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ELECTRONIC FUNDS TRANSFERS

Report of the Secretary-General

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INTRODUCTION

1. At its eleventh session the Commission placed the subject of electronic funds transfers on its priority list. 1/ At its twelfth session the Commission, recognizing the complex technical aspects of the topic, requested the Secretariat to do the preparatory work within the framework of the UNCITRAL Study Group on International Payments, a consultative body composed of representatives of banking and trade institutions. 2/
2. At its thirteenth session the Commission requested the Secretariat to submit at a future session a progress report on the matter, so that it might give directives on the scope of further work after having considered the Study Group's conclusions. 3/
3. The present report, a draft of which was prepared by the Secretariat, was examined by the Study Group at a meeting held in The Hague from 26 to 28 April 1982.

I. DESCRIPTION OF ELECTRONIC FUNDS TRANSFER SYSTEMS

4. The distinguishing element in an electronic funds transfer is that the payment instruction transmitted to or between the banks is made in an electronic form rather than by the physical transmission of a paper-based payment instruction. 4/ This substitution of electronic impulses for paper is made in order to achieve an increase in speed of transmission of the payment instruction between the parties to the payment and to facilitate the handling of the volume of such messages, thereby reducing their cost.
5. Some electronic funds transfer systems are completely electronic from the entry of data by the originating bank to the processing of that data by the recipient bank. These systems may involve on-line computer networks, off-line batch-processed transfer systems, or the physical exchange of magnetic tapes or other electronic memory devices. Bank customers which have the necessary equipment may be allowed to submit their transfer instructions to their bank or to receive data from their bank in electronic form, extending the purely electronic nature of the transfer beyond the bank operations.

1/ Official Records of the General Assembly, Thirty-third Session, Supplement No. 17, (A/33/17), paras. 48 and 67 (c)(ii)(b). The subject was discussed in the Report of the Secretary-General on the Programme of Work of the Commission (A/CN.9/149/Add. 3).

2/ Ibid., Thirty-fourth Session, Supplement No. 17, (A/34/17), paras. 55 and 56.

3/ Ibid., Thirty-fifth Session, Supplement No. 17, (A/35/17), para. 163.

4/ In the context of this report a "bank" is any institution which provides a funds transfer service, whether or not it is denominated as a bank under the applicable law. In addition to thrift, savings and other financial institutions which may offer such services, the postal service offers a funds transfer service in many countries. See Payment Systems in Eleven Developed Countries, (Basle, Bank for International Settlements, 1980).

6. However, in most electronic funds transfer systems in use at the present time, the instructions received by the transmitting bank from its customer and the data given by the recipient bank to its customer are in paper form. In many cases only the message between the banks and the storage of the data by the banks are in electronic form.

7. The term "electronic funds transfer", therefore, is equivalent to the term "paper-based funds transfer" in that it describes the medium of communication but does not describe the banking or legal aspects of making a payment.

A. Credit transfers

8. In a credit transfer the transferor instructs his bank to pay a certain sum to the transferee. 5/ 6/ If the transferee does not have an account with the transferor bank, that bank instructs the transferee bank to pay the transferee. In some countries the credit transfer is the primary means of making non-cash payments.

9. A major advantage of the credit transfer is that the transferee bank can act on the payment instruction without concern as to the solvency of the transferor. The transferor bank is obligated to reimburse the transferee bank for the payment. Any doubts as to the solvency of the transferor are the concern of the transferor bank.

10. The credit transfer is particularly well suited to the use of electronic means of communication. In the normal case neither the transferor nor the transferee has any reason to object to the use of electronic means of transmission by the bank. Since negotiable instruments are not used in credit transfers, the legal problems which must be overcome to collect negotiable instruments electronically do not arise. 7/

11. Credit transfers in electronic form have been widely used for international payments for over a hundred years in the form of cable transfers. Telex payment instructions and computer-to-computer links are but modern versions of this venerable device. 8/ Even in those countries in which the majority of domestic inter-bank transfers are made by the debit collection of cheques, wire and

5/ Throughout this report "transferor" refers to a person who pays a sum of money by a debit to his account in a bank. "Transferee" refers to a person receiving a sum of money by a credit to his account in a bank. The transferor may also pay the sum in cash to his bank while the transferee may receive the sum in cash from his bank.

6/ For consistency of presentation, throughout this report it is assumed that the funds transfer is made by the bank for the account of a non-banking client, although in fact, many international electronic funds transfers are made by banks for their own account or for the account of other banks.

7/ Compare paras. 14 to 19 infra.

8/ The Society for Worldwide Interbank Financial Telecommunications S.A. (S.W.I.F.T.) operates a computer message switching network for various types of inter-bank messages.

cable transfers are often used for business payments. In some of these countries the wire transfer facilities have been substantially improved in recent years and the majority of large business payments are made in this way. 9/

12. A recent development has been the payment of such obligations as salaries, pensions and monthly social security benefits to the transferee's bank account, a service available only by virtue of the increasing number of individuals who maintain current accounts in banks. 10/ This type of credit transfer is particularly suited to computer processing. Large volume transferors who possess equipment compatible with that used by the banking system may be encouraged to prepare themselves the magnetic tapes with the necessary payment data for use by their bank.

13. A new development, which is already in the experimental stage in several countries, is "home banking". With a computer terminal attached to a television set as well as to a central computer by means of electrical or telephone lines, an individual will be able to transfer funds from his account to another person's account in the same or a different bank.

B. Debit collections

14. In a debit collection the transferee instructs his bank to collect a specific sum of money from the transferor. He may attach to his instruction an instrument signed by the transferor, such as a cheque or a negotiable note payable at the transferor bank, which indicates that that bank should pay the sum and debit the transferor's account. Alternatively, the transferee may attach to this instruction a bill of exchange which he has drawn himself calling on the transferor or his bank to pay the sum indicated. The drawing of a bill of exchange by the transferee would normally have been previously authorized by the transferor, e.g. in a sales contract or by a letter of credit he has had opened for the benefit of the transferee.

15. Before the transferor bank will pay to the transferee the sum indicated and debit the transferor's account, it will require specific instructions to do so. The cheque or note payable at the bank which has been presented for payment constitutes such an instruction, as does the application by the transferor to his bank to open a letter of credit for the benefit of the transferee. Other bills of exchange not drawn under a letter of credit are submitted by the transferor bank to the transferor for authorization to pay, unless that authorization has already been given in some other form. 11/

9/ See the reports on France and the United States in Payment Systems in Eleven Developed Countries, note 4 supra.

10/ In some countries, salaries and wages over a certain minimum must be paid directly to a bank account.

11/ In trade between the member States of the Council for Mutual Economic Assistance payment is made by the buyer's bank without prior authorization from the buyer upon receipt of the seller's claim for payment, accompanied by the necessary documents. The buyer has the right for fourteen days from the receipt by his bank of the seller's invoice to demand return of all or part of the amount paid if the payment made was not in conformity with the contract. General Conditions of Delivery of Goods between Organizations of the Member Countries of the Council for Mutual Economic Assistance, 1968/1979, articles 49, 52-55.

16. Because it is the transferee who institutes the collection of funds he claims to be due to him, his bank - and every other bank in the collection chain - will seek assurances that any cheque, bill of exchange or note is genuine and that the transferor will have sufficient money in his account to pay the sum to be collected. 12/ A significant portion of the law of cheques, bills of exchange, notes and other forms of debit collections is concerned with these problems.

17. The collection of cheques, bills of exchange and negotiable notes does not lend itself as well to electronic funds transfer procedures as do credit transfers. Under the law of many countries, such instruments must be presented to the drawee or maker, thereby requiring the physical movement of the paper from the transferee bank to the transferor bank, and perhaps to the transferor himself.

18. In some countries the law provides that a cheque may be presented at a clearinghouse or that it may be retained by the original depository bank, i.e. the transferee bank. In either case the pertinent payment information may then be transmitted to the transferor bank by electrical means of communication. 13/

19. In order to avoid problems arising out of the collection of bills of exchange, problems arising not only out of the legal regime of negotiable instruments but also out of stamp taxes and other considerations, an increasing share of debit collections in international trade involves a claim made by the seller-transferee without the use of a bill of exchange. Such claims may be suitable for transmission by electronic means, so long as they are not accompanied by commercial documents in a paper-based form. 14/ Experiments are currently in process to replace the traditional transport documents by electronic messages. The most difficult institutional problem has been to devise means of effectuating letter of credit transactions and bank financing, but several different solutions have been advanced and it can be expected that in the next few years these procedures will have passed from the experimental to the operational stage. 15/

20. Debit collections by electronic means have also been fostered by certain credit card operations as well as by the introduction of debit cards for use

12/ For the purposes of this discussion, no distinction is made between an instrument which has been discounted by the bank and one which has been taken for collection.

13/ In Belgium and Sweden cheques are retained by the depository bank and presented for payment electronically. See the reports on Belgium and Sweden in Payment Systems in Eleven Developed Countries, note 4 supra.

14/ The bill of exchange payable at term is a traditional form of supplier credit in France. The collection of these bills is highly labour intensive and, therefore, costly. After several experiments designed to remedy the situation, a new version of the bill of exchange was developed, the lettre de change relevé, which can be created in either paper or electronic form. In either case, however, transmission of the bill between the banks is made electronically. The original paper-based bill, if one exists, is retained by the transferee bank. For a description of the mechanics and a discussion of the legal problems involved, see M. Vasseur, La lettre de change relevé, 28 Rev. tr. dr. com., 203 (1975). See also, Trib. com. de Roubaix, 2 juillet 1980, D.S. 1980. Jur. 519, note Y. Letartre.

15/ E.g., K. Grönfors, Cargo Key Receipt and Transport Document Replacement (Göteborg, 1979).

in automatic teller machines or for point-of-sale use. Although some credit card operations forward to the cardholder a copy of the paper receipt signed by him, other credit card operations retain the paper receipt at the first point of deposit and forward electronically the necessary payment information.

21. In addition to debit collections arising out of specific transactions, as have been described above, "direct debiting" may be instituted in favour of a transferee to whom large numbers of people are indebted on a regular basis. Direct debiting is particularly susceptible to electronic processing and large customers with their own computer facilities may themselves prepare the magnetic tapes for introduction into the system.

C. Direct transmission, correspondent relations and clearinghouses

22. Payment instructions, whether credit transfers or debit collections and whether paper-based or electronic, can be passed between the transferor bank and the transferee bank, through one of three types of routes. The payment may be transmitted directly between the two banks. If the two banks do not have a direct banking relationship, the transferor bank may send the payment instruction to a correspondent bank which does have a direct banking relationship with the transferee bank. It could happen, of course, that the payment instruction might pass through the hands of two or more correspondent banks. In order to handle the transmission of large numbers of payment instructions between banks, a clearinghouse may be established.

23. An international cable or telex transfer, which is the traditional form of electronic funds transfer, is routed either by direct transmission between the banks concerned or through correspondent banks. Transfers through S.W.I.F.T. are handled in the same way, as are many individualized high-value transfers in domestic electronic payment systems. 16/

D. Settlement

24. Settlement between banks for electronic funds transfers is accomplished in the same manner as for paper-based funds transfers. In the case of an individualized funds transfer, settlement is normally effectuated by off-setting debits and credits in the accounts of the two banks with one another, or in their accounts with the central bank or a bank which is a correspondent bank of both. In the case of a clearinghouse, only the net debits and credits of the banks arising out of the clearing or at the end of the day's activities need be settled by debits and credits in the appropriate accounts.

25. The rules as to the time of settlement need not be different for electronic funds transfers than they are for paper-based funds transfers. However, the increasing speed of transfer by electronic means leads to an increasing volume

16/ In this context a central bank which operates a wire-transfer service in which the transferor bank's account with the central bank is debited for each transaction and the transferee bank's account is credited functions as a correspondent bank of the transferor and the transferee bank.

of transfers. Therefore, the risk to a bank which has made payments at the request of another bank but which has not received settlement for those payments may become dangerously high. 17/ As a result, the introduction of electronic funds transfers has increased the pressures for quick settlement. At the same time the availability of computers has made it easier to move to same day settlement and even, in some cases, to simultaneous payment and settlement.

II. LEGAL ISSUES

26. Electronic funds transfers raise three types of legal issues: those associated with the payment process, those associated with the electronic nature of the communication and record keeping and those associated with the institutional structure within which an electronic funds transfer system operates. Any national electronic funds transfer system must deal with all of these problems either explicitly or implicitly.

27. These legal issues also arise in respect of international electronic funds transfers. Many of them are so closely integrated with domestic funds transfers that it would not be feasible to consider them separately. However, there are several legal issues which may be of particular concern in the context of international funds transfers. Among these are: A. when payment becomes final and the consequences associated with finality of payment, 18/ B. liability for loss caused by delayed or incorrect payment instructions and C. the evidential value of payment records kept in electronic form.

A. When payment becomes final

1. General considerations

28. Few legal systems have statutory rules which specify when payment of a funds transfer becomes final and the consequences of its becoming final. 19/ In most cases, such formalized rules as exist are to be found in inter-bank

17/ Prior to the changeover from next day settlement to same day settlement on 1 October 1981, it was estimated that the eleven principal settling banks in the New York Clearinghouse Interbank Payment System, known as CHIPS, averaged \$US 14 to 28 thousand million in overnight credit risk. International Herald Tribune, 24 September 1981, p. 11.

18/ The decision as to whether payment of certain international electronic funds transfers had become final was the determining element in the litigation in the United Kingdom and the United States following the insolvency of the Herstatt Bank in 1974. *Momm v. Barclays Bank International Ltd.*, 1976/ 3 All E. R. 588 (Q.B.); *Delbrueck and Co. v. Manufacturers Hanover Trust Co.*, 464 F. Supp. 989 (S.D.N.Y. 1979), aff'd 609 F.2d 1047 (2d Cir. 1979).

19/ This report considers when payment of the funds transfer becomes final, not when payment of the underlying obligation takes place. Although the two concepts may be related, different criteria may apply to each of them.

agreements, clearinghouse rules and the general conditions of banks. ^{20/} These sources, however, govern only a few of the possible contingencies.

29. The concept of payment in an inter-bank funds transfer is complex. There is no single act which can be said with assurance to be the act of payment. Instead, payment is made by a process which takes place over a period of time. Although this process includes certain basic procedures which must be followed in any funds transfer, the actual mechanics may differ from country to country, from bank to bank and, within a single bank, they may differ depending on the type of transfer.

30. As a result different points of time have been chosen in various contexts as the time when payment becomes final. The following paragraphs describe some of the more important possibilities in the context of a credit transfer.

2. Notice to the transferee bank of the transfer

31. The earliest point of time at which payment could be said to take place in an inter-bank credit transfer is the moment at which notice is sent to the transferee bank. This is the result in the United States for credit transfers made through the Federal Reserve System. The Federal Reserve operates a high-speed credit transfer service by which banks may transmit funds to other banks in the United States. The service is used by banks both to transmit funds for their own account and to effect transfers for the account of their customers. Nevertheless, from the viewpoint of the Federal Reserve and of the regulations governing the system, the only parties to the transfer are the banks concerned.^{21/} Payment is made by crediting the account of the transferee bank and debiting the account of the transferor bank with the appropriate Federal Reserve Bank.

32. The regulation which governs these transfers provides that payment is final as to the two banks and is available for immediate use upon the sending of a notice of the transfer to the transferee bank. ^{22/} When the transferee bank is the final transferee, i.e. when it has no customer for whose account the transfer has been made, the rule is complete. The regulation gives no indication whether payment is also final at that time as regards the payment by the transferee bank to the transferee or between the transferor and the transferee.

^{20/} In a questionnaire sent by the Study Group to central banks in the spring of 1980 the question was asked as to what laws or agreements determine when payment is final. Austria, Canada, Kuwait, Netherlands, New Zealand, Norway and United Kingdom replied that there were none. Australia, France, Germany, Federal Republic of, and Portugal referred to various inter-bank agreements covering aspects of the problem. The United States referred to the regulation governing the wire-transfer system operated by the Federal Reserve System. Czechoslovakia cited a provision in its Economic Code.

^{21/} "'Transferor' means a member bank...". 12 Code of Federal Regulations § 210.26(g).

^{22/} Ibid., § 210.36.

33. Nevertheless, in a case such as this where the transferee bank has received irrevocable credit with the central bank at or before the time the transfer instruction has been sent to it and the credit is available for immediate use by the transferee bank, it might even be reasonable to consider payment as final at that time as to the transferee as well. ^{23/} In this case, and in contrast to those discussed below, completion of the process by which the transferred sum was credited to the account of the transferee would be a mechanical act of no legal significance.

3. Decision that settlement offered is acceptable

34. It would be less acceptable to consider payment as final as to the transferee bank upon the sending to it of the transfer instruction if settlement for the transfer were by means other than an irrevocable credit with the central bank available for immediate use. In these cases perhaps the earliest point of time at which payment might be considered to be final is when the transferee bank decides that the means of settlement proposed by the transferor bank is acceptable. In the case of large individual transfers, such a decision may be made and indicated by an objective act of an officer of the transferee bank.

4. Posting of credit or notice to transferee

35. In routine transfers no such conscious decision is made and the first objective act which can be relied upon to occur is the credit entry made to the transferee's account. It is that objective act which is considered to be the act of payment in many legal systems. ^{24/} In some other legal systems payment is considered to have taken place only when a notice of the credit transfer has been sent to the transferee by the transferee bank. This, it should be noted, is an application of the same approach discussed above in respect of payment to the transferee bank by the Federal Reserve System in the United States.

5. Availability of funds to transferee

36. Since the relevance of payment to the transferee is that he has access to the funds, payment may be considered to be final at the time he has an unqualified right to use the funds. In many funds transfer systems settlement between the banks is made as a routine matter one, two or even more days after the payment instruction has been received by the transferee bank. ^{25/} In such

^{23/} The regulations also provide that the transferee bank must "Credit promptly the beneficiary's account or otherwise make the amount available to the beneficiary." *Ibid.*, § 210.30 (b)(1).

^{24/} In the questionnaire sent by the Study Group to central banks in the spring of 1980, the question was asked when payment becomes final. Several respondents indicated that the answer was not clear. Several others indicated that "normally" it occurred at a specific time. Most respondents stated that in a credit transfer payment was made when the credit was posted to the transferee's account. One respondent replied that "it probably becomes final when money is passed between the banks involved in settlement of the transaction."

^{25/} Under the S.W.I.F.T. rules the "pay date" on which the transferor bank requests the transferee bank "to credit or pay the beneficiary customer ... may not be earlier than the value date" on which the amount of the transfer is available to the transferee bank.

cases, it would be normal for the transferee bank to restrict the availability of those funds to the transferee until the bank itself had received settlement, even if the transferee bank had no cause to consider the transferor bank a credit risk. ^{26/} It would, therefore, be a matter of internal decision by the transferee bank as to whether it would post the credit with a value date of the expected date of settlement or whether it would delay posting the credit until settlement had been received.

6. Debit collections

37. A similar set of possibilities exists as to the time of payment of a cheque, bill of exchange or other debit collection item. In a debit collection, however, it is the transferor bank which does the relevant acts which constitute payment of the item, and not the transferee bank as in a credit transfer. The item is received by the transferor bank and examined for apparent authenticity.^{27/} The files are checked to see if payment is authorized, the account is examined to determine whether there is a sufficient credit balance to cover the item or whether a line of credit has been authorized and the amount of the item is debited to the transferor's account. Parallel to what was suggested in respect of the credit transfer, the point of time at which payment of the debit item is final can be the moment when the transferor bank has completed the necessary verifications and decided to pay by debiting the transferor's account or the moment when it has posted the debit to that account. As suggested below, payment of the debit item may also become final after the debit has been posted to the transferor's account.

7. Posting prior to verification

38. The acts which may be considered to constitute payment of credit transfers and debit collection items have so far been presented in the standard chronological order. However, in some countries it is standard banking procedure for incoming items, whether credit transfers or debit collections, to be posted to the relevant accounts prior to the time any verification is made of the item itself, or of the account to be debited in case of a debit collection or the means of settlement in the case of a credit transfer. In these countries, the bookkeeping operations for the day's activities may be completed during

^{26/} In The "Chikuma", [1981] 1 Lloyd's Rep. 371 (H.L.), a correspondent bank provided the funds four days after it telexed payment instructions to the transferee bank. The effect of withholding settlement for four days "seems ... to produce a situation, in accordance with Italian banking law and practice, which in the eyes of an English banker or lawyer, has some strikingly unusual features." Ibid., at 374. The House of Lords, applying English law, held that under the particular terms of the contract payment between the parties had not been made until the transferee bank received settlement. As a result of late payment, a ship was withdrawn from a charter-party at a loss to the Norwegian charterer said to be over \$US 3,000,000.

^{27/} Rather than examining either the item for apparent authenticity or the files for an authorization to pay, the transferor bank in many debit collection systems may rely upon an agreement by the transferee bank to indemnify the transferor bank if the item was not authentic or payment was not authorized by the transferor.

the night. The next morning problem items are brought to the attention of the bank's management. If it is decided not to pay an item, the bookkeeping entries are then reversed. 28/

39. Such a procedure is of most significance in respect of debit collections where, after posting has been completed, it is found that the debit was not previously authorized by the transferor or that authorization had been withdrawn in time, the transferor had insufficient credit to his account to pay the item or for some other reason the item was not payable. However, where the bank has instituted such a bookkeeping routine for debit collections, it may also find it convenient to use it for credit transfers. Only after the transferee bank had posted the credit to the account of the transferee would it decide whether the settlement for the transfer offered by the transferor bank was adequate. Where the transferee bank was uncertain that it would receive settlement from the transferor bank, it could reverse the credit entry to the transferee's account and return the payment instruction to the transferor bank.

40. In those countries in which this bookkeeping procedure is recognized the rules on payment must provide a legal justification for the bank to reverse the bookkeeping entries it would not have made if it had followed the standard chronological order. One way to achieve this result is to consider payment as having been made only when the transferee bank decides not to reverse the bookkeeping entries which otherwise would have constituted payment. This might be expressed as the passage of a pre-determined amount of time at the close of which the bookkeeping entries had not been reversed. For example, payment could be considered as having been made at midnight of the day after receipt of the item if the bookkeeping entries had not been reversed by that time.

8. Criteria for determining when payment is final

41. This discussion of the appropriate moment to consider payment as final suggests that the dominant consideration is the decision by the transferee bank in the case of a credit transfer or the transferor bank in the case of a debit collection that the item is genuine, that payment was authorized and that the bank will be reimbursed for the payment. It has been noted that there is a broad range of points of time that would implement this dominant idea, depending on the nature of the proposed settlement, and the normal bookkeeping procedures followed by banks. However, following this line of thought, it would seem that the moment at which payment is legally recognized as having occurred should be delayed until there remains only a minimal risk that the bank making payment will not be reimbursed.

42. On the other hand such a position would have the corollary effect of delaying the time of payment for all other purposes. The funds would belong to the transferor and not to the transferee and would be subject to legal process by the transferor's creditors until that later point of time. Any right the transferor might have to rescind the payment order until payment becomes final might continue to exist. Payment by the transferor to the transferee of the underlying contractual obligation might be understood not to take place until payment of the funds transfer as here determined had taken place.

28/ This practice is widely used in the United States. See Uniform Commercial Code, § 4-301, Official Comment No. 1. For a description of the practice in New Zealand, see, A. Tyree, Electronic Funds Transfer in New Zealand, 8 N.Z. Univ. L.R. 139 (1978).

43. These considerations might therefore lead to another conclusion, i.e. that it would be better to consider payment of the funds transfer as final for all purposes at some earlier point of time, with the exception that if the transferee bank failed to receive settlement for the item within a specified period of time, the transferee bank could revoke the payment to the transferee, debit his account, and return the transfer item to the transferor bank.

9. Effect on clearinghouse transfers

44. The need for a clear rule on the effect of a transferor bank's failure to settle for an item which has been "paid" to the transferee by the transferee bank is particularly important when the transfer has been effected through a clearinghouse at which settlement of each participating bank's net debit or net credit balance is made periodically, such as at the end of the day, rather than at each clearing.

45. If a bank cannot settle for its net debit balance, it normally means that the bank is insolvent. Since the failure to settle is of a net debit balance, it cannot be allocated to any specific payment instruction submitted to or by the insolvent bank. No transferee bank is in a position to know at the time it receives a payment instruction through a clearinghouse whether any other specific bank will end the day with a net credit or net debit balance or what the magnitude of that net balance might be. Therefore, it cannot protect itself by refusing to receive and process the transfer as it could if the transfer instructions had been received directly by telex or the like. 29/

46. There are a variety of schemes which can be used to allocate this loss. Among those schemes is that all the transactions with the insolvent bank would be deleted from the day's activities and returned to the remitting bank. 30/ New net balances would be struck between the remaining participants in the clearinghouse.

29/ This problem does not arise at a clearinghouse which requires settlement for all net debit balances in cash or in immediate credit on the books of the central bank before the clearing is completed. The disadvantages of such a procedure are beyond the scope of this report.

30/ Article 13 of the internal regulations of the automatic clearinghouse operated by the Bank of France dated 29 July 1977 provides that

"If, for any reason, the current account at the Bank of France of a participant with a debit balance does not have sufficient funds to cover the balance at the close of operations, and if the cover is not produced, the Bank of France will advise the other participants to the extent possible on that day, and at the latest the day following before 11:30.

"The participants must consider the operations directed to the defaulting establishment (and its sub-participants) or coming from the latter (and its sub-participants) as null and void.

"In the light of the knowledge in its possession the Bank of France will determine the new net balances and send to the participants a corrected statement."

Compare the provisions in the CHIPS rules discussed in H. Lingl, Risk Allocation in International Inter-bank Electronic Fund Transfers: CHIPS and SWIFT, 22 Harv. Int. L.J. 621, 643-648 (1981).

47. This procedure would seem to indicate either that payment between the banks is not final until settlement has been completed or that, in spite of payment being final, payment between the banks could be reversed in case of a failure of one of the banks to settle with the clearinghouse. Deletion of the day's transactions between the insolvent bank and the other banks in the clearinghouse may have the effect of deleting those transactions as regards the customers of both the insolvent bank and of all the other banks in the clearinghouse to which or from which transfer instructions were sent on the day in question.

10. Conclusion

48. The rules as to the point of time when payment is final are not clear. Few statutory rules exist and the various inter-bank agreements cover only limited aspects of the problem. No agreed upon rules exist for international payments.

B. Liability for loss caused by delayed or incorrect payment instructions

49. Customers and their banks alike may suffer a loss if a funds transfer is not carried out as expected. The nature of electronic funds transfers has introduced several new elements into this problem which are either unknown or are of less significance in paper-based funds transfers.

1. Loss causing factors

a. Non-standardized messages

50. In contrast to paper-based funds transfers which use broadly similar formats, there is no generally recognized standard format for electronic funds transfer messages. Each cable or telex is individually composed and contains the information thought to be relevant by the sender. ^{31/} The possibility of error in composition of the message by the sender and comprehension by the receiver is thereby increased.

51. Unstructured messages do not lend themselves to computer processing. Therefore, in order to facilitate the use of computer-processed electronic funds transfer systems standard message formats have been created. These formats, once adopted, are mandatory for use within that system.

52. Each computer-processed system has devised its own formats for its own purposes. Where a bank receives a funds transfer instruction through an international system which it must pass on through a domestic system, or the reverse, the message must be converted from the format used in the first system to the format used in the second. The use of interface programmes to do this

^{31/} As of 31 December 1981, the Technical Committee on Banking of the International Organization for Standardization had prepared a working draft of standard telex formats for inter-bank payment messages.

automatically is possible when the two formats have equivalent message fields, which is not always the case. ^{32/} Therefore, until there is a standardization of the formats for use in domestic as well as international funds transfers, electronic funds transfer messages will continue to be received in human readable form and rekeyed into other transfer systems.

b. Re-creation of messages

53. Rekeying a transfer message creates the possibility of error. This possibility of error is to some degree unavoidable in all electronic funds transfers. In contrast to paper-based funds transfers where the original paper form filled in by the customer can usually be forwarded through the banking system precluding the possibility that the payment instruction will be altered except by fraud, an electronic funds transfer message is re-created at each processing point. Payment instructions given to a bank in paper form are transformed into electronic messages which may again be reproduced on paper at receipt. Telex transfers through a correspondent bank require the correspondent bank to pass on a new message with a somewhat different data content. Messages sent over packet-switching networks are broken into segments of a uniform length which are sent by separate circuits and reassembled at the destination. Transfer instructions submitted on magnetic tapes to an automatic clearinghouse are sorted and recorded on new magnetic tapes before being sent to the recipient bank. Each of these processes introduces the possibility of an inadvertent change in the content of the payment instruction through human error, an incorrect computer programme or a breakdown or defect in the equipment. However, these errors can be detected before they pass through the system if the necessary controls are designed into the system as well as into the operations of each bank and if those controls are rigourously applied.

c. Non-standardized procedures

54. International funds transfers, whether electronic or paper, are more difficult for banks to handle without error than are domestic transfers because of the lack of international agreement on appropriate procedures. Each transfer message must, therefore, be read carefully to be sure as to the procedure being used by the transferor bank. That message may be unclear, especially when it is composed in unstructured cable language. ^{33/}

55. This confusion may be compounded when the local banking practices in the recipient country are different from those in the sending country. Expectations

^{32/} CHIPS Administrative Procedure No. 6 gives instructions for a CHIPS/S.W.I.F.T. or S.W.I.F.T./CHIPS interface. A description of the method by which this is accomplished by one large American bank was described by A. Cacchioli, Vice President, Chase Manhattan Bank, Our Solution - High Volume Users, in S.W.I.F.T. International Banking Operations Seminar 1980 (SIBOS '80), at 112-113. A criticism of automatic conversion between S.W.I.F.T. and CHIPS was made by I. Silfvast, Senior Manager, Bank of Helsinki, The Impact on European Banks of the Differences in the Banking Practice Concerning International Transfers in the USA, in SIBOS '81, at 125 "since the S.W.I.F.T. and the CHIPS formats are not compatible, the result becomes mutilated."

^{33/} See the examples given by I. Silfvast, ibid., and R. Polo, Manager, International Money Transfer Department, Banca Commerciale Italiana, The Quality of Today's International Transfers, ibid. at 117.

as to the time within which funds will be made available may turn out to be incorrect because of a local practice that a correspondent bank may withhold settlement for several days, thereby increasing its float, ^{34/} or that remittance will be made to remote locations by mail or by check, even though the international payment instructions requested the highest priority be given to the payment. ^{35/}

2. Nature of the loss

a. Loss of principal

56. When an electronic funds transfer is credited to the wrong account, credited to the correct account for the wrong amount or processed twice, the transferor risks losing the principal amount of the incorrect transfer. In most cases, the error can be rectified by a debit to the account of the incorrect transferee with a corresponding credit to the account of either the transferor or the correct transferee, as the case may be. The transferee bank may be authorized to debit the incorrect transferee's account without his prior consent. ^{36/} It is only when recovery cannot be made from the incorrect transferee that questions of allocation of loss arise.

57. Fraud is probably a more important source of loss of principal in electronic funds transfers. All major electronic funds transfer systems take precautions against fraud ranging from the use of personal identification numbers (PIN) in connexion with debit cards at an automatic cash dispenser, through test keys and encryption for inter-bank electronic funds transfers. ^{37/} The degree of security these procedures afford is to some extent a measure of the effort and the money spent on them.

b. Loss of interest

58. Interest claims for late payments, which were hardly known twenty years ago, are now a daily occurrence. Interest rates are high. Major funds transfers are less often than before made by the physical movement of paper, which is slow and uncertain as to the time required. Cash management techniques have made public and corporate treasurers throughout the world conscious of the interest earning potential of their cash balances.

^{34/} See The "Chikuma", note 26 *supra*. The Court of Appeal estimated that the correspondent bank had earned between \$US 70 and 100 in interest on the payment of \$US 68,863 by delaying settlement for four days.

^{35/} See I. Silfvast, note 32 *supra*, at 126.

^{36/} In the Federal Republic of Germany the Banks' General Business Conditions art. 4(3) provide that "Where credit entries are made in consequence of a mistake or clerical error, or for any other reason, without corresponding instructions having been given, the bank may reverse them by simple entry." Compare the regulations governing credit transfers in the United States through the Federal Reserve System which provide that in the case of an error the Federal Reserve Bank may request the transferee to return the funds. 12 Code of Federal Regulations § 210.35 (b).

^{37/} See Security and Reliability in Electronic Systems for Payments, (Basle, Bank for International Settlements, Revised ed. 1978).

59. Banks share this concern. S.W.I.F.T., for example, has adopted rules for the allocation of loss of interest for delays in payments made through that system. ^{38/} These rules present no innovation as to theory. Their main value is to set forth in detail the operating procedures which must be followed by the sending and receiving bank and by S.W.I.F.T. as a system to avoid liability for interest arising out of a late payment. ^{39/}

c. Changes in exchange rates

60. Under the regime of fixed exchange rates of the Bretton Woods system, exchange losses were an episodic event arising out of a devaluation or revaluation of a currency. With exchange rates currently fluctuating daily, customer claims for reimbursement of exchange losses arising out of late payments are a more frequent occurrence.

61. No international electronic funds transfer system has rules which allocate the responsibility for these losses. ^{40/} It has been suggested that the S.W.I.F.T. rules for allocation of interest losses could serve as a model for allocating the exchange losses arising out of similar events. ^{41/}

^{38/} The rules were originally published in S.W.I.F.T. Board Paper No. 185, Responsibility and Liability, and were reprinted in S.W.I.F.T. Newsletter, April 1979. Board Paper No. 185 has been incorporated in the S.W.I.F.T. User Handbook.

^{39/} The transmitting bank is responsible in five circumstances: (a) when S.W.I.F.T. fails to acknowledge the transmission of a message; (b) when S.W.I.F.T. acknowledges it, but the message appears on the report of undelivered messages; (c) when the transmitting bank enters an urgent message, but receives no delivery notification from S.W.I.F.T.; (d) when it enters a message in an inappropriate format; or (e) when it fails to react promptly to notification by S.W.I.F.T. that a bank regional processor, or operating center is not functioning.

The receiving bank is responsible in four circumstances: (a) when it fails to carry out the payment date instructions in the message; (b) when it fails to react promptly to system messages; (c) when it fails to reconcile adequately incoming messages according to sequence numbers; or (d) when it fails to follow S.W.I.F.T.'s terminal connexion policy.

S.W.I.F.T. is responsible in three circumstances: (a) when it acknowledges a message to the sender, but fails to put the message on the undelivered message report and fails to deliver the message; (b) when it or its personnel perform improperly; or (c) when it fails to notify members promptly of failures of banks, operating centers, or regional processors.

^{40/} Compare Draft Convention on International Bills of Exchange and International Promissory Notes, arts. 71 and 72, A/CN.9/211, and Draft Convention on International Cheques, arts. 64 and 65, A/CN.9/212, for rate of exchange to be applied in case of dishonour of the instrument. See also the Commentaries on the two draft conventions, A/CN.9/213 and A/CN.9/214 respectively.

^{41/} R. Polo, note 33 supra, at 117; New S.W.I.F.T. Rules on the Liability of Financial Institutions for Interest Losses Caused by Delay in International Fund Transfers, 13 Cornell Int. L.J. 311, 325 (1980).

d. Consequential damages

62. The least frequent, but potentially the most serious, losses are the indirect damages suffered when a contract is lost, a penalty is incurred or a ship is withdrawn from a charter-party because a required payment was improperly handled. ^{42/} When these events occur, the damages can easily amount to many times the size of the transfer. The infrequency of the reported cases may indicate that transferors normally allow a margin of safety for their payments when they anticipate such drastic consequences. ^{43/}

3. Standardization and liability

63. The actions being taken within the international banking community to standardize message formats and, more hesitantly, to standardize banking procedures, will not only reduce the incidence of delayed and incorrect transfers, they will ease the task of assigning responsibility for the losses which do occur. In this respect the S.W.I.F.T. rules on interest losses are revealing. They could not have assigned responsibility between the three participants in a S.W.I.F.T. transfer on the basis of failure to follow one of the operating rules of the system unless there already had existed operating rules that the participating banks were required to follow.

64. At the same time these rules reveal that even within S.W.I.F.T. international agreement on procedures does not yet go beyond the technical elements of the transfer process. These rules make the bank receiving the message responsible if the message was properly addressed to it and received prior to the cutoff time but was not processed with appropriate value by the "pay date" indicated in the message, which date may not be earlier than the date on which the amount of the transfer is at the disposal of the receiving bank. ^{44/} The "pay date" is, however, only "the day on which the Receiving or a Third Bank

^{42/} See, for example, *Evra Corp. v. Swiss Bank Corp.*, 522 F. Supp. 820 (N.D. Ill. 1981), rev. 673 F.2d 951 (7th Cir. 1982), in which the trial court held the defendant correspondent bank liable for over \$US 2,000,000 for negligence in failing to transmit payment instructions for \$US 27,000 to the transferee bank by the pay date.

^{43/} See, e.g. H. Schroder, General Manager, Skandinavisk Tobakskompagni, Fulfilling the Client's Needs, SIBOS '80, at 170 where he complained that because of the long and uncertain delays from the time they give a payment order till the time it is received in a foreign country "we very often have to build in considerable time contingencies if we are contractually committed to our suppliers for payment at the disposal of the supplier's account at a given date." The court of appeals in reversing the decision of the trial court in *Evra Corp. v. Swiss Bank Corp.*, note ^{42 supra} at 957, said in part that "it was imprudent ... for the plaintiff ... to wait till arguably the last day before payment was due to instruct its bank to transfer the necessary funds overseas."

^{44/} S.W.I.F.T. Board Paper No. 185, para. 5(a). Although the new rules on responsibility relied upon the existing operating rules and, therefore, introduced no changes in S.W.I.F.T. procedures, it was found necessary, in order to fix responsibility, to clarify the terms "value date" and "pay date" as used in those operating rules.

is requested to credit or pay the beneficiary (private person or any other non-banking institution) subject to national convention and exchange control regulations, if any". ^{45/} S.W.I.F.T. gives two explanations for this rule. The first is that "it is possible that the receiving bank is not able to meet the 'pay date' because time between 'value date' and 'pay date' is not sufficient according to the bank's normal business conditions. ^{46/} The second, which is related to the first but independent of it, is that "Obviously each bank has its own terms of business related to the relationship with its correspondents." ^{47/} These rules accept, therefore, a "national convention" or the "terms of business" of a bank which would limit the obligation of the transferee bank to make the funds available to the beneficiary by the pay date indicated by the transferor bank in the message.

4. Responsibility of bank for acts of others

65. Two separate approaches are taken to the responsibility of a bank to its customer for loss arising out of events which occur somewhere in the system. Under one approach each bank is responsible to the transferor only for losses arising out of its own wrongful acts. Under a second approach the transferor bank is responsible to the transferor for losses arising throughout the system. In the normal case the transferor bank would seek reimbursement from the party who caused the loss. ^{48/}

66. The first approach recognizes that no bank has control over the operations of any other bank. While instructions can be given in respect of anticipated problems, no bank can be expected to be aware of all foreign banking practices. It cannot avoid the possibility that another bank may be negligent in regard to the transaction, so long as that bank is not so consistently negligent as to be an inappropriate channel through which to pass payment instructions.

67. The second approach emphasizes the responsibility of a bank to its customer to perform a service that requires the participation of other banks, clearinghouses and communications facilities. With rare exceptions the bank makes all the operational decisions affecting the transfer. It transforms the payment instructions as they are received from the customer into the message to be transmitted electronically, chooses the communications facilities (e.g. telex or S.W.I.F.T.) and the correspondent banks. The customer relies upon his bank to have established, or to have associated itself with, a network of foreign banks that will permit the payment instructions to be performed as requested.

68. This approach encourages banks which participate in international electronic funds transfers to support improvements in funds transfer procedures which will reduce the incidence of loss.

^{45/} Ibid., para. 2(b).

^{46/} Ibid., comments.

^{47/} Ibid.

^{48/} The second approach, which focuses on the immediate responsibility of the transferor bank to the transferor, need not preclude a direct claim by the injured transferor against the party known to be at fault.

5. Conclusion

69. The rules adopted by S.W.I.F.T. illustrate the perceived need for guidance as to the responsibility for losses arising out of electronic funds transfers. What may have been an occasional problem in the past which could be satisfactorily settled by reference to the applicable national law under traditional conflicts of law doctrines has become an everyday problem. The least satisfactory aspect of the current situation is the uncertainty as to the rights of the customer when payment was not made as expected in a foreign country.

C. Legal value of computer records

1. Background

70. Bank records involving huge sums are maintained in computers. In international electronic funds transfers there may be no paper records to evidence the transaction other than those produced by the computer itself. ^{49/} This is not, however, unique to electronic funds transfers, whether international or domestic, since the computer is becoming the basic bookkeeping machine used by business throughout the world.

71. In spite of the widespread use of computers in all fields of commercial activity, there remains a hesitancy in some countries to admit computer records as evidence before courts and arbitral tribunals. It is thought that the current state of techniques in the matter of recordings on computers does not give sufficient guarantees against falsification. ^{50/} In addition, there are classical legal barriers concerning the use of such recordings as evidence, particularly in countries of common law tradition. ^{51/}

2. International actions taken to facilitate the use of automatic data processing

72. Although the question of the evidential value of computer records in litigation is essentially a matter for domestic concern, the widespread and ever-increasing use of computers in international trade has led to provisions in a certain number of international legal texts intended to facilitate their use. The Hamburg Rules, which require that a signed bill of lading be issued if requested by the shipper, provides that:

"The signature on the bill of lading may be in handwriting, printed in facsimile, perforated, stamped, in symbols, or

^{49/} Nevertheless, a properly designed system will leave an audit trail which will make possible the detection of fraud or error.

^{50/} See Council of Europe Explanatory Memorandum to Recommendation No. R (81) 20, adopted by the Committee of Ministers on 11 December 1981, para. 17.

^{51/} See A/CN.9/149/Add. 3, paras. 16-20.

made by any other mechanical or electronic means, if not inconsistent with the law of the country where the bill of lading is issued." 52/

An identical provision is to be found in the United Nations Convention on International Multimodal Transport of Goods. 53/

73. Montreal Protocol No. 4 of 25 September 1975 to the Convention for the Unification of Certain Rules relating to International Carriage by Air would permit as a substitute for the delivery of an air waybill "any other means which would preserve a record of the carriage to be performed", so long as this was done with the consent of the consignor. 54/

74. In the field of trade facilitation the International Civil Aviation Organization has recommended to its Contracting States to "make arrangements which would enable the use of commercial documents required for the clearance of air cargo produced by electronic data processing techniques in legible, understandable, and acceptable form." 55/ Similarly the Inter-governmental Maritime Consultative Organization, now called the International Maritime Organization, has recommended that "Documents produced by electronic and other automatic data processing techniques, in legible and understandable form, shall be accepted." 56/

75. The Customs Co-operation Council has recommended that States, whether or not members of the Council, should

"1. Allow under conditions to be laid down by the Customs authorities, declarants to use electronic or other automatic means to transmit to the Customs Goods declarations for automatic processing. Such declarations may be transmitted either by direct link between the data processing systems of the Customs and those of declarants or on magnetic or other ADP media;

52/ United Nations Convention on the International Carriage of Goods by Sea, 1978, Hamburg, 31 March 1978, art. 14(3).

53/ Geneva, 24 May 1980, art. 5(3). These texts reflect a diminution of the requirement of a manual signature on a piece of paper as a means of authenticating the document and its data content. See in this regard Recommendation No. 14 of the Working Party on Facilitation of International Trade Procedures entitled "Authentication of Trade Documents by Means other than Signatures". These texts are also a reflection of a decline in the importance of the concept of negotiability.

54/ Art. 5(2) of the Convention as it would be amended by art. III of the Protocol.

55/ Recommendation 4.4 in Chapter 4 of Annex 9, "Facilitation", to the Convention on International Civil Aviation (Chicago, 1944), Seventh edition, April 1974, reprinted in TRADE/WP.4/INF. 63, Annex II/I, TD/B/FAL/INF. 63, Annex II/I.

56/ Standard 2.15 as amended by the Final Act of the Conference of Contracting Governments to amend the Annex to the Convention on Facilitation of International Maritime Traffic, 1965 (November 1977), reprinted in TRADE/WP.4/INF. 63, Annex II/II, TD/B/FAL/INF. 63, Annex II/II.

"2. Accept, under conditions to be laid down by the Customs authorities, that Goods declarations which are transmitted by electronic or other automatic means to Customs be authenticated other than by handwritten signature." 57/

3. International actions in respect of evidential value of computer records

76. This approach, by which legislative texts and recommendations of international organizations to facilitate the use of electronic and other automatic data processing in international trade are prepared on a sectoral basis, may however not be sufficient unless supported by an approach which is designed to ensure that the use of computer records as evidence in litigation is not prevented. This was noted by the Working Party on Facilitation of International Trade Procedures when it recommended to the Customs Co-operation Council that the Council make "a study of changes which are necessary to national laws to admit as evidence information stored on computer", 58/ which the Council declined to do on the grounds that this was not purely a customs matter. 59/

77. The only international organization which has considered the evidential value of computer records is the Council of Europe. The Committee of Experts charged with studying the problem "came to the conclusion that, in view of the absence of general rules in several states and of the need for such rules because of the development of these practices, it would be useful to reach harmonized solutions in member States which would be justified by the international nature of the problem since documents or copies made in one state were increasingly likely to be presented as evidence in another." 60/

78. As a result of the study conducted by the Committee of Experts, the Committee of Ministers of the Council of Europe, on the recommendation of the European Committee on Legal Co-operation, adopted a Recommendation to its member States which, inter alia, provided that each member State should "designate which books, documents and data may be recorded on computers." 61/ These records, if made in conformity with the Recommendation, would be admitted as evidence in judicial proceedings and "be presumed to be a correct and accurate reproduction of the original document or recording of the information it relates to, unless the contrary is proven." 62/

57/ Recommendation (16 June 1981) of the Customs Co-operation Council Concerning the Transmission and Authentication of Goods Declarations which are Processed by Computer, reprinted in TRADE/WP.4/R.148/Add. 1.

58/ TRADE/WP.4/INF. 62, para. 22(x), TD/B/FAL/INF. 62, para. 22(x).

59/ TRADE/WP.4/R.148, para. 19.

60/ Council of Europe Explanatory Memorandum, note 50 supra, at para. 3.

61/ Recommendation No. FR (81) 20, Appendix, art. 1(1), adopted by the Committee of Ministers on 11 December 1981.

62/ Ibid., art. 2. As regards the conditions under which computer records would be admissible as evidence, see Annex I of this report.

79. The Recommendation of the Council of Europe is a recognition at the international level of the importance to commercial undertakings that the records of their transactions maintained in computers be admissible in evidence and that the international character of many of those transactions, of which international electronic funds transfers are a prime example, requires harmonized solutions to the problems involved.

4. Conclusion

80. International electronic funds transfers are increasingly made through computer-to-computer links. The admissibility in evidence of the records of those transactions is in doubt in some States. Moreover, few States have clear rules on the conditions which must be fulfilled in the preparation of those records for them to be admissible in evidence. ^{63/} Where those rules exist, they may not be in harmony, leading to the possibility that the records prepared in accordance with the requirements of one State may not be admissible in litigation arising in another State.

81. The problem, while of particular importance to international electronic funds transfers, is one of general concern for all aspects of international trade. Generalized solutions would, therefore, be desirable.

III. FUTURE WORK

82. Electronic funds transfer systems have developed in a partial legal vacuum. In many countries it has been assumed that the law relating to paper-based transfers also applies at least in part to electronic funds transfers. However, it is seldom clear to what extent this is the case. ^{64/} Moreover, the law which was developed for the needs of paper-based funds transfers may not be appropriate in all respects for electronic funds transfers even when the law appears by its terms to apply.

83. The problems arising out of the uncertainty as to the legal rules applicable to electronic funds transfers are much greater when the funds transfer is international. When problems occur, there is no adequate legal framework within which they can be settled.

84. It would seem to be premature, however, to attempt to unify the law in respect of electronic funds transfers at present. Electronic funds transfer systems, especially those based on computer-to-computer transmissions, are still in their infancy. The technology and the associated banking practices

^{63/} For rules in force in the Soviet Union, see document TRADE/WP.4/R.126, reprinted in Annex II to this report, which contains rules that the State Arbitration Commission of the USSR has proposed for use by arbitration bodies, and document TRADE/WP.4/R.178, which contains the provisional instructions on the conditions to be observed to confer a legal value to documents established by computer on magnetic tape and on paper.

^{64/} The answers to the questionnaire sent out by the Study group in the spring of 1980 were particularly revealing in this regard. No clear pattern as to the general application of the law relating to paper-based funds transfers could be discerned.

are rapidly changing, threatening to make obsolete any new legal rules which might be developed even before they came into force. At the same time it is also foreseeable that electronic funds transfer systems will play a dominant role in international funds transfers in the near future with the increasing participation of the developing countries. 65/

85. What would seem to be needed at this stage of development is a guide to the legal problems arising out of electronic funds transfers. Such a guide would identify the legal issues, describe the various approaches pointing out the advantages and disadvantages of each approach and suggest alternative solutions.

86. Such a legal guide would be of value to all legislative bodies which might contemplate coping with legal problems peculiar to electronic funds transfers or adjusting the current law governing paper-based transfers so as to cover the specific concerns arising out of electronic funds transfers. The guide would also be of value to those who might wish to regulate certain of the legal problems arising out of electronic funds transfers by contractual arrangements between the participants.

87. If the Commission agrees that it should prepare a legal guide, it may wish to request the Secretariat, in consultation with the UNCITRAL Study Group on International Payments, to prepare a draft of a chapter on questions arising in the context of finality of payment and of a chapter concerning questions relating to responsibility as well as a checklist of other basic legal issues which should be borne in mind in the conduct of electronic funds transfers. Should the Commission so agree, the Secretariat will ensure that the views of banks and trade associations from all regions of the world are adequately reflected in the draft.

88. Harmonized rules as to the conditions under which computer records must be produced to be admissible as evidence and the evidential value of computer records are necessary to give legal security to international electronic funds transfers. The problem, however, goes beyond electronic funds transfers and concerns all aspects of international trade in which computers might be used. Since rules of evidence are part of the procedural law, and are linked to the rest of the legal structure in a State, uniformity of law would be difficult to attain at present. However, if guidelines are established as to the conditions under which computer records are admitted in evidence, it may influence the legal development in this field. The Commission may, therefore, wish to request the Secretariat to submit to a future session of the Commission a draft of such guidelines.

65/ E.g. during 1981 S.W.I.F.T. extended its services to four countries in Latin America, Chile, Ecuador, Mexico and Uruguay, and was in the process of doing so in another three, Argentina, Brazil and Colombia.

ANNEX I

COUNCIL OF EUROPE

RECOMMENDATION No. R (81) 20

Adopted 11 December 1981

Appendix

Article 3

1. Reproductions or recordings made under the responsibility of /a commercial undertaking or other person designated by national law/ must conform to the following general rules. They must:

- a correspond faithfully to the original document or the information to which the recording relates, as the case may be;
- b be reproduced or recorded in a systematic way and without gaps;
- c be made in accordance with the working instructions, laid down consistently with national law and preserved as long as the preservation of the reproductions or recordings;
- d be preserved with care, in a systematic order, and be protected against any alteration.

2. When a document which has been reproduced or has been used for a recording is destroyed, the following particulars must be preserved together with the recording and in the reproduction, if possible, or otherwise with it:

- a the identity of the persons under whose responsibility the reproduction or recording has been made and of the person effecting it;
- b the nature of the document;
- c the place and date of the reproduction or recording;
- d any defects observed during the reproduction or recording.

* * *

Article 5

1. The following rules shall apply to computer programmes:
 - a the programme write-up, files description and programme instructions must be directly legible and kept carefully up to date under the responsibility of the /commercial undertaking or other person designated by national law/;
 - b the documents referred to in a above must be preserved in a communicable form for so long a time as the recordings to which they relate.

2. If, for whatever reason, the data recorded are transferred from one computer to another, the /commercial undertaking or other person designated by national law/ must establish that there is concordance.

3. The following rules apply to computer systems generally:
 - a the system must contain the safeguards necessary in order to avoid any alteration of the recording;
 - b the system must also make it possible to reproduce at any moment the information recorded in a directly legible form.

ANNEX II

STATE ARBITRATION COMMISSION OF THE USSR

THE USE AS EVIDENCE IN ARBITRATION MATTERS OF DOCUMENTS PREPARED BY COMPUTERS

(Reproduced from TRADE/WP.4/R.126)

With a view to the standardization of arbitration practice on matters in which documents prepared with the help of computer technology are used as evidence, the State Arbitration Commission of the USSR has proposed that arbitration bodies should apply the following rules:

1. Parties to arbitration are entitled to submit, in substantiation of their claims or objections, documents prepared with the help of a computer. Insofar as they contain information on circumstances relevant to the case, such documents should be generally accepted as written evidence by arbitration bodies. The acceptance, examination and appraisal of such documents should be governed by the general legislation for consideration of economic disputes. The parties may submit to the arbitration body any copy of a document prepared with the help of a computer. Should the original of a document be required for the settlement of the dispute, it must be submitted.

2. For the purpose of determining whether a contractual relationship exists between the parties, an agreement whose terms have been transmitted or established with the help of a computer shall be deemed to have the same status as an agreement concluded in writing.

3. In the settlement of disputes arising with regard to conditions of contracts, it should be borne in mind that contracts may provide for the production of accounts and the addition by parties of penalties by means of a computer. In such a case, the form of the records or other documents to be prepared with the help of the computer must be stipulated in the contract.

4. Parties should be required to ensure that all their documentary evidence prepared with the help of a computer is drawn up in good and due form. The documents should show at what computer centre and on what date they were prepared. That information may be recorded automatically by a computer or added by any other means. Should regulations binding on the parties, or the contract, prescribe that a document prepared with the help of a computer must be signed by the competent authorities, the parties should be asked to submit documents bearing the appropriate signatures.

5. Documents prepared with the help of a computer and submitted to an arbitration body as evidence must be so set out that their contents can be clearly understood. They must bear the appropriate inscriptions, column and paragraph headings, etc.

6. When they contain handwritten corrections, documents prepared with the help of a computer must show the reasons for the corrections, the date they were made and the signature of the official who made them.

7. Should the arbitration body order the checking of accounts, the party which has submitted as evidence documents prepared with the help of a computer must make it possible for the other party to carry out the checking and must, if necessary, arrange for it to be done in the relevant computer centre.

8. In cases of need, an arbitration body shall be entitled to appoint, on its own initiative or at the request of the parties, an expert body to review questions connected with the verification of the accounting programme in the computer centre.

9. Electronically-stored data (kept on magnetic tape, magnetic discs, etc.) may be used as evidence for the purposes of the case only when converted into a form suitable for general comprehension and conventional file storage.