 (BGB1. 1 S.201).

[h] The hearsay rule holds inadmissible in court any testimony or written evidence of a statement made out of court offered to establish the truth of the matter asserted in the statement. See Richardson, *On Evidence*, §200 *et seq.* (10th ed., Prince) (New York, Brooklyn Law School). Since a computer print-out is in fact a written statement made out of court it is hearsay evidence and as such inadmissible, save as an exception, to establish the truth of what is therein contained.

tion of the original entry in order to prove the contents of a writing.[i] Since in the case of a computer-kept record the original entry consists of patterns of electronic impulses captured on tape or in the computer's memory devices, none of which can be apprehended by human beings, except in the form of print-outs, the argument could be made that such print-outs are not "original" records and so are inadmissible as the best evidence of the matter therein contained. There is the point, furthermore, of the self-serving nature of a computer print-out generated specifically as evidence in the dispute at hand.

19. The difficulties which can arise in this context may be illustrated by the following example. Company A, domiciled in State X, a jurisdiction in which computer print-outs are admissible as evidence of the matter therein contained, is in dispute with Company B, domiciled in State Y, a jurisdiction which is strict about the inadmissibility of such evidence. Under the rules of private international law, matters of evidence and procedure are governed by the rules of the forum (*lex fori*). Suppose then that either State X or State Y would have jurisdiction to entertain an action on this matter. The consequence, assuming no other source of evidence, would be that a different result would be arrived at depending on whether the action was brough in State X or in State Y. Furthermore, Company B would be in a position of being able to assert against Company A in State X a claim or defence, based on the print-out, which Company A could not assert against Company B in State Y.

20. Although some attempt has been made in a number of common law jurisdictions to resolve certain of these issues either by statute or by pragmatic judicial interpretation of the rules of evidence,[j] it is doubtful whether the underlying problem can be resolved short of some form of international agreement on the issue.

Specific legal questions

21. A number of questions arise as to the legal relationship of parties to an EFT transaction. Before considering some of these issues in detail reference should be made to a conceptual question of some practical significance. This is the debate which is taking place in a number of countries as to the category of legal rules under which electronic funds transfer operations should be subsumed: the special rules governing the bank collection process or some other régime such as the general law of contracts or, as some have advocated, a specially-enacted EFT law? This debate has generally taken place against the background of demands for greater consumer protection in response to the fact that banks have so far conducted their EFT activities under private contractual arrangements between themselves and the other parties concerned, including their customers, who, it is said, may be too weak to secure equitable terms for themselves.

22. The importance of this debate for the international payment situation is that it can well be expected to lead to EFT legislation in individual countries which, if not harmonized, will tend to complicate the position of banks engaging in international electronic funds transfer, especially if such banks have operations in many countries. Even the mere fact that the domestic EFT transaction is subject to one régime of rules while the international transaction is subject to a different régime could require costly adaptation in many cases.

23. As far as the international transaction is concerned, it will in all likelihood continue for the time being to be regulated, at least as regards the relationship between the financial institutions involved, by private contract. This raises the question as to the adequacy of private contract to provide solutions to all the problems that may possibly arise in EFT operations. While recognizing the wisdom of leaving it to private parties to run their own private commercial affairs, especially where such parties are sophisticated financial institutions, one may nevertheless draw attention to certain limitations of private contract in this regard. Firstly, whilst a contractual arrangement may provide an excellent régime for resolving disputes between the parties thereto, it generally is of limited value in resolving questions as to rights and obligations of third parties. Thus, for example, in an EFT transaction involving a transferor, A, his bank, B_1, a clearing-house, C, the transferee, D, and the transferee's bank, B_2, contractual agreements between A and B_1, between B_1, C and B_2 and between D and B_2 would have very little to contribute on the question of whether C or B_2 may be liable to A, or whether C or B_1 may be liable to D. Secondly, even as between the parties involved, a contract may be silent as to a particular issue, e.g. as to who, as between B_1, C and B_2, bears the risk for an unexplained computer error causing loss.

24. These considerations would thus tend to favour the idea of a comprehensive, international legal framework for electronic funds transfer, even if this were only optional or supplementary to private contract.

25. Turning now to legal issues that may arise in a specific EFT situation when something goes wrong and the need arises to allocate responsibility and consequent loss among the parties involved, it should be observed that, quite apart from fraudulent and other unauthorized tampering with the system—matters already alluded to above—any number of things could go wrong in an EFT system. As a result, say, of computer malfunction, the payer's account might be debited with too much or too little; the account of the intended payee might be debited while that of the intended payee might be credited; the account of a third party involved in the transaction might get debited or credited; or the transfer order might go unexecuted altogether or be only partially executed. The possibilities might be illustrated by the following hypothetical examples.

Bank-customer relationship

Case I: responsibility for error, mistake, computer malfunction.

26. A, a businessman in country X, instructs his bank to transmit a substantial sum of money to B, a businessman in country Y. Part of the money was in payment for goods shipped by B and part A's contribution to a fund for joint exploitation of a highly lucrative business opportunity. Payer bank transmits transfer order by electronic medium through an ACH to B's bank. Because of slight malfunctioning of ACH computer order to B's bank to credit his account omits special security code, so it is discounted by the bank's computer as not being genuine though the order could have been easily verified. By the time the error is discovered, it is too late. The business opportunity on which A had been relying to rescue his business from financial difficulties has fallen through and A is in bankruptcy. B must take his place in line with other creditors.

27. *Quaere*: (1) What, if any, is liability of A's bank:

(*a*) To A? Could A argue that the bank had chosen the means by which it was going to carry out the transfer and so should be accountable for any errors?

(*b*) To B? Could a payee in such circumstances have a claim against the originating bank or is the absence of a direct contractual relationship between the two fatal to such claim? (Cf. cases of transfer of funds by cable or telegraph where in some countries the payee has generally been unable to maintain a claim against the originating bank when something has gone wrong.)

(2) What, if any, is liability of ACH:

(*a*) To A? Is ACH assimilated to legal position of originating bank vis-à-vis A?

(*b*) To B? Is ACH's legal position similar to that of a telegraph company or other message carrier used to transmit long-distance transfer orders between banks?

(3) What, if any, is liability of B's bank:

(*a*) To A? Is legal status of receiving bank vis-à-vis A that of subagent?

(*b*) To B? Is legal relationship between B and his bank as regards the transaction in question of creditor-debtor?

Case II: time and finality of payment issues.

28. A and B both maintain accounts at the same branch of a foreign bank X. A, having received value from B, instructs X to transfer an agreed amount from A's account to B's account as of a

[i] See Richardson, *op. cit.* §297.

[j] See, for example, as to the United States, the Uniform Business Records as Evidence Act, 28 U.S.C. (United States Code) 1732 (a), the Uniform Photographic Copies of Business and Public Records Act, New York Civil Practice Law and Rules, rule 4539 and also *Transport Indemnity Co.* v *Seib*, 132 N.W. 2d 871 (Nebraska, 1965); and, as to the United Kingdom, the Civil Evidence Act, 1968, S.5.

specified date. X, upon receipt of A's instructions, sets in motion the computer process whereby A's account will be debited and B's credited with the stated amount. Under X's internal EFT procedures, a customer's final balance with respect to in-house transactions is determined as of the day following such transactions, leaving the possibility of reversing erroneous entries at that time without the customer's knowledge. Subsequent to the debit-credit instructions to its computer, but on the same day, X learns of A's insolvency and on the next day reverses the debit-credit entry in the accounts of A and B since on the basis of that transaction A's account is in a net debit situation.

29. *Quaere*: (1) What is the legal position of X vis-à-vis B? Could B claim repayment of the amount in question on the ground that payment was complete as soon as the payment instructions were accepted and the process commenced, or, at any rate, as soon as the credit entry was actually made? Could X, on the contrary, argue, by analogy to the cheque-collection situation, that any credit entry must remain provisional and conditional until it had actually "collected" the requisite funds from the payer, A; or alternatively, that the transfer was not complete until B had received notice of the credit in his favour?[k]

(2) When in general is payment "final" or "complete" in an electronic payments situation? Since in a fully computerized system execution of the transfer order in terms of the appropriate debiting and crediting could be accomplished in a matter of minutes at most (the projected time for a typical SWIFT message from one end to the other is one minute), how are factors such as bankruptcy, death, incapacity, revocation of collecting bank's authority and stop-payment orders, etc. which might ordinarily interrupt the payment process, to be accommodated in an EFTS? What about bank errors, including computer and clerical errors? Should all EFT entries be considered provisional or should a general and independent power be recognized in the bank to reverse, and so undo, entries subsequently discovered to have been erroneous?

Case III: the problem of "float".

30. A instructs his bank, X, to transfer a very substantial sum of money to B's account in a foreign branch of the same bank to reach B by a certain date. A assumes that the transfer will be effected by cable and, wishing to be very cautious, allows more than the usual number of days between the date he issues his order and his account is debited and the date when he expects the payment to reach B. X, however, transmits the funds on the last day by which B must receive payment through an EFT network of which it has just become a subscriber.

31. *Quaere*: (1) Can A claim from X interest on the transmitted funds from the time his account was debited to the time when it actually was credited to B?

(2) Can B claim interest on the same funds for the same period on the ground that the transaction should have been transmitted electronically on the first day, or alternatively, from the time when the payment could have reached him if effected by cable promptly on receipt of the transfer order to the time when it actually was credited to his account?

(3) Who in general is entitled to the benefit of the "float" in an EFT operation?

Interbank relationship

32. As with the bank-customer relationship, many questions can arise with respect to the legal relationship between banks involved in an EFT operation. These questions tend in the main to relate to the allocation of responsibility, and hence the distribution of the consequent loss, when something has gone wrong in the transfer operation. Thus, for example, suppose that in the hypothetical case put above (case I, para. 26 above) the fault lay in the failure of the receiving bank to credit its customer's account with items properly communicated to it and the originating bank incurs liability as a result? A question would arise as to what remedy, if any, the originating bank had against the receiving bank? Similarly, the receiving bank could incur liability as a result of acting on instructions emanating from the originating bank's malfunctioning computer or as a result of fraudulent tampering with the computer programme by employees of the originating bank who, it is claimed, were negligently given access to the originating bank's terminals. In addition cases may arise in which there is admitted error but it is not clear as to where in the system the malfunction occurred, how it occurred, or who is to blame for it.[l]

33. All these matters would in a typical EFTS be regulated by private agreement between the banks concerned, or where there is an intermediary association, such as a clearing-house, by the rules of the association and by the established customs and practices of banks in their relations among themselves. The sole question then is whether these consensual rules and the established practices provide an adequate and satisfactory regulatory régime for a phenomenon of such far-reaching implications as electronic funds transfer bearing in mind especially the limitations to self-regulation some of which were discussed above (para. 23).

34. One might also recall in this connexion the various other aspects of the subject of automatic data processing in international trade evidenced by such developments as the current study by the International Chamber of Commerce of the possibility of replacing negotiable documents of title (bills of lading, warehouse receipts, etc.) by electronic data communication, the related project under study by the Economic Commission for Europe and the commonly-held view that negotiable instruments in general—bills of exchange, promissory notes, cheques, etc.—should one day be replaced in their international payment function by EFT. All of this would seem to speak to the necessity for a comprehensive, uniform and integrated legal framework for electronic data processing (including EFT) in international trade.

35. Many of the other interbank and interinstitutional issues as, for example, the kinds of institutions which may engage in EFT business, the question of fair access to any EFT facilities for smaller institutions, the existence or otherwise of any anticompetitive aspects to EFT operations are essentially domestic law matters and will not be discussed in this paper. It may, however, be observed that if, as it now seems realistic to suppose, one EFT organization were to emerge as the sole or primary medium for international electronic funds transfer, interest would surely grow and pressure mount for bringing what was effectively a monopoly of a vital aspect of international trade under a regulatory régime other than private contract.[m] Such pressure would undoubtedly increase if the EFT system in question were at any point to add any clearing function to its services.

SUMMARY OF DELIBERATIONS OF THE UNCITRAL STUDY GROUP

36. At a recent session of the UNCITRAL Study Group on International Payments (19 to 22 September 1977) the issues outlined in paragraphs 37 to 48 below were identified as requiring study with respect to the role of EFT in international payments.

37. *Time of payment. When is payment final?* The Group was of the view that this was an issue of paramount importance in international electronic funds transfer.

38. The Group reached the preliminary conclusion that there appeared to be a case for a uniform international rule on this question.

39. *Allocation of liability for errors, mistake and fraud.* It was

[k] It will be recognized that these were the basic facts and issues in the English case of *Momm and Others* v. *Barclays Bank International Ltd.* [1976] 3 All E.R. 588. In that case the court held that payment was complete once X decided to accept A's transfer order and set in motion the computer process for effecting such transfer and B could, therefore, reclaim the sum in question from X. It is widely recognized that the decision in this case could quite conceivably have gone the other way and might still if the same issues came up in a different jurisdiction. The significance of the case in this context is that it points up how ill-defined, unclear and uncertain the rules regarding EFT still are and the potential for divergent developments under individual national laws in the absence of an internationally-sanctioned uniform legal framework. It also underlines the essential insufficiency of the régime of private contract to regulate electronic funds transfer operations in all their aspects.

[l] Freak atmospheric occurrences (e.g. lightning) have been said sometimes to cause changes such as erasures on computer magnetic tapes.

[m] A recent report indicates that SWIFT, with a current membership of over 500 institutions on both sides of the Atlantic and plans to extend operations to Japan and South America in the near future, could well become such a medium.

noted that such questions were generally regulated by private agreement among the parties to an EFT operation. A question was raised in this connexion as to how much autonomy the law should allow the parties not only as regards their rights *inter se* but also as regards their legal position vis-à-vis third parties. It was suggested that, by analogy to the through-cargo rules proposed by UNCTAD under which the originating carrier remained responsible to the shipper for the safety of the cargo and proper performance of the carriage throughout the entire voyage, regardless of the use of intervening carriers, the originating bank in an EFT transaction should be likewise accountable to the customer-transferor for the proper and timely payment of the sum to the transferee irrespective of the role of any intervening banks.

40. It was also suggested that with respect at least to fraud a rule might be adopted for EFT similar to that followed for the paper-based transfer, namely, that liability should rest on the person who "enabled" the fraud to be committed.

41. The Study Group reached the preliminary conclusion that there was also a *prima facie* case for work in this area with a view to arriving at a common international position with respect to these issues. It was suggested that this could be done by way either of uniform rules or of general conditions regulating bank-customer relations in an EFT transaction.

42. *Privacy with respect to EFT data.* Two aspects of privacy were noted by the Study Group: the protection of a customer's EFT records from access by public authorities or third parties without due process of law, and the need to ensure that only data strictly relevant to the business purpose was gathered and/or stored by operators of EFT systems.

43. No common position emerged in the Study Group as to the proper international response on this issue. Some members would leave this matter to national law whereas others pointed to the ensuing difficulty should individual national laws diverge on the kinds of data which should be protected and the level of protection to be granted them where the data in question could physically be retrieved in any of the countries linked by an EFT network.

44. *Usefulness to the customer of computer-produced records.* Concern was expressed as to the effect which computerization and the consequent elimination of the traditional paper-based record might have on the availability to the customer of adequate and legally admissible records of his transactions. The customer might require such records both as proof of payment and for official (e.g. tax) and other purposes. Apart from the admissibility problem in common law jurisdictions, there was the fact that unlike in the paper-based system where the customer had in his hands a piece of paper evidencing his transactions with a bank, the evidence in an EFT situation was often in the memory of the computer of the same bank against whom the customer may have a dispute. The customer must then depend on his adversary to obtain the evidence he needs.

45. The Study Group again did not arrive at any consensus as to the appropriate international response, if any, on this question and recommended that the question be not pursued at this stage.

46. *"Float" within the EFTS; who is entitled to benefit?* The Study Group noted that under current bank EFT practices, it was customary to draw a distinction between customer-to-customer and interbank transfers: crediting was effected as soon as possible in the latter situation whereas in the former there was generally a time-lag (sometimes of up to two days) between debiting the transferor and crediting the transferee during which the bank took advantage of the interest and "float" of the funds.

47. The Group noted, however, the difficulty of establishing uniform banking rules or practices on this matter. As the experience with regard to the rules on documentary credit had shown, banking practices varied so much from country to country; banking practice in one country might consider 24 hours a reasonable time-lag while in others a period of 10 days or even three weeks would be considered normal. Account had also to be taken of the varying stages of development with respect to electronic technology attained in different countries.

48. The Group did not arrive at any recommendation with respect to this issue.

Conclusions

49. While it is true that most of the existing and operational EFT schemes are still small in scope, seen from the point of view both of the number of participants and the amounts involved as well as of the services offered, and that the more ambitious schemes are still only projections, there appears to be universal agreement that electronic funds transfer could in due course become the principal payments mechanism in and between the most advanced economic systems. Certainly, as the SWIFT project indicates, a major role can be anticipated for EFT in the field of international commercial transactions, not only because of the speed and greater reliability which it would impart to such transactions, but also because of its promise of cost-savings through the standardization of message elements and media and the reduction or elimination of such costly factors as delay, clerical errors, loss or misplacement of items, etc., which seem to be unavoidable features of the paper-based system.

50. The regulatory régime of private contract under which present international EFT operations are carried on may be said to have worked well enough so far and furthermore may be acknowledged to possess features such as flexibility and adaptability which would be desirable in any régime. Even so, its inherent limitations, as, for example, in the matter of third-party rights, as well as the enormous implications for international trade of electronic data processing in all its aspects, would appear to enjoin the elaboration, not perhaps immediately, but at some appropriate point in the future, of an international legal framework to provide certainty and uniformity in this key area of international commercial transactions.

B. Note by the Secretary-General: recommendations of the Asian-African Legal Consultative Committee (A/CN.9/155)*

1. The Asian-African Legal Consultative Committee (AALCC),[1] at its nineteenth session held at Doha, Qatar, from 16 to 23 January 1978, considered the possible composition of the future programme of work of the Commission.

2. At the conclusion of its deliberations, AALCC adopted the resolution concerning the future programme of work of the Commission that is set forth as an annex to this note.

ANNEX

Decision by the Asian-African Legal Consultative Committee on the future programme of work of the Commission

(Taken at its nineteenth session, Doha, Qatar, 16-23 January 1978)

The Asian-African Legal Consultative Committee,

Having considered at its nineteenth session the request of the General Assembly of the United Nations that Governments submit their views and suggestions on the long-term programme of work of the United Nations Commission on International Trade Law (UNCITRAL) (resolution A/31/99);

Having noted the views expressed in this respect by its Sub-Committee on International Trade Law Matters;

Being convinced that it is important that UNCITRAL, when drawing up its new programme of work, should give due considera-

* 4 May 1978.

[1] The membership of AALCC consists of 35 States of the Asian-African region.