

FILE COPY

REFERENCE AND TECHNICAL UNIT
PLAYERS AND SPECTATORS



**UNITED NATIONS
GENERAL
ASSEMBLY**



Distr.
GENERAL

28284

A/CN.9/250/Add.3
19 April 1984

ORIGINAL: ENGLISH

UNITED NATIONS COMMISSION ON
INTERNATIONAL TRADE LAW
Seventeenth session
New York, 25 June - 11 July 1984

DRAFT LEGAL GUIDE ON ELECTRONIC FUNDS TRANSFERS

Report of the Secretary-General

(continued)

Chapter

on

AGREEMENTS TO TRANSFER FUNDS AND FUNDS TRANSFER INSTRUCTIONS

CONTENTS

	<u>Paragraphs</u>	<u>Page</u>
A. General agreement between bank and customer to transfer funds	1-11	3
1. Contract for cash payment	2- 4	3
2. Agreement for transfer to or from an account	5-11	3
B. Authority to transfer funds and to debit transferor's account	12-25	5
1. Debit and credit transfer instruction by transferor and presented to transferor bank	12	5
2. Debit transfer instruction truncated at transferee bank	13-18	5

	<u>Paragraphs</u>	<u>Page</u>
3. Paper-based debit transfer instructions not issued by the transferor	19-20	7
4. Electronic debit transfer instructions not issued by the transferor	21-23	8
5. Authority of one bank to debit account of another bank	24-25	9
C. Funds transfer instruction	26-54	9
1. Authentication	26-39	9
(a) Form of authentication	30-35	10
(b) What must be authenticated	36-39	12
2. Data elements	40-46	12
3. Format	47-54	15
D. Time within which bank must act on the instruction	55-81	17
1. General considerations	55-56	17
2. Customer's concern about speed and consistency of performance	57-66	18
(a) Impact on relations between customers	58-59	18
(b) Interest earning potential of customer bank balances	60-65	18
(c) Irrevocability of funds transfer instruction	66	20
3. Bank's concern about speed and consistency of performance	67-73	20
(a) Interest earning potential of bank assets	68-71	20
(b) Security of reimbursement to transferee bank	72-73	22
4. Responsibility of destination bank to act promptly	74-78	22
(a) Credit transfer	74-76	22
(b) Debit transfer	77-78	23
5. Effect of branch banking	79-81	24

A. General agreement between bank and customer to transfer funds

1. Funds transfers are executed by banks under the terms of agreements between the banks and their customers. The contracts governing cash in-payment or out-payment transfers are rudimentary while those governing transfers to and from accounts are more complex.

1. Contract for cash payment

2. A cash in-payment transfer occurs when a person pays to the transferor bank in cash the sum to be transferred plus service charge and the bank undertakes to transfer that sum to the transferee in cash or to the credit of his account. The contractual obligation of the transferor bank is limited to the specific transaction in question.

3. A paper-based debit transfer cash in-payment service is offered by banks and some other financial organizations which provide the transferor either with a demand payment instruction, which might be a cheque, drawn by the bank on itself or on another bank or with some other form of debit transfer instruction which the transferor can mail or otherwise transmit to the transferee. The obligations of the transferor bank are based upon the law of cheques or, when the debit transfer instruction is not in the form of a cheque, on the law governing the paper-based instruction in question.

4. A cash out-payment transfer occurs when the bank, postal service or private telecommunications company undertakes to pay the transferee in cash. This service is often associated with a consumer-oriented cash in-payment service. The obligation of the transferee bank, including the receiving office of the postal service or telecommunication company, may be either to seek out the transferee at an address given by the transferor, or to hold the funds awaiting the transferee to present himself. Although the transferee bank holds the funds for the benefit of the transferee, there is no contractual relationship between the two and it is not clear in many legal systems what right, if any, the transferee has in the funds until the time they are handed over to him.

2. Agreement for transfer to or from an account

5. At the time an account is opened, the bank and its customer will enter into a contract governing the services the bank will perform. The contract will often be in writing, although in some countries it is normal for there to be no written contract between the bank and its customers. As regards funds transfers, the contract will distinguish between those services the bank will provide as a transferor bank and the services it will provide as a transferee bank. In those countries in which there is typically no written contract, the implied terms of the contract are found in banking practice. In many countries the basic terms of the contract are found in the general conditions of the bank, which may be uniform throughout the country. The contract governing an important commercial account may be individually negotiated and,

while its terms could not call for changes in funds transfer procedures that would be disruptive to the operations of the bank, it may contain significant special provisions, particularly in regard to the types of transfers that can be made, the authorization and authentication necessary, and the time at which the customer's account will be debited or credited.

6. The arrangement between the bank and its customer may provide that on his credit transfer instruction or on his authorization to honour the debit transfer instruction of a transferee, the bank will transfer funds to the accounts of the indicated transferees. The arrangement will also provide that the bank is authorized to take steps to reimburse itself for the sums transferred. The first, and usually the only necessary, step to reimburse itself is to debit the account of the transferor.

7. The contract will normally specify the types of funds transfers which the bank is authorized to make against that account as well as the authentication required before the bank is authorized to act upon a funds transfer instruction. The contract may specifically or by implication permit all forms of funds transfers generally available through that bank. Certain forms of funds transfers may be permitted only by special agreement. In particular, a bank should be sure it has proper authority, including a resolution of the corporate board of directors, before it installs at the place of business of a customer a terminal by which funds transfer instructions can be sent directly to the bank.

8. Until recently in many countries any customer could deliver any form of debit transfer instruction to the bank and the bank would transmit it through the clearing or collection arrangements available to it for presentation to the transferor bank. There would probably have been standard provisions as to the time when the customer's account would be credited with the proceeds and the amount of discount, if any, from the face amount of the debit transfer instructions received, although special arrangements with particular customers would also have been common.

9. That situation no longer exists except for cheques. Only those bank customers who have signed special contracts with the bank are permitted to submit such debit transfer instructions as bank credit card vouchers, and the amount of discount charged by the bank can vary considerably between different transferees. In some countries only certain categories of transferees may be permitted by law to submit debit transfer instructions under a standing authorization to debit and, even where there are no such legal restrictions, banks will allow only customers of established integrity and financial standing to do so.

10. An account to which entries are made reflecting funds transfers may be of a type that normally carries a credit balance or of a type that normally carries a debit balance. It is not important for the funds transfer process whether or not the transferor receives interest when the account is in credit or is charged interest when it is in debit. Nor is it important for the funds transfer process whether the account is of a type which is normally used to make or receive funds transfers. However, many countries restrict the types of accounts which can be debited for the amount of funds transfer

instructions. Moreover, in some countries there are legal restrictions on the extent to which an account of a type expected to carry a credit balance may be allowed to carry a debit balance. In any case, all banks will eventually place a limit on the extent to which they will allow a customer to be in debit to them. When that limit is reached, the bank will no longer honour funds transfer instructions issued by the customer until the customer has taken remedial action.

11. In countries where the normal method of funds transfer has been by credit transfer, the opening of an account automatically gives the bank the right to receive credit transfers to that account. There are few restrictions on the type of account which can be credited with a funds transfer. However, in some countries where the normal method of funds transfer has been by debit transfer, particularly by the collection of cheques, it has been suggested that no person other than the owner of an account should be allowed to deposit funds to the account. If a bank has doubts as to its authority to receive a credit transfer to an account, specific authorization from its customer might be necessary before it credits to the customer's account sums received by credit transfer.

B. Authority to transfer funds and to debit transferor's account

1. Debit and credit transfer instruction issued by transferor and presented to transferor bank

12. A funds transfer instruction issued by the transferor and transmitted or presented to the transferor bank serves as an authorization to the transferor bank both to transfer the funds to the account of the transferee at the same or a different bank and to debit the transferor's account. In all paper-based and electronic credit transfers, the credit transfer instruction is delivered by the transferor to the transferor bank. In some paper-based debit transfers, especially those involving the traditional collection of a cheque, the debit transfer instruction issued by the transferor is presented for honour to the transferor bank. In both cases, so long as no question is raised as to the authenticity of the debit or credit transfer instruction, the transferor bank has clear authority to act based upon the funds transfer instruction in its possession.

2. Debit transfer instruction truncated at transferee bank

13. Rather than physically moving the paper-based debit transfer instructions such as cheques from the transferee (depository) bank to the transferor bank in order to present them for honour, in many cases it would be less expensive for the transferee bank to keep the debit transfer instructions and to forward to the transferor bank by electronic means the necessary funds transfer data for presentment, i.e. to truncate the instructions. Furthermore, it would usually be possible to present the cheque electronically to the transferor bank in less time than to present the cheque itself. This would allow the transferee bank and the transferee to receive value sooner and would shorten

the period of uncertainty whether a cheque would be dishonoured. Truncation of the instruction and its electronic processing is used with a number of newer forms of debit transfer instructions signed by the transferor, such as credit card receipts and some cheque-like or bill of exchange-like instruments not subject to the law of bills of exchange or of cheques. It is also followed in respect of cheques in a few countries such as Belgium, Denmark and Sweden, but in the majority of countries the law relative to cheques is thought to preclude the truncation of cheques and their electronic processing.

14. The right of the transferor bank (drawee bank) to require physical possession of the cheque before honouring it is designed to provide it with an opportunity to examine the signature or other authentication on the cheque, to examine the cheque for its accord with the formal requirements of law, to assure itself that the cheque has not been altered and to assure itself that the cheque cannot be presented a second time. In a few countries, but not in most, the transferor bank is also expected to verify that the cheque has not been presented prior to the date on the cheque, and conversely, that the cheque is not so old as to have lost its validity. These verifications are intended to ensure that the transferor bank is properly authorized by the transferor before it transfers the funds and debits the transferor's account. Since the policies in favour of the physical presentment of the cheque are in large measure for the protection of the transferor (drawer), they cannot be waived on his behalf by the transferor bank. They can, it would seem, be waived by the transferor himself, and some experiments with truncation of cheques have been based on customer agreement.

15. In addition, in some countries a dishonoured cheque must be protested by notation on the cheque itself in order for the depositor to charge a prior endorser, a rule which requires the physical availability of the dishonoured cheque. Although banks no longer return cancelled cheques to the transferor in several of the countries in which this practice previously prevailed, in at least one country (the United States) the law governing the collection of cheques provides that the time-limits within which a transferor can raise certain defences against the debits to his account commence on his receipt of the statement of account activity and of the cancelled cheques which authorized the debits. Banks in that country are reluctant to engage in cheque truncation which might extend inordinately the period during which the debit to the account may be questioned. Furthermore, as a result of extensive advertising by banks that cancelled cheques returned to the transferors were particularly good evidence of payment of the underlying obligation, many bank customers no longer keep other receipts and some companies no longer furnish receipts when payment is by cheque.

16. The experience with credit card receipts and the cheque-like debit transfer instructions not subject to the presentment requirement as well as the experience with cheque truncation and electronic processing in Belgium, Denmark and Sweden has shown that it is an acceptable banking procedure for the transferor bank to debit the transferor's account on the basis of a statement by the transferee bank that it has in its possession an authorization from the transferor. If the transferor claims that he did not give any such authorization, the transferee bank must of course be prepared to produce the original cheque, credit card receipt or other debit transfer

instruction. If the transferee bank cannot produce the original, or a legally acceptable copy, or if it is shown that the transferor bank would not have been authorized to debit the transferor's account if the original had been presented to the transferor bank, the transferor bank must be required to re-credit the transferor's account in such a way as to eliminate any consequences in respect of interest, fees or the like arising out of the mishandling. The applicable rules must in turn provide for the transferor bank to be reimbursed by the transferee bank for the amount in question and for the transferee bank to be reimbursed by the transferee. If the law regarding cheques was modified in this manner, the truncation of cheques and their electronic processing would be greatly facilitated.

17. As a partial step towards cheque truncation, in several countries the essential data on the cheques is captured and forwarded by telecommunications to the transferor bank for debit to the transferor's account. Although the debits are provisional until the cheques are received by the transferor bank for verification, the transferor's available balance is immediately reduced and the banks in the collection chain are assured that, if there are insufficient funds, notice will be received promptly. On the other hand, provisional debit may not terminate any right the transferor may have to revoke the bank's authority to debit his account. This procedure is used in some countries for all cheques while in others for only those over a certain value.

18. Cheques, cheque-like instruments and bank credit card vouchers are the principal forms of debit transfer instruction which authorize the transferor bank to make the funds transfer to the transferee and to debit the transferor's account. In the forms of debit transfer described in the following paragraphs the authorization is separate from the instruction.

3. Paper-based debit transfer instructions not issued by the transferor

19. An example of the separation of the debit transfer instruction from the authorization is the bill of exchange drawn by a seller (transferee) on the buyer (transferor) payable at the buyer's bank (transferor bank). Before the transferor bank honours the bill of exchange, it must receive an authorization from the transferor to do so. The authorization may be in the form of an acceptance of the bill; it may have been given by the transferor in anticipation of the presentment of the bill; it may have been given in a general authorization to pay bills of exchange drawn by a particular transferee or it may have been requested by the transferor bank after presentment to it of the bill. In all of these cases, the transferor bank's authority to honour it arises out of the transferor's separate authorization to the transferor bank.

20. A specific authorization to honour the bill may not be necessary where the context in which it was issued gives sufficient assurance that the debit to the account would be authorized. Under the General Conditions of Delivery for trade between the member States of the Council for Mutual Economic Assistance, payment is made by the buyer's bank (transferor bank) without

prior authorization from the buyer (transferor) 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 was not in conformity with the contract. Authorization to honour the bill is assumed in the absence of a claim by the transferor to the contrary.

4. Electronic debit transfer instructions not issued by the transferor

21. The development of electronic funds transfer capability has given new life to transfers made pursuant to a standing authorization to debit. Such transfers are particularly useful for the collection of large numbers of periodic payments, which may be of a constant amount, such as for rent, in which case a standing instruction to credit would serve the same purpose, or they may be of a fluctuating amount, such as for telephone service. The debit transfer instructions can be prepared on a computer memory device by the transferee or by the transferee bank and presented by the transferee bank to the various transferor banks either directly or through an automated clearing-house. Some automated clearing-houses permit transferees to submit the computer memory devices directly to them.

22. Since electronic debit transfer instructions by their very nature cannot be issued by the transferor, the authorization given by the transferor to debit his account is separate from the debit transfer instruction prepared by the transferee or the transferee bank. A standing authorization to debit, which would usually be in written form signed by the transferor, may be given to the transferor bank. In this case the bank would notify the transferee that it had received authorization from the transferor to honour claims made against it for the indicated purposes. If the authorization is given by the transferor to the transferee, the transferee could keep it or give it to the transferee bank. In either of the latter cases the transferor bank, not having the authorization, would honour the claim on the strength of a representation by the transferee, or by the transferee bank, that a proper authorization existed.

23. The public attitude towards standing authorizations to debit varies widely from country to country. Its efficiency as a means of collecting relatively small amounts from large numbers of transferors has led to its wide-spread use in some countries. In other countries there is a concern that transferees may become arrogant towards their customers if they can too easily reach into their customer's bank accounts to secure payment. These concerns have led to restrictions in some countries on the extent of the authorization to debit which a transferor can give. Furthermore, when the amount to be debited varies from one period to the next, it is felt that the transferor should be warned of the amount of the forthcoming debit. One technique has been to require that the transferor be given a notice that a debit of a specified amount would be made to his account on a given date in the future. It might also give him the opportunity to withdraw the authorization to debit his account, though that would not eliminate his obligation to pay the sum due.

5. Authority of one bank to debit account of another bank

24. It is common practice for banks to debit the account of another bank on their books for the amount of the debit transfer instructions which have been sent to the receiving bank for honour. One example is that under the Eurocheque Package Deal Agreement the clearing centres in each of the participating countries send once a day to the clearing centres of each of the other participating countries the Eurocheques drawn on banks in the receiving country which were cashed in the sending country. The sending clearing centre is authorized under the Package Deal Agreement to debit the account of the receiving clearing centre for the total amount of the cheques plus the standard commission charged on all Eurocheques cashed abroad. The debit is made with an interest date of two working days after the date of dispatch.

25. This practice of authorizing the sending bank to debit the account of the receiving bank greatly facilitates the clearing of routine debit transfer instructions directly between banks, or as in the case of Eurocheques, between national clearing centres. The sending bank automatically has value on its books for the amount of the instructions sent for honour as of the interest date agreed upon by the banks. If any of the instructions are not honoured upon presentment, the debit can be reversed to the extent of the dishonoured instructions.

C. Funds transfer instruction

1. Authentication

26. The authentication of a document or message gives it a legal form which renders it worthy of belief. A formal authentication consists of the execution of the document before a notary or other public official authorized to execute such functions, and especially in the civil law countries, it gives the document a special weight in any subsequent legal proceedings. Informal authentication consists of marking the document or message in such a way as to indicate its source. Funds transfer instructions are informally authenticated.

27. The term authentication as used here should be distinguished from the use of the same term in computer-to-computer telecommunications, and especially as it is defined in ISO DIS 7982. In that context, because of the availability of certain techniques using computers, the authentication of the message can validate the full text of the message as well as its source. This is, of course, a desirable attribute of those techniques. However, since those techniques are available only by use of computers, they are available neither for those electronic funds transfers which do not rely on the use of computers nor for paper-based funds transfers.

28. The relative rarity of electronic funds transfers prior to the use of computers may have led to a lack of statutory or regulatory provisions which require electronic funds transfer instructions to be authenticated before the banks concerned are permitted to act upon them. However, it is probable that all agreements between banks and their customers require that funds transfer

instructions issued by the customer must be authenticated before the bank is authorized to execute them. The agreement would also include the form of the authentication.

29. Many closed-user networks for electronic funds transfers establish required means of authenticating a funds transfer instruction passing through them. Consumer oriented networks, such as networks of automated teller machines, automated cash dispensers and point-of-sale terminals, specify the authentication required of the consumer. Inter-bank funds transfer networks specify the authentication required from the sending banks.

(a) Form of authentication

30. An authentication of a paper-based funds transfer instruction is usually accomplished by the signature of an authorized person. Signature is usually understood to mean the manual writing of a specific individual's name or initials. The signature so written is considered to be personal to the individual. Its existence on the funds transfer instruction gives a strong indication of that person's intent to issue the instruction. Moreover, the possibility of comparing it with a specimen of a signature known to be genuine provides a means of verifying that the signature on the instruction is also genuine.

31. The demands of modern commerce have led many legal systems to permit the signature to be made by stamp, symbol, facsimile, perforation or by other mechanical or electrical means. 1/ This is in line with developments in other fields of trade law. For example, all of the principal multilateral conventions governing the international carriage of goods which require a signature on the transport document permit that signature to be made in some way other than by hand. 2/

32. Authentication of a funds transfer instruction made electronically must be made by a means which is appropriate to the means of communication used. Telex and computer-to-computer telecommunications often employ call back procedures and test keys to verify the source of the message. Certain encryption techniques authenticate the source of a message, as well as its content. Withdrawals from an automated cash dispenser, transfers from an account through an automated teller machine or a point-of-sale electronic funds transfer by use of a plastic card are authenticated, under the most widely used current technology, by the entry into the terminal of a personal identification number (PIN) which agrees with the PIN assigned to that card

1/ See the definition of "signature" in the draft Convention on International Bills of Exchange and International Promissory Notes (A/CN.9/211), art. 4(10) and the draft Convention on International Cheques (A/CN.9/212), art. 6(8), both of which have been elaborated by UNCITRAL.

2/ Co-ordination of Work: International Transport Documents, Report of the Secretary-General (A/CN.9/225), para. 47.

holder. Dynamic signature analysis by computer is in experimental use as a replacement for the PIN. A funds transfer instruction given over the telephone may be authenticated by use of codes and the transferor bank may call back to the transferor to verify the source of the request.

33. Although an authentication in any form serves the basic functions of identifying the source of the instruction and indicating that the instruction was intended to be issued, there is a fundamental difference between a handwritten signature and authentication by electronic means. Even though a handwritten signature can be forged so well that the forgery is difficult to detect, nevertheless the signature can properly be made only by a specific individual. A signature shares this quality with only a few other forms of authentication, such as a fingerprint. Therefore, if a signature has been forged it is by its very nature an invalid authentication, even though other considerations may lead a legal system to hold that in certain cases the person whose signature was forged should bear the consequences rather than a person who relied on the forged signature in good faith and without negligence.

34. Mechanical forms of signature on paper documents and various techniques for authentication of an electronic funds transfer instruction can be authenticated in a proper form by an unauthorized person or by a person exceeding his authority. If such a person had access to the legitimate stamp, perforating device, test key, encryption key or plastic card and PIN, the instructions which he caused to be issued would be identical to those issued under proper authorization.

35. This difference between the various means of authenticating a funds transfer instruction has certain legal consequences when the bank honours a funds transfer instruction which has an unauthorized authentication. These legal consequences are discussed in connection with the allocation of loss arising out of fraud. ^{3/} However, this difference should not be understood to mean that a handwritten signature requiring visual comparison is a more secure form of authentication than is an electronic authentication. On the contrary, a person's signature can easily be forged well enough to be accepted by a bank, even if an expert could later determine with a high degree of certainty that the signature was forged. Moreover, visual comparison of signatures is so time consuming and costly that in many countries it is not done for funds transfer instructions of a small amount, even though the applicable legal rules may assume or require the visual comparison of all signatures. On the other hand an electronic form of authentication can be verified at an acceptable cost for even the smallest of transactions. Moreover, a well designed authentication system and rigorous adherence to the procedures necessary to keep the system secure can reduce to a minimum the likelihood that funds transfer instructions containing unauthorized authentications will be honoured.

^{3/} See discussion in Chapter on Fraud, errors, improper handling of transfer instruction and related liability, A/CN.9/250/Add.4.

(b) What must be authenticated

36. As indicated in paragraph 16 above, in all paper-based and electronic credit transfers and some paper-based debit transfers, especially those involving the traditional collection of a cheque, the funds transfer instruction issued by the transferor is transmitted or presented to the transferor bank. Since this funds transfer instruction serves as the authorization to make the funds transfer and to debit the transferor's account, it is the only message which must be authenticated for this purpose. Where the paper-based debit transfer instruction is truncated, the transferor bank debits the transferor's account on the basis of a funds transfer instruction issued by the presenting bank. Therefore, in this case both this latter instruction and the original debit transfer instruction must be authenticated.

37. Where a debit transfer instruction was not issued by the transferor as in cases of a bill of exchange drawn by a transferee (seller) on a transferor (buyer) payable at the transferor bank, a bill of exchange drawn by the transferee on the transferor bank pursuant for example to a letter of credit, or a debit transfer instruction submitted pursuant to a standing authorization to debit, the debit transfer instruction does not constitute an authorization by the transferor either to transfer the funds to the transferee or to debit his account. Therefore, both the debit transfer instruction issued by the transferee or the transferee bank and the authorization given by the transferor to the transferor bank, transferee bank or transferee must be authenticated.

38. When a paper-based or electronic funds transfer is between two banks and does not involve a customer either as transferor or as transferee, it is obvious that the funds transfer instruction passing between the two banks must be authenticated. If an electronic funds transfer must pass through intermediary banks, a new funds transfer instruction must be created for each funds transfer transaction and each instruction must be separately authenticated. Similarly, if an electronic funds transfer is initiated by a non-bank customer, both the instruction from the customer and the instruction passing between each pair of banks must be authenticated.

39. Where funds transfer instructions are transmitted in batches, there is usually a single authentication for the entire batch. In the case of the teletransmission of a batch, the authentication is found in the message header. In the case of electronic funds transfer instructions transmitted by the physical exchange of computer memory devices, the authentication may be in the header, on a separate piece of paper, or on both.

2. Data elements

40. Negotiable instruments drawn on or payable at or by a bank are more than funds transfer instructions. They are also instruments which embody certain rights in the instrument and which may free certain holders of the instrument from some defences which might have been available to the drawer against the payee. As a result there are strict requirements as to the data elements

which must appear on a negotiable instrument and those which must not appear on a negotiable instrument. An instrument which does not conform to these requirements fails to be a negotiable instrument. However, an instrument which fails to meet the requirements of a negotiable instrument might still serve as a valid funds transfer instruction.

41. There are no general statutory requirements as to the necessary data elements in a non-negotiable funds transfer instruction. However, many electronic clearing-houses and communications services specify the data elements required for different types of funds transfer instructions transmitted through them. ISO DIS 7982 establishes a list of the data elements which can be used in a computer-to-computer telecommunication of a funds transfer instruction and gives examples of how they are to be represented in various types of instructions, but it does not attempt to specify which data elements may be necessary in a given type of funds transfer. The data elements for funds transfer instructions to be used in telex messages and in debit and credit card message exchange among financial institutions are also being standardized by the Banking Committee of ISO. When consumer protection legislation specifies certain information which must appear on a periodic statement of account activity, the funds transfer instruction to the transferor bank must also contain that information so that the transferor bank can include it in the statement.

42. When paper-based debit or credit transfer instructions are truncated before they reach the destination bank, the electronic instruction prepared by the truncating bank may not contain all of the data elements which were on the paper-based instruction. Words of negotiability on a cheque are not forwarded. The account to be debited or credited may be indicated only by account number, if it is available, and not by name. The amount may be indicated only by figures, even if the paper-based instruction contained both words and figures and even if the applicable law provides that the words control. The date of the paper-based instruction may not be included.

43. It is the responsibility of the sending bank to be sure it has sent all of the data elements that would be necessary for the receiving bank to act on the instruction. Failure to do so renders the instruction incomplete. The receiving bank, however, may not recognize that the instruction is incomplete, in which case the instruction may be executed incorrectly. On the other hand the receiving bank may be able to deduce some of the data elements from the context of the funds transfer instruction. A domestic funds transfer can be assumed to be in the local currency unless otherwise specified. Some of the required data elements can be derived from those data elements given. The number of an account to be debited or credited and the relevant branch of the bank can usually be determined if the name of the account is given correctly. In other cases the receiving bank may be able to repair the incomplete instruction on the basis of prior transactions or other information in the possession of the receiving bank. However, since attempted repair of the instruction by the receiving bank may lead to an incorrect instruction, the receiving bank may become liable for the error rather than the sending bank. Therefore, when the receiving bank is in doubt, it should ask for clarification.

44. Identification of account by name or number: Bank accounts are usually opened in the name of a particular person or entity. A single customer may have several different accounts for different purposes. These accounts are often identified by similar, even if not identical, names. Likewise, different customers may have similar, or even identical, names. Moreover, customers may not be consistent or entirely accurate in the name they use in connection with their account or accounts. Banks usually attempt to overcome this problem by assigning a unique number to each account, permitting them to distinguish between accounts with similar names or different accounts of the same customer. If each bank has also been assigned a unique number, the entire process of sorting and routing funds transfer instructions between banks and within banks can be accomplished automatically through machine-readable magnetic ink character recognition (MICR) or optical character recognition (OCR) techniques in the case of paper-based funds transfer instructions or by a computer in the case of electronic funds transfers. In a fully automated banking environment the account of the transferor would be debited and the account of the transferee would be credited entirely on the basis of the machine-readable account numbers, thereby decreasing the cost of the bookkeeping operations as well as decreasing the likelihood of entering the debits or credits to an incorrect account.

45. In spite of the advantages of making funds transfers on the basis of the number of the account rather than the name of the account holder, there are several problems. A bank may allocate the same account number to two different customers, though it could be expected that this error would soon be corrected. The customer may give his own or the other party's account number incorrectly or, if the bank must transcribe the number to the code line of a paper-based funds transfers instruction or to a new electronic instruction, it may do so incorrectly. For paper-based funds transfers this problem can be reduced by the use of funds transfer instruction forms containing pre-printed machine-readable account numbers. The account number of both the transferor and transferee can be pre-printed when the funds transfers are regularly made between them. However, usually only the transferor's or the transferee's account number can be pre-printed on funds transfer instruction forms and the other account number must be entered on the form at the time of the transfer. The account numbers to be debited and credited in funds transfers processed by computer can be verified as being in existence, thereby reducing the possibility of error, but all cases of fraud cannot be eliminated through these verifications.

46. Although the use of machine-readable paper-based funds transfer instructions and of electronic funds transfer techniques have led banks to rely largely on the account number for these transfers, it is not clear at present to what extent in the various legal systems a bank is legally justified in relying only upon the account number as disclosed in the funds transfer instruction to post debits and credits, and especially to post them automatically from the code line of a paper-based funds transfer instruction or from an electronic funds transfer instruction. Where the transfer is identified only by account number, as it is for example in a transaction activated by the use of a magnetic stripe plastic card and a PIN, in an automated teller machine, automated cash dispenser or point-of-sale terminal,

the bank can identify the account to be debited only by reference to that number and it is believed that this practice is legally justified. However, if the funds transfer instruction carries both the name and the number of the account to be debited or credited and the two are not in agreement, the legal rules in force may provide that the name of the account controls. The legal system may go even further and hold that the bank must investigate because of the obvious existence of either error or fraud. However, to the extent it can be reconciled with laws of general application in force in a jurisdiction, the development of a fast, reliable and inexpensive electronic funds transfer system would clearly be furthered by enabling banks to rely entirely upon the account number in the funds transfer instruction.

3. Format

47. Although there have been no general legal rules requiring that funds transfer instructions be in a particular format, certain world-wide conventions developed over time as to the general formats to be used for the traditional paper-based instructions. This has been particularly true of cheques and bills of exchange, where the formats used are clearly recognizable in all countries. This similarity in format has greatly aided the international clearing and collection of these traditional forms of debit transfer instructions.

48. In order to process paper-based funds transfer instructions by automated data processing it is necessary that the data elements be located in a specific place and be machine-readable. This has called for the standardization of the size and the format of funds transfer instructions and this standardization has often been accomplished within the relevant clearing and collection systems. Therefore, in a country where there are several different clearing or collection systems for paper-based funds transfer instructions, such as one system amongst the commercial banks and a second operated by the postal system, and the funds transfer instructions are not cleared freely between the two systems, each of the clearing systems may have standardized the size and formats of the funds transfer instructions, but in an incompatible manner. Where there is only one clearing system or where funds transfer instructions are cleared freely between the different clearing systems, nation-wide standardization of the size and format will usually be found.

49. Similarly, where paper-based funds transfer instructions are intended to be cleared or collected internationally, or where forms prepared in one country are to be useable in other countries, international agreement has sometimes been reached on the size and formats to be used. Therefore, the size and format of Eurocheques has been standardized, thereby also standardizing the cheques as used domestically in those Eurocheque countries (with the current exception of France and the United Kingdom) and the forms to be used for the various types of international funds transfers through the postal system have also been standardized.

50. In the past electronic funds transfer instructions sent by telegraph or telex were not standardized. The move to standardize message formats of electronic funds transfer instructions undoubtedly began when banks began to

exchange, either directly or through an automated clearing-house, computer memory devices containing funds transfer instructions. In order for the computers of the receiving bank to process the instructions, the programs for the computers of the banks, as well as those of the automated clearing-houses, must be compatible and the data elements must be entered according to a standard format.

51. The concerns are essentially the same for funds transfers made by computer-to-computer telecommunications. Although there is nothing in the nature of a computer-to-computer telecommunication network which precludes the use of free-form messages, since the receiving computer can show the message on a screen or produce a paper print-out which can then be used as the equivalent of a telex message, the use of free-form messages eliminates many of the advantages to be derived from a computer-to-computer network. Therefore, standard formats have been created for the different types of funds transfer instructions permitted in each network. A bank which programs its computers to inter-face with the standard format used for domestic and international funds transfers can enter transactions into its accounts directly from the instructions received, as well as from those sent, with at most a minimum of additional data to be entered relevant only to that bank.

52. Once a standard format for a funds transfer instruction has been adopted by a particular closed-user network for funds transfers, the use of that format should be obligatory. A bank within the network which fails to use a required format should be responsible for loss to the receiving bank caused by the failure. However, where banks can use the network also for messages necessarily sent in free-form, the evidence suggests that the computer operators use the required formats for messages of a type they send often but prefer to use free-form messages in place of message types they use less often. Since failure to follow a required format may cause extra work and delay to the receiving bank, even though no quantifiable loss may be created, consideration could be given to the levy of a standard charge on the sending bank for each deviation from the required format.

53. The standard formats developed for the various closed-user networks have been neither identical nor compatible in all respects. If the formats are compatible, even though not identical, soft-ware is available to convert funds transfer instructions from one format to the other. If the formats for the closed-user networks for computer-to-computer funds transfers in which a bank participates are not compatible with one another, a bank which receives a funds transfer instruction from one closed-user network and passes it on through a different network may have to re-enter the data for the out-going instruction with the consequent delays, extra expense, and, most important of all, the increased likelihood of errors. The incompatibility of the formats precludes the clearing of funds transfer instructions between banks, or limits the access of some banks to some aspects of a market for funds transfers.

54. Incompatibility of format is most serious when the message format of one network does not contain data elements which are required in another network. This latter problem has arisen in its most acute form in respect of the use of magnetic stripe plastic cards in point-of-sale networks. Merchants in most countries in which point-of-sale networks have been created or actively

discussed tend to insist that they can accommodate only one point-of-sale terminal at each cash register. If point-of-sale terminals which can accept only one of several competing magnetic stripe cards are installed in large numbers of stores, an adverse effect can be expected on the competitive position of those banks which belong to the rival systems. As a result, in several countries official pressure has been exerted leading to the adoption of a compatible format for such cards. This problem has often been referred to as a problem in shared facilities.

D. Time within which bank must act on the instruction

1. General considerations

55. The agreement between the customer and the bank not only governs the extent of the bank's obligation to complete the funds transfer or cause the funds transfer to be completed, but also governs the period of time within which the funds transfer must be completed or within which the various banks and other entities in the funds transfer process must act. That period of time may be explicit or it may be implicit. The length of the period will vary depending on the funds transfer technique chosen. Few countries have statutory provisions prescribing the period within which the banks must act. However, some agreements between banks and their customers and a larger percentage of inter-bank agreements, including the regulations governing clearing-houses and closed-user networks, contain rules governing such period of time. Although in some countries the inter-bank agreements have no formal effect on the rights of the bank customers, they govern the rights of banks between themselves and, by providing the structure for the funds transfer system, they determine the period of time within which a customer can reasonably expect his funds transfers to be completed.

56. The law and practice governing the period of time within which banks must act in a funds transfer varies widely in different countries. Undoubtedly this reflects differences in such factors as the size of the country, the nature of the banking system, whether funds transfers are primarily made by debit transfer or credit transfer, the transportation system and clearing arrangements available for paper-based funds transfers and the extent to which various forms of electronic funds transfers are available. The development of international closed-user networks for paper-based funds transfers (e.g. Eurocheque), consumer electronic funds transfers (various debit and credit card systems) and commercial funds transfers (e.g. S.W.I.F.T. and, in a different sense, CHIPS) has tended to unify the time-limits applicable to transfers through those networks. However, even in these countries national differences are significant and, since an international funds transfer may also pass through domestic channels in the originating or destination country, the total period of time necessary for an international funds transfer is often still difficult to determine. It is likely, however, that the development of these networks is also having an effect on the domestic practice in the countries which are active participants.

2. Customer's concern about speed and consistency of performance

57. The concerns of bank customers about the speed and consistency of performance of the funds transfer system fall into two broad categories. On one hand, the funds transfer system must function in such a manner that bank customers can fulfill their business and personal obligations to make funds available to the credit of the transferee at the time and place required. On the other hand customers and banks alike share the desire to maximize the interest earning potential of their account balances.

(a) Impact on relations between customers

58. A transferee may be primarily interested in knowing that the transfer process has begun and can be expected to be completed in due course. On that assurance he may be willing to ship additional goods or provide additional services. A debit transfer system by which he receives a cheque from the transferor or in which he can initiate a bill of exchange or electronic debit transfer instruction may satisfy this concern. When the transferee has doubts whether the funds transfer will be completed in an acceptable period of time or when the transferee needs the money prior to proceeding further, he may require completion of the funds transfer with irrevocable credit to his account before he will act further.

59. If the funds must be available to the credit of the transferee by a certain date, the transferor using an ordinary cheque must furnish the cheque to the transferee in sufficient time for the cheque to be presented, honoured and credited to the transferee's account. If the transfer is by credit transfer, the transferor must make it in sufficient time and by a method that will assure the availability of the credit in time. In either case the transferor needs at least a reliable estimate of the time necessary for the funds transfer. In some cases he may need a firm commitment of the bank that the funds transfer will be completed by the point of time stipulated. If the transferor suffers a loss as a result of the failure to complete the funds transfer within the period of time explicitly or implicitly provided in the transferor's agreement with his bank, the transferor bank, or the other bank or entity responsible for the delay, may be liable for that loss.

(b) Interest earning potential of customer bank balances

60. Many bank customers want to maximize the interest earning potential of their bank balances by delaying debits as long as possible and securing credits as early as possible, while at the same time keeping only the minimum balance necessary in accounts which earn no interest or only a low rate of interest. Although customers have little control over the timing of debits and credits to their accounts once the funds transfer instruction has been issued, they can influence the timing by their choice of funds transfer techniques.

61. A transferor may be able to delay debits to his account for a significant period of time if he can effectively discharge an obligation by issuing a debit transfer instruction, such as a cheque, whether or not issuing the

instruction legally discharges the obligation. In many countries cheques are debited to the account only as of the date they are presented. In these countries the transferor has the continued use of the funds until the point of time the cheque is honoured, which may be days or weeks later. By careful management of the account balance, the transferor can ensure that there are sufficient funds in the account to honour the cheques as they are presented. Such a practice is often formally prohibited by a rule that there must be at all times a balance sufficient to cover all cheques issued, but official action is rare so long as cheques are in fact honoured.

62. The interest gained by the transferor from a delayed debit to his account is usually lost to the transferee, since it can be expected that the transferee will not be credited at least until the cheque has been honoured or, if he is credited more promptly, that the credit will not usually earn interest or be freely transferable until the cheque has been honoured.

63. In some countries the debit to the transferor's account and the credit to the transferee's account are entered as of the date the funds transfer instruction was issued as shown by the date on the instruction. In those countries the amount of time it takes to complete a funds transfer is of less importance to the customers and to the banks. Although funds cannot be available to the transferee as a practical matter until the credit is entered, that may be of little consequence if the transferee is permitted to carry a debit balance larger than his immediate cash flow needs. Carrying a debit balance does not generate net interest charges to the extent that credits entered subsequently are credited as of the date of the instruction was issued. Entering the debits and credits as of the date the instruction was issued may cause difficulties for inter-bank clearance. However, this practice has been in existence for a long time in some countries and the problems would seem to be minimized when computers are used in the clearance. This system of dating the entries reduces the incentive to a bank to delay entering customer credits beyond that necessary for a normal flow of work.

64. In a credit transfer the transferor's account is debited at the time the transferor bank begins to process the credit transfer instruction while the transferee's account is credited only after the transferee bank receives the instruction. Unless the debits and credits are made as of the date of issuance of the credit transfer instruction, all inter-bank credit transfers necessarily envisage a gap between the point of time at which the transferor's account is debited and the transferee's is credited. As with debit transfers no generalizations can be made as to the extent of the gap, which could run from fractions of a second in an on-line computer-to-computer network to days or even weeks for other transfers.

65. Since electronic funds transfer techniques almost always permit the banks to complete the funds transfer faster than do paper-based techniques, the transferee's account can be, and usually is, credited and the transferor's debited sooner than when a cheque is involved. This has been a major deterrent to the introduction of electronic funds transfer techniques in some cheque oriented countries, since in most cases it is the transferor who decides the means by which the funds transfer is made. This concern has been met in some point-of-sale networks by delaying the debit to the transferor's

account for some specific period of time. There would be no such deterrent to the substitution of electronic funds transfer techniques in place of paper-based credit transfer techniques when the transferor's account is debited at the same time.

(c) Irrevocability of funds transfer instruction

66. It is in the interest of transferees, and of transferee banks, that funds transfer instructions be irrevocable as early in the funds transfer process as possible. On the other hand on occasion transferors wish to revoke funds transfer instructions they have issued, usually because of problems associated with the underlying transaction or because of the intervening insolvency of the transferee. Although specific rules vary in different legal systems, a matter which is discussed at more length in the chapter on finality of honour, the transferor's right to rescind the funds transfer instruction terminates no later than when the funds transfer is completed. Since electronic funds transfers tend to be completed sooner than are paper-based funds transfers and the operating rules of many on-line and off-line electronic clearing-houses further restrict the right to revoke a funds transfer instruction once it has been submitted to the clearing-house, transferors tend to lose their right to revoke funds transfer instructions at an earlier time when the funds transfer is made electronically than when made by paper-based techniques.

3. Bank's concern about speed and consistency of performance

67. Banks are at least as interested as their customers that the funds transfer system operate in a consistent and predictable manner. Banks transfer large sums of money for their own account and they too must be able to count on being able to deliver funds when they have promised to do so and to receive funds which were promised to them. If the funds transfer service does not operate well, in many countries the banks risk losing both deposits and funds transfer fees to other financial entities which can furnish competitive, if not identical, services. This leads banks to work for the reliability of the system, including both improvements in the hardware, software and procedures and a strengthening of the rules requiring prompt action by the receiving bank of a funds transfer instruction. However, in addition to the pressures exerted on the banks to increase the speed with which the funds transfer system operates, there are countervailing pressures on the banks to retain some of the delay that was inherent in the paper-based system. The two main pressures of this type being the impact which the speeding up of the funds transfer process has on the interest earning potential of the bank and on the security of the transferee bank that it will be reimbursed by the transferor bank.

(a) Interest earning potential of bank assets

68. A banking system as a whole increases its net earnings when there is an increase in the amount of interest earning assets not subject to a corresponding obligation to pay interest to a customer. Interest obligations

of a banking system to its customers are decreased during the period after the account of the transferor has been debited and before that of the transferee has been credited. In effect, during this period of time the deposit liability for funds transfers in transit is not recognized as due or available to any specific bank customer. Since the introduction of electronic funds transfer techniques in credit transfers tends to reduce the period of time before which transferee banks receive the credit transfer instructions, prompt crediting of the transferee's account as of the day of receipt of the instruction tends to increase the obligations of the banks to their customers reflected in customer bank balances as compared to the situation using paper-based credit transfer techniques.

69. In many parts of continental Europe it is common practice in an inter-bank transfer to credit the transferee's account with an interest date two banking days subsequent to the entry date. The time stretches to four calendar days over an ordinary weekend. This period of two banking days is intended to allow the transferee bank to receive settlement from the transferor bank prior to the date on which the transferee would begin to earn interest. Under the usual rule for a credit transfer the credits once entered are firm and the transferee has usually an unqualified availability of the funds. They can be withdrawn or transferred to another account immediately. However, the funds do not draw interest until the indicated interest date. Moreover, if they are withdrawn before that date, the customer is charged for the relevant period. This practice assures the banks a minimum period of two days during which neither bank is paying interest on the amount transferred in addition to any period of time necessary to make the transfer.

70. Interest earning assets are also created if the transferee bank receives a credit to its account before the transferor bank is debited. In effect, in this case both banks recognize the same asset. This occurs in debit transfers in the United States where the Federal Reserve uses an availability schedule to determine when it will give credit to transferee banks for cheques they have submitted to the Federal Reserve for collection. This availability schedule on average calls for crediting the transferee banks somewhat sooner than the Federal Reserve is able to present the cheques to transferor banks and to receive value from them. The Federal Reserve, however, has acted to reduce this unique form of bank asset by, inter alia, encouraging the development of electronic credit transfers and by the faster presentation of cheques, including a proposal for the electronic presentation of large cheques.

71. Where the interest earning potential which existed in the previous paper-based funds transfer system has been decreased by the introduction of electronic funds transfer techniques, or by the action of the public authorities, it has been expected that explicit charges for funds transfers would result. While the advantages or disadvantages of explicit charging for funds transfer services go beyond the scope of this legal guide, a funds transfer service adequate to the needs of many bank customers calls for rules which do not reward delay in processing any aspect of the transfer in order to create interest income for themselves.

(b) Security of reimbursement to transferee bank

72. In some countries banking rules permitting delay in entering a legally final credit to the transferee's account is associated with the transferee bank's concern that it may not receive reimbursement from the transferor bank. When a bank becomes legally committed to its customer for the credit before it has a final legal right to the corresponding debit in a form acceptable to it, the bank runs a credit risk that the debit may not become final or that the person or bank indebted to it on the debit may become insolvent. In a debit transfer there may be an additional risk for the transferee bank that the debit transfer instruction will be dishonoured.

73. The risk for the transferee bank has been reduced in most countries in respect of paper-based debit transfers by a legal rule permitting the transferee bank to reverse the credit to the transferee's account in case of dishonour. A similar rule seems to prevail in electronic funds transfer systems permitting debit transfers. The risk that the transferor bank may fail to settle for either a debit or a credit transfer is also reduced in some countries by a similar legal rule that the credit to the transferee's account can be reversed if the transferee bank does not receive value. The most notable example is that of the United States where the risk of bank failure underlies many of the rules governing funds transfers. However, where the legal rules do not permit reversal of a credit to a transferee's account, or give a priority in insolvency, the risk can be placed on the transferee rather than on the transferee bank by delaying the entry of the credit to the transferee's account until after settlement is final.

4. Responsibility of destination bank to act promptly

(a) Credit transfer

74. In a credit transfer the transferee bank is the bank which finally executes the instruction of the transferor to credit the account of the transferee, although in many legal systems the transferee bank's legal obligation to do so promptly arises out of the inter-bank agreement between it and the transferor bank or intermediate bank which sent it the instruction.

75. Pay date: The transferor's instruction to the transferor bank may include a pay date on which the transferee's account is to be credited. Although the pay date may constitute a contractual commitment on the part of the transferor bank that the transferee's account will be credited by that date, it is less clear what significance the pay date has for the transferee bank. ISO DIS 7982 defines the pay date as the "date on which the funds are to be available to the beneficiary [transferee] for withdrawal in cash." This would appear to make the pay date as that date appears in the instruction received by the transferee bank as legally binding on it unless the transferee bank were to reject the instruction because it could not credit the transferee's account by that date or because it refused to do so unless it had already received settlement. Failure by the transferee bank to credit the transferee's account by the appropriate time, which would seem to be the pay

date if one is specified, would therefore ordinarily constitute breach of an inter-bank agreement and the transferee bank may be liable for the consequent losses, if any, caused by the delay.

76. The transferee bank also has an agreement with the transferee to credit his account within some appropriate period of time for all credit transfers received. When crediting is delayed beyond the appropriate time, there would be a loss of interest in many cases, even if the loss would be so minor for each transaction that it would not be worth the transferee's time to complain. The transferee might also fail to complain because he may not be in a position to know when the credit transfer instruction was received. However, if a bank was consistently slow in crediting the transferee's account, the total loss to the bank's customers and gain to the bank could be substantial. It is for this reason that some countries and some credit transfer networks prescribe the maximum period of time after receipt of a credit transfer instruction for the transferee bank to credit the transferee's account.

(b) Debit transfer

77. In a debit transfer the transferor bank acts on the instruction or authorization of the transferor to debit his account and to transfer or cause to be transferred the sum in question to the account of the transferee. If the transferor bank wrongfully fails to honour the instruction, it may be liable to its customer for damages. The transferor bank by debiting the transferor's account also acts as the bank which finally executes the instruction given by the transferee to the transferee bank to collect the sum in question from the transferor's account in the transferor bank. As a practical matter, few transferees would be in a position to insist that the transferor bank honour the instruction promptly. On the other hand the transferee bank may be able to exert pressure in this direction. Furthermore, in some countries the public authorities also press transferor banks to settle promptly.

78. The principal concern of the legal system, however, has not been the amount of time before the debit transfer instruction is honoured but the amount of time available to the transferor bank to dishonour a debit transfer instruction. A transferor bank to which an instruction is presented that would, if honoured, create an unacceptably high debit balance in the transferor's account might decide to retain the item for a period of time to allow the transferor an opportunity to deposit additional funds to the account. If the additional funds are not deposited, the debit transfer instruction will eventually be dishonoured. However, when the transferor's financial position has worsened during this period of time before dishonour, the transferee and the transferee bank may suffer more losses because they were not notified of the transferor's financial difficulties by an immediate dishonour of the debit transfer instruction. It is common to find in clearing-house rules and similar inter-bank agreements a strictly limited period of time measured from the presentment of the instruction after which it can no longer be returned through the clearing-house. However, it is usually somewhat less clear for how long the dishonoured instruction can be returned outside the clearing-house although there is general agreement that such a time-limit exists.

5. Effect of branch banking

79. In respect of paper-based funds transfers, separate branches of banks have often been treated as separate banks for the purpose of determining the applicable time-limit for the transmission of a funds transfer instruction from one bank to the next or for the honour or dishonour of the instruction by the transferor bank. This rule is based on the premise that many of the crucial actions to be taken by the transferor bank and transferee bank can take place only when the funds transfer instruction has arrived at the office of the bank where the customer records of account and specimen signatures are kept and the account is managed.

80. When the customer records of account are kept off-line at a centralized data processing centre but the specimen signatures for paper-based funds transfer instructions are maintained at the branch, it is less clear whether the time-limit for the bank to act should be measured from the time of receipt of the paper-based instruction at the data processing centre or from its receipt at the branch where the verification of the authentication can take place. Many clearing-house rules measure the time for return of a dishonoured debit transfer instruction or of an unprocessable credit transfer instruction from the point of time when the receiving bank withdraws it from the clearing-house. This does not take into account any need for the receiving bank to process the instruction at both the data processing centre and the branch. Nevertheless, if many banks participating in the clearing-house found the periods of time to be too short, it could be expected that the clearing-house rules would be amended to allow additional time for return of such instructions.

81. Since the PIN, password or other customer authorizations for off-line as well as on-line electronic funds transfers are contained in the computer along with the records of account, the funds transfer instructions would need to be delivered only to the data processing centre, and not to the branch. Furthermore, if the branches and offices of the bank are on-line, the customer records of account and authorizations for electronic funds transfers could be accessed from terminals at any of those points. However, in case of paper-based funds transfers, it might be necessary for the transferor bank to send the instructions to the appropriate branch for verification of signature even though the debit or credit entries to the customer's account could be made from an on-line terminal at another convenient point. On the other hand, if banks truncate the paper-based funds transfer instructions, there is no necessity to allow them time to send those instructions to the branch for verification of signature.