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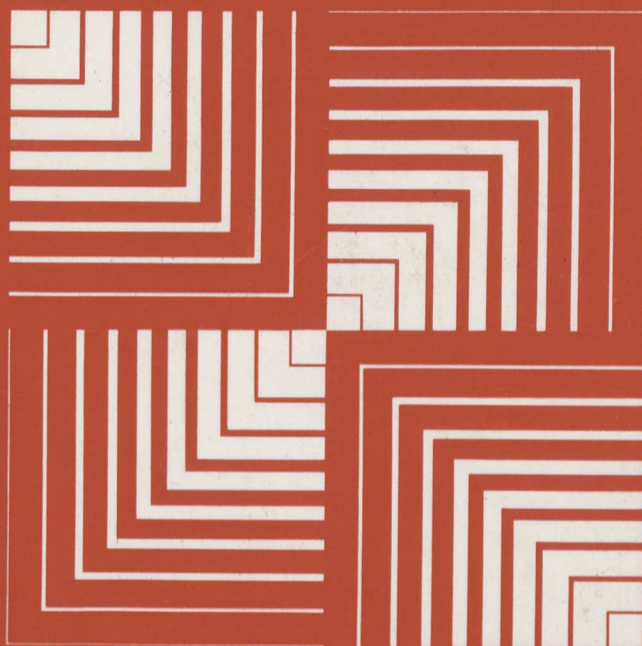
# Electronic Funds Transfer Systems in Canada:

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emerging issues  
and recommendations

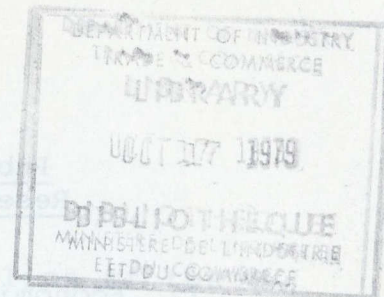
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John W. Lambie



Consumer and  
Corporate Affairs  
Canada

Consommation  
et Corporations  
Canada



Electronic Funds Transfer  
Systems in Canada:  
Emerging Issues and Recommendations

John W. Lambie  
Consumer and Corporate Affairs Canada  
Bureau of Competition Policy

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Any errors which remain are, of course, the responsibility of the author. The views expressed are those of the author and do not necessarily reflect those of Consumer and Corporate Affairs Canada.



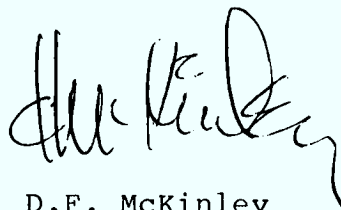
## FOREWORD

A primary objective in the Research Branch, Bureau of Competition Policy is the preparation of policy-oriented research studies in the fields of industrial organization and competition policy, which relate directly to the contents or administration of the Combines Investigation Act. Publication is intended to provide businessmen, academics, government officials and other interested parties an opportunity to scrutinize and comment on the direction and quality of the research. In addition, it is hoped that this monograph series will serve as a recognized focal point for policy-oriented micro-economic research in Canada. Studies published in this monograph series are prepared by personnel employed in the Branch and by research consultants under external contract.

This third monograph in the series examines the competition-policy issues associated with the emergence of an electronic funds transfer system (EFTS) in Canada. Increasingly in recent years, advances in computer and telecommunications technologies have been applied to methods of making payments. These developments, such applications as credit cards, electronic store terminals and magnetic ink characters on cheques, have created increasing public exposure and awareness. These and other more substantial changes associated with electronic payments system will involve enormous expenditures and create important new opportunities and challenges both for business and government.

In Canada, EFTS is in the early stages of implementation. The time is appropriate to describe emerging trends, identify related issues and consider alternatives. Mr. Lambie, in this monograph, deals with these matters from the standpoint of competition policy.

In identifying the principal issues for competition policy, it is hoped that this study will contribute to effective policy formulation in an area likely to touch the economic lives of most Canadians.



D.F. McKinley  
Director  
Research Branch  
Bureau of Competition Policy

June 1979

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## INTRODUCTION

Electronic Funds Transfer (EFT) has long been a topic of serious discussion in banking circles and has recently begun to appear in the popular press. Some members of the public see EFT as a futuristic payments system in which computers take over their financial affairs, replacing their cash and cheques with plastic cards and identification numbers and the jingle of a pocketful of coins with the electronic noises of computer terminals. As practical experience has shown, however, it is too early to write off cash and cheques. Early visions of electronic terminals in every store, restaurant and place of business have faded as the problems created by implementing an EFTS have been recognized. As a result, participants and policy makers have the opportunity to step back and observe trends and developments, and perhaps shape the course to be followed by EFTS.

The switch to EFTS will bring many changes in the payment mechanism and the institutions providing payment services. This study will attempt to present some of the issues created by electronic funds transfer and discuss events that have occurred in Canada and the United States. Because electronic funds transfer is still in the early stages of introduction, there are very few numerical data, so this study has had to rely on the press, trade and academic journals, and reports published by various institutions for much of its information.

A social change of the magnitude of EFTS creates a number of policy issues. The focal point of the discussion to date has been the consumer, but other areas include technology, privacy, fraud, telecommunications, the operation of government policy, the legal system, competition and others. While each of these topics is important and worthy of consideration, this study will restrict itself to discussion of the competition policy problems raised by EFTS.

A nationwide electronic funds transfer system is still in the future, but its introduction will create a number of questions. Because it will cut across several industrial boundaries, EFTS raises many issues for competition policy. As the financial community develops the necessary skills and services, many paper-based financial transactions will be switched to the electronic networks. The financial services offered will range from direct deposit of payrolls to basic retail transactions completed through point of sale (POS) terminals. This move to electronic messages will bring firms, consumers, etc., into closer contact with the payments system and will create more awareness of its functions. Changes will occur in the internal operations of business organizations and their relationships with other firms. Access to electronic payment techniques will be viewed as a business necessity.

All modern economies depend on an efficient and smoothly functioning payments system. Some transactions will not adapt to electronic signals and so the electronic and paper-based systems will coexist. The success of EFTS will depend on its public acceptance, which will undoubtedly require improved performance and/or reduced costs. As a result, the future importance of each network within the payment system will depend on its comparative advantages. Since opting for electronic payment techniques is voluntary at present, society is able to monitor and perhaps control the changes.

This study is divided into nine chapters. Chapter I discusses modern payments systems and how the current Canadian system works, then presents the various components of future EFT systems and describes Canada's experiences to date with electronic payment techniques. Much of the controversy surrounding the development of electronic payment techniques centers on the ownership of EFTS systems, access to the systems, their regulation and their impact on the competitive balance among firms. These issues are important because ownership policies can affect the development of electronic payment systems, and denial of access could place firms at a competitive disadvantage.

Chapters II, III and IV examine the major components of these networks and some of the problems and issues created by ownership and access. Some of the attempted solutions will also be discussed.

Chapter V discusses recent trends in the credit card industry, because credit cards are viewed as a crucial element of EFTS. The success of bank credit cards indicates that they will be an integral part of our payment system. Of particular interest to this study are the role of the different types of credit cards and the terms by which the various financial institutions will participate in EFTS.

Telecommunications and computer services are essential inputs for electronic payment techniques. Telecommunications services have undergone a number of changes in the last quarter century. Chapter VI examines this evolution, the structure of the telecommunications and computer industries and some of the anticompetitive situations that could develop.

Chapter VII discusses the antitrust and legal issues created by EFTS and presents some of the Canadian and U.S. experiences. All firms and organizations will have contact with EFTS. Chapter VIII indicates areas where competition will likely occur and the possible effects. Chapter IX lists the study's recommendations and summarizes the issues.

A glossary of terms and a list of acronyms are included as appendices.

## CHAPTER I

### THE PAYMENTS SYSTEM: PRESENT AND FUTURE

#### 1.1 THE CANADIAN PAYMENTS SYSTEM

##### a) Financial Institutions

The deposit-taking institutions of the Canadian payments system are chartered banks, trust companies, mortgage loan companies, credit unions and caisses populaires. As Table 1 illustrates, the chartered banks are the largest group, with the near banks<sup>1</sup> approximately one half the size of the banks. Of the 11 chartered banks, the three largest account for 65 per cent of industry assets. The "big five"<sup>2</sup> control 91 per cent of the assets and each member of this group has assets in excess of \$15 billion. In recent years, all deposit institutions have grown at rapid rates. During 1967 to 1976, the trust and mortgage loan companies and the credit unions and caisses populaires grew at faster rates than the chartered banks. The banks experienced an average annual growth rate of 15.0 per cent while the rates for trust and mortgage loan companies and credit unions and caisses populaires were 16.2 and 18.5 per cent, respectively. As a result, the chartered banks' percentage of total assets declined, but this trend did not substantially reduce their dominance in the deposit market. Foreign banks do not have an official status as banks in Canada, but representatives are allowed to conduct business. The activities of foreign banks have increased rapidly in recent years and to deal with their growing importance a number of changes in the Bank Act<sup>3</sup> have been proposed by the federal government.

##### b) Payment Instruments

The existing payments system is based on the use of currency, deposit accounts, cheques and credit cards, with cheques

- 
1. 'Near banks' are deposit-taking financial institutions other than chartered banks, such as trust and mortgage loan companies, credit unions and caisses populaires.
  2. The Royal Bank of Canada, the Canadian Imperial Bank of Commerce, the Bank of Montreal, the Bank of Nova Scotia and the Toronto Dominion Bank.
  3. Bill C-57: An Act to revise the Bank Act, to amend the Quebec Savings Banks Act and the Bank of Canada Act, to establish the Canadian Payments Association and to amend other Acts in consequence thereof. First Reading: May 18, 1978.

TABLE 1

ASSETS OF SELECTED FINANCIAL INSTITUTIONS, SELECTED YEARS, 1967-76<sup>1</sup>  
(millions of dollars and per cent of total)

|  | 1967   |       | 1971   |       | 1974   |       | 1976    |       |
|--|--------|-------|--------|-------|--------|-------|---------|-------|
|  | \$m    | %     | \$m    | %     | \$m    | %     | \$m     | %     |
| Chartered Banks <sup>2</sup>           | 25,199 | 69.6  | 39,958 | 69.2  | 68,481 | 69.2  | 88,751  | 66.6  |
| Trust and Mortgage<br>Loan Companies   | 7,125  | 19.7  | 11,629 | 20.1  | 19,183 | 19.4  | 27,667  | 20.8  |
| Credit Unions and<br>Caisse Populaires | 3,382  | 9.3   | 5,532  | 9.6   | 10,315 | 10.4  | 15,662  | 11.8  |
| Quebec Savings<br>Banks                | 506    | 1.4   | 637    | 1.1   | 884    | 1.0   | 1,118   | 0.8   |
| TOTAL                                  | 36,212 | 100.0 | 57,756 | 100.0 | 98,863 | 100.0 | 133,198 | 100.0 |

1. As of December 31.

2. The bank asset figure is total Canadian dollar assets.

Source: Bank of Canada Monthly Review.

being the dominant payment instrument.<sup>4</sup> Unfortunately, Canadian data on the use of each instrument are not available, but existing estimates for the U.S. payments system, shown in Table 2, are probably indicative of the current payment patterns in Canada.

Currency consists of coins in various denominations and notes of the Bank of Canada. The Royal Canadian Mint is responsible for the manufacture of coins, while the Bank of Canada issues all paper currency. As of December 1976, \$6.6 billion in notes and coins were in circulation, while the chartered banks maintained cash balances of \$1.3 billion. Table 2 indicates that (in the United States) the majority of transactions are settled in currency, but the small percentage of total value of transactions conducted with currency is explained by the low value of a typical cash transaction. For small value transactions, current and projected operating costs of existing electronic experiments indicate that EFTS will not displace currency.

For many large purchases a cheque is a more suitable payment technique. In terms of value of transactions, the cheque is the chosen instrument and the most important part of the existing payments system. Canadians issued over 1.5 billion cheques in 1976. The processing of a cheque requires that it be handled an average of 14 times. Potential savings from automation create an incentive for the financial industry to seek electronic substitutes.

Credit cards are the third component of the payments system. They act as a substitute for cash or cheques at the time of purchase and allow cardholders to consolidate bills. However, money is still required for final settlement. While cards are a small segment of the payments system, they are increasing in importance. As an illustration, in 1976 the Chargex/Visa system had 5.6 million cardholders and retail charges were \$2.3 billion. The comparable figures for Master Charge were 1.8 million and \$600 million.<sup>5</sup> In a recent study, the Consumers' Association of Canada found that consumers held over 15 million cards.<sup>6</sup>

- 
4. Each type of Canadian deposit institution offers chequing accounts and customers can easily transfer funds from savings to chequing accounts. In the majority of transactions cheques drawn on deposit accounts at banks and near banks are considered good substitutes for each other.
  5. Angela Barnes, "Will that be Chargex or Mastercharge," Toronto Globe and Mail, August 20, 1977, p. B1.
  6. The Consumers' Association of Canada, The Billing Practices Study (Ottawa: Consumer Research Council, Canada, 1975). The study did not survey all plans but it did include the major cards, i.e. Chargex/Visa, Master Charge, American Express, The Bay, Eaton's and Sears.



c) Operation of the Payments System

The use of cheques as the core of a payments system requires an arrangement for the rapid exchange of cheques and settlement of outstanding balances.<sup>7</sup> The principal participants in the payments system are the Bank of Canada, the chartered banks and the near banks. The Bank of Canada serves as the bank of final settlement and provides ultimate payment between banks for clearing system transactions. The chartered banks, through the Canadian Bankers' Association, operate the cheque clearing system and are the only participants in the final settlement stage. Near banks also issue cheques but must negotiate access terms with the chartered banks and are forced to rely on the clearing services offered by the chartered banks.

A clearing system is not required for a cheque drawn on the same branch - this necessitates only internal bookkeeping operations to transfer money between accounts. In 1973, 15 per cent of cheque transactions were in this category.<sup>8</sup> The banks use their own internal clearing system to transfer cheques drawn on different branches of the same bank. The external clearing system exists to transfer cheques drawn on a branch of a different bank. The Economic Council of Canada has estimated that 80 per cent of the clearings between deposits held at different branches involved different banks.<sup>9</sup> Table 3 indicates the volume of money involved in these transactions.

The clearing system is an arrangement for the handling of cheques on other banks. The exchange of cheques is based on "classifying banking points, designating certain branches as clearing branches, and distinguishing between local and out-of-town cheques or other items."<sup>10</sup> Local cheques are exchanged at

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7. This section is drawn from J.A. Galbraith, Canadian Banking, (Toronto: The Ryerson Press, 1970), pp. 327-365.

8. Economic Council of Canada, Efficiency and Regulation: A Study of Deposit Institutions, (Ottawa: Supply and Services Canada, 1976), p. 99.

9. Economic Council of Canada, 1976, p. 99.

10. A banking point is some readily identifiable area at which there is at least one bank. There are three classes of banking points: one-bank points, two-bank points and three-bank points.

Local cheques are those on other bank branches at the banking point. Cheques on other bank branches outside the banking point are out-of-town cheques.

Definitions from Galbraith, p. 328.

TABLE 2

DISTRIBUTION OF TRANSACTIONS  
BY TYPE OF PAYMENT INSTRUMENT

Per cent of total transactions

|              | <u>Number of<br/>Transactions</u> | <u>Value of<br/>Transactions</u> |
|--------------|-----------------------------------|----------------------------------|
| Cash         | 87                                | 03                               |
| Cheques      | 11                                | 96                               |
| Credit Cards | 02                                | 01                               |
| TOTAL        | 100                               | 100                              |

Source: Arthur D. Little, Inc., The Consequences of Electronic Funds Transfer, National Science Foundation, Cambridge, Massachusetts 1975, p. 54.

TABLE 3

CHEQUES CASHED AGAINST INDIVIDUAL ACCOUNTS  
FOR 50 CENTRES, 1965-76

|      | <u>\$ million</u> |
|------|-------------------|
| 1976 | 2,469,599         |
| 1975 | 2,138,580         |
| 1974 | 1,698,779         |
| 1973 | 1,369,885         |
| 1972 | 1,065,933         |
| 1971 | 919,462           |
| 1970 | 817,910           |
| 1969 | 735,404           |
| 1968 | 636,698           |
| 1967 | 585,081           |
| 1966 | 537,826           |
| 1965 | 491,027           |

Source: Statistics Canada, Cheques Cashed in Clearing Centres, Various issues.

the banking points. At two-bank points, each bank opens an account with the other and they exchange cheques daily. Settlement occurs either on Wednesday, on the last business day of the month or when the net balance reaches \$10,000. At multi-bank points, banks exchange cheques daily. To simplify the transactions, one bank serves as the clearing bank and it pays or receives daily the net amount from each bank's clearings. Settlement is by draft on bank accounts at the Bank of Canada. Central clearing points have been established for the clearing of out-of-town cheques. The local branches send out-of-town cheques to the nearest central clearing point where both banks (payer and payee) are represented. The banks in turn distribute cheques through their internal systems. Settlement is by drafts on the Bank of Canada.

Finally, the bank card companies also have a system for the transfer of charge card slips, which is independent of the cheque clearing system. When a purchase is made with a bank card, the customer and store each receive a copy of the bill of sale. The merchant's copy is discounted by his bank and the appropriate amount deposited in his account. The branch then transfers the sales slips to the bank's processing center where they are processed electronically and the relevant information is captured, sorted and transformed to magnetic tape. Each bank maintains its own processing center and the computer tapes are exchanged by the banks. Each month the customer receives a computerized statement listing the merchant, the date and the amount. It should be noted that computerized billing is a recent innovation. Initially (1968), the Chargex organization employed country-club billing and each month the cardholder would receive his statement and the original bills of sale. In 1973, the Bank of Nova Scotia joined the Chargex organization and introduced descriptive billing. The other Chargex banks subsequently bought the Bank of Nova Scotia computer program. Master Charge has offered descriptive billing since it began operations in Canada.

d) Estimating the Cost of the Payments System

The payments system is used by consumers, governments and business firms. An estimate of the costs borne by each group could provide a benchmark against which future changes can be compared. The incentive behind past changes has been to reduce total resources devoted to the operation of the payments system. The switch to electronic payment techniques will involve considerable initial expenditures, because during the transition phase both the paper and electronic systems must operate. Assessment of the costs and benefits to each group and the economic feasibility of moving to EFTS is made much more difficult if adequate information is not available.

In theory, an estimate of the costs associated with the payments system could be obtained by summing the payments related expenditures of all groups in the economy. The total would include the cost of printing paper currency and minting coins, the distribution costs of the central bank, banks and users of currency, the cost of operating clearing systems for cheques and credit cards, the cost of printing cheques and credit card slips, the cost of security services and many more items. In actual fact, a significant proportion of the required information is not available to the public and an accurate calculation is not possible. A significant omission is data on the cheque clearing system. The most comprehensive single source of data on the cost of bank services in Canada is the functional cost analysis prepared by the Canadian Bankers' Association.<sup>11</sup> This document is not available to the public. The Canadian Bankers' Association operates the clearing system but is very selective about the data it supplies to Statistics Canada. For example, the CBA releases the dollar amount of cheques cleared but not the actual number of cheques processed. Also, it does not release data on the expense of operating the system. Banks must have an estimate of their costs, as they are able to determine near-bank access fees and banks do not have the reputation of willingly subsidizing their competitors. Such information, however, is not released. The lack of cost data hampers examination of the costs and benefits of the current systems and of future electronic payments systems.

## 2.2 COMPONENTS OF EFT SYSTEMS

EFTS will definitely arrive, but at this time it is impossible to predict the ultimate configuration. However, some facts and trends have started to emerge and the rest of this chapter will discuss some of the electronic funds transfer arrangements being developed.

### a) Automated Teller Machines

Automated Teller Machines (ATMs)<sup>12</sup> are terminals through which an individual may conduct various routine banking services.

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11. For a more detailed discussion of this document see D.L. McQueen and J.R. Savary, "Economic Significance of the Computerization of Deposit-taking Institutions in Canada," Economic Council of Canada, Discussion Paper 87, March 1977.

12. ATMs have also been called customer-bank communications terminals (CBCTs) by the U.S. Comptroller of the Currency, and Remote Service Units (RSUs) by the U.S. Federal Home Loan Bank Board.

They range from machines which only dispense cash to full service ATMs offering deposits acceptance, fund withdrawal, transfer of funds between accounts, credit card advances and acceptance of bill payment instructions. ATMs may or may not communicate directly with the host computer. On-line ATMs are linked directly to the computer by communication lines and deposit accounts are updated immediately. Off-line ATMs contain a minicomputer which keeps a record of transactions for account balancing at the end of the day. Most of these machines are located in the outer wall of a financial institution. Some have been placed in high traffic areas such as airports and train depots.

ATMs allow customers continuous access to certain bank services. To activate an ATM, the customer inserts an encoded plastic card and punches his personal identification number into the terminal keyboard. The customer can then perform his banking services. Because of the security provisions required for both cash and bank records, ATMs cost between \$25,000 and \$50,000.

b) Point of Sale Terminals

A Point Of Sale (POS) terminal is a communication and data capture terminal located in retail outlets. POS systems are on-line and allow customers to pay for purchases by transferring funds to merchants. In a general sense, a POS system can perform cheque verification and credit card authorization, transfer of funds between store and customer accounts for debit card transactions, and the switching of funds between a customer's accounts. The complexity of a POS system depends on the number of services offered and whether funds will be transferred between two or more financial institutions.

POS terminals are activated in the same manner as an ATM, by inserting an encoded plastic card. The personal identification number is entered on the terminal keyboard, the store clerk enters the sales information, and the terminal then contacts the switch<sup>13</sup>. If the customer and store have different banks, the switch connects the two banks. The computer at the customer's bank verifies the identity of the customer, the account and if sufficient funds are available. The customer's account is then debited and the store's account credited by the amount of the purchase. Upon completion of the transaction, the customer and store receive a printed statement of the transaction.

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13. A switch is a minicomputer that identifies the parties, the location of their accounts and routes messages to the appropriate destination.



c) Automated Clearing House

Some observers claim that Automated Clearing Houses (ACHs) will be a crucial element of future EFT systems. An ACH is a clearing facility for financial institutions which enables them to exchange electronic or paperless debits and credits. It is the electronic counterpart of the cheque clearing system. ACHs will be discussed in greater detail in Chapter II.

The above is not to imply that EFTS will consist only of ATMs, POS terminals and ACHs. In the future, deposit institutions will be connected with most of the institutions within the economy. As Figure 1 suggests, the list of EFT participants could include households, retail outlets, manufacturing firms, employers, non-deposit financial institutions (e.g., stockbrokers and insurance companies), other deposit institutions, credit card companies, etc. Given the wide range of potential users, a variety of services will be supplied and the necessary terminals and support services (e.g., computer software) will be developed with time.

1.3 THE POSSIBLE STRUCTURE OF AN EFTS

This section contains a conceptual description of an electronic funds transfer system (EFTS). Since EFTS is still evolving, the description should only be considered as a point of reference for subsequent analysis and discussion.

Figure 2 illustrates a possible EFTS configuration. Within a country, a number of EFT regions will develop. The divisions will be based on a number of criteria, ranging from natural markets to provincial boundaries. Each region will contain an automated clearing house and a variety of terminal (ATM and POS) networks. Telecommunications lines will link the ACHs and the regions. Each region will support a number of local systems.

At point A, a group of banks are sharing on-line ATMs. The customer inserts his encoded plastic card and enters his personal identification number in the terminal keyboard. Because the customers of more than one bank have access to the ATMs, a message must be sent to the switch computer. The switch determines the proper destination and makes the connection between the ATM and the customer's bank computer. After the bank computer establishes the identity of the customer and his account, the customer performs his banking transactions from the available services.

Figure 1

EFTS RELATIONSHIPS

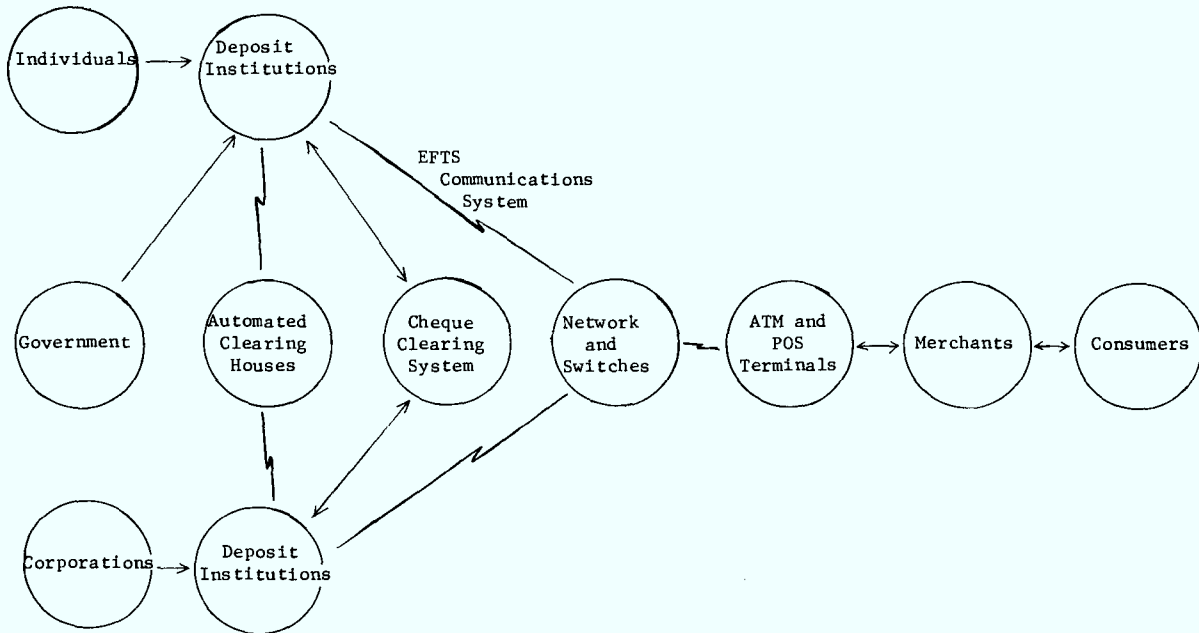
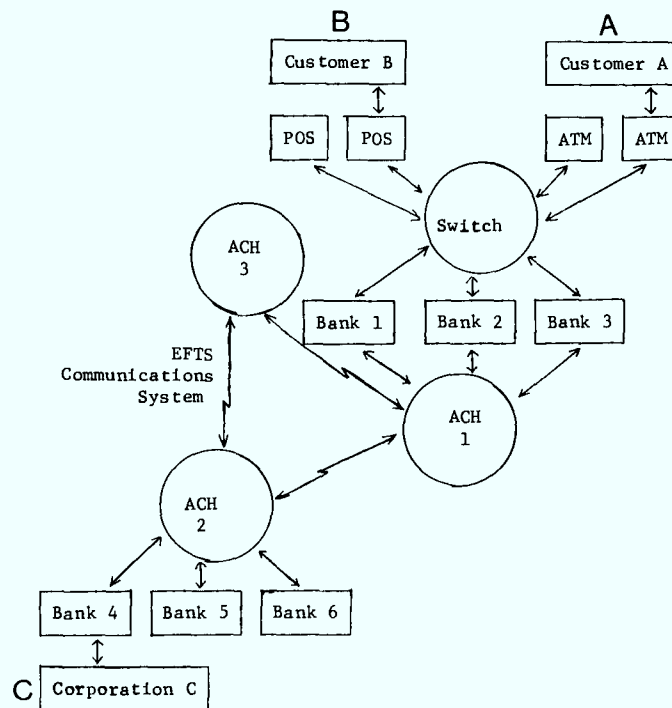


Figure 2

STYLIZED ELECTRONIC FUNDS TRANSFER SYSTEM



At point B, a customer uses his plastic card to pay for a purchase. The card and his personal identification number identify the customer, his bank and account. The terminal identifies the store, its bank and account. If the customer and store have the same bank, the transaction is relatively simple. The switch establishes the connection and the terminal sends the account numbers and the value of the transaction. The computer verifies that funds are available and transfers the required amount from the customer's account to the store's account. If the customer and store have accounts at different banks, the switch establishes the necessary links between the banks. Once the link is established and the customer information verified, the money is transferred from the customer's to the store's bank. In each case, upon completion of the transaction, a signal is returned to the terminal indicating that the transaction has been completed.

On pay day the employees of the firm at point C have their salaries deposited directly into their bank accounts. The firm prepares the payroll information and transmits it to its bank. The payroll information on employees with accounts at this bank is removed. The firm's account is debited and the employees' accounts are credited. The remaining information is electronically transmitted to the ACH where it is distributed to the appropriate banks and the employees' accounts are credited by the proper amount.

#### 1.4 CANADIAN EXPERIENCE WITH ELECTRONIC PAYMENT SERVICES

EFTS is still a number of years in the future, but financial institutions are already using computers and related automated techniques. The initial applications of computers were on-line banking and the cheque clearing system. At present, a number of banks offer on-line service for personal chequing accounts and savings accounts in some of their branches. In 1967, the caisses populaires installed bank terminals at a branch on the Expo site in Montreal. The network has since expanded and the majority of caisses populaires now offer on-line banking. The Canadian Imperial Bank of Commerce was the first bank to install teller terminals. In 1967, terminals were placed in some Toronto branches. The Canadian National Bank and the Royal Bank began to offer similar services the same year. By 1969, all the major institutions had developed on-line deposit account strategies. Electronic technology is also used for the sorting and clearing of cheques. In 1962, the Canadian Bankers' Association published standards and specifications for magnetic ink character recognition (MICR) encoding. This is the process of printing the necessary information for electronic sorting on the bottom of cheques with magnetic ink. Over 90 per cent of the cheques in general use are MICR encoded. Electronic sorters scan the cheques

and read the bottom line of characters. Several banks feed the information from this operation into their computers to adjust their customers' on-line accounts.

To date, Canadian banks have installed only a few hundred ATMs and cash dispensers. The Canadian Imperial Bank of Commerce installed the first cash dispenser in 1969. Three years later, the Royal Bank introduced the first ATM (Bankette). In 1973, Canada Permanent installed the Permateller and the Bank of Montreal followed with Instabank in 1974. Also in 1974, the Bank of Nova Scotia installed cash dispensers called Bank 24. The Toronto Dominion Bank has begun to install ATMs called the "green machine." The Canadian Imperial Bank of Commerce continues to operate cash dispensers but has decided not to offer ATMs. All the above machines are off-line. At present there are no POS terminals in Canada.

ACHs do not exist in Canada, but a number of direct debit/credit services are available. Several companies (insurance, oil, mortgage loan, trust, banks, etc.) direct debit their customers' accounts for regular and recurring payments and/or direct deposit their employees' wages. The federal government is also experimenting with the direct deposit of payments. Employees of the Department of External Affairs have the option of direct deposit of their salaries. Interest payments by the federal government under the Canada Student Loan program are sent to the chartered banks on magnetic tapes. The Bank of Canada requires a social insurance number from purchasers of Canada Savings Bonds, and plans exist for the direct deposit of interest payments. The banks are developing a system for the exchange of magnetic tapes. While more examples could be provided, these indicate that the financial industry is making progress in the introduction of electronic payment techniques. Also, as will be discussed later, the federal government has released a position paper on electronic payment systems.<sup>14</sup>

#### 1.5 SUMMARY

In summary, the current payment system is based on currency, deposit accounts, cheques and credit cards. Currency is the most widely used payment medium, while cheques represent the largest dollar value. Credit cards are playing a small but increasing role in the payments system. The chartered banks distribute currency for the Bank of Canada and operate the cheque

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14. Government of Canada, Towards an Electronic Payment System (Ottawa: Information Canada, 1975).

clearing system. A separate network has been developed for credit card vouchers. Each credit card bank has its own data center that processes the vouchers and sends descriptive statements to its customers. At present, EFTS has been developed around the use of ACHs, ATMs and POS terminals, but a wider range of services, terminals, etc. will be available as more firms use the electronic networks. Canadian experience with electronic payment techniques has been limited to the installation of teller terminals, ATMs and cash dispensers by the chartered banks and few direct debit/deposit plans by corporations and other major employers. Further progress can be expected with the increased use of electronic techniques for selected government payments. While there are some criticisms of the operations of the payments system, it satisfies the needs of the majority of Canadians.





## CHAPTER II

### THE AUTOMATED CLEARING HOUSE: OWNERSHIP AND ACCESS

#### 2.1 INTRODUCTION

An Automated Clearing House (ACH) is a facility enabling participants to exchange electronic debits and credits<sup>1</sup>. The ACH is the electronic counterpart of a cheque clearing facility, with the economic advantages of computers handling recurring payments. Initially, paper reduction economies will dominate, while future benefits will include reduced operational costs and more rapid transfer speeds. ACH services include direct deposit of payrolls, government pensions and salaries, and other recurring payments to consumers; pre-authorized payment of fixed amount bills, such as mortgages and installment loan payments and insurance premiums; and payment of consumer-authorized variable-amount bills, such as credit card bills and utility bills. The ACH exchange mechanism involves the ACH organization, the originating and receiving depository institutions, corporate and individual customers, and the central bank.

A typical ACH transaction involves the following procedures. A corporation sends instructions to its deposit institution to pay or collect funds from its customers who participate in the ACH program. At present, the deposit institution prepares a magnetic tape with the appropriate instructions and delivers it to the ACH. In the future, the information will be transmitted directly from the deposit institution to the ACH. The ACH computer processes the tape and routes the payments information to the appropriate destinations. The receiving deposit institutions debit or credit their customers' accounts.

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1. This study will not include a detailed history of the development of ACHs, but it can be briefly summarized. The automated clearing house concept originated in April 1968, with the establishment of the Special Committee on Paperless Entries (SCOPE) by the Los Angeles and San Francisco Clearing House Associations. Later that year, the American Bankers Association formed the Monetary and Payments System Planning Committee (MAPS) to study ways to improve costs and efficiency of the payments system. In October 1972, the California Automated Clearing House Association began operations, followed seven months later by the Georgia Automated Clearing House. In 1974 the National Automated Clearing House Association (NACHA) was established.

The huge financial requirements and the potential scale economies make it very unlikely that a single firm could operate an ACH. Present transaction volumes, even of large firms, are also too small to warrant the allocation of a single machine to this use. Since marginal and average costs decline as the transaction volume increases, the ideal situation would be to utilize the excess capacity of an existing computer until sufficient volume is reached to require continuous use of a machine. Given these conditions, possible alternatives are joint ownership by a consortium of financial institutions, a government agency, a computer service bureau or a regulated firm.

Consideration of the ownership question must include the institutional framework (see Chapter VII for a full discussion). In the United States, there are 32 operational ACHs owned by the deposit institutions that have joined the ACH association. Originally, the Federal Reserve Board restricted membership to banks, but thrift institutions<sup>2</sup> have recently been included, aided by threats of legal action by the U.S. Department of Justice.<sup>3</sup> The individual ACHs are members of NACHA (National Automated Clearing House Association), a standards organization.<sup>4</sup> While each of the ACHs are independent organizations, they are using the Federal Reserve System for at least some of their operational needs in the areas of data processing, delivery, and settlement. With the exception of those in New York and Chicago, ACH facilities are located on the premises of the Federal Reserve offices, where the various ACH services are provided without any explicit charges to the deposit institutions.<sup>5</sup>

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2. The U.S. thrift industry includes depository institutions that are not commercial banks, e.g. credit unions, savings and loan associations, mutual savings banks and industrial banks.
  3. Robert Dowling, "Rocky Mountain Suit Could Affect Half Nation's ACHs; Government Subsidy Cited," American Banker, April 26, 1977. p. 1.
  4. The NACHA provides the software package and allows the ACH associations to participate in the development of the "national" ACH rules, regulations and standards. Long, R.H. and Rucker, S.M., The Automated Clearing House (Park Ridge, Illinois: Bank Administration Institute, 1975), p. 7.
  5. The non-Federal Reserve Board (New York and Chicago) still piggyback on the Federal Reserve Board for other services. The New York ACH obtains its data processing by using the CHIPS (Clearing House Interbank Payments System) computer.

The Federal Reserve Board explains its operation of the ACHs, as opposed to pure regulation, in a number of ways. First, one of its original functions was to restore order to the chaotic U.S. payments system in the early part of this century. The Federal Reserve Board views the ACH movement as a logical extension of its traditional payments system functions, as it already operates the paper system and clears and settles about 50 per cent of the items processed. Second, the Federal Reserve Board claims it can provide ACH services at a lower cost by piggybacking the electronics on the existing paper cheque infrastructure. With the fixed costs covered, member banks would need to cover only the lower variable costs. The indirect subsidy would allow a lower price structure (if the Federal Reserve Board charged for its services) than a competing private firm could offer.

The institutional structure has had a direct influence on the development of ACHs in Canada, where at present there are none. In the Canadian payments system, private interests (the Canadian Bankers' Association) undertake the delivery and data processing functions, while the Bank of Canada performs the settlement function. Under this system, there are no compelling reasons why the central bank should operate the ACHs. This is in direct contrast to the U.S. situation, where the Federal Reserve Board's control of cheque clearing has led to its involvement in the operation of ACHs.

The Canadian Bankers' Association (CBA) clearing system is not without critics. The banks control the system, and the terms of access have been used as a competitive tool against the near banks. CBA rules require a near bank to have a chartered bank act as its agent. Near banks maintain a deposit balance at a chartered bank and cheques are settled against this account. Before 1972, the near banks used the same transit number as their agent, thereby making the changing of agents a costly procedure. In 1972, qualified near banks were granted their own transit number. These procedures give the near banks access, but only on a pass-through basis.

Reductions in competition and flexibility have been the primary criticisms of the CBA clearing systems. In its 1964 report, the Porter Commission recommended that:

the clauses of the Canadian Bankers' Association Act which give the Association the right of operating the clearing system should be repealed, and an association of all clearing institutions formed to manage the

system and allocate costs equitably among all members in relation to the work done by each.<sup>6</sup>

The Economic Council of Canada recently proposed that near banks be given equal access:

We recommend that direct access to the clearing system and participation in its management, on a basis equal to that of the chartered banks, be extended to suitable qualified near banks willing to accept the responsibilities implied by such participation.<sup>7</sup>

After a delay of over 10 years, the government included the Porter Commission recommendations (on near bank access) in the latest Bank Act Proposals.<sup>8</sup> The government has proposed that near banks be given direct access to the clearing system and have an input in its management. The system would be run by a new organization, the Canadian Payments Association (CPA). After submissions from interested parties, the White Paper proposals were revised to make membership mandatory for chartered banks, while other deposit-taking institutions meeting the requirements of the Canadian Payments Association Act would have the right to join or not, as they see fit. Arrangements for the clearing of cheques and settling of balances would be determined by association members. Clearing members would be able to clear and settle items directly, while non-clearing members would have to clear and settle through the clearing member of their choice.

The CPA proposals should introduce greater flexibility into the cheque clearing system, eliminate some of the abuses that have existed in the past, and probably result in a tiered financial system for clearing purposes. The right to choose the

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6. Report of the Royal Commission on Banking and Finance (Ottawa: Queen's Printer, 1964), p. 393.
  7. Economic Council of Canada, Efficiency and Regulation: A Study of Deposit Institutions, (Ottawa: Supply and Services, 1976), p. 104.
  8. Department of Finance, Canadian Banking Legislation -- August 1976 (White Paper) (Ottawa: Ministry of Supply and Services, 1976).

form of membership and the larger number of clearing institutions will benefit the smaller deposit-taking financial institutions which will not want direct access, as they will have a wider range of firms with which to negotiate for clearing services.

## 2.2 DEVELOPMENT OF ACHS IN CANADA

The majority of Canadian financial institutions have not felt the same urgency and desire to develop ACHs as have their U.S. counterparts. Some have questioned whether ACHs are suitable for the Canadian environment at this time. ACHs in the United States currently accept magnetic tapes for processing and then transfer debits and credits between the appropriate financial institutions. The chartered banks in Canada have suggested that existing facilities can be used to duplicate the ACH services.

The banks currently operate regional clearing houses as part of the cheque clearing system, using electronic technology in the sorting and clearing of cheques. The small number of chartered banks has allowed for the easy exchange of magnetic tapes between computing centers. Since ACHs depend on the exchange of information in machine-readable form (i.e., magnetic tapes), the chartered banks believe that current procedures will allow them to provide similar services without the creation of separate ACHs. Their preferred alternative would be to offer ACH-type services to other financial institutions on a "competitive" basis. Each institution wishing to use ACH-type services would have to negotiate an access arrangement with the bank of its choice. In other words, the near banks would gain access on a pass-through basis.

The trust companies are opposed to this, as they do not wish to be placed at a similar disadvantage as in the cheque clearing system. They have instead advocated the development of ACHs or at least an examination of this alternative. They would like some input into the development of a tape exchange system, as they do not wish to rely on piggyback or pass-through arrangements or to be dependent on a particular bank's system.

It has yet to be decided if the Canadian institutional structure requires the creation of ACHs. The small number of financial institutions would permit a simple tape exchange program, but the possibility exists of anticompetitive exclusion of competing financial institutions. If the assumption that ACHs are not required proves to be correct, then there should be some procedure for near bank direct participation in and initiation of direct credit/debits. For example, large trust companies or credit union centrals could be included in the banks' tape exchange program. Also, the proposed Canadian Payments Association could operate a tape exchange program in conjunction



with the cheque clearing system. Regardless of the outcome of the debate on the creation of formal ACHs, the distinction must be made between near banks entering into correspondent relationships with banks by choice or by compulsion. This paper recommends that all "qualified" financial institutions be granted direct access to ACH-type services. From the perspective of this paper, the chartered banks' proposed pass-through arrangements would amount to the electronic recreation of the entry barriers to the paper-based system.

### 3.3 POLICY ISSUES

#### a) Government Involvement

As has been illustrated, ACH ownership raises a number of issues for competition policy. An important question to be resolved is the role of the federal government in the development of ACHs. Should the U.S. example be duplicated and ACHs be operated by a government agency or should the government determine guidelines and regulations for private groups, such as the Canadian Bankers' Association and the Canadian Payments Association, to operate the payments system? In the United States, where ACHs are in operation, it has been asked whether ACHs can compete in any given district. If the answer is yes, are there any compelling reasons why the private sector cannot operate ACHs? Unfortunately, the answers to these questions cannot be determined until more information is available on the operational characteristics of ACHs. If the scale economies are as pervasive as claimed by some individuals and groups, then the debate is resolved. If not, then government involvement can be questioned.

The traditional rationale for government involvement has been the "public" nature of many services. As in many situations, the distinction needs to be drawn between involvement because of public good and involvement for other reasons. Involvement of government agencies in ACHs raises the problem of cross-subsidization in the provision of these services. The allocation of joint costs has always been a problem for multi-product firms. As discussed above, the U.S. Federal Reserve Board subsidizes the ACHs from its other operations, but before government agencies become too involved, it should be determined if the subsidized services are displacing private firms. The U.S. Department of Justice has expressed its concern about these points on a number of occasions.<sup>9</sup> In particular, is the provision of ACH

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9. "Comments of the United States Department of Justice," Proposed Amendment of Regulation J and Related Issues, filed May 14, 1974.

services by the Federal Reserve Board preventing the private development of ACHs? To support its pro-competition position, the U.S. Department of Justice points to the example of the two bank card companies, National Bank Americard Inc. and Interbank/Master Charge. Each company has established nationwide clearing systems and it is possible that they could provide ACH services to the public.<sup>10</sup>

Another area where the possibility of government subsidies is raised is in the initial implementation of ACHs. If an ACH displays scale economies, then operators (private or public, if fees are charged) are faced with the problem of determining whether to follow a short-term or long-term pricing strategy. The high fees necessary to cover short-run costs will discourage the volume required to exploit scale economies and costs will remain high, but if operators set a fee that reflects long-term cost levels, the use of the ACH will be encouraged and its operation will eventually become profitable. However, the initial losses must be financed. If ACHs prove to be more efficient than current techniques, then the introduction of electronic processing should reduce the resources used in the payments mechanism.

This situation poses a number of questions for government. If the private sector is slow in introducing new techniques, should the government subsidize ACHs in the interest of social welfare? The chartered banks are the dominant participant in the Canadian cheque system. How will the public react to government subsidies to already highly profitable firms? From the perspective of competition policy, will government subsidies lead to further concentration in the already concentrated financial industry? Also, if the government is going to subsidize certain services, should it also be involved in the provision of these services?

#### b) Access

The importance of access to ACHs for deposit-taking institutions is obvious. The ability to offer services which similar financial institutions cannot offer would give the selected group of institutions a definite competitive advantage. The U.S. ACHs currently offer a limited range of services, but additional applications and services will be developed as experience is gained and potential needs become more apparent. For example, transactions on shared ATMs and credit card billings could be processed through local ACHs. Also, transactions are currently processed in "batch" form, but in the future the ACH computers will be on-line and there is a potential market for consumer initiated payments.

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10. U.S. Department of Justice (1974), pp. 20-21.

Regardless of the final range of ACH services, the privilege of ACH access would grant the banks a considerable marketing advantage. In consumer advertising, the banks could stress the ease and convenience of dealing with one financial institution instead of two or more, the implication being that better service could be obtained by transferring their deposit accounts at competing institutions to the banks. The excluded financial institutions have expressed concern about the implications of ACH access conditions to their market positions. Business firms have traditionally maintained their commercial accounts at banks and it is unlikely that this practice will change immediately. The near banks believe the existing customer-bank relationship plus the access to ACH services, such as direct deposit privileges, will cause deposit run-offs, threatening their existence. The excluded firms have and will continue to lobby for access to the ACHs or similar types of arrangements to maintain the competitive balance. In the United States, the Department of Justice has been successful in obtaining thrift institution access, while in Canada the creation of the Canadian Payments Association is the government's response to earlier criticisms.

A variety of business firms besides deposit-taking financial institutions could benefit from automated payment techniques, and these firms have begun to present their case for direct participation in the ACH mechanism. Most of the large U.S. consumer finance companies have computer networks for internal control systems and funds transfers, accessed by terminals in company offices. The recurring nature of their customers' loan payments makes the consumer finance industry an ideal ACH candidate. However, the delinquency problem associated with some consumer finance industry loans may make use of the ACH unfeasible because of the reversal costs and inconveniences imposed on other ACH participants. All institutions that use the ACH for direct debiting will, to varying degrees, be faced with the problem of insufficient funds in customers' deposit accounts. While the ideal situation would be zero delinquencies, this problem must be accepted as part of the conditions of doing business, provided reversal costs are low and delinquencies maintained within a reasonable margin. At present there is very little information on the cost of reversing an ACH transaction if an account is overdrawn or delinquent. Estimates of the increased costs caused by including finance companies, whether they were within a reasonable margin or too high, and how to reduce them, would definitely aid policymakers in their decision on the finance company access issue.<sup>11</sup>

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11. One finance company in Canada is trying to reduce its delinquency problem by offering cash rebates to customers with a good payment record.

## 2.4 SUMMARY

As this chapter has shown, the institutional structure and legal framework have and will shape the roles the government(s) and the various other participants assume in the development of ACHs and EFT in general. The U.S. banking industry consists of a large number of banks of a variety of sizes operating under different sets of regulating institutions and legislation. This situation has forced the Federal Reserve Board to assume a dominant role in cooperative activities, such as cheque clearing. The Federal Reserve Board has expanded its activities and taken an active role in the development and implementation of ACHs. In Canada, the small number of chartered banks and favourable legislation have allowed private interests to develop and operate the cheque clearing system. ACHs do not exist in Canada, but developments in electronic payment techniques are being monitored and sometimes directed by the Bank of Canada and the federal government. The position of this paper is that the operation of ACHs (and EFTs in general) should be by private interests. If formal ACHs are not instituted in Canada, a system could be established for the exchange of magnetic tapes. Access could be granted to all "qualified" institutions.<sup>12</sup> The firms would determine the rules, regulations, allocation of costs, etc. and operate the system. Government intervention would be limited to final settlement and monitoring and correcting any anti-competitive situations that develop.

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12. This statement does not ignore the problem of establishing criteria for the determination of "qualified" firms. This paper would recommend all financial institutions that have the authority to make third-party transfers and would initiate a minimum number of transactions. Equal access does not mean unlimited access for all institutions, but access for all institutions willing to accept their share of the costs and responsibilities of operating the tape exchange system. The larger number of firms would allow smaller institutions to negotiate access on more competitive terms.



## CHAPTER III

### POINT OF SALE SYSTEMS: ACCESS

#### 3.1 INTRODUCTION

The consumers' contact point with EFTS will be the retail point of sale (POS) terminal and, therefore, every firm will want access. Since the purpose of a POS terminal is to provide consumers with access to their funds, deposit-taking financial institutions will be given access to the POS networks. The questions to be resolved are which institutions and which networks. As will be seen in Chapter VII, there is little agreement on the access principle. In Canada the government supports the idea of a common user network, while in the United States the debate still continues. If the deposit-taking institutions were the only creditors, the access issue would be less complicated. However, there are non-deposit-taking creditors which grant substantial amounts of credit, such as finance companies and retail chain stores (see Table 4). For example, of the consumer credit granted in 1976, the finance companies and retail chains supplied 10.5 per cent and 11.5 per cent, respectively. Because contact with the customer is essential for their business, these firms will seek access to the switch and terminals.

#### 3.2. FINANCE COMPANIES

Granting the finance companies access to POS terminals is a contentious issue. The finance companies would like to be viewed as an alternative source of credit. Since the customer usually visits the loan office only when he borrows money, the companies would assess his financial resources and determine his credit worthiness. A line of credit would then be made available for the customer's use.<sup>1</sup> This procedure does not require a new loan application with every purchase. This results in reduced loan costs for the finance companies and grants the customer credit when his bank balance is inadequate for the intended purchase.

Objections to finance company access to the POS terminals centers on the ease with which credit can be obtained.

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1. For example, one of the conditions of the loan agreement could be that borrowers are forced to accept direct account debit. The finance company creates a tape and it is run through the nearest ACH. This option may not be feasible if the loan is secured with a chattel mortgage.



TABLE 4

CONSUMER CREDIT: OUTSTANDING BALANCES OF SELECTED HOLDERS  
(millions of dollars and per cent of total)

|  | 1973   |       | 1974   |       | 1975   |       | 1976   |       |
|--|--------|-------|--------|-------|--------|-------|--------|-------|
|  | \$m    | %     | \$m    | %     | \$m    | %     | \$m    | %     |
| Chartered Bank Ordinary<br>Personal Loans            | 8,878  | 50.2  | 10,817 | 52.6  | 13,175 | 55.3  | 16,177 | 58.6  |
| Sales Finance & Consumer<br>Loan Companies           | 2,913  | 16.5  | 2,966  | 14.4  | 2,912  | 12.2  | 2,886  | 10.5  |
| Life Insurance Company<br>Policy Loans               | 884    | 5.0   | 1,066  | 5.2   | 1,157  | 4.9   | 1,212  | 4.4   |
| Quebec Saving Banks<br>(Unsecured Personal<br>Loans) | 36     | 0.2   | 44     | 0.2   | 58     | 0.2   | 72     | 0.2   |
| Retail Dealers                                       | 2,470  | 14.0  | 2,766  | 13.5  | 3,086  | 13.0  | 3,159  | 11.5  |
| Credit Unions and<br>Caisses Populaires              | 2,420  | 13.7  | 2,762  | 13.4  | 3,243  | 13.6  | 3,820  | 13.8  |
| Trust and Mortgage<br>Loan Companies                 | 82     | 0.4   | 145    | 0.7   | 199    | 0.8   | 288    | 1.0   |
| TOTAL  | 17,682 | 100.0 | 20,566 | 100.0 | 23,830 | 100.0 | 27,611 | 100.0 |

Source: Bank of Canada Monthly Review

Some finance company customers have poor credit ratings, while others have little financial information and are unaware that they could obtain credit from banks, credit unions, etc. Given the risk characteristics of some of the borrowers, some regulatory groups and individuals are concerned that easily available credit will lead to excessive borrowing and continual debt. The interest rates charged by finance companies are also viewed as being too high.<sup>2</sup>

While these criticisms have been made of finance companies, they could include banks and their credit card operations. Advertising campaigns stress the "painless" quality of purchasing goods and services with plastic cards. The modern shopper can "Relax because he has Master Charge" or decide "Will that be cash or Chargex?." Media reports have documented the inability of some families to use plastic cards wisely. Also, the deposit-taking financial institutions will be actively promoting the main theme for which finance companies are criticized, namely, that credit-worthy customers will not have to worry about the balance in their EFT account since they will have access to pre-negotiated lines of credit. The consumer finance industry is not unaware of this situation. As Dr. S.L. Booth has noted:

It can not be assumed EFTS will change human nature and that a sizable portion of borrowers will no longer need to have a careful review of the reason for the loan, as well as consistent reminders that the loan repayments are due. It is a rare bank after it introduced a bank credit card that has not discovered, by way of the charge-off route, that there are some consumers who have great difficulty in resisting the temptation to overspend when only a plastic card serves as a medium of exchange.<sup>3</sup>

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2. Although bank cards and retail revolving credit plans charge similar rates (for small loans), they are not looked upon with the same distaste as finance companies. As of December 1978, the various card plans charge at least 1.5 per cent per month. Representative rates are Chargex 1.5 per cent, Master Charge 1.5 per cent, the Bay 1.75 per cent, Sears 1.75 per cent and Eatons 1.75 per cent. Finance companies charge almost 2 per cent per month on amounts up to \$300, 1 per cent on amounts from \$300 to \$700, and  $\frac{1}{2}$  per cent from \$1000 to \$1500. The bank card rates are higher if the merchant discount is included in the interest rate calculation.
  3. S.L. Booth, The Consumer Finance Industry and EFTS, May 1975, p. 4.

The uninformed or disadvantaged consumer is a problem which cannot be ignored, but abuse of credit by some individuals will occur regardless of the source. Rather than protect all individuals against every possibility, consumer protection legislation should provide the necessary information and a legal framework within which consumers can make their choices. From a competition policy viewpoint, the potential abuse of credit by some individuals should not lead to a prohibition against finance companies using POS terminals. Finance companies are the only source of credit for some consumers, while others who could borrow from banks find the image too imposing and prefer to borrow from their "friendly" finance companies. An individual's choice of financial institutions should not deny him full participation in EFTS.<sup>4</sup>

The exclusion of finance companies from POS networks will distort the payments system in favour of deposit-taking institutions. Consumer credit from EFT terminals would be restricted to banks, credit unions, etc., and retailers. Possible competitors would be excluded by law, not by market decisions. Therefore it is recommended that all financially sound credit granting institutions be given access to the POS terminals on an equal basis. The ultimate EFT participants should be determined by competition between firms. Consumer preference will determine if finance companies are providing a valuable service. This is a case where regulation<sup>5</sup> is unnecessary and the market can select the participants. As a final point, the exclusion of the finance companies would create an "untried martyr" on the EFTS sidelines. Admission to the POS terminals will remove this possibility.

### 3.3 RETAIL STORES

Retail stores are another group seeking access to the POS terminals and switch. For widespread acceptance of EFTS, the terminals must be placed in stores, preferably near the cash registers. Because of the dependence on their location and the ability of the stores to function adequately without EFTS, the

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4. There is no reason why all consumers should have access to all EFT services. At the same time, two individuals with identical financial circumstances should not have their range of services restricted because of their choice of institutions to patronize (providing the institutions are financially sound).
  5. Other than regulations concerning fraud, security, etc., which would apply to all firms.

large retailers have a stronger bargaining position than finance companies. However, the major retailers are not rushing to install EFT terminals. They are resisting the bank-run EFT projects for a variety of reasons. Retailers do not want bank EFT programs to encroach on their credit card operations, and the major chains are reluctant to pay for the privilege of accepting bank cards. Also, retailers do not want financial institutions imposing certain methods of payment on their customers.

The importance of the access issue will depend on the type of store. They can be classified as national chains, local and regional stores, and food retailers. Stores can also be divided into two other groups, those which do and those which do not accept bank cards. In recent years, bank credit card sales have grown at a rapid rate. Many merchants (restaurants, small stores, etc.) accept the cards to extend their market area and gain an edge over competitors. Most retail stores offer credit facilities as a customer convenience with profits a secondary consideration. Credit departments are not very profitable for large chains, while the smaller stores usually suffer losses or, at best, break even. To reduce this drain on profits, many regional and local stores are now accepting the bank cards.<sup>6</sup>

Most major retail chains do not accept bank credit cards. They believe the bank cards will interfere with the relationships they have established with their customers. But more important from the retailers' viewpoint, the bank cards would erode their customer base and reduce the profitability of the in-house credit department. The stores claim that anyone who qualifies for a bank card would also qualify for a store card. However, the reverse is not always true. The banks would siphon off the better customers and the stores would be left with the poor risk customers and the untried consumers (i.e., young adults and young newlywed couples). The bad loan loss would increase and the credit department would become less profitable. Retailers would attempt to reduce their losses, resulting in a curtailment of credit to the less affluent customers.

EFT accounts will be accessed with a debit card and credit worthy customers will often be granted overdraft privileges. Some financial institutions will combine their credit

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6. The regional and local stores hope to attract tourists and other visitors who would not have a store card. At the present time, it is too early to decide if the bank cards have lived up to their advance billing. See "Bank Cards Push for the Big Stores," Business Week, Sept. 27, 1976, pp. 107-108.

and debit services into a single multipurpose card. The acceptance of EFT terminals by retailers is currently being delayed by a dispute between retailers and financial institutions over who sets the terms for the use of multipurpose cards. The dispute centers not on the use of the debit card with no overdraft or credit service, but on the debit (or multipurpose) card with the credit option. Retailers recognize that accepting EFT debit cards with overdrafts is in fact accepting bank credit services. EFT cards with debit and credit services mask the occasions when they function as credit cards and make it impossible for the retailer to tell if the source of funds is an account or a line of credit. Because the retailer cannot discern the card's function, he in effect loses his option to reject the card and the banks are able to circumvent the retailing policy of not accepting bank credit cards.

Retailers have no desire to accept a new system which they believe will cost them more than the current paper based system. At present, "it has not yet been determined by the marketplace, who, in the triangular relationships of depository institution, retailer and customer, shall pay for these services."<sup>7</sup> The credit card companies insist that their standard contract specifies that the store pay a discount on sales to its bank for any transaction, whether it be credit or debit. Retailers regard a debit card purchase as the equivalent of a cash or cheque purchase on which discounts are not paid. In response to the card companies' position, a number of small U.S. retail chain stores have threatened to stop accepting bank credit cards.<sup>8</sup> There appears to be little chance of EFT terminals appearing in major retail stores until this disagreement is resolved. As the American Retail Federation has stated:

Because of the cost of an EFT network, we anticipate that the financial service offered via such a network will be grouped into a package of services. The nature of retailing requires that we be permitted to decline or refuse to accept any one or several of the financial services offered in such a package

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7. D. Olson, "Comments of the American Retail Federation before the Committee on Regulatory Issues," National Commission on Electronic Funds Transfer, Washington, D.C., October 29, 1976, p. 5.

8. For a more detailed discussion of this topic, see Chapter VIII.

... For example, those retailers who now maintain their own credit plan and have their own credit card -- and, therefore, do not honor a third-party credit card -- need the flexibility to decline to accept a third-party credit card when it is offered as a part of a package of financial services through an EFT network.<sup>9</sup>

Finally, the retail industry feels that other costs involved with EFT transactions could be switched from banks to retailers. A cancelled cheque is accepted as proof of payment and banks currently microfilm cheques and store the film for the time period specified by bank statutes. In a debit card environment, many cheques will be eliminated and the merchant's register slip will assume a more important role. The use of register slips in the settlement of disputes means that retailers will have to follow storage procedures along bank lines. At present, there has been no mention of who will pay a store's retrieval costs if the slip is used in a dispute between a consumer and his bank. The banks' storage costs are, in effect, transferred to the merchants. Retailers believe the banks would receive all the profits from EFT transactions, while the retailers would pay all the costs.

In general, the major retail chains see little to gain from accepting EFT terminals at this time. EFT terminals threaten to skim off their best credit department customers, increase operation costs and give the banks a greater influence on the retailer's financial affairs. Terminals will not be accepted until the banks grant retailers more input into the design of EFT services. As an American Retail Federation spokesman has stated:

We wish to make the point that the retailing industry and its customers are not dissatisfied with the current system of payment by cash, checks and credit cards. The near term needs of retailing, which can be met by EFT, will be met by a simple system composed only of a check verification or guarantee system, perhaps supported by the presence of unmanned cash-dispensing terminals.<sup>10</sup>

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9. Olson, p. 5.

10. Olson, p. 8.



The bank will have to make some form of accommodation, for the bank cards cannot claim to be universal if the major stores will not accept them.

Firms which do not accept credit cards would also like access to the switch, but can function with bank installed terminals. Grocery chains, for instance, do not extend credit or accept credit cards. The profit margin on sales is less than the bank card commission and therefore the card transaction would not be worthwhile.<sup>11</sup> However, in the United States, only banks cash more cheques than grocery stores. In a typical store, the value of cheques cashed will exceed the value of food sales.<sup>12</sup> The large amount of cash necessary to cash cheques creates a security problem and the stores also suffer from a considerable bad cheque loss. It has been estimated that managers spend 20 to 25 per cent of their time on the follow-up procedures with bad cheques. A system that would guarantee cheques would save the manager time and money.<sup>13</sup> Grocery stores are willing to accept the terminals if they reduce operating costs and do not interfere with the check out process.<sup>14</sup> If the store does not have direct access to the

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11. Recent events in Ontario might cast doubt on this statement. The food chains started to accept bank cards in 1974, but reversed this policy after the Ontario government threatened legislation that would forbid this practice. However, in British Columbia, shoppers may use their Woodward's credit card to purchase groceries at the company's food stores.
  12. Many individuals use the food stores as a cheque cashing service. Part of the weekly pay cheque is used to pay for the groceries and the remainder is taken in cash.
  13. A number of different terminal systems have been installed. At present, cheque verification terminals are the most common system in U.S. grocery stores. Some systems approve the cheque and the bank sets aside the funds until the cheque clears regular channels. Other systems approve cheques until a non-payment occurs. Then the card privileges are revoked until the situation is rectified. Terminals can be located at check out counters or courtesy counters. When a shopper uses the courtesy counter, he has a cheque approved for a maximum amount and fills in the appropriate value when his shopping is complete.
  14. Not all stores are convinced of the benefits of EFTS terminals, however. See "Food Retailers Still Not Sold on EFT, Supermarket Institute Conference Told," Payments System Newsletter, Vol. 8, No. 12, Dec. 1976, pp. 5-6.

switch, the installation of another firm's (financial institution) terminals will generate approximately the same results. Obviously, this argument can be extended to "mom and pop" stores, specialty shops, restaurants, etc.

### 3.4 SUMMARY

If nationwide EFTS is established and accepted by the public, a large proportion of consumer transactions will be conducted through the POS terminals. Firms supplying goods and services to the public will obviously want access to the terminals. Access for consumer finance companies will probably raise the most controversy, but as a general principle of competition policy all qualified firms should have some form of access. EFTS will not gain widespread acceptance until the disputes between the large retail chains and the bank credit card companies are resolved. The large retailers do not trust the motives of the financial industry. It appears that progress could be made if retailers had more input into EFT services and were given more choice on the range of services they must accept. In the United States, the most common POS system is cheque guarantee services in food stores. The systems are accepted because they provide services and other benefits to the food stores and do not compete with any vested interests (i.e., credit departments).



## CHAPTER IV

### POINT OF SALE SYSTEMS: OWNERSHIP

#### 4.1 INTRODUCTION

Ownership of the terminals and switch has created some of the most heated debate on the EFT scene. A wide spectrum of viewpoints exists, and some of the issues will be presented in Chapter VII. This is not a trivial debate, for the policies of the owners of the terminals and switches could influence the development of EFTS. For the purposes of this section, switch computers can be classified into two types, routing and processing computers. In some situations, networks supplied by telecommunications carriers will be the core of the POS system. Modern telecommunications networks (i.e., Datapac and Infoswitch) consist of switching nodes connected by digital transmission lines.<sup>1</sup> The nodes are usually minicomputers which perform a number of communications functions (i.e., network flow and error control) and route the message packets to the appropriate destination. No data processing is performed by the routing computers. In the United States, a more common arrangement is rental of communications lines from the carriers and ownership of the switch computer by the organization sponsoring the POS system. In this situation, the switch could be a processing switch which will route messages and also perform data processing functions, giving network users the option of routing their message to another computer or allowing the switch to perform the necessary data processing.

Use of the processing switch by the large firms will depend on how it fits into their data processing and communications networks. Some firms will do their own processing, while others will allow the switch to do the data processing and thereby remove some of the load factor from their computer facilities. Small stores will probably have the switch computer maintain their data bases, as this will give them access to data processing and EFT facilities. At the end of the business period (day, week, etc.), the switch operators could supply the firms with business reports, such as statements of account, sales and inventory analysis. As an example of the use of processing computers in a communications network, the U.S. bank card companies reduce paper receipts to computer-readable form and transmit the information electronically to regional processing centers. The U.S. National Bank Americard (VISA) system links 88 processing centers and provides net settlement between the member banks' accounts.<sup>2</sup>

1. The operations and characteristics of modern telecommunications networks will be expanded in Chapter VI.
2. Thomas Kleinschmit, Electronic Funds Transfer: The Future is Now, Federal Reserve Bank of Minneapolis, Sept. 1976, pp. 9-11.

#### 4.2 POTENTIAL PARTICIPANTS

Familiarity with the concepts and technologies of the computer industry, telecommunications industry and other high technology industries (e.g., space) has allowed a number of EFT networks to appear and to be accepted by the public. A list of firms which could participate in EFTS include:

- individual financial institutions
- consortia of financial institutions
- credit card organizations
- retail stores
- third party firms (computer service bureaus)
- telecommunications companies
- government agencies.

The large number of potential participants raises a series of questions. The main ones, as far as performing the switch function and delivering financial transactions, are: Who should be allowed to perform these tasks? Is this a proper area for competition or should it be reserved for financial institutions? Does any firm with sufficient computer capabilities have a natural advantage in the provision of these services? As in the case of the ACH, much of the discussion of the POS switch must be tempered by the possibility of large scale economies.

Groups other than financial institutions are installing on-line, real-time terminal systems. Consumer finance companies have installed terminals which link their offices into central computers. The bank card organizations have electronic switches for the routing of their sales slip information. Airlines, hotel chains, car rental firms, stock exchanges, etc., use terminal systems for reservations, inventory control, etc. The major retail chains have on-line systems for credit authorization, inventory control and accounting. In fact, retailers have some of the most sophisticated on-line, real-time terminal systems. In the future, these systems will need to talk to each other. For example, an individual on a business trip would go to an airline counter to reserve a seat on an airplane. The necessary information would be typed into a terminal and the airline computer would make the reservation. If the traveller decides to pay with a bank card, the airline computer would access the card system for credit verification. The traveller could then go to the American Express terminal and order travellers cheques. If he decides to debit his bank account, the American Express computer would access the bank network and its data base. Similar arrangements would occur for hotel reservations, car rental, etc. As this suggests, it is possible for a number of networks and switches to exist.

As a general principle of competition policy, any firm with the necessary computer capacity should be allowed to function as a switch. The financial institutions, either individually or in groups, view EFTS as a new way to deliver traditional banking services. For reasons of competitive advantage, security and privacy of data base, faith in the free enterprise system, etc., the banks believe that they should provide the switch. However, from an operational point of view, it is possible to refute this argument. A financial institution could negotiate a contract with a computer service bureau to act as the switch, and so provide the level and quality of services identical to those of a bank switch.<sup>3</sup>

The question of who should perform the switch functions will not be easily resolved. A number of industries view the different EFT services as within their sphere of influence and are preparing to move into these business activities. Of major concern to various segments of society is the possible movement of the telecommunications carriers and computer manufacturers into switch activities.<sup>4</sup> Due to rapid technological change, the boundary between communications and data processing is becoming more uncertain and controversial. Computers are an integral part of the new telecommunications networks and carriers have had to acquire the necessary computer and data processing skills. The carriers now regard computer services as a natural extension of their networks. At the same time, one computer firm (IBM) has plans to develop its own satellite communications network.<sup>5</sup>

The questions and doubts expressed about the movement of the telecommunications and computer firms into switch activities reflect a variety of interests and concerns, ranging from the vested interest of competitors to the economic and political power

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3. Since very few banks have the necessary computer expertise, they must purchase their EFT systems from other firms. Possible candidates are the computer manufacturers or financial institutions which already have successful systems (e.g., First Federal Savings and Loan Association of Lincoln Nebraska and the TMS Corporation).
  4. A.G.W. Biddle, "A Nut in a Nutcracker: The Small Company's Competitive Position in the EFTS Markets," Computers and People, Vol. 26, No. 2, Feb. 1977, pp. 11-17.
  5. Edith Holmes, "SBS Net to Connect Various Sites of Large Companies," Computerworld, Vol. 11, No. 11, Mar. 14, 1977, p. 33.



of certain corporations. Most modern governments have some form of industrial development strategy, a facet of which is the encouragement of competition in existing industries.<sup>6</sup> Within this approach is the concept that firms should not be given advantages unrelated to superior economic performance. Telecommunications and the computer industries are becoming increasingly important in modern society. Each industry is dominated by large firms which have successfully maintained their market position over time. The prospect of these firms using their large size and resources (financial, management, etc.) to pre-empt the EFT switch market runs counter to most industrial development strategies. The question to be answered is whether a large firm in a key sector of the economy should be allowed to move into and possibly control another sector. Even if the new activities could be justified in economic terms, on political grounds it may not be acceptable.<sup>7</sup> The situation may be viewed as too much power in too few hands.<sup>8</sup>

The common carriers provide a variety of communications services to their customers. The increasing use of computers and their need to talk to each other have created a demand by business firms for data transmission services. The carriers would like to piggyback this demand onto existing voice circuits, but the nature of computer transmissions requires separate digital transmission circuits,<sup>9</sup> so carriers have been forced to make considerable investment in new equipment to meet demand. The high cost of the new facilities, and the associated capital requirements, have led various groups to question the business practices of the carriers, such as the possible extinction of competitors due to the carriers' use of cross-subsidies, "improper" cost accounting practices, predatory pricing and the passing on of costs to household telephone ratepayers. As Mr. A.G.W. Biddle of the Computer and Communications Industry Association has noted:

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6. These comments do not ignore the fact that often the policies can be anticompetitive (e.g., the increasing of a tariff).
  7. For example, some U.S. economists support the proposed breaking up of the major petroleum companies. However, their support comes from concern over the political power of the corporations, not the economic arguments.
  8. In Canada, similar conditions led to the establishment of the Royal Commission on Corporate Concentration, known as the Bryce Commission.
  9. More will be said on this topic in Chapter VI.

Cross-subsidies in the Bell system have been uncovered by state public utility hearings in New York, Massachusetts, and Vermont.... Another recently completed FCC hearing on the impact of competition in telecommunications revealed that contrary to all of Bell's claims there is still no evidence that carrier supplied communications equipment contributes in any way toward the cost of basic telephone services. Rather, based on AT&T's own submitted studies, just the opposite conclusions are being drawn....

To put it simply, FCC hearings have revealed that Bell's accounting system makes no attempt to relate the cost of providing a particular service to the price tag it places on that service. Thus, it is nearly impossible to determine whether revenues from Bell equipment and service offerings are covering their costs.

If left unchecked, AT&T will in the long run drive out all EFT competition ....<sup>10</sup>

#### 4.3. REGULATED INDUSTRIES

In exchange for monopoly privileges, telecommunications carriers, etc., have agreed to the supervision of their business and financial activities by government regulatory agencies. The standard rationale for this arrangement is that consumers will obtain the desired output at the lowest attainable cost. In actual fact, fulfilling this objective creates its own set of problems. While the regulator has certain goals, it is often difficult to ensure that the firm will always operate efficiently and in a manner consistent with the regulatory guidelines. The following examples<sup>11</sup> illustrate some of the difficulties that regulation presents. The firm is assumed to be a monopoly with

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10. Biddle, p. 12.

11. This section is drawn from W.T. Stanbury, "The Consumer Interest and the Regulated Industries: Diagnosis and Prescription," in H.W. Ruppenthal and W.T. Stanbury (eds.), Transportation Policy: Regulation, Competition and the Public Interest, (Centre for Transportation Studies, Vancouver: University of British Columbia Press, 1976).

declining average-total and marginal costs. In Case 1 the firm is a well-regulated and technically-efficient monopolist. As Figure 3 shows, the regulator sets price ( $P_1$ ) equal to average total cost and the firm's output is  $Q_1$ . This policy ensures that total revenues are equal to total cost and the firm does not make a loss. In Case 2 the firm is not regulated. It would equate marginal revenue to marginal cost and produce  $Q_2$  units of output at price  $P_2$ . Case 3 represents a nonregulated but technically inefficient firm that maximizes profits. The firm sets price at  $P_3$  and produces  $Q_3$  units of output. Because of its higher costs, this firm produces fewer units of output and at a higher price than the monopoly in Case 1. In Case 4 the firm is regulated, the regulator sets the price at  $P_4$  and output would be  $Q_4$ . Regulation results in a larger output than Case 3 and at a lower price.

Regulatory agencies have traditionally been concerned with the profitability of public monopolies. Profits are defined as the rate base times the "fair" rate of return. Deviations from allowed profits are removed by appropriate adjustments in the carrier's tariff structure. As noted by Stanbury, regulatory authorities are obsessed with the spectre of excess profits but usually spend too little time in determining whether the regulated firm is technically efficient. Operating costs and the rate base are seldom questioned and are taken virtually as given by the regulated firm. This form of regulatory behaviour has been criticized by economists and policymakers.<sup>12</sup> Averch and Johnson have shown that rate of return regulation causes over-intensive substitution of capital for other production factors. A rearrangement of the firm's production process (substituting capital for other factors) will increase its capital stock and

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12. When reviewing the literature on regulated industries, the seminal article is,

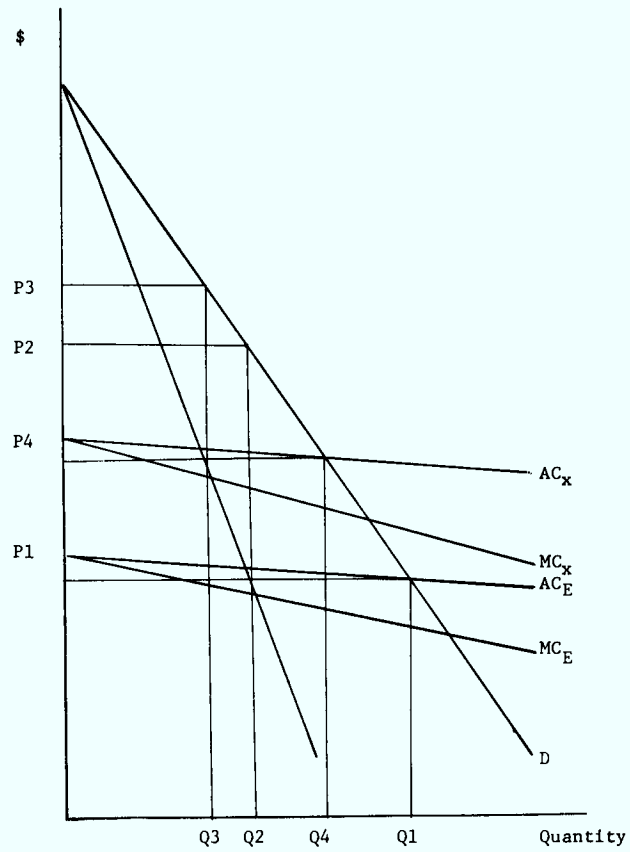
H. Averch and L.L. Johnson, "Behaviour of the Firm Under Regulatory Constraint," American Economic Review, Vol. 52, No. 5, (Dec. 1962), pp. 1053-1069.

Other important articles would include,

E.E. Bailey and J.C. Malone, "Resource Allocation and the Regulatory Firm," The Bell Journal of Economics and Management Science, Vol. 1, No. 1, (Spring 1970), pp. 129-143.

W.J. Baumol and A.K. Klevorick, "Input Choices and Rate-of-Return Regulation: An Overview of the Discussion," The Bell Journal of Economics and Management Science, Vol. 1, No. 2, (Autumn 1970), pp. 162-190.

Figure 3  
COST CURVES OF REGULATED MONOPOLY



therefore the rate base. Since profits are proportional to the rate base, the firm's profits will have increased. Other possible methods of increasing profits are buying unnecessarily expensive materials ("gold-plating") and purchasing non-productive capital ("rate base padding").

The regulatory problem is further complicated by the presence of multi-product firms. Many regulated monopolies produce more than one product or service and are expanding into new market areas. Regulators must decide whether the expansion plans will be approved or not, and they are often hampered by a lack of knowledge of the economics of large systems. This topic has been raised by Baumol and others<sup>13</sup> in terms of whether a combination of several firms can produce an industry output as cheaply as it can be produced by a single supplier. Baumol has shown that if there is some sort of complementarity in the production of the different outputs of the industry, then the single firm will make better use of its capital stock and the outputs can be produced at a lower cost. However, there is no easy method to determine when this situation arises.

Regulated firms have also increased their profits by expanding into non-regulated areas. Profits have been increased by a number of techniques. Although a regulated firm's tariff structure must be approved by the regulatory authority, there are often no constraints on its choice of suppliers. The regulated firm will establish a subsidiary (a non-regulated firm) and by overcharging the parent firm the subsidiary can transfer profits from the regulated parent to itself.<sup>14</sup> To capture a market, the regulated firm will often price below marginal cost in the

13. W.J. Baumol, "On the Proper Cost Tests for National Monopoly in a Multiproduct Industry," American Economic Review, Vol. 67, Dec. 1977, pp. 809-22.

W.J. Baumol, E.E. Bailey, and R.D. Willig, "Weak Invisible Hand Theorems on Pricing and Entry in a Multiproduct Natural Monopoly," American Economic Review, Vol. 67, June 1977, pp. 350-65.

W.J. Baumol, and D.F. Bradford, "Optimal Departures from Marginal Cost Pricing," American Economic Review, Vol. 60, June 1970, pp. 265-83.

14. "Public may be subsidizing non-phone firms: engineer," The Ottawa Citizen, Apr. 14, 1977, p. 22.

Director of Investigation and Research, Combines Investigation Act, The Effects of Vertical Integration on the Telecommunication Equipment Market in Canada, (Submission to the Restrictive Trade Practices Commission), Department of Consumer and Corporate Affairs, Bureau of Competition Policy, Ottawa, 1976.

competitive market and cover losses by rate increases in the regulated area. Also, because it is difficult to allocate joint costs in a multi-product firm, the accountants will try to pad the rate base. Costs are transferred from the unregulated to the regulated activities, and to the extent that they are successful the profit ceiling will be raised.

#### 4.4 TECHNICAL STANDARDS

Technical standards can be used to promote or stifle competition. By making its standards machine specific, a manufacturer can often force a firm to remain as a customer and thereby protect its market share. The computer mainframe manufacturers are excellent examples of this procedure. Of major concern to policymakers is the possibility that the large communications and data processing firms will step in and establish de facto standards for the EFTS market, restricting competition and pre-empting the market for themselves. The de facto standards restrict competition in a number of ways. The dominant firm can change its standards and then release incomplete details, thereby gaining a valuable time advantage. Competitors must go through the costly process of determining the new standards and then designing compatible equipment. Until then, the dominant firm has had a virtual monopoly. Also, the existence of de facto standards and the non-cooperation of the dominant firm often prevent the development of an alternative.<sup>15</sup>

Firms which compete with the industry giants are not unaware of the problems. Mr. Biddle's recent remarks before the U.S. National Commission on Electronic Funds Transfer illustrate some of their concerns. On the possible anticompetitive uses of standards he said:

There are certain anticompetitive purposes to which standards can be put and we must be aware of these. Standards have been found to inhibit or stifle existing competition, thus subjecting the users to antitrust liability, when they have employed standards to bring about an artificial uniformity of product....

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15. Roderick Oram, "Dominance of IBM felt restraint to development," Toronto Globe and Mail, Feb. 25, 1977, p. B6.

"Cbema Cites 'Institutional Uncertainties' as a Barrier to Development of EFT Systems," Computerworld, Vol. 11, No. 3, Jan. 17, 1977, p. 45.



Standards may also be found to be anticompetitive if they have the effect of boycotting or excluding competitors or if they tend to control or withhold production. With regard to the use of standards to exclude competitors, our experiences in the data processing industry have shown just the opposite to be the case; that is, it is the absence of standards which has excluded competition.<sup>16</sup>

He also expressed concern about the creation of de facto standards and their use as a marketing tool by the industry giants.

De facto standards can and do stifle competition when many small suppliers are at the mercy of a giant competitor who sets such standards at will; the IBM situation in the computer industry is the leading example of this....

This very same situation could develop in the EFT industry if a single company achieves such dominance or control that it can set de facto standards for the entire industry....

In the data processing industry, the giant mainframers, that is, IBM and the 5 dwarfs, have been the enemies of standards -- hardware, software, interface, or communications protocols. Each fears the loss of market position to the others and especially to the plug-compatible companies and the minicomputer manufacturers .... They regard the lack of standards as a ploy, something to outwit competition with, something to further reduce customer efficiency.<sup>17</sup>

The above issues were also discussed in the National Commission on Electronic Fund Transfers' Interim Report.<sup>18</sup> In particular:

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16. Biddle, p. 14.

17. Biddle, pp. 14-15.

18. National Commission on Electronic Fund Transfers, EFT and the Public Interest. (Washington, D.C.: 1977).

The clear consensus of opinion of witnesses at the Commission's hearings was that well thought-out, timely standards stimulate competition. Many witnesses expressed concern, however, that some practices enable standards to be used as competitive weapons.

One of these practices is the ability of the dominant suppliers in the data processing and communications fields to create standards outside the normal standards-making process....

Another potentially anticompetitive practice involves the standards-making process itself. Several witnesses indicated that this process is dominated by the large computer manufacturers to the detriment of both users and smaller manufacturers. They charge the large manufacturers with using ANSI as a tool to further their alleged goal of minimizing entry .... Large manufacturers deny the above charges, claiming a long history of ANSI support and that changes in standards are made as technology dictates.<sup>19</sup>

#### 4.5 OWNERSHIP

Another question to be answered is who should own and pay for the electronic terminals. One possibility is for financial institutions to install proprietary EFT systems and operate and own the network.<sup>20</sup> The systems typically consist of computer equipment interconnected with leased phone lines. Because the financial institutions own the network, they determine who has access, under what conditions, and what services are offered through the terminals. In this case, the POS terminals in

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19. National Commission on Electronic Funds Transfer, pp. 102-103.  
ANSI - American National Standards Institute.

20. "Operate" would include the possibility of a financial institution using a computer service bureau for its data processing, etc.

stores, the ATMs at a shopping center, etc., would be owned by the financial institution. Shared systems can operate in a similar fashion.<sup>21</sup>

At present there is a power struggle between the financial institutions and the large retail stores as to who should own and pay for the retail POS terminals. Some financial institutions view the ownership of the POS terminals as their exclusive domain, while retailers want to have an input into this EFT development. Retailers want to have a choice as to the services offered and which financial institutions can use their terminals. As one U.S. retail industry spokesman has said:

We do not want to impair our point-of-sale efficiency by introducing foreign devices or procedures ... nor are we interested in making costly modifications to our point-of-sale systems which (already) cost millions of dollars to implement ...

This is a basic concern which we feel bankers must understand as they proceed in the development of funds transfer systems.<sup>22</sup>

At the same time, retailers do not want to be locked in with one financial institution. As mentioned in Chapter III, retailers are concerned that they will pay for the terminals while the financial institutions will reap all the profits. In examining the above conflict, the question to ask is whether the retailers' concerns are justified or the issue is merely a reflection of the early stages of EFTS negotiations which will resolve itself as participants gain maturity in this field.

As discussed earlier, the major retail chains in Canada and the United States have some of the most sophisticated on-line, real-time terminal systems. They have spent substantial amounts of money to obtain the necessary hardware, personnel, technology, telecommunications, etc. Naturally they are opposed to other

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21. In shared systems, ownership of the terminals, etc., is by the "group" of institutions. However, the determination of management policies may or may not be by the "group." For example, some systems accept new firms as "equal" partners, while others accept new members but control remains with the originating institution.

22. Toni Wiseman, "Banks Hit for Ignoring Retailers' Needs," Computerworld, Vol. 10, No. 42. Oct. 18, 1976, p. 1.

firms gaining access to their systems without some form of compensation. Since the facilities already exist, many institutions in the financial community, especially in the United States, believe that the retail POS networks should be treated as a public utility rather than duplicating existing systems.

The banks would prefer to piggyback onto the retailers' existing on-line terminal systems, and deliver their financial services through the store POS terminals. Basic economics are claimed to dictate this move. An automated teller machine costs \$30,000 to \$35,000, different types of retail terminals cost \$3000 to \$4000 apiece and a brick and mortar branch might cost \$450,000.<sup>23</sup> A number of banks and retail chains in the United States have started to interface their systems. The Chase Manhattan Bank of New York provides VISA authorizations through the terminals of Fortunoff department stores.<sup>24</sup> Each terminal is connected to a store-level data collector. The store sends messages to a minicomputer which routes the signals on to the VISA authorization center. Responses return via the same route. Similarly, Macy's in New York has 1800 terminals and is interfacing them into the American Express network. Korvette maintains a hot card file for bank cards which can be accessed by 3000 terminals.<sup>25</sup> Also, retail chains, such as Sears and Montgomery Ward, are installing nationwide terminal networks based on computers which can communicate with any other terminal in the United States. For example, the final Montgomery Ward network will have a total of 25,000 on-line terminals.<sup>26</sup>

The cost figures suggest that few financial institutions could afford or even want to duplicate the retail networks. The success of EFTS will depend on the financial institutions having

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23. "Bankers hoping to encourage customers to do more of their banking by machine," Toronto Globe and Mail, Apr. 16, 1977, p. B4.

24. Vince Sabia, "Fortunoff Merges POS and EFT in Mini-Based System," Computerworld, Vol. 11, No. 11, Mar. 14, 1977, p. 51.

Fortunoff is a medium-size retailer specializing in jewelery, silver and home accessories.

25. Citibank has recently become involved with the Korvette credit operations. See Laura Gross, "Citibank Buying Korvette Credit Card Subsidiary," American Banker, Apr. 27, 1977, p. 1.

26. "Network Structures for Distributed Systems," EDP Analyzer, Vol. 14, No. 7, July 1976, pp. 1-13.

access to the retail premises and POS terminals. Therefore, it appears that in the majority of cases the retailer will own or rent the terminals and the financial institutions will have to negotiate some type of access arrangement.

Another possibility for consideration is the third-party provision of the switch, proponents of which stress the neutrality and efficiency provided by a service bureau. There would be additional benefits. A service bureau may offer services which financial institutions are legally prohibited from providing for their customers. Users benefit by receiving a consolidated financial and business report. Neutrality is maintained because a non-interested third party is handling the sensitive financial information. Finally, the use of a service bureau extends EFT services to small financial institutions and firms which were previously excluded and costs are allocated in an "equitable" manner, on a fee per transaction basis.

Several U.S. service organizations are operating as processing switches and providing transactions networks for their customers. Regulations exist in Canada which suggest that the alternative of a third-party switch should be considered. In January 1975, the Minister of Finance issued guidelines for banks providing data processing services.<sup>27</sup> The banks could perform data-processing services for their deposit customers and other financial institutions. They were prohibited from all other services. Therefore, if a bank computer were to act as a processing switch, there would be legal restrictions on the range of services it could offer. However, third-party firms could fulfil the market need. For example, a processing switch could be installed for a shopping center. Small shops would connect their electronic terminals to the processing switch. Sales information, etc., entered into the terminals would be stored for analysis. The switch would establish contact with the appropriate banks and complete the financial side of the transaction. At the end of the processing period, the switch could provide the firm with detailed business reports (inventory analysis, sales patterns, etc.). In the debate over the proper switch participants, a third-party switch should be considered as a definite alternative for the Canadian EFT market.

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27. Department of Finance, Canadian Banking Legislation: August 1976 (White Paper) (Ottawa: Supply and Services, 1976), pp. 32-33.

#### 4.6 SUMMARY

Changes in technology have blurred the boundaries between telecommunications and data processing services. The size of the largest firms in the respective industries has created a number of concerns for social and economic policy. For competition policy, the main concern is the use of anticompetitive techniques to pre-empt the EFT market. Attachment policies and technical standards have been previously used to exclude competitors in other markets. The position of this paper is that the needs of the system should determine the standards, not the standards the system. The development of technical standards acceptable and available to all potential users and manufacturers should be encouraged. There should also be liberal attachment of terminals meeting these standards to the communications networks. These policies should allow more firms to compete in the computer industries and reduce some of the anticompetitive situations.<sup>28</sup>

It will be a number of years in the future before a complete electronic payments system is installed and operational. EFTS will be introduced in phases as operators meet the easier and more obvious needs and then expand into new services. Initial activity is in intercorporate and interbank transfers, with the more sophisticated retail POS system following at a later date. Whatever the sequence of introduction, Chapters II to IV have stressed that the operation of future electronic payments systems should be by private interests rather than by government, as often occurs in new markets and technologies. This paper maintains that central planning, including regulation, should not be offered as automatic solutions to perceived policy problems and issues. Regulations should determine general ground rules and remove any restrictive conditions on entry. Government operation and intervention should be viewed as a last resort, not a first step. A consultant's report for Consumer and Corporate Affairs Canada expressed a similar view on government intervention in economic affairs:

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28. For example, many firms produce peripheral equipment for IBM computers which cost less and perform as well as, if not better, than similar IBM hardware. The restrictive IBM attachment policy and refusal to release technical standards has prevented these firms from making even larger inroads in the peripheral equipment market.



the performance of government -- not only in Canada -- in managing nationalized or regulated industries, in the selection of private-sector projects for financial assistance, in determining a "correct" level for wages either when intervening in stalemated strikes or for its own employees -- does not engender confidence in the claim that it should assume a major role in economic decision-making for the economy as a whole.<sup>29</sup>

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29. L.A. Skeoch and B.C. McDonald, Dynamic Change and Accountability in a Canadian Market Economy, (Ottawa: Supply and Services 1976) p. 15.

## CHAPTER V

### BANK/CHARGE/CREDIT CARDS

Credit cards have become an integral part of the payments system, despite substantial resistance from both consumers and retailers. Credit cards can be divided into four categories: bank cards<sup>1</sup>, national independent<sup>2</sup>, national private<sup>3</sup>, and local private<sup>4</sup>. The widespread acceptance and different types of credit cards creates a number of economic and social issues. The discussion that follows is restricted to issues relating to competition policy.

#### 5.1 HISTORY OF THE DEVELOPMENT OF CREDIT CARD PLANS

Credit cards have been available since the turn of the century. Small retailers, department stores and oil companies offered credit cards to their clientele to identify their good customers and allow them to purchase merchandise on credit. Although the use of credit cards increased, they were considered relatively unimportant.

In 1950, the Diners' Club Inc. introduced "third party" credit cards in the United States. Diners' Club is an independent credit card plan which involves an agreement between the card organization, its customers and merchants (originally restaurants). The merchant honours the card and its card invoices are discounted by Diners' Club, while the card holder agrees to pay his monthly statement. The merchant receives guaranteed payment while the customer obtains a bill collection service and the ease of a single monthly payment. The card company earns its profits on the merchant discounts and membership fees. Diners' Club quickly became profitable and imitators soon followed. In 1958, the American Express card was introduced and the Hilton Credit Corporation followed with Carte Blanche.

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1. There are two major bank cards - Chargex/Visa and Master Charge.
  2. The primary independents are Diners' Club, American Express and Carte Blanche.
  3. This category includes the petroleum companies, car rental, hotel and motel chains and the national retail chains (Sears, Eaton's, The Bay).
  4. This category includes the cards of local retail establishments (e.g., Robinson's Department Store in Hamilton).

The Franklin National Bank was the first bank to issue a bank credit card, which it offered to its customers in 1951.<sup>5</sup> In the late 1950s, a number of large banks, including Bank of America, Chase Manhattan and Marine Midland Trust, introduced charge cards. With the aid of its network of branches, Bank of America was able to gain widespread acceptance of its credit card (Bank Americard) in the state of California.<sup>6</sup> Rather than compete directly with Bank of America, many small banks applied to join the Bank Americard system. In 1966, Bank of America began to licence its scheme to banks in the United States and other countries. A number of U.S. banks were dissatisfied with the control Bank of America extends over its credit card plan. They wanted more autonomy in their card operations and many could not accept the concept of issuing a card with a major competitor's name on it. The Interbank system grew out of a number of regional bank card associations which issued their own cards. Initially (1967) the cards only had to bear the letter "i", but members soon switched to the Master Charge logo.<sup>7</sup>

Bank cards were introduced in Canada in 1967.<sup>8</sup> A consortium of banks (Royal Bank of Canada, Canadian Imperial Bank of Commerce, Toronto Dominion Bank and Banque Canadienne Nationale) obtained the Canadian rights to Bank Americard. They kept the blue, white and gold colours, but changed the name to Chargex. In 1972, after a compensation payment of \$9 million, the Bank of Nova Scotia joined the Chargex consortium. In 1972, the Bank of Montreal and Banque Provinciale du Canada considered joining the Chargex network. After comparing the high Chargex initiation fees (\$14 million for the Bank of Montreal) against the Interbank franchise fees (about \$500,000), the two banks decided to join the competing U.S. bank card system. In March 1973, Master Charge was introduced into Canada. The same name and logo were retained for Canadian cards.

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5. Henry J. Schaberg, "Story of a First Generation Bank Card," Banking, Sept. 1977, p. 116.
  6. On the east coast of the United States, laws in some states prohibit branch banking and credit card plans had a more difficult time gaining acceptance. For example, the Chase Manhattan Bank sold its card operations in 1962 after four years of continual losses.
  7. This section is drawn from Thomas Russel, The Economics of Bank Credit Cards (New York: Praeger 1975).
  8. Economic Council of Canada, Efficiency and Regulation: A Study of Deposit Institutions (Ottawa: Supply and Services, 1976).

At the present time, it is highly unlikely that a third bank card network will develop. The major banks already belong to either of the two card plans and have no reason to start another. The two existing networks have covered the country and established a substantial card holder and merchant base. A new competitor would be at a substantial disadvantage. There would probably be merchant resistance, as many businesses already accept two bank cards and several travel and entertainment cards, so they would perceive little, if any, future benefits from a third bank card. Finally, the large entry costs act as an effective entry barrier; the entry fees into existing networks are high and establishment of a new network would probably involve substantially higher costs.

## 5.2 ACCESS TO CREDIT CARD PLANS

### a) Near Banks

Financial institutions compete on the basis of their charges and the services provided. At present, the inclusion of a credit card in the bundle of services offered by a financial institution would likely be an important competitive advantage. As a general principle of competition policy, firms should be allowed to enter any area of economic activity not specifically precluded by legislation. At present only chartered banks are members of the two bank credit card systems. Originally National Bank Americard Inc. and Interbank had clauses in their master agreements which prohibited near banks from joining the card systems. As will be discussed later, the restrictive covenances were recently removed in the United States, where the card companies have begun to accept near banks as members. Canadian companies in the past have been mute about their policy but they are now considering near banks for membership. Master Charge has accepted two trust companies (Canada Trust Co. and Victoria and Grey) and Chargex-Visa is negotiating with a number of financial institutions. Even if membership is easy to obtain (which has yet to be determined), not all near banks will want to join the card systems. Merchants do not keep accounts at near banks and as a result, near banks would receive no merchant discounts from the card invoices. However, they would also not incur any associated account expenses. Near bank revenues would be restricted to interest charges on customer loans and the interchange fees involved in each transaction. The Visa interchange fee is 1.95 per cent of the total sales ticket and the Interbank fee is 1 per cent and 13 cents on a sales ticket.<sup>9</sup> Over one half of the card

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9. The interchange fee is a percentage of the sales ticket paid by the bank whose merchant is involved in the sale to the bank which issued the card. Carol Bishopric, "Credit Card Industry, in its 10th Year, Is Moving Fast But Wonders, Where to?" American Banker, Sept. 12, 1977, p. 1.

holders pay their bills promptly and incur no charges. Given that the credit card operations have not been overly profitable for all banks (and they receive merchant discounts), it is doubtful if all Canadian near banks would want to join the card plans at this time. However, for those that wish to participate, the possibility of being excluded restricts their services without an obvious economic justification.

Access to the credit card plans may not appear to be a crucial issue because the near banks already compete with banks for retail banking business without issuing credit cards. However, the card companies are developing debit cards<sup>10</sup> and cheque guarantee services which, if successful, could place the near banks at a substantial disadvantage in the consumer banking business if they are denied access. (Debit cards are discussed more fully later in this chapter.) Given the difficulty of establishing a competitive card network and the other conditions mentioned above, this paper supports the recommendations of the Economic Council of Canada that all institutions have access to the credit card plans on a nondiscriminatory basis with payment of compensation fees.<sup>11</sup>

b) Duality

In the United States, the bank card companies originally would not accept near banks as members. In May 1976, National Bank Americard Inc. (NBI) announced that membership eligibility would be extended to thrift institutions and any financial organization eligible for federal deposit or share insurance that is properly empowered and able to perform the appropriate functions of membership.<sup>12</sup> Three months later, the Master Charge organization changed its membership agreement to include savings and loan associations, credit unions, cooperative banks and other institutions that meet certain criteria set by the Interbank board.

The easing of membership regulations may have been influenced by the Justice Department's interest in the card companies' bylaws. In the past, NBI followed a policy of

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10. A debit card identifies the holder of a deposit account. Its use in exchange for goods and services would withdraw funds from the buyer's account and then deposit them in the seller's account.

11. Economic Council of Canada (1976), pp. 111-14.

12. "NBI Removes Dual Membership Ban, Opens Door to Thrifts, Seeks Check Guarantee to Compete with Signet," Payment Systems Newsletter, Vol. 8, No. 6, June 1976, p. 1.

prohibiting a member bank from joining the competing card system (Interbank/Master Charge). In 1971, an NBI member bank<sup>13</sup> was planning to offer both Bank Americard and Master Charge. The NBI prohibition prompted a legal suit and a settlement was reached in December 1974.<sup>14</sup> The bank agreed to drop its suit and to leave review of legal issues to the U.S. Justice Department. In October 1975, the Justice Department declared that the proposed NBI non-duality bylaws could result in an antitrust suit.<sup>15</sup> NBI removed the bylaw and broadened its eligible membership. Interbank did not have any prohibitions against dual membership.

The U.S. financial community is split over the possible effects of dual membership. The Justice Department's action was taken to promote competition, but some financial industry spokesmen believe the opposite effect will result. NBI has been, and still is, opposed to duality. It believes if banks belong to both systems there will be no incentive to make one better or different from the other. Members will not compete because they would in effect be competing against themselves, the only logical result being a merger of card systems and the ill effects of a monopoly. On the other hand, some banks stress the possibility of increased competition and better service for their business customers. Before dual membership, a merchant accepting the two cards had to follow the operating rules of two separate systems. With a single bank performing the various card functions, the merchant must deal with only one bank, one authorization system and one accounting system. Since only one deposit account is maintained, the bank can tailor its account services to suit the merchant's needs. Better service is provided, but at no extra cost to the merchant.<sup>16</sup>

Initially, U.S. banks showed little interest in joining both card systems. Prospective members were uncertain about the economic benefits. Large and small banks have now joined both

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13. The Worthen Bank & Trust Co., NA, Little Rock, Arkansas.

14. Laura Gross, "Card Duality Seen Inviting Justice Action," American Banker, Apr. 5, 1977, p. 1.

15. "Justice Department Says NBI's Proposed Dual Card Ban May Bring Antitrust Suit," Payment Systems Newsletter, Vol. 7, No. 10, Oct. 1975, p. 5.

16. Jerry Straessle, "Duality Proves Successful as Bank's Entire Merchant Clientele Takes Part," American Banker, Apr. 25, 1977, p. 11.



systems. Of the 20 largest U.S. banks, only three do not have dual membership and they do not issue any bank credit card.<sup>17</sup> The large banks that became dual said they were interested in merchant accounts and would not issue both cards. However, shortly after the announcement, they began to issue cards from both systems. To protect their merchant base, competitors have also become dual. In some sections of the United States, the introduction of duality has resulted in increased competition and discount rate wars.<sup>18</sup> Banks have also become dual to protect other business relationships. For example, the Continental Illinois National Bank & Trust Co., an issuer of Master Charge, was forced to apply for membership in the Visa network to stop the loss of correspondent banks.<sup>19</sup> All this activity has resulted in a greater number of cards being issued, more competition and expense for the banks and concerns about consumer abuse of the new lines of credit because of the ease of obtaining additional credit cards.<sup>20</sup> Duality has unsettled the U.S. credit card industry and resolution of the issue is uncertain. As one industry spokesman has stated, "We're in a hell of a hurry, but we don't know where we are going."<sup>21</sup>

In Canada, the banks have shown little interest in joining both card systems. The compensation payments are considered high in relation to the potential benefits. The Bank of Montreal did not want to pay \$14 million in 1972 and it is unlikely that its opinion has since changed. Also, although they are national in charter, some of the banks' branches are regionally concentrated. For example, the Toronto Dominion Bank has the majority of its branches in Central and Western Canada

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17. "Special Report: Bank Cards: What the Experts See Ahead," Banking, Sept. 1977, p. 43.
  18. Carol A. Bishopric, "Discount Rate Cuts to Merchants Seen," American Banker, Mar. 3, 1977, p. 2.
  19. James Rubenstein, "Continental Illinois Taking on Credit Card Duality Partly to Halt Correspondent Falloff," American Banker, July 25, 1977, p. 1.
  20. An extreme case is a Mr. Walter Cavanagh. He collects credit cards and has over 800 cards representing lines of credit totalling \$9.3 million. See "Merchants of Debt," Time, Feb. 28, 1977, p. 37.
  21. Kenneth V. Larkin, senior vice president of Bank of America. Quoted in Carol Bishopric, "Credit Card Industry," American Banker, Sept. 12, 1977, p. 1.

and very few in the Maritime provinces. Little business can be gained if the branches are not available to accept merchant accounts. By comparison, U.S. laws prohibit interstate banking, which has resulted in unit and regional banks concentrating on their local market areas, thus creating a situation more amenable to dual membership.

The introduction of duality and the possibility of banks issuing both cards will reinforce the image held by consumers that identical services are offered by card companies. To protect their market position, the card companies must somehow differentiate their product. At present, they are competing on the basis of trade name and marketing images. The Master Charge organization stresses the fact that its card is universally recognized. Bank Americard has been franchised to a number of countries, so the cards bear various names [Bank Americard (U.S.A.), Chargex (Canada), Barclaycard (U.K. and West Indies), Bancomer (Mexico) and Sumitomocard (Japan)]. In August 1976, IBANCO, the multinational membership organization for Bank Americard, announced the conversion of all member cards to the name VISA.<sup>22</sup> The blue, white and gold logo was retained and the name VISA must appear on the front of the card. IBANCO claims the name change will make the card more widely acceptable and will reduce confusion for travellers abroad.<sup>23</sup> In an attempt to educate the public and capitalize on the name change, an intensive advertising campaign was initiated. In the United States, Ibanco had plans to spend \$8.2 million on media advertising, while the estimated figure for Canada was \$1.5 million. To try to offset the influence of the Ibanco efforts, Interbank had planned to spend \$6.2 million in the United States and revised its advertising slogans. The timing of the Interbank campaign suggests the importance of media images in the promotion of each card plan.<sup>24</sup>

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22. At the same time, National Bank Americard Inc. became Visa U.S.A. Inc. and Ibanco Ltd. became Visa International Services Association.

23. The removal of the name Bank Americard will also make it easier for competing banks to accept the NBI card system.

24. "NBI Restructures Fees, Accepts 72 New Members and Plans \$8.2 Million Advertising Campaign for Visa," Payment Systems Newsletter, Vol. 9, No. 2, Feb. 1977, pp. 6-7.

"Interbank to Continue 'Relax' Theme for Master Charge Ad Campaign," Payment Systems Newsletter, Vol. 8, No. 11, Nov. 1976, pp. 4-5.

### 5.3 BANK VERSUS RETAIL CREDIT CARDS

Retailers are a major source of credit for consumer purchases, accounting for about 12 per cent of the Canadian total outstanding in 1976, as was shown in Table 4 (p. 28). The bank card companies regard retail card sales as a potential profit source and are trying to make inroads into the retail card business. Most retail chain stores do not accept bank cards, but regional stores have begun to accept them. For example, in April 1976, S.S. Kresge Co. Ltd. switched its in-house credit card accounts to Bank of Montreal Master Charge accounts.<sup>25</sup> For the regional store, bank cards expand the number of potential customers (i.e., tourists and local residents without a store card) and eliminate the risk associated with the store's credit operations. As a further inducement, the card companies decrease the discount rate as the store's card sales volume increases. Because of the dollar magnitudes and potential profits, the competition between retail and bank cards is intense.<sup>26</sup> Moreover, once EFTS is introduced, the bank cards (credit and debit) will hardly be able to claim universality if the largest retailers refuse to accept them.

The competition between retail and bank cards has so far been discussed in terms of the bank cards replacing store cards. The advent of EFTS allows for another scenario. In the future, banks and other financial institutions will be introducing debit cards which will allow purchases to be deducted directly from bank accounts. In these circumstances, banks would prefer to follow current convention and pay no interest on debit card accounts.<sup>27</sup> Retail stores (and their credit operations) will find themselves in direct competition with the bank debit cards. For competitive reasons, retailers will want store cards to be used at POS terminals. An ambitious retail firm with access to EFT terminals could act as follows. To finance its credit department, the store must either use internal funds and/or borrow on the financial markets. There are well-defined costs associated with either

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25. Bank of Montreal, Annual Report 1976.

26. In 1976, the two bank card companies had the following sales figures: Visa sales were \$2.3 billion and the Master Charge total was \$600 million. By comparison, retail sales for the same period were \$57 billion. With discount fees of 2 to 5 per cent per \$1 charged, the potential revenue is large.

27. Recent events in the United States suggest that American banks may be forced to pay interest on chequing account balances. For a more detailed discussion, see Chapter VIII.

option, but a possibly cheaper route could involve borrowing from customers. Bank accounts pay no interest, so the store could offer X per cent on any credit account overpayments. To further entice "banking" with the store, it could offer to accept payment for certain bills, etc.<sup>28</sup> Interest rates would be adjusted to match the flow of funds with the store's financial needs, placing retail stores in direct competition with the banks. To avoid being classified as deposit-taking institutions,<sup>29</sup> retail stores could issue one dollar bonds for their customers to purchase or negotiate loans in multiples of one dollar. Such arrangements would not qualify for Federal Deposit Insurance, but coverage could be arranged with a private insurance firm, or no insurance could be provided but the default risk explained to the public. Unlikely as it may seem, a similar event almost happened in the United States. During the 1969 credit crunch, interest rate ceilings (Regulation Q) placed a limit on the rate savings institutions could pay their depositors. As market rates rose above the ceiling, small savers withdrew their funds and started to buy smaller denomination U.S. Treasury bills, producing heavy public demand and creating insolvency problems for some financial institutions. To end this situation, the U.S. Treasury raised the minimum denomination of its bills from \$1,000 to \$10,000. In response, some large firms were on the verge of offering \$1,000 bonds to the public when the credit crunch ended.<sup>30</sup>

#### 5.4. DEBIT AND CHEQUE GUARANTEE PLANS

The two bank card organizations (Visa and Interbank) had plans to issue nationwide debit and cheque guarantee cards in the United States. In August 1975, Visa announced plans for its debit card, "Entree,"<sup>31</sup> followed a few months later by Interbank with

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28. For example, theatre patrons can purchase National Arts Centre tickets at NAC Box Offices in Ottawa-Hull Sears stores. Customers can pay with their Sears account card. Advertisement in The Ottawa Citizen, Oct. 8, 1977, p. 43.
29. For example, in Canada, the Bank Act draws a distinction between financial and non-financial activities. As a result, various restrictions are placed on the non-financial business of the chartered banks. For a more detailed discussion of this point see Canadian Banking Legislation, Ottawa 1976, pp. 29-39.
30. Edward Kane, "Short-Changing the Small Saver: Federal Government Discrimination against the Small Saver during the Vietnam War," Journal of Money, Credit and Banking, Vol. 2, No. 4, (Nov. 1970), pp. 513-22.
31. "NBI Announces Entree Card - Some Problems Yet to Be Solved," Payment Systems Newsletter, Vol. 7, No. 9, Sept. 1975, pp. 1-2.

"Signet."<sup>32</sup> The major features of the debit cards are direct fund transfers from POS terminals, cash from ATMs or cash dispensing machines, internal account transfers, and access to savings accounts. The Signet (Interbank) card emphasizes cheque guarantee while the Entree (Visa) card does not, so to counter this feature, Visa introduced the OK cheque guarantee system. Interbank originally planned to merge the debit and cheque guarantee functions into one Signet card, while Visa offered credit, debit and cheque guarantee services separately or in various combinations.<sup>33</sup> Both debit card plans met with limited acceptance from their respective association members, and the card companies have scaled down their plans. Banks providing the VISA OK cheque guarantee services could affix a gold seal to a credit card, debit card or independent cheque guarantee card. Interbank would follow a similar procedure, placing a green and white logo on a proprietary card or on a Master Charge card.<sup>34</sup> The cheque guarantee plans were expected to be operational in late 1977, but Interbank decided to eliminate its plan because of a lack of projected demand for the service on a national basis, replacing the Signet cheque guarantee plan with a Signet debit card similar to the Visa debit card.<sup>35</sup> The Entree debit card will use the VISA blue, white and gold logo. As VISA requires member merchants to accept all cards with the blue, white and gold stripes, merchants will not be able to refuse the Entree card. This requirement has and will lead to disputes with merchants about their acceptance of the VISA credit card and not the Entree debit card. Interbank plans to avoid this problem by making Signet a separate card. For a more detailed discussion of the debit card dispute, see Chapter VIII.

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32. "Interbank Board Approves Debit Card Plan - Check Guarantee Is Major Feature," Payment Systems Newsletter, Vol. 8, No. 1, Jan. 1976, pp. 1-3.

33. "Interbank and NBI; New Battle Lines Drawn in the Bank Card Arena," Payment Systems Newsletter, Vol. 8, No. 9, Sept. 1976, pp. 4-6.

34. "Signet System to Begin Operation September 1, Interbank Says; Logo Redesigned as 'Bug'," Payment Systems Newsletter, Vol. 9, No. 5, May 1977, pp. 3-4.

35. Carol Bishopric, "Interbank Dropping Signet Check Guarantee, Will Offer Instead Debt Plan Similiar to Visa's," American Banker, Feb. 24, 1978, p. 1.



Several of the Canadian chartered banks have operated cheque guarantee plans, but they were withdrawn when Chargex and Master Charge credit cards were introduced. (The Bank of Montreal and the Provincial Bank of Canada offered "Bancardchek," while the Bank of Nova Scotia issued the "Scotia Card.") Each plan guaranteed the cheque and granted loans when the account was overdrawn. Cheques are widely accepted in Canada and the plans obtained very little support. At present, it appears that Canadian banks will not be introducing the U.S. based cheque guarantee cards.<sup>36</sup> At present, there are no debit cards in Canada.

## 5.5 SUMMARY

The series of events that have occurred in the credit card industry in recent years have made it difficult to predict the future for this industry. Bank credit cards gradually overcame consumer and merchant resistance and competition from established travel and entertainment cards and retail store cards, and have now become the industry giants. The companies are extending their influence into EFTS through the introduction of debit cards and cheque guarantee services.

The actions of the U.S. Department of Justice have created an unsettled environment in the credit card industry. After a brief period of industry uncertainty, duality became accepted by a large number of banks. VISA, still opposed to duality, has become more aggressive in the promotion of its system and the services available to its members (both original Visa banks and new Interbank banks).<sup>37</sup>

A controversial topic in the credit card industry is the pricing of card services. In general, customers do not pay direct charges for card services (although some card plans levy annual membership fees of about \$20) and merchants pay percentage discount fees, allowing consumers to shift their transactions costs to retailers and banks. To recover some of their expenses, merchants raise their prices. Since customers who pay their monthly statement in full obtain the services without charge, the burden of financing credit card operations falls on merchant discounts and debt charges on outstanding balances. The percentage of

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36. Anne Gregor, "Canada banks studying cheque-card," Gazette, May 19, 1977, p. 25.

37. "Views from Top at Master Charge, Visa on Dual Credit Card Issuance: Hock of Visa," American Banker, Sept. 23, 1977, p. 4.



cardholders in the United States paying their monthly statement in full has been increasing over time, implying that future growth in profits will come from increasing indebtedness of a decreasing proportion of cardholders. The U.S. credit card industry is aware of this situation and there is growing pressure for the introduction of service charges. As an example of this trend, in April 1976, Citibank, the largest issuer of Master Charge, imposed a 50 cents per month charge on cardholders who paid their credit balances before finance charges accrue. Few card issuers followed the Citibank lead and after 20 months Citibank decided to cancel the 50 cent fee.

The consumer's choice of which payment instrument to use should be made on the basis of economic costs. When consumers pay for purchases with cheques, the service charges are considered as part of the transaction cost. However, when credit cards are used as substitutes for cheques no service charges are levied. This price structure encourages the use of credit cards and distorts the payment system in favour of instruments (such as credit cards) priced below their true cost. Since both consumers and merchants receive benefits from credit card transactions, this paper recommends that costs be reallocated to more realistically reflect the benefits derived. Service charges, either on a per transaction or per month basis, will make consumers consider the relative cost of each instrument.

It is generally agreed that plastic cards will play a central role in future electronic payments systems. Initial discussions were in terms of credit cards evolving into universal payments cards. However, recent events suggest that a number of cards will exist. Financial institutions have been tailoring their cards to meet the needs of definite market segments. The use of several cards rather than a universal card allows financial institutions to extend EFT services to a larger customer base. If a customer is refused one type of card, he may qualify for another. This approach allows him still to participate in EFT whereas an all-in-one package card would not. It also allows good customers to select the services they want.<sup>38</sup> The regional nature of existing U.S. EFT experiments and the U.S. financial industry also suggest several payment cards will develop. U.S. laws prohibit interstate banking, and successful local and regional EFT projects are being franchised to other financial

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38. For example, City National Bank of Columbus, Ohio, issues five plastic cards and is considering a sixth card. Joe Asher, "Five Cards for One Bank?" Banking, May 1977, p. 39.

institutions. For example, First Federal Saving and Loan Association of Lincoln, Nebraska markets its POS package called "The Money Service" and First National Bank of Atlanta sells its cheque verification service, "Honest Face."<sup>39</sup> In Canada, it is also reasonable to expect that multiple cards will develop rather than a single multi-purpose card.

As this chapter has shown, credit cards have played and will continue to play an important role in the payments system. At present, the credit industry is in an unsettled state as it attempts to define and develop its role in the emerging electronic payments system.

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39. Jeffrey Kutler, "FNB Atlanta's Honest Face Check Verifying Plan to be Offered by Control Data Corp.," American Banker, Sept. 28, 1977, p. 2.



## CHAPTER VI

### TELECOMMUNICATIONS

#### 6.1 INTRODUCTION

The widespread acceptance of computers by the business community has caused a number of changes in the telecommunications industry. As the number of computers rose and applications increased, computers started talking to each other. Initially, 20 years ago, data transmissions were over the telephone voice lines supplied by the common carriers. The voice networks transmitted information using analog techniques. This created a problem because computers, terminals, etc. use digital methods of data transmission.<sup>1</sup> Therefore, to transmit digital data over the voice circuits a digital pulse had to be converted to an analog signal and then back to its digital form at the receiving station. This form of data transmission required the use of costly modems (modulator/demodulator) for the conversion of the signals, which was less efficient than direct digital transmission. A further disadvantage was the cost to the users. The lines were leased from the carrier and dedicated to the user, who had to pay for the circuits for the duration of the connection whether or not they were used. These characteristics restricted private analog lines to firms transmitting large volumes of data.

In an attempt to reduce communications costs, circuit-switched communications networks were established. The sharing of the network facilities with other users allowed for lower costs. Charges were levied on the basis of the time the circuits were in use. However, the analog circuit-switched networks suffered from a variety of technical difficulties. Computer industry hardware manufacturers increased the transmission speed of their equipment. For many applications, the transmission speeds of the analog lines were too slow. Often the time needed to set up a connection was excessive when compared with the time used in the transmission itself. But the main difficulty was the "noise" on the voice lines which, although acceptable for voice transmission, was unsatisfactory for business applications. Computers often included the "noise" as part of the data transmission and thereby introduced preventable errors.

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1. Analog transmission involves the conversion of sound waves into electrical impulses to produce a frequency pattern that is analogous to the speech pattern. In digital form, data are transmitted in a discontinuous or discrete form.

Another network configuration was to attach multiple terminals<sup>2</sup> to a single dedicated line. In this manner, several terminals could communicate with the host computer over the same circuit. However, there were flaws with this approach. While one terminal was communicating with the host computer, all other terminals were prevented from using the circuit. Since usage was restricted to one terminal, some form of communications control procedure had to be installed in the host computer, reducing its efficiency as some of its capacity was diverted to the communications control function. In general, utilization rates tended to be low in this type of network. Charges were calculated on the duration of the connection.

## 6.2 DEVELOPMENT OF DIGITAL TRANSMISSION NETWORKS

The use of digital transmission lines allowed information to travel faster, reduced errors to acceptable margins and did not require the use of modems. In March 1973, the Trans-Canada Telephone System (TCTS) introduced Dataroute, the world's first nationwide digital data service. CNCP Telecommunications (CNCP) soon followed with Infodat.<sup>3</sup> While digital in nature, the networks were basically non-switched dedicated lines. Computers could interact, but only with machines connected to the same dedicated lines. The new lines reduced transmission costs between one-half and one-tenth,<sup>4</sup> but the leasees were still forced to pay for the lines for the duration of the connection regardless of usage.

Digital transmission was cheaper and more error free, but the networks lacked the accessibility of the analog circuit switched networks as computers could only communicate with terminals connected to the same line, while the switched system allowed access to any receiving device connected to the network. A switched network transmitting data in a digital form was more efficient and, to suit their needs, some large telecommunications

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2. Terminals can be any device, including computers, connected to the network.
  3. TCTS is an association of Bell-Canada, its Atlantic subsidiaries and the four western telephone companies. CNCP is a joint communications operation of Canadian National and Canadian Pacific Railways.
  4. Roy Wilcox, "Taking the Mumbo-Jumbo Out of Modern Communications," The Canadian Banker and I.C.B. Review, Vol. 83, No. 6, Nov.-Dec. 1976, pp. 24-27.

users built their own private networks, leasing lines from the carriers to connect the computers, terminals and necessary communications hardware. Faced with the possible proliferation of private networks in which they would provide only the data transmission services, and which they believed were an unnecessary and inefficient duplication, the carriers developed packet switched networks. TCTS introduced Datapac in August 1976, and CNCP began to offer Infoswitch in 1977.

Packet switching networks consist of a series of nodal switches linked together with digital transmission facilities. A message is broken into sections of standard length and format, called packets, which consist of a section of the message, an address label, a sequence number for reorganization of the message and error control information. The data portion is approximately 90 per cent of a packet. The packets enter the network and are sent to the nearest switching node. The nodes are minicomputers programmed to perform a number of communications and network control functions. They read the address information, check the accuracy of each packet, calculate the optimum path and individually route the packets through the network. At the receiving node, the packets are reassembled into their correct sequence and delivered to the destination. During the transmission there is no direct link between the sending and receiving stations. This method of handling data utilizes the concept of a virtual circuit. Traditional circuit switched networks establish a dedicated circuit between the sending and receiving stations for the duration of the call, while a virtual circuit does not physically provide a point-to-point connection but instead is a logical association between the two stations. Network control is performed by the switching nodes. During a transmission, the circuits are only used for the short time it takes to transmit each individual packet. Because the lines are not dedicated for the duration of the call, the network can send the packets of other users during the gaps in transmission. This sharing of the circuits improves efficiency and allows for cost reductions, directly relates communications costs to the amount of data transmitted (number of packets) and not to the duration of the connection, and makes costs less sensitive to distance. As a result, carriers have been able to change their billing procedures, as has been stressed in the marketing of the new networks.<sup>5</sup>

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5. Stuart L. Mathison, "Public Packet Network Seen Best Alternative for User," Computerworld, Vol. X, No. 48, Nov. 29, 1976, p. 1.



As mentioned in Chapter IV, each computer manufacturer has developed its own technical standards. For a public network to be successful and widely available, users must be able to connect a number of different terminals. This diversity of terminals requires an agreed-upon format for the data (the packet) and a set of procedures for the terminals to communicate with the network. The standards must be common to the network users, the computer manufacturers and the communications carriers.

The concept of packet switching has been accepted by the majority of carriers, and networks are developing in a number of countries.<sup>6,7</sup> It quickly became apparent that without international standards, each network would develop its own and probably different specifications, hampering communications between networks, so in 1974, TCTS developed a set of network standards called SNAP (Standard Network Access Protocol). After receiving comments from other carriers, the TCTS proposal was submitted to the Comité Consultatif International Téléphonique and Télégraphique (CCITT), a communications agency of the United Nations. SNAP was renamed X-25 and in October 1976 was accepted as the international standard for packet-switched networks. Although general agreement was reached, some 50 significant areas are still under study, the most important being a network access procedure for non-packet mode (non-intelligent) terminals and how to set up (dial) and clear down (disconnect) a call on the network. This paper supports the efforts to develop technical standards acceptable and available to all potential users and manufacturers. The unresolved areas have created a dilemma for the carriers: should they wait for the CCITT recommendations or should they proceed with their own version of X-25 and hope that the CCITT recommendations are identical or that the necessary changes can be made easily?

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6. Four Canadian companies which have considered switching from Dataroute to Datapac supplied cost data to a consulting firm. Three of the four firms could obtain cost savings ranging up to 41 per cent (41 per cent, 33 per cent, and 22 per cent). The fourth firm, a financial institution, had a 1 per cent increase in cost. The Datapac network could not reduce costs because the current operations made efficient use of the Dataroute lines. However, the consulting firm suggested the financial institution may want to convert to Datapac because of improvements in accuracy, reliability, etc. "Improving EDP Performance with Packet Switching," EDP In-Depth Reports, Vol. 6, No. 7, Mar. 1977.
  7. For example, at a recent conference in Toronto, five packet-switched networks were demonstrated. France had three networks - RCP, Transpac and Cyclade Canada had Datapac; and the United States had Telenet.

This dilemma facing the carriers is illustrated by the Canadian telecommunications market. TCTS has decided to go ahead with SNAP before the CCITT recommendations are released. In Datapac, non-intelligent terminals access the network through a Network Interface Machine (NIM).<sup>8</sup> CNCP has accepted X-25 but believes modifications must be made if the many areas of further study are to be resolved. As G.F. Carleton, Project Manager of Infoswitch, has stated:

The Infoswitch Network is being implemented using well proven data network interface principles and at this point in time is utilizing X-25 in all areas, where agreement has been reached within CTCA (Canadian Telecommunications Carriers Association) and in other areas where X-25 as currently documented, is consistent with our principles....

I believe personally that X-25 in its currently documented CCITT form will never be implemented, but . . . it will shake itself down to a level of complexity which will be much more attractive to the users of these kinds of networks.

After this period of further evolution of X-25 has been completed, CNCP intend to implement it in the Infoswitch network.<sup>9</sup>

### 6.3. RESTRICTIVE CARRIER PRACTICES

A continuing criticism of the telecommunications carriers has been the restrictive nature of their policies on the attachment of customer-owned ("foreign") terminals. Any firm planning to use its own terminal equipment must have it approved by the carrier, installed by the carrier, and attached to the

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8. A non-intelligent terminal does not have the necessary software capability to packet the data. A Network Interface Machine contains the software to convert the data into standard packets.

9. G.F. Carleton, "CNCP View of X.25," Canadian Datasystems, Vol. 8, No. 10, Oct. 1976, p. 3.

network through an interface coupler rented from the carrier.<sup>10</sup> The carriers believe that by supplying the equipment and/or requiring their approval and the use of a coupler, they can maintain technical standards and the integrity of the network. The malfunctioning of faulty or poorly designed equipment could result in hazard to life, interference with other users of the system and physical damage to the communications system. Although there is technical merit to the argument, it is often difficult to draw the line between network integrity and rigid protectionism.<sup>11</sup> For example, the following comments were made by Carl Beigie:

Network integrity is another area in which an economist must appeal to expert engineering advice. There is no doubt that in a two-way system technical safeguards must be maintained so that inputs by one party do not disrupt service to others. What is not clear is just how complicated these standards must be and how expensive they might be to observe. Until these issues have been fully investigated it will be impossible to resolve the debate between those who argue that network prohibitions by the telecommunications industry serve a legitimate technical function and those who feel that they are a mechanism for arbitrarily limiting competitive entry.<sup>12</sup>

10. Recent modifications requires only devices that access the network (i.e. automatic dialers) to have a coupler; see Director of Investigation and Research, Combines Investigation Act, The Effects of Vertical Integration on the Telecommunications Equipment Market in Canada, Submission to the Restrictive Trade Practices Commission, Department of Consumer and Corporate Affairs, Bureau of Competition Policy, Ottawa 1976, pp. 70-77 and 163-164.
11. Some concrete examples of Bell Canada's attachment policy were provided by a complainant whose firm sells telecommunication equipment. The complainant once attempted to market the Norwegian Ekkofon (an automatic telephone answering unit which records messages), but Bell Canada insisted on a special interfacing device in spite of a device of this nature built into the unit itself. Twice Bell Canada attempted to produce such a device but both were unworkable. The complainant claims that Bell Canada now supplies this telephone on a limited basis but it does not require the special interface. See Director of Investigation and Research, Combines Investigation Act, pp. 72-73.
12. Carl E. Beigie, "An Economic Framework For Policy Action in Canadian Telecommunications," in H. Edward English, ed., Telecommunications for Canada: An Interface of Business and Government (Toronto: Methuen, 1973), p. 66.

The issues raised by the carriers concerning foreign attachments are real, but we find their attitude on this matter to be excessively perfectionist. We feel that the highest priority should be given to specifying clearly and precisely the terms that would, if met, satisfy legitimate network operating requirements.<sup>13</sup>

The carriers have been accused of using their restrictive attachment policies to protect their market position. The attachment of customer-owned devices pre-empts the equipment market for the carrier and, since the telephone companies provide the equipment, they can select their sources of supply. The corporate link between Bell Canada and Northern Telecom grants Northern Telecom a privileged status leaving little opportunity to assess the benefits of more competition in the equipment industry. This form of buyer-seller relationship allows for the possible transfer of profits from the regulated to the unregulated activities of the firm. The exclusion of foreign attachments allows the firm to maintain its market share and earn a rental income associated with the captive terminal market. At the same time, rapid changes in the technology of computer equipment, data processing and telecommunications are creating new generations of terminals. It is questionable whether the telephone companies are capable of, or interested in, keeping pace with all the developments. Realizing this fact, Bell Canada has published tariffs for the attachment of data communication equipment.<sup>14</sup> Given the above, this paper supports the liberal attachment of terminals, using common standards, to the data networks.

Bell Canada's attachment policy creates an area of interest for competition policy. As mentioned earlier, an unresolved area in X-25 is the attachment of non-intelligent terminals to the networks. The two Canadian carriers have adopted different philosophies on the attachment of terminals. CNCP plans to follow a flexible terminal connection policy. Terminals can be attached to the network without the use of a network interface machine. CNCP explains its policy in the following manner:

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13. Beigie, p. 203.

14. Director of Investigation and Research, Combines Investigation Act, p. 72.

Over such a typical connection ... the host computer may receive or originate calls in the identical manner as the terminals. In fact, regarding the reception of calls, this can be done as it is currently carried out with existing networks ... While the current standard for originating calls ... is not in this interface, a simple procedure will allow the set-up of calls from the processor without costly monthly rentals for interface devices.<sup>15</sup>

By contrast, Bell Canada has adopted a different policy on the attachment of terminals to the Datapac network:

Intelligent terminals, including computers, can access the network using Standard Network Access Protocol ... The terminal itself issues and receives the data in SNAP format.

Non-intelligent terminals, which do not have the software capability to implement SNAP, can access the network through a ... connection to a Network Interface Machine (NIM). The NIM contains the software to convert the data into SNAP packets. A NIM is a shared communications controller which enables non-intelligent terminals to access the Datapac Network.<sup>16</sup>

The Bell Canada attachment policy has been implemented in the Datapac rate structure. The first two services offered on the network are Datapac 3000 and Datapac 3101. The former connects intelligent devices, while the latter connects non-intelligent terminals through a network interface machine.<sup>17</sup> Datapac is designed for intelligent terminals, but in the interim, the use of a network interface machine provides non-intelligent terminals with access to Datapac. The potential still exists for non-competitive situations. Customers do not have to own a Network

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15. G.F. Carleton, "Network Flexibility - Catering to Packet-Mode and Non-Packet Terminals," Canadian Datasystems, Vol. 8, No. 11, Nov. 1976, pp. 30-31.

16. A.M. McMahon, "A New Philosophy in Data Networks," Canadian Datasystems, Vol. 8, No. 6, June 1976, p. 45.

17. "Rates Filed for Datapac Network," Canadian Datasystems, Vol. 8, No. 12, Dec. 1976, p. 61.



Interface Machine. They can be rented from Bell Canada but, as with telephone equipment, are manufactured by Northern Telecom for Bell Canada. The necessity of a Network Interface Machine assures Bell Canada of a source of rental income.

#### 6.4 INTERCONNECTION OF FUTURE COMMUNICATIONS NETWORKS

The final area for consideration is the interconnection of future communications networks which, as discussed in Chapter IV, will need to talk to each other. Some of the issues are discussed in the following statements:

There is one overriding structural policy issue, and it ... concerns the question of the conditions and terms that will be set for permitting interconnection with the telecommunications network and the degree to which joint usage of facilities will be allowed. The policy adopted by Canadian carriers in the past, subject to regulatory approval, has been quite rigidly against most interconnection.<sup>18</sup>

One clear example of behaviour which bars competitive entry is the prohibition on most forms of interconnection to carrier facilities. Even here there is a fundamental problem in determining whether systemic protection is an overriding consideration or merely a convenient pretext for anticompetitive conduct, and strong arguments have been presented on both sides of this issue.<sup>19</sup>

Particularly in the digital data field, ... technological considerations and experience show that a limited number of competing and complementary organizations, with a reasonable degree of interconnection, is quite possible. Nevertheless, the integrity of a system ... certainly poses many technical problems. Yet the quality of our technology is high and should be able to surmount these given that the situation is controlled ... Since

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18. Beigie, p. 181.

19. Beigie, p. 131.



interconnection is now a fact of life, it can be argued that it would be better to learn how to live with it, technologically, than to attempt to suppress it ...

The legal, economic, and technological problems of interconnection, soluble when a relatively small number of competent firms interconnect or when suitable protected customer-owned terminal devices are added, may well be practically insurmountable if a large number of moderately sized, modestly competent, data transmission firms were to attempt to form into a network.<sup>20</sup>

In the Canadian telecommunications market, the existence of two carriers has created pressure for the interconnection of the networks. Each carrier has established communications systems<sup>21</sup> between the major cities. However, a network of local loops is required to gather and distribute a message. Bell Canada is the only carrier with an established local loop network, but by setting prohibitive access conditions, has been able to delay interconnection and, as a result, has gained a potential advantage over its competitor.

In June 1976, CNCP applied to the CRTC for permission to interconnect the CNCP transmission lines to the Bell Canada local telephone network, claiming that "competition between CNCP and Bell Canada will be enhanced, and users will be assured of the maximum benefits to be gained from the new technologies and services now being implemented in this country."<sup>22</sup> Major users

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20. D.A. George and S.T. Nichols, "Telecommunications Technology," in H. Edward English, ed., Telecommunications for Canada: An Interface of Business and Government, (Toronto: Methuen, 1973), pp. 293-295.

21. The four basic services of a telecommunications networks are: (1) the long-distance transmission of communications, (2) the switching system by which communications are distributed, (3) the local service loops for the gathering and distributing of messages, and (4) the basic terminal equipment.

22. J.C. McDaniel, "Review '76, Forecast '77," Canadian Data-systems, Vol. 8, No. 12, Dec. 1976, p. 24.

have stated that they are in favour of some form of network interconnection, as access through Bell Canada's local loops would provide users with an easily available backup facility in the event of network failure or congestion on one carrier's lines.<sup>23</sup> At the same time, some users are uncertain about the benefits of interconnection and disagree with CNCP's attitude towards the Bell Canada local networks. They claim CNCP regards the Bell network as a "natural resource" available for exploitation by any firm. CNCP wants access, but at minimal cost.<sup>24</sup>

As expected, Bell Canada is opposed to any form of interconnection. As one official has stated:

Bluntly, we don't think it's a good idea. To equalize the competitors would destroy an element of competition. Interconnection would not work to the long-term benefit of the user, for it would impede the ability to maintain quality end-to-end service. It would remove the incentive to improve technology.<sup>25</sup>

Bell Canada has invested substantially in the local loops and believes their shareholders' interests must be protected. They argue that CNCP already has a national network and interconnection would grant their competitor a local network without any capital investment or associated risk.<sup>26</sup> CNCP would try to

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23. Dixon T. Jarvis, "CNCP Must Have Access to Bell's Network," Canadian Datasystems, Vol. 9, No. 4, Apr. 1977, p. 64.

24. The situation occurs in the natural resource industry where the firm which locates a resource views it as its property. Since no charges are levied, the resource is regarded as a free good and is over-exploited. The classic example of this phenomenon is the fishing grounds in the oceans. Fishermen are not charged for the fish caught and as a result the grounds are being over-fished. For a discussion of the issues see, D.M. Winch, Analytical Welfare Economics (Penguin Books, UK, 1971), pp. 100-110.

25. Palle Kiar, Vice President of Bell Canada's Computer Communications Group.

"Carrier Competition Helps Computer Industry Thrive," Canadian Datasystems, Vol. 7, No. 6, June 1975, p. 32.

26. Susan Goldenberg, "A \$138 million question: Bell's future is promising -- once present problems are settled," Financial Times, May 2, 1977, p. 8.

capture the high volume, long distance lines, while Bell Canada will be left with the high cost, low density routes. This paper supports the concept of interconnection of telecommunications networks.

#### 6.5 SUMMARY

The technology of telecommunications has been changing rapidly and in the last quarter century, has gone from analog voice circuits to digital packet switching networks. To accommodate user equipment built by a variety of manufacturers, the carriers are attempting to develop standards for the new networks. While the standards are not yet finalized, they will allow for future interconnection of domestic and international networks. The discussion in Chapter IV indicated how standards and attachment policies can be used in anticompetitive manners. In the telecommunications area, this paper believes that some of the anticompetitive situations can be dealt with by the establishment of ground rules<sup>27</sup> and the enforcement of combines legislation rather than immediate recourse to regulation. The rules would include:

- a. the development of technical standards acceptable and available to all potential users and manufacturers;
- b. the liberal attachment of terminals, using standards developed in (a), to the data network(s);
- c. liberal interconnection of data system whether this be private systems or universally accessible networks.

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27. The ground rules would recognize the present market power of financial institutions, computer manufacturers and telecommunications carriers.

## CHAPTER VII

### LEGAL AND INSTITUTIONAL FRAMEWORK

#### 7.1 INTRODUCTION

The laws and institutions of a society both reflect and shape social values, so any discussion of the development of EFTS must examine the influence of the social infrastructure.

The current debate focuses on the merits of sharing EFT facilities against the potential benefits of open competition in the provision of EFT services. As has been discussed in earlier chapters, the various alternatives within the sharing concept have generated the most debate. At the one extreme, some institutions have installed proprietary systems and refuse to share them with others, while at the other, financial institutions seek mandatory sharing of EFT networks. Between the two, a number of viable positions exist. The U.S. National Commission on Electronic Funds Transfer has considered four alternatives for sharing:<sup>1</sup>

- a. Mandatory sharing -- any entity that provides any EFT component or service must share upon request with any other enterprise covered by the mandate;
- b. Permissive/nondiscriminatory sharing -- any single EFT enterprise could choose not to share, but if it shared with one other, it would be required to share with all other covered entities upon request;
- c. Permissive sharing -- any enterprise could share or not, as it wishes, regardless of the structures of the antitrust laws;
- d. Pro-competitive sharing -- parties may share pursuant to mutual agreement but, if challenged, sharing is permitted, required, or prohibited on a case-by-case basis depending on the effect such sharing would have upon competition in the market involved.

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1. National Commission on Electronic Funds Transfer, EFT and the Public Interest (Washington, D.C., Feb. 1977), p. 50.

## 7.2 ARGUMENTS FOR SHARING EFT NETWORKS

The proponents of sharing EFT networks have developed a number of arguments in defence of their position. The first concern is the cost of an EFT system. (For example, Citibank plans to spend approximately \$50 million to install Citicard Banking Centers;<sup>2</sup> the Nebraska Electronic Terminal System has signed a contract for \$1.3 million to develop a switch;<sup>3</sup> in California, Glendale Federal Savings and Loan Association spent \$400,000 on a supermarket POS network which was shut down in 1977.)<sup>4</sup> The necessary technology has been available and in recent years has been changing at a rapid pace, but the applications of this technology are new. Therefore, any financial institution installing an EFT system must spend considerable amounts of money in a new and risky business activity. As a result, many firms which could install proprietary systems are seeking business partners to lighten the financial burden and also to spread the risk and associated default costs if the system should prove inadequate and have to be abandoned.

EFT systems use both computers and telecommunications networks. The computing and storage capacity of present computers places a high ceiling on the transaction volume a single machine can handle. If sufficient transactions volumes can be generated by multiple users, cost reductions will result. Similar arguments can be presented concerning the use of telecommunications lines (as was discussed in Chapter VI). Sharing spreads the high installation costs among participants and helps to generate the large transaction volume necessary for cost reductions from scale economies as well as preventing many under-utilized networks.

The capital cost of an EFT network can act as an effective entry barrier. If large banks have expressed concern about the financial drain caused by their EFT operations, then the costs for small financial institutions could be prohibitive, but small depository institutions are afraid of losing their current share of retail deposits if they are excluded from EFT networks.

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2. Citicard Banking Centers are full service ATMs located in Citibank branches. The centers are accessible 24 hours a day.
  3. Nebraska Electronic Terminal Systems (NETS) is the proposed electronic banking network of the Nebraska Bankers Association. Just over 300 of the state's 453 banks have joined NETS. They control 86 per cent of all commercial bank deposits.
  4. "A point-of-sale system short-circuits in Southern California," Business Week, Apr. 18, 1977, pp. 86-87.

Given the pattern to date of non-cooperative bank behaviour, many excluded depository institutions doubt it is possible to gain easy access to bank controlled EFT facilities. For this reason, many small financial institutions and U.S. unit banking states support mandatory rather than optional sharing to best protect their interests (which may or may not coincide with other social objectives like efficiency, competition policy, consumer welfare, etc.).

To achieve widespread contact with the public, EFT networks must be placed in retail stores and other public places. Limitations on valuable counter space will cause retailers to resist a proliferation of POS terminals, but the use of one POS terminal by more than one system would require the development of standards. The proponents claim sharing would be expected to assist here by simultaneously contributing to efficiency and competition.

### 7.3 ARGUMENTS AGAINST SHARING EFT NETWORKS

There are also a number of arguments against certain types of sharing, mandatory sharing in particular, that should be considered. Opponents maintain that competition and the free market are adequate regulators of EFT developments. They believe there is a basic conflict between mandated sharing and a market economy. As already noted, financial institutions have invested substantial amounts of money in EFT projects. If forced to share their systems, competitive advantage and innovative incentive will be lost.

Legislated access to EFT networks is also claimed to be unnecessary. Actual and potential suppliers are numerous and competition among firms will minimize anticompetitive situations. The characteristics of EFT networks indicate that partners will be sought to spread costs and risks. If a number of competing EFT networks are allowed to develop, no firm need be excluded. Any EFTS abuses that develop can be attacked through competition legislation. This approach would also avoid any form of government intervention. If mandatory sharing is instituted, some form of government regulatory agency will be needed to monitor and perhaps set fees and settle disputes. Given the recent criticism of operations of regulatory agencies and the attempts by some countries to deregulate controlled industries, the opponents of mandatory sharing claim their approach must be given careful consideration.

Another criticism focuses on the assumption that EFTS is a natural monopoly. The opponents claim that there is no clear evidence to support this assertion. EFTS is a new and evolving



industry characterized to date by rapid technological advance; for these reasons, the burden of costs, their distribution and incidence are also dynamic. If mandated sharing is actually necessary, then it should be the result of market forces and natural evolution, and not a legislated first step. Given these uncertainties, opponents believe that competition and the market place should be given a chance to determine the "best" system.

In this debate, the major concern for public policy is the trade-off between cost reductions associated with sharing and the possible inefficiencies caused by the lack of competition inherent in sharing. The basic problem for competition policy will be determining the potential for efficiency via joint ventures and its implications for competition. In other words, does the introduction of sharing substantially reduce the opportunities for competition, and if so, are there any benefits which offset this effect? Comprehensive solutions are unlikely to emerge until fully functioning EFT systems are available and hard data are obtained from practical experience.

#### 7.4 LEGAL EXPERIENCE IN CANADA AND THE UNITED STATES

Although it is early in the evolution of EFTS in both Canada and the United States, some attempts have been made to identify and resolve perceived institutional and legal problems. Differences in the approaches taken by U.S. and Canadian legislatures are presented here in some detail to shed a little light on this important controversy. Since the United States has more installed EFT experiments, their experiences are discussed first.

##### a) United States Experience

In the United States, a legal conflict exists between the federal and state governments over the control of banking and EFT legislation. An American bank has the choice of membership in the Federal Reserve System or obtaining a state charter. The split authority has resulted in two sets of bank regulators (federal and state) and a dual banking system. Each state determines its banking statutes and many have prohibited branch banking. The McFadden Act of 1927 granted branching powers to national banks, but only if permitted by state law to banks in those states. This law effectively prevented national banks from entering unit bank states.

In December 1974, the U.S. Comptroller of the Currency issued an interpretative ruling stating that EFT terminals did not require branch applications. Customer-bank communication terminals (CBCTs) were defined as not being branch banks and consequently could be established without reference to federal and

state banking statutes. As a result, more than a dozen law suits were filed challenging the validity of the Comptroller's ruling. The Independent Bankers Association of America, (IBAA) was one group bringing suit against the Comptroller's ruling. The IBAA position (and that of many unit bank states) has been expressed by the IBAA President, Charles Maddox:

Our position was clear. IBAA believed that the Comptroller's Ruling declaring that so-called CBCTs were not branches under the National Bank Act was in violation of the law. The purpose of the Ruling was to enable national banks to circumvent the branching restrictions of state law, imposed on national banks through the National Bank Act - This would give national banks a competitive advantage over state banks restricted by state branching statutes. The Ruling created an atmosphere in many states which resulted in pressure on the legislatures to act precipitously on behalf of state-chartered banks to meet the competitive threat of proliferating national bank electronic terminal devices ("ETDs"). The Comptroller was in effect, preempting the field of EFT regulation for the federal government."<sup>5</sup>

In July 1975, a U.S. District Court ruled in favour of the IBAA. The ruling was taken through a series of appeals. Finally, in October 1976, the Supreme Court refused to hear the branch/terminal issue. Owing to this refusal by the Supreme Court to review the petitions, the lower court ruling that a terminal constitutes a branch as defined in the McFadden Act is regarded as final.<sup>6</sup>

The installation of EFT terminals by financial institutions and the above court rulings have necessitated changes in banking statutes. At the present time, over half the states either have passed or are considering enabling legislation dealing

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5. Charles O. Maddox, "The Conditions under which Terminals Performing Electronic Fund Transfers Should Be Deployed," Statement before the Hearings of the National Commission in Electronic Funds Transfer, Oct. 28, 1976. p. 2.
  6. "Supreme Court Refuses to Consider Branch/Terminal Issue," Payment Systems Newsletter, Vol. 8, No. 10, Oct. 1976, pp. 1-2.

with EFTS.<sup>7</sup> Some states (Connecticut, Oregon, Minnesota) support mandatory sharing and have written or plan to write their laws accordingly. Federal preemption is viewed as unwanted and unnecessary. At the same time, the federal Department of Justice is concerned about the antitrust implications of mandatory sharing.

The Department of Justice has also expressed its opinion on the involvement of the two federal regulatory agencies, the Federal Reserve System and the Federal Home Loan Bank Board,<sup>8</sup> in EFTS. In a letter to the Federal Reserve Board, the following statements were made:

In promulgating regulations governing the participation of the Federal Reserve System in EFT, the Board should take full account of their competitive implications. Consideration of antitrust and anticompetitive issues by the Board can serve as a 'first line of defense' against anticompetitive practices.<sup>9</sup>

Perpetuation of the status quo is particularly costly when a much better alternative could be used but for the regulatory scheme. The Board should recognize this by announcing a long-range policy favoring competitive EFT development rather than development under a regulated public utility approach. In so doing, the Board will promote innovation and efficiency in this important field.<sup>10</sup>

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7. American Bankers Association, An Analysis of Enacted EFTS State Legislation (Washington, D.C.: 1976).
  8. The Federal Reserve System is the U.S. central bank. It was created in 1913 and consists of 12 district Federal Reserve banks and a board of governors in Washington D.C. It regulated 45 per cent of all commercial banks with 80 per cent of total bank deposits. The Federal Home Loan Bank Board provides a similar regulatory service to the federal savings and loans associations.
  9. "Comments of the United States Department of Justice," Proposed Amendment of Regulation J and Related Issues, filed May 14, 1974, p. 8.
  10. U.S. Department of Justice (1974), p. 10.

Similar comments were made in a letter to the Federal Home Loan Bank Board:

The central issue is whether the Home Loan Banks themselves ought to offer EFT services to their members. The Department of Justice believes that it is premature for them to do so and that the better course is to await developments in the private sector.<sup>11</sup>

It does not make any difference, at least from the point of view of competitive effects, whether the discriminatory monopolist is a government entity or a private corporation.

If the Bank Board goes forward with this proposal, it should insist that ... the Home Loan Banks offer service to all financial institutions, ... It is unnecessary and unwise, however, to begin an experiment in a government-provided service with an artificial bias against certain institutions.<sup>12</sup>

The operational practices of the ACHs have also attracted the attention of the U.S. Department of Justice. In the U.S., ACHs are organizations to clear the banks' paperless items. They enjoy free use of the Federal Reserve System's hardware, computer time, required personnel and delivery services, which is, in effect, a substantial government subsidy. Originally the Federal Reserve Board proposed to limit ACH access to those institutions having sufficient volume and authorization to maintain demand deposit accounts, but the Department of Justice reviewed the proposals and recommended that the Federal Reserve Board either justify the discriminatory terms for thrifts and non-member banks or eliminate them. In particular, the Department of Justice regarded the Federal Reserve Board's application of the "sufficient volume" and "legislatively authorized to maintain demand deposits" as unduly discriminatory and restrictive.<sup>13</sup>

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11. Thomas E. Kauper, "United States Department of Justice letter to the Federal Home Loan Bank Board," Oct. 16, 1975, p. 5.

12. Kauper, p. 8.

13. "Justice Department Asks Fed to Change ACH Policies," Payment Systems Newsletter, Vol. 7, No. 12, Dec. 1975, pp. 2-3.

The U.S. thrift industry has applied for admission in the various regional ACHs and has been granted full membership by 16 of the 32 members of the National Automated Clearing House Association. Of the remaining 16, six offer limited membership to thrifts and 10 do not allow thrift membership at all.<sup>14</sup> For a number of years, the Department of Justice has been less than satisfied with the progress thrift institutions have made in gaining access to certain ACHs. As indicated above, the Department of Justice has expressed its viewpoint on a number of occasions. They regard ACHs as an "essential facility" and would like thrift institution access on a reasonable and non-discriminatory basis. In April 1977, the Department of Justice filed a test case against the Rocky Mountain Automated Clearing House Association (RMACHA) charging "conspiracy" by bankers in Denver to prevent credit unions and savings and loan associations from having equal access to clearing facilities.<sup>15,16</sup> This issue seems to be resolving itself. RMACHA members claimed that they have been waiting for Federal Reserve Board guidelines on thrift industry participation and therefore could not vote on the membership issue. While the guidelines are still not available, the affected ACHs have asked for the legal suit to be terminated because they have voted to grant thrift institutions full membership rights.<sup>17</sup> The legal action was discontinued in November 1977.

EFTs will keep the legal arena busy for a number of years. EFT projects are planned or being developed in a number of cities and the U.S. Department of Justice has begun to review these projects for possible anticompetitive implications.<sup>18</sup> An

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14. "Justice Department Sues Two ACHs, Asks Equal Access for Thrifts," Payment Systems Newsletter, Vol. 9, No. 5, May 1977, pp. 1-2.

15. A similar suit was filed against the California Clearing House Association in Los Angeles.

16. Robert Dowling, "Rocky Mountain Suit Could Affect Half Nations' ACHs; Government Subsidy Cited," American Banker, Apr. 26, 1977, p. 1.

"Justice Department Antitrust Complaint Against Rocky Mountain ACHA," American Banker, May 3, 1977, p. 4.

17. "Banks in Rocky Mountain ACH Approve Full Membership Rights for Thrift Institutions," American Banker, Sept. 22, 1977, p. 2.

18. "Maryland Consortium Starts Switch, But Justice Looking At Antitrust Implications," Payment Systems Newsletter, Vol. 9, No. 5, May 1977, pp. 3-4.



EFT project which has attracted a great deal of attention is Nebraska Electronic Terminal Systems Inc. (NETS). Nebraska was the state where one of the first EFT systems was launched. In January 1974, First Federal Savings and Loan Association of Lincoln, Nebraska installed POS terminals in two Hinky Dinky food stores. The programme, known as "The Money Service" (TMS), is now sponsored by 11 Nebraska financial institutions and has expanded to a network of 70 POS terminals in ten merchant locations in 16 Nebraska cities. The success of The Money Service caught the financial community and the Nebraska Bankers Association by surprise. It was not expected that a small financial institution (\$431.5 million) could successfully install an EFT network. In late 1974, the Nebraska Bankers Association organized NETS to compete with the Hinky Dinky terminals. NETS is the only bank system authorized under Nebraska's mandatory sharing law, and savings and loan associations are excluded from participation by this statute.<sup>19</sup>

The organizers believed that the state law would protect NETS from federal antitrust legislation. However, in March 1977, the Department of Justice issued a business review letter stating that NETS could rather easily violate antitrust guidelines.<sup>20</sup> Objections were based on size, structure and mandatory sharing. As the Department of Justice stated in its business review letter to the Nebraska Bankers Association:

Our investigation indicated that, as of October, 1976, approximately 66% of all the commercial banks in Nebraska, which collectively account for 86% of all commercial bank deposits in the state, have signed NETS participation commitments. We anticipate that the participation level may approach 100 should NETS proceed as planned.

We do not believe that the available evidence supports the necessity of an all-encompassing joint venture. Indeed, some evidence is to the contrary. A savings and loan association and several of the larger Nebraska commercial banks, acting alone, have either designed and

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19. "Nebraska S&Ls Fighting to Share Bank EFT Net," American Banker, Feb. 11, 1977, p. 1.

20. "Nebraska EFT Network Will Proceed Cautiously in Wake of Negative Justice Reaction," Payment Systems Newsletter, Vol. 9, No. 3, Mar. 1977, pp. 1-3.



operated EFT systems or are in the process of doing so. The degree of risk, the amount of capital required and the economies of scale involved in constructing EFT systems - all of which are often cited as justification for joint ventures - do not necessarily suggest the need for a joint venture of the dimension of NETS ...

The NETS joint venture is apparently prompted by a state statute which expressly mandates sharing among all commercial banks in Nebraska. The Department generally opposes mandatory sharing legislation ... The department is not prepared to conclude that a state mandatory sharing statute will necessarily shield such a joint venture from antitrust attack, since the joint venture is still based on the voluntary private act, by individual banks, of joining the system ...

We recognize that the NETS proposal contains several positive aspects ... On balance, however, and after careful analysis, we cannot conclude that these positive attributes outweigh the potential anticompetitive effects of the proposed joint venture. Thus, we are unable to state a present intention not to institute legal action to challenge the creation or operation of the NETS joint venture.<sup>21</sup>

After reviewing the letter, the NETS network has decided to proceed, but two of the state's largest banks have withdrawn and the available legal options are being examined.<sup>22</sup>

Finally, as a point of interest, the U.S. National Commission on Electronic Funds Transfer in its final report<sup>23</sup> has recommended a pro-competitive approach for sharing POS and ATM networks, namely, that federal preemptive legislation be passed

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21. "Justice Warning on Shared EFTS," American Banker, Mar. 9, 1977, p. 5.
  22. "NETS Nears New Switch Contract Aimed At Forestalling Justice Department Objections," American Banker, July 20, 1977, p. 1.
  23. National Commission on Electronic Fund Transfers, EFT in the United States: Policy Recommendations and The Public Interest (Washington D.C., 1977).

which would have the effect of nullifying any state mandatory EFT sharing legislation. For financial institutions denied access to a shared POS or ATM system, it is recommended that an injunctive procedure be followed pending the outcome of antitrust litigation.

As indicated above, in the United States, the banking and EFT legislation controversies are interrelated. Many states see the value of some form of federal statutes, but are reluctant to grant authority in this instance to the federal government because of its implications in other areas. In particular, accepting federal EFTS statutes may be viewed as being one step away from federal control of all aspects of banking. The controversy may have to be resolved in the courts, but until these conflicts are resolved, development of uniform U.S. EFT laws and standards will be impeded.

b) Canadian Experience

In Canada, the federal government is taking a more active role in the development of EFTS. In January 1975, the federal government released an EFTS policy paper<sup>24</sup> proposing that a common user communication network be established:

the government supports a "common user communications network" for the payments system. This network is defined as a shared service which would be openly accessible to all qualified users on a fee-for-use basis. This recommendation would not preclude the use by individual institutions of private communication systems for purposes that are entirely internal to the institution and are unrelated to payments transactions.<sup>25</sup>

The payments system and communications interface standards for the communications networks are to be developed by the potential users. It also recommended the establishment of a number of committees: an Implementation Committee (now called the Canadian Payments System Standards Group) to develop standards for the communication network; two inter-departmental committees to consider payments cards and the legal and consumer issues; an inter-departmental committee to coordinate the activities of the other committees. The Canadian Payments System Standards Group has released its final report. However, it contains no proposals for formal standards.

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24. Government of Canada, Towards an Electronic Payment System (Ottawa: Information Canada, 1975). This report is now referred to as the "Blue Book."

25. Government of Canada (1975), p. 7.

A major social change of the magnitude of EFTS will have implications for a number of policy areas. For the federal government, the main concerns expressed in the Blue Book are competition in financial markets, privacy, Canadian control of telecommunications, the development of a Canadian computer industry, and dominance of this industry by IBM. At the time the Blue Book was released, EFTS appeared to be just around the corner and the federal government felt it must take a position before developments reached an advanced stage. As the Blue Book states:

The software and hardware systems being planned and implemented now and for the future by deposit-taking institutions will influence the communications structure of the payments system for a number of years. By that time, developments involving electronic interchange, electronic point-of-sale payment systems and other aspects will be sufficiently far advanced to make a change in this structure extremely difficult. It is incumbent upon the government to examine the impact of possible alternatives on the public interest.<sup>26</sup>

According to the Blue Book, the formation of a common user network with appropriate standards will lead to an efficient payments system with maximum potential for innovation, etc. With respect to financial markets, equity considerations and the cost reductions available through the sharing of EFT facilities are emphasized. In particular:

Another implication for financial markets policy is that the exchange of electronic information both among deposit-taking institutions and between them all sectors of the Canadian economy will grow in importance as the electronic payments system evolves. In principle, this could be handled by any number of independent systems with appropriate interface capability, but a commonly used communications network will almost certainly lead to a more efficient payments system. In addition, the common use of a network based on some minimum degree of standardization will help to ensure that all deposit-taking institutions are moving towards an efficient

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26. Government of Canada (1975), p. 15.

payments system without stifling their ability to innovate and to handle their own systems in their own way. This common thread will make it easier to implement standards for the exchange of electronic payments information when these are required.<sup>27</sup>

A segment of the federal government's industrial strategy is Canadian control in key sectors of the economy. This policy is illustrated in banking, communications, transportation and a number of other industries, and EFTS is viewed as a method of increasing the Canadian presence in the computer industry. The common user communications network would place the essential communications links "under Canadian rather than multinational influence,"<sup>28</sup> while the development of interface standards "would enhance the opportunities for Canadian companies or consortia to develop complete user-orientated systems."<sup>29</sup> Finally:

A standardized interface between data processing equipment and the communications network would make it easier for a deposit-taking institution to employ different suppliers for particular parts of a system or to switch suppliers, thereby increasing the competitiveness of the market to the benefit of deposit-taking institutions and other users. It would also enable typically specialized Canadian hardware and software companies to compete on a more equal basis with large multinational companies.<sup>30</sup>

As expected, the federal government's proposal has drawn its share of criticism. The focal point of the discussion has been the proposed common user network. Some groups believe that computer companies, banks, stores and telecommunications carriers should develop a system. The banks have also expressed their concerns. They are already heavily committed to the installation of internal computer systems and the prospect of further expenses

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27. Government of Canada (1975), pp. 16-17.

28. Government of Canada (1975), p. 18.

29. Government of Canada (1975), p. 18.

30. Government of Canada (1975), p. 18.

in adapting to the common user network is not pleasing. The banks also feel that they will pay the bill for the creation of the data network.<sup>31</sup>

Some critics have questioned the natural monopoly assumption underlying the common user network. However, the federal government has stated that Canadians cannot afford the costly duplication of facilities caused by private data systems. Critics also claim that the common user network will only entrench the market power of existing carriers, especially Bell Canada.<sup>32</sup> The Economic Council of Canada has expanded upon these concerns.<sup>33</sup> Uncertainties about future technologies and the actual introduction of EFTS has led the Economic Council to believe that a monopoly network "may lead to a premature commitment to only one of many technologies. In effect, it rules out the existence of competing communications networks for servicing the payment system."<sup>34</sup> A more flexible approach is favoured. In the course of developing EFTS a number of obstacles will arise. The exact nature of these obstacles cannot be predicted, but could be dealt with by government as they arise. Attempting to anticipate and forestall the development of these obstacles may create another set of problems.

At present, the common user network is more a concept than an actual entity. This paper agrees with the Economic Council that constraints should not be installed too quickly. As mentioned above, EFTS will require some form of sharing. Given the current chain of events, it appears there will be mandatory sharing of certain EFT terminals. This paper supports the manda-

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31. "The payments dialogue begins," The Canadian Banker and ICB Review, Vol. 82, No. 2, Mar.-Apr. 1975, pp. 16-19.

Jake Koekebakker, "Why the banks are cautious about policy for an EFT System," Canadian Datasystems, Vol. 7, No. 6, June 1975, pp. 30-32.

32. Eric Hamovitch, "Computerizing Money: Will That Be Cash Or...?" The Last Post, Oct. 1975, pp. 7-9.

33. D.L. McQueen and J.R. Savary, "Economic Significance of the Computerization of Deposit-Taking Institutions in Canada," Economic Council of Canada, Discussion Paper No. 87, 1977.

Economic Council of Canada, Efficiency and Regulation: A Study of Deposit Institutions. (Ottawa: Supply and Services, 1976).

34. Economic Council of Canada (1976), p. 117.



tory sharing of terminals in public places. The sharing of terminals located in bank walls, etc., should be at the discretion of the individual institution. It is possible to envision a number of terminal networks operated by different types of financial institutions. For example, the credit unions in Ontario could install a network of in-wall ATMs to be used by all Ontario credit union members. Similar opportunities would be possible for other financial institutions.

The legislative framework for the enforcement of Canadian competition legislation is currently under review. The 1967 Revisions of the Bank Act prohibited agreements between banks concerning the rate of interest on a deposit, the interest and charges on a loan and other matters. Stage I of the current competition legislation became effective January 1, 1976. The passage of the bill brought most services and service industries (including banks) within the Combines Investigation Act. The legislation revised sections of the Bank Act to exclude all agreements between or among banks as well as mergers from application of Section 32 and 33 of the Combines Investigation Act.<sup>35</sup> However, banks are still bound by the Combines Investigation Act with respect to the offences of monopoly, predatory pricing, price maintenance and those relating to consumer protection, as well as being subject to the Restrictive Trade Practices Commission on all relevant reviewable practices.

At present, both the Inspector General of Banks and the Director of Investigation and Research of the Bureau of Competition Policy, Consumer and Corporate Affairs Canada, have authority to investigate anticompetitive bank behaviour. The Stage II proposals of the competition legislation recommend the transfer of responsibility for enforcement of competition in the banking industry to the Competition Policy Advocate.<sup>36</sup> Banks would be subject to the Competition Act except for those forms of

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35. Section 32 of the Combines Investigation Act deals with conspiracy to lessen competition, while Section 33 covers mergers and monopolies.

36. In the Stage II proposals, the modified Combines Investigation Act would be renamed the Competition Act. The Competition Policy Advocate is the principal executive officer under the Competition Act and his proposed functions will be essentially the same as the Director of Investigation and Research under the Combines Investigation Act.



cooperation formerly endorsed by the Bank Act and instances where the Minister of Finance approves restrictions upon competition for reasons of monetary or financial policy.<sup>37</sup>

Another policy area that must be discussed is the relationship between the proposed Competition Act and the sharing of EFT networks. The establishment of a joint venture requires discussions between participants on the allocation of costs, pricing structures, etc. A major question is when such a consortium would violate the proposed Competition Act. Given the history of EFTS developments in Canada, exemptions may be granted for the sharing of EFT networks. After the release of the Blue Book, the government established the Canadian Payment System Standards Group to develop payment systems and communications interface standards. Also, in the White Paper on Bank Reform the Department of Finance proposed that the Canadian Payments Association be established by companion legislation to the Bank Act. The Association would provide a uniform clearing system which would be available to all financial institutions that accept deposits transferable by order. It is also envisioned that the Canadian Payments Association will play a major role in the movement towards a fully functioning EFTS. The government's policy actions to date suggest that EFTS developments will be granted exemptions from the proposed Competition Act through Section 4.3(1)(a)(iv) and (vi). The Minister of Finance will consider the sharing of EFT networks to be necessary for reasons of financial policy. Also, the Canadian Payments Association would be exempt because a clearing house is a joint facility used to improve the efficiency of the payment system. However, even given these exemptions, Section 4.3(2) of the proposed Competition Act would still apply. For example, if it could be shown that the members of a joint facility were using it as a restrictive tool, then the proposed Competition Act would apply (e.g., deposit-taking financial institutions preventing non-deposit creditors from gaining access to EFT networks).

Finally, in Canada there is also debate on the appropriate role of the federal and provincial governments in the implementation of EFTS. The provinces, like the U.S. states, are concerned about the intrusion of the federal government into areas of provincial jurisdiction. EFTS will require amendments to provincial consumer protection statutes and will affect

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37. Proposals for a New Competition Policy for Canada Second Stage Combines Investigation Act Amendments (Ottawa: Supply and Services Canada, 1977), pp. 31-36.

provincially chartered financial institutions.<sup>38</sup> As the U.S. situation illustrates, it is not unreasonable to expect that Canadian provinces will introduce EFTS legislation some time in the future. An area that should be addressed before provincial legislation is introduced is which level of government has ultimate authority under current constitutional arrangements. This concern for provincial rights can be illustrated with the provincially chartered near banks' response to the proposed Canadian Payments Association. Generally, the near banks approve of the establishment of the association; their criticisms are directed against the need and the authority for reserves on near bank deposits. A distinction is made between clearing reserves and primary reserves. Near banks object to the imposition of central bank primary reserves. They accept the need for clearing reserves but would prefer a deposit balance closer to their clearing needs. Provincial reserve requirements maintain liquidity and the Governor of the Bank of Canada has stated that near bank reserves are not necessary for the effective operation of monetary policy. Some near banks have questioned the constitutional validity of federal reserve requirements on provincially chartered financial institutions. They regard the reserve requirement as "a sham intended to establish a basis for the purported exercise of jurisdiction over provincially incorporated institutions which are currently developing a greater share of the deposit-taking function in the financial community."<sup>39</sup> These criticisms were acknowledged and changes were made in the proposed Bank Act. (For a more detailed discussion see Chapter II.)

## 7.5 SUMMARY

As this chapter has illustrated, the legal and institutional framework of a society will affect the course of EFTS. Many of the questions raised could be answered if proper data (gained from practical experience) were available. However, it is early in the implementation of EFTS and policymakers are forced to grope about with assumptions (factual and otherwise), incomplete data, intuition and just plain guesswork. There is general agreement that EFT systems will be shared. Policymakers must balance the cost reductions available through the sharing of EFT facilities against the possible inefficiencies caused by lack of innovation, competition, etc., in arriving at their decisions.

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38. Angela Barnes, "Provinces want say in electronic payment plan," Toronto Globe and Mail, Oct. 15, 1976, p. B2.

39. "Report on the White Paper on Canadian Banking Legislation the Standing Senate Committee on Banking, Trade and Commerce," Debates of the Senate, 2nd Session, 30th Parliament, Vol. 124, No. 86, Appendix p. 4.

In the United States, financial institutions are experimenting with EFT projects but the legal system is slowing the pace of change. The U.S. Department of Justice has been active in the antitrust area and has gained thrift institution access to ACHs, credit cards, etc. However, the number of court cases suggests the legal system will be used to resolve some of the issues (at least until the legislation is revised).

The Canadian federal government has released a position paper on EFTS and established a number of committees to examine the issues. EFTS is to be developed around a common user network and there will probably be mandatory sharing of terminals in public places. EFTS will require changes in the legislative framework but current practices suggest that sharing of EFT facilities will be exempt from the Combines Investigation Act.

## CHAPTER VIII

### THE INFLUENCE OF EFTS ON THE COMPETITIVE ENVIRONMENT

There is little doubt that EFTS will influence the competitive environment, but in assessing its competitive impact, the major questions concern the actions of the competitors themselves. Which firms will be involved? How are they using EFTS as a competitive tool? What impact has EFTS had or is expected to have? Reduced to the essential elements, the debate centers on the questions of how much, and where. In this chapter, the main question will be, "How will the use of EFTS affect the competitive relationships between financial institutions, and between non-financial organizations?"

#### 8.1 FINANCIAL ORGANIZATIONS

##### a) Deposit-Taking Organizations

The introduction of nationwide EFTS will have an impact on an already highly complicated financial system. Firms in the financial sector perform a variety of functions. With the passage of time, a legal framework developed and functions became compartmentalized. However, recent developments in money markets have led to increased competition for funds and financial institutions are making inroads into each others' markets.<sup>1</sup> EFTS will further accentuate this blurring of the distinctions between financial institutions. Its impact will depend on the range of services offered by a financial institution and its access to the various components of EFT systems.

The following are general examples of how EFTS can be expected to influence competition between financial institutions. The importance of the examples must be assessed against the legal and institutional framework of a society.

The use of ATMs will affect the competitive relationships among financial institutions and introduce more competition into retail banking. It will shorten the geographic distance between the financial institution and its customers. To protect

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1. The persistent and continuing inflation and the associated higher interest rates have made consumers and business firms more aware of the cost of and the return on money. Financial institutions have also begun to use liability management as a competitive tool, resulting in more interest sensitive deposits. Liability management is the process of altering the bank's deposit rate to adjust the deposit (liability) total to match the bank's requirements.

their market position, other institutions will have to install ATMs.<sup>2</sup> Although they are not a complete substitute for a brick and mortar branch, ATMs can be used as an effective supplement to a branch network as well as providing services where a brick and mortar branch is not cost justified.

An issue which will be resolved with time and actual experience is the impact of ATM networks on the competition between large and small financial institutions. One side of the debate believes that ATMs will allow small institutions to expand their market area and compete more effectively, while the other claims that ATMs will expand the powers of the large institutions and eventually eliminate small financial institutions. In the United States, evidence exists to support both viewpoints. A number of small and medium sized financial institutions have installed ATMs and plan to use them as competitive devices.<sup>3</sup> Also, a few savings and loan associations and credit unions have initiated ATM programmes and have become keen competitors with the commercial banks. At the same time, the IBAA, unit bank state regulators, etc., have expressed concern about the possible spread of national banks into their market areas. Uncontrolled expansion of the large banks will result in the elimination of small financial institutions. They claim the activities of some of the national banks support their viewpoint. For example, Citibank, one of the world's largest banks, is making an intensive effort to capture a large portion of the New York State retail EFT market. In Canada the banks have been mute on this point, but the trust companies have expressed their viewpoint:

In Canada the major banks have a very substantial competitive advantage in this area largely because of the size of their customer base. In situations where economies of scale are the primary focus of competition ... monopolistic tendencies are difficult to avoid. This situation also applies to ATMs and could be especially harmful to our industry in the case of off-premises terminals. Since these terminals are in effect a substitute for a "brick and mortar branch" they could add to the already substantial advantage which the banks have in this area.<sup>4</sup>

2. "Citibank ATMs Fire Up NY Competitive Situation," American Banker, June 21, 1977, p. 2.
3. "Tallah, the ATM that Says 'Dahling'," American Banker, June 21, 1977, p. 2. Joe Asher, "Five Cards for One Bank? Yes says City National Bank, Columbus, Ohio," Banking, May 1977, p. 39.
4. G.B. Larson, "How trust companies view EFTS," Canadian Datasystems, Vol. 8, No. 8, Aug. 1976, p. 126.



U.S. commercial banks originally regarded the use of the ACHs as their exclusive privilege. Exclusion of the near banks from the ACHs would place them at a competitive disadvantage in their attempts to capture a portion of the existing and the envisioned much larger future direct deposit business. For example, the U.S. Treasury electronically processes over 6.7 million cheques each month (16 per cent of a total of 40.8 million eligible payments), and has predicted that it will electronically process 18 million cheques worth \$4 billion by 1980.<sup>5</sup>

A wider range of institutions will have an economic interest in POS terminals than in ATMs and ACHs. POS terminals will be consumers' main contact point with EFTS and many firms will regard access to the terminals as essential to their survival. Many institutions in the financial industry believe that by gaining access to the POS terminal networks they can compete for deposit accounts. As more institutions offer third-party payments, the distinctions between accounts will blur in consumers' minds. They will then consider other financial institutions for their cheque services. POS terminals would improve cheque acceptance and extend the smaller near banks' market area.

Legal restrictions exist on the type of deposit accounts offered by various U.S. financial institutions. The bank failures of the Depression and U.S. legislators' fears of cutthroat competition resulted in legislation prohibiting all financial institutions which are empowered to offer demand-deposit accounts from paying interest on these deposits. The U.S. thrift industry, through regulatory changes in the state and federal legislatures, has chipped away at some of the restrictions on its powers. Mutual savings banks and savings and loan associations in certain states can offer negotiable order of withdrawal (NOW) accounts.<sup>6</sup> To meet the competition of the banks and savings and loan associations, U.S. credit unions developed the share draft.<sup>7</sup> As a result

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5. Lynn Conover, "Treasury Plans Nationwide Media Drive to Promote Direct Deposit Plans in '78," American Banker, Dec. 15, 1977, p. 1.
  6. A NOW is a cheque-like instrument that allows customers to draw from their interest-bearing saving accounts in the same manner they would from chequing accounts. A variation of a NOW is the non-interest bearing negotiable order of withdrawal (NINOW). A NINOW account is a savings account, but it pays no interest.
  7. A share draft is payable through a bank, but the draft is paid by the credit union out of the member's share draft account.



of their efforts, savings and loan associations in eight states, mutual savings banks in 11 states and credit unions in six states now have the authority to offer NINOW accounts. In six New England states, the saving and loan associations and mutual savings banks can offer NOW accounts. Share drafts are permitted in 19 states.<sup>8</sup>

Legislation has been introduced in the U.S. Congress to authorize NOW accounts and the payment of interest on reserves held at the Federal Reserve System. After a period of initial enthusiasm, the NOW is making slow progress through the U.S. Congress and passage does not appear inevitable.<sup>9</sup>

The U.S. NOW accounts will pay interest on demand accounts, but users will have to pay higher service fees. Banks currently provide their customers with chequing service at zero or below cost fees. This means that depositors with large balances and low cheque users are subsidizing the small depositors and the heavy users. To offset the higher interest costs, bankers will have to raise their service charges, and financial institutions will probably use some combination of minimum balances, monthly service charges and fees on individual services. The changes caused by NOW accounts will let each account earn what it is worth and each depositor pay the cost of his chequing services. Large accounts will receive interest revenue, while the small subsidized accounts will pay a greater share of costs. This situation has led some observers to question whether the net benefits for consumers will be large or even positive. Regardless of the size of the net benefit, NOW accounts should lead to a more realistic pricing of bank services<sup>10</sup> and more competition through the pricing of services. Free or below cost fees encourage the use of cheques. Direct interest payments and higher service charges should result in a more efficient allocation of resources. Consumers' choice of payment techniques will be based on more realistic estimates of relative costs.

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8. Figures are from the American Bankers Association. "Bankers Cannot Run from Consumer Demands for Check-Account," American Banker, May 6, 1977, p. 4.

9. "Senate Banking Committee Approves Nationwide NOWs; Full Senate Action Uncertain," Payment Systems Newsletter, Vol. 9, No. 8, Aug. 1977, pp. 3-4.

10. Paul Nadler, "Demand Deposit Interest May Lead To Realistic Pricing of Services," American Banker, Apr. 26, 1977, p. 4.

The introduction of credit union share drafts has not gone unchallenged by the banks,<sup>11</sup> but the U.S. Department of Justice has not taken a stand on the legality of share drafts and the credit unions are continuing to offer this service to their members. This is another issue that may have to be resolved in the courts.

The U.S. financial industry is currently undergoing a number of structural changes and, at the same time, financial institutions are developing EFT strategies. The current changes were in motion before EFTS became a major area of interest to the financial community and would have occurred with or without its introduction. The economic implications of the structural changes should not be equated with the installation of EFT terminals, although EFTS has increased interest and speeded up the change process.<sup>12</sup> At present, the majority of operating POS systems offer cheque verification services, with a few providing the more sophisticated multi-account transfer of funds. The predominance of cheque verification systems places considerable importance on the ability of an institution to offer chequing accounts to its customers. U.S. thrift institutions believe that unless they can offer similar services through the POS terminals, they will be unable to compete with the banks.

Canadian near banks already have the chequing privileges sought by U.S. thrift institutions and, as a result, near banks have become major participants in the payments system in certain sections of the country (i.e., credit unions in British Columbia and caisses populaires in Québec). As the Economic Council of Canada recently noted:

some institutions outside the interbank clearing system generate larger volumes of transactions at regional clearing centres than many participating banks. The B.C. Credit Union Central, for example, has an annual volume of ten million items - one fifth the volume of the Vancouver clearing centre and a greater volume than that of all but two of the banks participating at the centre. The Central's incoming clearings are valued at approximately \$3.7 billion per year - 7 per

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11. "Competitive Situation Prompted Bank to Seek Share Draft Halt," American Banker, May 25, 1977, pp. 4-6.

12. For example, the McFadden Act has existed for a number of decades with no successful attempts at reform. The various legal difficulties created by EFT terminals have increased interest in the law and general legislative reform of the banking industry.

cent of the total annual value at the Vancouver centre and more than that of all but three banks.<sup>13</sup>

The different institutional structure (in Canada and the United States) has resulted in deposit competition following another path in Canada. Prior to 1967, the chartered banks offered only two personal deposit accounts, a chequing account paying no interest and an ordinary or regular savings account with chequing privileges. Other financial institutions offered chequable accounts. A limit was placed on the deposit rate the banks could pay their customers by a six per cent ceiling on the loan rate. The 1967 Bank Act Revisions removed the loan ceiling and changed the deposit reserve ratio from eight per cent on all deposit accounts to four per cent on notice deposits and twelve per cent on demand deposits. This change in the reserve ratios made it profitable for the banks to segment their personal deposit account business. In May 1967, the chartered banks introduced non-chequable or "pure" savings accounts and began to actively promote the use of both savings and chequing accounts. Many individuals were using their savings accounts for savings and chequing purposes. If the banks could persuade these customers to use both accounts and transfer their savings to a savings account, the banks' required reserves would decrease.<sup>14</sup> The banks could then invest the released funds in income earning assets. The removal of the six per cent loan ceiling allowed the banks to offer higher deposit rates as the necessary inducement.

13. Economic Council of Canada, Efficiency and Regulation: A Study of Deposit Institutions (Ottawa: Supply and Services Canada, 1976), p. 103.

14. The following example illustrates this point. Assume an individual has \$1,000 in savings and a disposable monthly income of \$1,000. His monthly bills total \$1,000 and payments are made by cheque.

(a) Pre-1967

Assume he deposits his \$1,000 in savings and monthly income in a regular savings account. In this case, the bank would be required to maintain  $\$2,000 \times 0.08 = \$160$  in reserves.

(b) Post-1967

- (i) Assume the individual maintains his funds in a chequing saving account. The bank would have to maintain  $\$2,000 \times 0.12 = \$240$  in reserves;
- (ii) Assume he places \$1,000 in a non-chequable savings account and his monthly income in a chequing account. The bank would have to maintain  $\$1,000 \times 0.04 + \$1,000 \times 0.12 = \$160$  in reserves.

By altering the composition of its deposit liabilities, the bank was able to reduce its required reserves by  $\$240 - \$160 = \$80$ .

The near banks responded quickly to the bank initiatives and were soon offering non-chequing accounts at premium interest rates. Since 1967, the banks and near banks have offered a variety of consumer savings accounts.<sup>15</sup> The banks' main objective is to attract funds from other financial institutions' term deposits and the federal government's Canada Savings Bonds. The trend that has emerged is for the chartered banks to tailor savings deposits to match the savers' requirements. This form of competition has changed the composition of personal savings deposits in all financial institutions. Tables 5 and 6 illustrate the magnitude of the changes. While the U.S. financial industry is currently debating the merits of NOW accounts, Canadian financial institutions are moving in the opposite direction. The 1967 changes in the reserve ratios were a financial incentive for the chartered banks to remove chequing privileges from interest bearing accounts and to lower the proportion of chequing accounts. As with any rule, there are exceptions. In an attempt to develop a broader deposit base, several near banks offer accounts with a wider range of services than similar bank accounts. For example, a number of trust companies provide free chequing on savings accounts. Also, several British Columbia credit unions have begun to offer personal chequing accounts that pay monthly interest.<sup>16</sup> While the ratio of demand to savings accounts has been declining, the banks have encouraged the use of chequing accounts. The Toronto Dominion Bank has recently introduced "No Charge" chequing accounts. A customer who maintains a minimum balance of \$200 has the cheque charges waived. In 1973, the banks introduced service packages which offer the customer a bundle of services at a flat monthly fee. One of the main features of the package is unlimited chequing (Table 7). The package accounts encourage the use of cheques, as the "rational" customer would not purchase the account unless the value of the services was greater than or equal to the monthly fee. Since the Canadian financial institutions already have chequing accounts, their main concern with respect to POS terminals will be access and under what terms.

A related topic is near bank access to credit cards and debit cards. This issue will have to be resolved if these institutions are to participate fully in EFTS. As mentioned in Chapter V, the U.S. bank card plans will now consider thrift institutions, etc., for membership. A few banks provide credit

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15. For a more detailed discussion of this process, see H.H. Binhammer and Jane Williams, Deposit-Taking Institutions and the Process of Change, Economic Council of Canada Special Study (Ottawa: Supply and Services 1976), pp. 12-18.

16. John Schreiner, "Banks face battle with credit unions for savings," The Financial Post, Aug. 27, 1977, p. 1.

TABLE 5

CHARTERED BANKS' CANADIAN DOLLAR DEPOSITS, PERSONAL SAVINGS<sup>1</sup>  
(millions of dollars and per cent of total, as of December 31)

|               | 1967   |       | 1969   |       | 1971   |       | 1973   |       | 1976   |       |
|---------------|--------|-------|--------|-------|--------|-------|--------|-------|--------|-------|
|               | \$     | %     | \$     | %     | \$     | %     | \$     | %     | \$     | %     |
| Chequable     | 7,592  | 65.3  | 5,634  | 37.8  | 5,674  | 32.4  | 6,572  | 27.1  | 6,570  | 16.4  |
| Non-chequable | 2,775  | 23.9  | 5,663  | 38.0  | 7,732  | 44.1  | 9,127  | 37.6  | 18,580 | 46.4  |
| Fixed-term    | 1,261  | 10.8  | 3,594  | 24.2  | 4,127  | 23.5  | 8,579  | 35.3  | 14,867 | 37.2  |
| TOTAL         | 11,628 | 100.0 | 14,892 | 100.0 | 17,533 | 100.0 | 24,277 | 100.0 | 40,016 | 100.0 |

1. Average of Wednesdays.

Sources: Bank of Canada Review,

H.H. Binhammer and Jane Williams, Deposit-Taking Institutions and the Process of Change,  
Economic Council of Canada Special Study (Ottawa, Supply and Services, 1976) p. 15.

TABLE 6

COMPOSITION OF DEPOSITS IN MORTGAGE LOAN COMPANIES,  
TRUST COMPANIES, CAISSES POPULAIRES AND CREDIT UNIONS

(millions of dollars and per cent of total, as of December 31)

|   | 1967  |     | 1969  |     | 1971  |     | 1973  |     | 1976   |     |
|---|-------|-----|-------|-----|-------|-----|-------|-----|--------|-----|
|   | \$    | %   | \$    | %   | \$    | %   | \$    | %   | \$     | %   |
| <b>Mortgage Loan Companies</b>                          |       |     |       |     |       |     |       |     |        |     |
| Chequable   | 152   | 07  | 162   | 07  | 159   | 05  | 179   | 05  | 184    | 03  |
| Non-chequable   | 246   | 12  | 279   | 12  | 387   | 12  | 467   | 12  | 621    | 10  |
| Term Deposits and debentures                            | 1,651 | 81  | 1,956 | 81  | 2,604 | 83  | 3,189 | 83  | 5,525  | 87  |
| TOTAL   | 2,049 | 100 | 2,397 | 100 | 3,150 | 100 | 3,835 | 100 | 6,330  | 100 |
| <b>Trust Companies</b>                                  |       |     |       |     |       |     |       |     |        |     |
| Chequable   | 572   | 15  | 438   | 08  | 455   | 07  | 554   | 06  | 629    | 04  |
| Non-chequable   | 591   | 15  | 901   | 17  | 1,229 | 18  | 1,494 | 15  | 2,527  | 15  |
| Term deposits and Guaranteed<br>Investment Certificates | 2,740 | 70  | 3,833 | 75  | 5,127 | 75  | 7,576 | 79  | 13,402 | 81  |
| TOTAL   | 3,903 | 100 | 5,172 | 100 | 6,811 | 100 | 9,624 | 100 | 16,558 | 100 |
| <b>Caisses Populaires and<br/>Credit Unions</b>         |       |     |       |     |       |     |       |     |        |     |
| Chequable   | 1,592 | 89  | 1,951 | 83  | 2,424 | 66  | 3,769 | 61  | 6,449  | 57  |
| Term deposits   | 194   | 11  | 413   | 17  | 1,258 | 34  | 2,440 | 39  | 4,901  | 43  |
| TOTAL   | 1,786 | 100 | 2,364 | 100 | 3,682 | 100 | 6,209 | 100 | 11,350 | 100 |

Sources: Bank of Canada Review; and Statistics Canada, Financial Institutions.  
H.H. Binhammer and Jane Williams, Deposit-Taking Institutions and the Process of Change,  
Economic Council of Canada Special Study (Ottawa, Supply and Services, 1976) p. 16.



Table 7

Characteristics of Chartered Banks "Package Accounts" (January 1974)

|                                       | Bank of<br>British<br>Columbia                            | The Royal<br>Bank<br>of Canada  | Canadian<br>Imperial<br>Bank of<br>Commerce             | Toronto<br>Dominion<br>Bank                             | The Bank of<br>Nova<br>Scotia   | Bank<br>of<br>Montreal                                  | Regular<br>Individual<br>Charges               |
|---------------------------------------|---|---|---|---|---|---|--|
| Name of Account                       | Westerner   | Certified<br>Service  | Key Account   | Personal<br>Service<br>Plan                             | Scotia Club   | Full Service<br>Package                                 |  |
| Monthly Charge                        | \$3.00  | \$3.00  | \$2.50  | \$2.50  | \$2.00  | \$3.00  |  |
| Eligibility                           | 19 years of<br>age and over                               | must qualify<br>for Chargex<br>Account                                    | must qualify<br>for Chargex<br>Account                  | must qualify<br>for Chargex<br>Account                  | must qualify<br>for Chargex<br>Account  | must qualify<br>for Master<br>Charge Account            |  |
| Chequing Account<br>Features include: |   |   |   |   |   |   |  |
| Identification Card                   | yes   | yes   | yes   | no  | yes   | yes   |  |
| Personalized Cheques                  | yes   | yes   | yes   | yes   | yes   | yes   | \$2.95   |
| Unlimited Chequing                    | yes   | yes   | yes   | yes   | yes   | yes   | 14¢ per cheque                                 |
| Transfer Between<br>Accounts          | yes   | yes   | yes   | yes   | yes   | yes   |  |
| Required Minimum<br>Balance           | none  | none  | none  | none  | none  | none  |  |
| Interest Paid                         | 4% on<br>minimum<br>quarterly<br>balance<br>over \$100    | none  | none  | none  | none  | none  |  |
| Deposit Facilities                    |   |   | free use of<br>24-hour<br>depository                    | any branch<br>free,<br>"letter-slot"<br>deposits        | any branch<br>free,<br>and night<br>depository  |   |  |
| Payment of Utility Bills              | no charge   | no charge   | no charge   | no charge   | no charge   | no charge   |  |
| Free Money Orders                     | domestic  | any currency  | domestic  | any currency  | any currency  | any currency  | 25¢ on \$100 or<br>less; 35¢<br>on \$151-\$500 |
| Travellers Cheques                    | no charge   | no charge   | no charge   | no charge   | no charge   | no charge   | 1% commission                                  |
| Cheque Cashing                        | no charge<br>any branch                                   | no charge<br>any branch   | no charge<br>up to \$100,<br>any branch                 | no charge<br>up to \$100,<br>any branch                 | no charge<br>up to \$100,<br>any branch   | no charge<br>any branch                                 | 14¢ per<br>cheque                              |
| Overdraft Protection                  | cheques covered<br>up to<br>pre-arranged<br>\$1,500 limit | automatic<br>advance<br>up to<br>Chargex<br>limit                         | automatic<br>advance<br>up to<br>Chargex<br>limit       | automatic<br>advance<br>up to<br>Chargex<br>limit       | automatic<br>advance up<br>to Chargex<br>limit  | automatic<br>advance<br>up to<br>Master Charge<br>limit |  |
| Reduced Interest on Loans             | ¾ per cent<br>off personal<br>loan rate                   | unspecified<br>reduction<br>personal<br>loans                             | ¾ per cent<br>off personal<br>loan<br>rate              | ¾ per cent<br>off personal<br>loan<br>rate              | not offered   | not offered   |  |
| Safety Deposit Box                    | box worth<br>\$7.50<br>per year<br>included               | allowance<br>of \$7.50  | not<br>offered  | allowance<br>of \$2.50<br>per year                      | not<br>offered  | allowance<br>of \$7.50                                  |  |
| Other Features                        | free<br>wallet  | free cancella-<br>tion of<br>\$5.00<br>booking<br>charge with<br>Suntours | no charge for<br>use of<br>24-hour<br>cash<br>dispenser | same charges<br>and privileges<br>for joint<br>accounts | free wallet;<br>monthly fee<br>guaranteed<br>for 12 months<br>from approval<br>of application |   |  |

Source: H.H. Binhammer and Jane Williams, Deposit-Taking Institutions and the Process of Change, Economic Council of Canada Special Study (Ottawa, Supply and Services, 1976).

union members with cards to access bank terminals.<sup>17</sup> In an attempt to circumvent some of these difficulties, several U.S. credit union centrals have bought banks. The acquired bank provides access to the clearing system and other EFT services to the parent credit union. In Canada, these issues have not generated as much discussion and the Bank Act places restrictions on the ownership of bank stock and prevents near bank control of chartered banks.

EFTS will bring about basic changes in the competitive environment which may force firms into electronic payments whether or not they wish to join. Examples of this process have already begun to appear. In 1975, the First National Bank of Atlanta began to market a cheque guarantee system called "Honest Face." Under the scheme, First National Bank of Atlanta guarantees any cheque authorized by the Honest Face terminals. An individual does not have to be a customer of the bank to obtain an Honest Face card. The plan uses a negative file<sup>18</sup> and will authorize cheques until an individual issues a bad cheque. The system has gained widespread acceptance with the public and retail stores. Firms which were initially reluctant to join the cheque guarantee system reversed their decision after Honest Face became operational because their bad cheque losses increased substantially.<sup>19</sup> The situation in Atlanta has turned full circle. An individual now needs an electronic system to have a cheque accepted, whereas before Honest Face he did not. However, as the Glendale Federal supermarket POS experiment (Chapter VII) indicates, not all projects will be as successful.

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17. "Marine Midland Open ATMs to Credit Union Funds," American Banker, Apr. 29, 1977, p. 2.

18. A "negative file" is an authorization file which contains a simple list of accounts for which credit, cheque cashing, etc., should be denied. A "positive file" is an authorization file which contains information about every account holder and is capable of providing a variety of data to be evaluated prior to response to an authorization request.

19. Sanford Rose, "Checkless Banking is Bound to Come," Fortune, June 1977, p. 126.

Market shares will also be affected as firms compete in existing and new business areas. Banks currently dominate business deposit accounts and have developed business relationships with many firms, placing them at a comparative advantage in the development of corporate EFT systems.<sup>20</sup> At the same time, many small firms ("mom and pop" stores, etc.) do not accept credit cards or keep separate business chequing accounts. Potential customers exist for all financial institutions. As EFTS is introduced, not all firms will be able to keep pace with the technology and market developments. Unsuccessful firms will either close their doors or be taken over by larger firms. The shifting of market shares and the merging of financial institutions will require the enforcement of competition policy. The various influences will create a dilemma for policy makers, who will have to balance the desirability of perpetuating the present market share relationship against the benefits from competitive freedom in the marketplace which may alter market shares.

Competition will also develop along the lines of correspondent networks. While some banks (Citibank) are moving into the retail EFT market, other banks (Chase Manhattan) have decided to concentrate on wholesale EFT services, (providing services for other financial institutions.<sup>21</sup>

b) Non-deposit-taking Organizations

A number of organizations offer financial services to the public in direct competition with deposit-taking financial institutions. EFTS can be expected to influence the nature and intensity of the competition. Although some of the following examples were presented in earlier chapters, they are worth repeating briefly. Major consumer purchases are often financed with funds borrowed from deposit-taking and non-deposit-taking organizations. In the latter category, finance companies and retail chain stores are the main creditors. Finance companies and retail credit departments have seen the banks make inroads in their traditional segment of the consumer credit market. In an attempt to expand their retail business, some U.S. banks have

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20. "Electronic banking aims at businesses," Business Week, Jan. 24, 1977, p. 77.

21. Jeffrey Kutler, "Citibank, Pushing on with 500 New ATMs, Says Activity Is Satisfactory At First 2 Sites," American Banker, June 27, 1977, p. 1.

bought finance companies. A typical finance company borrows funds at market interest rates and in turn lends them to customers. The bank-owned finance companies can obtain lower cost bank deposit money from their parent firms and thereby lower the loan rate to attract customers from other finance companies. In Canada, the banks have opened branches in neighbourhoods they have traditionally ignored.<sup>22</sup>

Finance companies and retailers have expressed concern about the possible use of access privileges as an anticompetitive tool. They believe the banks' sources of low cost funds and the denial of access could place them at a substantial competitive disadvantage.<sup>23</sup> The finance companies claim their business is ideally suited for electronic payment techniques and question the rationale for denying them access while banks and other firms providing identical services can use the electronic facilities. When the banks introduce debit cards, some banks will offer overdraft privileges to selected customers. Since the finance companies also lend money, they would like to offer a line of credit through the electronic terminals.

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22. The Royal Bank has storefront branches in poor neighbourhoods of Montréal, Toronto, Winnipeg and Vancouver. Loans and financial counselling are given to low income earners who would not qualify for a traditional bank loan. Victor Lederer, "The poor need banks, the banks are willing, but ... meanwhile, up in Canada, the Royal Bank is doing something about it," Banking, Sept. 1977, pp. 166-171.

23. An interesting variation on the above theme is the purchase of a California savings and loan association by a Sears Roebuck subsidiary (the Allstate Group). The merger was opposed by segments of the financial industry. As an industry spokesman stated:

We're not a bit concerned about the merger of two savings and loan companies but rather the implications in the fact that one is a wholly owned subsidiary of Sears, which is one of the largest retailers and one of the biggest consumer credit organizations in the country and which is currently not under the same regulatory provisions relating to financial and thrift institutions.

Dick Hayes, "Proposed S&L Sales to Sears Subsidiary Under Fire in California," American Banker, Aug. 3, 1977, p. 2.

The blurring of distinctions between financial institutions has been accelerated by the recent action of Merrill Lynch, Pierce, Fenner and Smith, the largest U.S. stock brokerage firm. Merrill Lynch, in conjunction with City National Bank and Trust Co. of Columbus, Ohio, is introducing a new consumer banking account called Cash Management Account. This new service will allow brokerage customers to deposit money in a money-market fund and to withdraw funds by either cheques or Visa purchases. Any unused balances in the customer's brokerage account will be transferred into that fund once a week. Customers with stocks and bonds will be able to borrow against those securities. City National will issue the Visa cards for Merrill Lynch customers, provide the cheques, and perform the cheque and credit card processing. The bank has a computer-to-computer linkup with Merrill Lynch for transactions. City National is providing the services on a fee basis.<sup>24</sup>

The Cash Management Account can be expected to intensify competition between brokers and trust departments of commercial banks. While the minimum balance is \$20,000, if the Cash Management Account is successful, other brokerage firms can be expected to provide similar services.<sup>25</sup> U.S. bank legislation currently prohibits interstate banking. Merrill Lynch has a network of 254 offices in 45 U.S. states. The new account and electronic terminals in every office will allow Merrill Lynch to offer commercial banking services on a national basis. In effect, the brokers will have circumvented the bank regulations and gained a competitive advantage on the large banks.

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24. "Merrill Lynch: The Bull in Banking's Shop," Business Week, Aug. 8, 1977, pp. 50-56. "Merrill Lynch Plans New Account with Brokerage, Visa and Banking Features," Payment Systems Newsletter, Vol. 9, No. 7, July 1977, pp. 3-4.

25. Burns, Nordeman, Rea and Co., a U.S. brokerage firm, plans to offer its customers payable-through drafts which can be used to draw funds against the customer's margin account. Manufacturers Hanover Trust Co. will process the drafts. Payable-through drafts are drawn on accounts of a company rather than a bank account. The drafts are processed by a bank and presented to the company, which has to then authorize payment of the draft by the bank. Gary Hector, "Burns, Nordeman Sets Payable-Through Draft," American Banker, Aug. 31, 1977, p. 1.



## 8.2 NON-FINANCIAL ORGANIZATIONS

Every type of business firm will have some form of contact with EFTS. The effects of EFTS on non-financial corporations will depend on a number of factors including the specific sector, the size of the corporation and the services required from financial institutions. Once the obvious points of contact have been exploited, electronic banking will spread to other firms and industries as the necessary applications are developed.

In the United States, supermarkets were the initial target for retail EFT experiments. Supermarkets do not extend credit or accept credit cards, but they do cash a substantial number of cheques. To reduce customer checkout time, some supermarkets provide cheque cards to their established customers. However, not all cheques are covered by this service and bad cheque losses still occur, causing U.S. store managers to spend 20 to 25 per cent of their time on follow up procedures. Electronic cheque verification will reduce the number of bad cheques and the associated costs. However, the store must still process the cheques (good and bad) and these costs remain, even with an electronic verification system. There would be further savings if cheques could be replaced by direct debit of customer accounts.

Supermarkets are also interested in increased sales and view retail EFT as a method of achieving this objective. U.S. experience indicates that the introduction of electronic terminals into stores will attract new customers and increase sales. However, little evidence exists to determine if the gains will persist after other stores offer similar services. The long-run effect on supermarket sales will be small.

The banking industry and the retail industry currently disagree on the role and responsibilities of each participant in the introduction of EFTS into retail stores. The areas of controversy center on who should own and pay for the new electronic system and the competition between bank and retail credit cards for the consumer credit business. Retailers have complained that the banking industry will try to impose EFTS on the public even if it is against retailer and consumer interests. The banking industry claims that the concerns of the retail industry are unfounded, but retailers point to a dispute between a department store and the Visa credit/debit card system to justify their position. The Diamond's department store of Phoenix accepts the Visa credit card. The dispute began when First National Bank of Arizona in Phoenix introduced the Visa debit card. The department store refused to accept the Visa card if it was used as a debit card. Diamond's (and other retailers) regard a debit card



purchase as equivalent to cash and they view the paying of a discount on a debit card purchase as equivalent to paying a discount on cash or a cheque, a practice they do not currently follow. However, Diamond's eventually accepted the Visa card because of lost sales and dissatisfied customers. The retail industry claims that the financial community marketed the debit card directly to the public to circumvent retailer resistance and force the acceptance of the card.<sup>26</sup> Substantial revenue will be generated by service fees and interest charges on consumer loans and each industry will attempt to obtain what it regards as a fair share. The basic positions of the participants suggest that this conflict will not be easily resolved.

Another group to be considered is firms supplying support services to the payment system. Telecommunications and computer hardware companies were discussed in Chapter VI, but the main concerns are the potential abuse of monopoly power and the use of technical standards as an entry barrier. Collusion and other forms of anticompetitive behaviour exist without EFTS. However, it represents a new and large market for computer hardware and the potential for anticompetitive activities exist. For example, two large bank security equipment firms have signed consent decrees with the U.S. Justice Department which prohibit them from restricting sales of equipment in the United States and overseas.<sup>27</sup>

At the same time, as some firms move into new markets, existing suppliers are faced with changes in the demand for their products. EFTS will not eliminate the need for bank notes and cheques, but cheque printers and bank note companies cannot expect past growth rates to continue in the future. Successful firms will modify their business to meet the new market conditions. In Canada, British American Bank Note Company Ltd. prints bank notes for the Bank of Canada and it has also acquired a minority interest in Canadian Security Credit System, Canada's largest credit card manufacturer.<sup>28</sup>

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26. Jeffrey Kutler, "Phoenix Merchant Fights Visa Debit Fee," American Banker, June 9, 1977, p. 1.

27. Lynn Conover, "Diebold, Chubb Sign Agreement in Antitrust Case," American Banker, July 14, 1977, p. 1.

28. Rick Laiken, "Nothing makes money like making money," The Ottawa Citizen, May 6, 1977, p. 25.

Finally, the Post Office must view EFTS as a competitive threat to its existence. Public dissatisfaction with disruptions and quality of service have allowed private carriers to make inroads into the first class market. Payment of a bill by direct debit of a deposit account will eliminate a cheque and the need for the associated postal services. In the future, the Post Office must define its role within the context of declining revenue caused by EFTS and the competition of private carriers.

### 8.3 SUMMARY

Few, if any, firms will be able to avoid the influences of EFTS. Some of the more intense competition will occur in the financial sector. There has been a general blurring of account boundary lines, and different types of financial institutions are offering similar service packages. EFTS should accelerate this trend. As the financial institutions have competed for customers, the variety of accounts has increased and it is now possible to have NOW accounts, share drafts, Cash Management Accounts and many more. U.S. near banks have been active in other areas and they have gained access to ACHs, credit cards and some POS networks. A side benefit of this competition will be a movement towards more realistic pricing of financial services. Profit constraints will force financial institutions to reconsider their service charges.

Supermarkets were the initial target for retail EFT terminals, which are viewed as a method of increasing sales, but the experience with credit cards suggests that long-run effects will be small. An interesting competitive conflict is the dispute between the large retail chains and the bank credit card organizations. The potential gains suggest that this dispute will not be easily resolved. Finally, the success of firms supplying support services to the payments systems will depend on their ability to modify their business to new market conditions. Not all firms will be able to keep pace with developments in EFTS. Unsuccessful firms will either close their doors or be taken over by other firms, and this may require the enforcement of competition policy. Policymakers will have to balance the desirability of perpetuating the present market share relationship against the benefits from competitive freedom in the marketplace which may alter market shares.



## CHAPTER IX

### SUMMARY AND CONCLUSION

The payments system is currently undergoing a transition period as it switches from paper based to electronic payment techniques. EFTS will become part of the payment system, but at present it is impossible to predict its final form or the date of its arrival. The movement towards EFTS is the result of two developments, the already high and rising costs of an exchange mechanism based on paper transfers, and the ready availability of the required technology.<sup>1</sup> After some uncertain starts and stops, progress is being made. As one observer has noted:

The nation needs a consumer EFTS system, and it will eventually get one. But the pace of advance will be slower than previously thought, and the ultimate configuration of the system is at present almost impossible to predict. It is clear that many banks and thrift institutions which plunged into ill-conceived EFT experiments a few years ago will soon be dropping out. Some will get back into business after rethinking their strategies, and they will be joined by other institutions that have profited from the mistakes of their forerunners.<sup>2</sup>

The transition period will be the most costly, as both the paper and electronic payment system will have to be operated to process the two types of transfers. Cheques and cash will always exist, but reductions in the cost of an electronic transaction should occur after a large portion of transactions are transferred to the electronic system.

#### 9.1 CURRENT PAYMENTS SYSTEM

The current payment system is based on the transfer of deposits by cheque. The Canadian Bankers' Association operates the cheque clearing system and determines the criteria for access. The banks have used access terms as a competitive tool. Near banks were forced to negotiate access on a pass-through basis with

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1. Mark G. Bender, EFTS Electronic Funds Transfer Systems Elements and Impact (Kennikat Press, Port Washington, N.Y., 1975), p. 84.
  2. Sanford Rose, "Checkless Banking Is Bound to Come," Fortune, June 1977, p. 118.

a chartered bank and use the same transit number as its agent bank. In 1972, qualified near banks were granted their own transit number, but access was still on a pass-through basis. The government has recently proposed the establishment of a new clearing system run by the Canadian Payments Association. Near banks will be given the option of direct access to the clearing system and an input into its management. While the 1977 version of the Bank Act has not been passed by Parliament and the Canadian Payments Association still remains a proposal, it would appear to correct some of the near bank criticisms of the existing system. This paper endorses the granting of direct access to and input into the management of the clearing system for all qualified financial institutions. The policy of non-discriminatory access for near banks should be extended to future electronic systems.

## 9.2 AUTOMATED CLEARING HOUSE

An Automated Clearing House (ACH) allows banks to electronically exchange debits and credits between themselves. The ownership issue has yet to be resolved. The controversy centers on the role of the government. Should the government provide the necessary legal framework and let the private sector operate the ACHs, or should the government provide the ACH services? In the United States, 32 ACHs have been created, with many already in operation. Except for two operated by private groups, the Federal Reserve Board provides the data processing services. It appears that a large transaction volume will be required to exploit potential scale economies and to cost justify the operation of an ACH. To date, the main user has been the U.S. federal government, which is currently offering direct deposit of social security payments, Air Force salaries, etc. In Canada, there are no ACHs and little pressure exists for their introduction. The banks believe that the small number of chartered banks will allow the easy exchange of magnetic tapes between computing centers and ACH services would duplicate existing facilities. This leads the banks to claim that there is no need for ACHs, but ACH-type services would be offered to other financial institutions on a "competitive" basis. As expected, not all near banks accept this arrangement and they are pushing for the development of ACHs. This paper recommends that all qualified financial institutions be granted direct access to ACH-type services. If the assumption that the Canadian institutional structure may not require the creation of ACHs is correct, there should be some procedure for the near bank initiation of direct credits/debits. For example, large trust companies or credit union centrals could be included in the chartered banks' exchange of tapes. From this paper's viewpoint, the proposed pass-through arrangements would amount to the electronic recreation of the entry barriers of the paper based system.

### 9.3 POS TERMINALS

The consumers' contact point with EFTS will be the retail POS terminal. At present there is a power struggle between the financial institutions and the large retail stores as to who should own (and pay for) the retail POS terminals. This conflict will have to be resolved if EFTS is to gain widespread acceptance. Some financial institutions view the ownership of POS terminals as their exclusive domain, while retailers want to have an input into their development. The large retail chains have installed expensive on-line systems. The financial industry would like to piggy-back onto these networks while retailers are opposed to other firms gaining access without paying some form of compensation. Since the retailers control both the network and the in-store sites, financial institutions will have to negotiate access. Bank terminals will probably appear in smaller stores and stores without computer networks. An alternative that should be given serious consideration is third-party firms providing computing services and terminals. Canadian service bureaus have grown at a rapid pace in recent years and possess the necessary skills to provide EFT services. These firms should also be allowed to compete for a share of the potentially large market.

Regardless of who owns the terminals, a variety of firms will seek access. Since the purpose of a POS terminal is to give consumers access to their funds, deposit-taking financial institutions believe access should be restricted to themselves. However, the finance companies also provide credit and would like access to EFT terminals. This paper recommends that all qualified firms should be allowed access to the POS terminals. The exclusion of finance companies, etc. will distort the payment system in favour of deposit-taking institutions. The final EFT participants should be selected by market forces, not by a select group of firms with a vested interest in the exclusion of competitors.<sup>3</sup>

### 9.4 SHARING

The large capital requirements and the high volume required to cost justify an EFT network suggests that there will be an incentive for firms to enter into joint ventures. The sharing of EFT networks will allow financial institutions to lighten the financial burden and spread the default risk. While there is general agreement on the virtues of sharing, there is very little consensus on what form it should take. The debate focuses on the balancing of the equity and cost reductions from sharing against the benefits from competition. The basic problems for competition policy will be determining the potential for efficiency via joint ventures and its implications for competition.

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3. This statement is tempered by the fact that equity in access does not necessarily imply equal access.



The structure of the Canadian financial industry suggests that there will be mandatory sharing of POS terminals and ATMs in public places. The arguments against mandatory sharing are based on the development of alternative EFT networks. If a financial institution is excluded from one network it will be able to join another. However, the size and distribution of the Canadian population suggests that, except in the major centers, only one system would be possible. Also, retailers have limited counter space and will probably force all systems to use one terminal. They will not want to discriminate against customers on the basis of their choice of financial institutions. Given these considerations, this paper supports the mandatory sharing of EFT terminals in public places. The sharing of terminals located in institution walls should be at the discretion of the individual institution.

#### 9.5 CREDIT CARDS

Credit cards have been available since the turn of the century, but modern card plans (travel and entertainment and bank cards) were first offered in the 1950s. After an initial period of slow growth, credit cards have become an important part of the payment system. There are at present a number of travel and entertainment cards (American Express, Diners' Club and Carte Blanche) and two major bank cards (Visa and Master Charge). Each of the bank card organizations is developing a debit card. The central role of debit and credit cards in our future payments system suggests that near bank access will become an important issue. Given the substantial costs and effort involved, it is unlikely that the near banks will establish a third credit card system. Until recently (1976), the U.S. bank card organizations had restrictions on near bank membership, and the Canadian banks have shown little interest in accepting near bank competitors. This paper supports the Economic Council's recommendation of compulsory non-discriminatory access to existing card systems.

On a related topic, the conflict between the large retailers and the banks is in part over who will capture the consumer credit market. The large retail chains regard bank cards as an intrusion into their credit operations, while the banks view consumer credit as a new business area. Retailers are refusing to accept bank cards (credit and debit) until they have some input into their uses. A topic which deserves more attention than it has currently received is the role of retail credit cards in the future payment system.

Finally, it appears that the universal plastic card will not develop. All consumers do not demand the same financial services and cannot be granted the same financial responsibilities. These characteristics allow the financial services market to be divided into segments, and cards are being developed to match the needs of each group of consumers.

## 9.6 TECHNOLOGY AND STANDARDS

The development of EFTS is based on recent innovations in the telecommunications and computer technology. Initial data transmissions were over the voice (analog) circuits, but this was not entirely satisfactory because computers send digital signals. In response to these needs the carriers provided digital transmission lines. Further changes in technology and the intermingling of computers and data transmission has allowed the carriers to introduce packet switching networks. In 1976, TCTS introduced Datapac, while CNCP began to offer Infoswitch in 1977. Each computer manufacturer has its own technical standards and packet switching networks require an access protocol. Technical standards, access protocol, attachment policies, etc., can be used anticompetitively. In an attempt to reduce some of the confusion, international standards for packet switching networks are being developed. While progress is being made, a number of areas of disagreement remain.

Another issue to be resolved is the interconnection of telecommunications networks. Each carrier can deliver messages between major cities but only Bell Canada has the local loops for distribution of messages within a locality. In June 1976, CNCP applied to the CRTC for permission to interconnect with the Bell Canada loops. CNCP claims interconnection will increase competition while Bell Canada claims CNCP is only interested "in skimming the cream" from the profitable lines. This paper supports the CNCP request to interconnect with the Bell Canada loops.

This paper believes that some of the anticompetitive situations can be dealt with by the establishment of ground rules and the enforcement of combines legislation rather than immediate recourse to regulation. The rules would include: (1) the development of technical standards acceptable and available to all potential users and manufacturers; (2) the liberal attachment of terminals, using standards developed in (1), to the data network(s); and (3) liberal interconnection of data system whether this be private systems or universally accessible networks.

## 9.7 LEGAL ISSUES

The computerization of the financial industry has created a number of issues for policy makers. Rapid changes in technology have blurred the boundaries between communications and data processing. The new communications networks have forced the carriers to acquire data processing skills, while one computer firm is developing a satellite communications network. At the

same time, banks have increased their use of in-house computer and telecommunications services. Each of these industries is a key sector of the economy and is dominated by a small number of large firms. The changing technology has allowed these firms to expand their business activities (often behind the barrier of protective legislation) and perhaps control other key sectors of the economy. Policy makers must decide if the new activities will be allowed to continue even if they can be justified in economic terms. The federal government has released a policy paper on EFTS.<sup>4</sup> The recommendations were an attempt to balance a number of concerns including competition, privacy, development of a computer industry and Canadian control of key industries like telecommunications. While the federal government's initiative is welcome, this paper agrees with the Economic Council<sup>5</sup> that constraints should not be installed too quickly. Rather than attempting to solve all problems before they occur, obstacles should be dealt with as they arise.

EFTS will affect virtually all business firms. EFTS will accelerate the trend towards less differentiated deposit-taking financial institutions. In the competition for customers, each institution will offer similar services. In this situation, the legal framework places competitors on unequal terms. The chartered banks and the near banks operate under different legislation and regulatory authorities. The chartered banks must obtain a federal charter and hold interest free reserves at the Bank of Canada, while the near banks can be provincially incorporated and have no central bank reserve requirements. From the point of view of competition policy, firms offering similar services should be under similar legislation. The obvious solution to this inequity of treatment is to make the various statutes consistent. However, as illustrated by the reception of the recent White Paper proposals<sup>6</sup> from the near banks and provincial governments, this will not be an easy task. The provincial governments view federal attempts at reorganizing the payments system as an attempt to extend federal authority over

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4. Government of Canada, Towards an Electronic Payment System (Ottawa: Information Canada, 1975).
  5. Economic Council of Canada, Efficiency and Regulation: A Study of Deposit Institutions, (Ottawa: Supply and Services Canada, 1976).
  6. Department of Finance, Canadian Banking Legislation: August 1976, (White Paper) (Ottawa: Supply and Services Canada, 1976).

provincial institutions. In general, not all firms will be able to keep pace with developments in EFTS. Unsuccessful firms will either close their doors or be taken over by other firms. Policy makers will have to balance the desirability of perpetuating the present market structure against the benefits from competitive freedom in the marketplace which may alter market shares.

A casual examination of the literature will indicate that EFTS encompasses a wide range of interests. This paper has dealt with some of the problems EFTS will create for competition policy. Canadian financial institutions are now well advanced in the process of computerizing their operations and, while most of the activity to date has been behind the scenes, more advanced systems should soon appear. Hopefully, EFTS represents an opportunity to reorganize the payments system, improve its efficiency and correct past abuses.



## GLOSSARY OF ACRONYMS

|       |   |
|-------|---|
| ABA   | American Bankers' Association                               |
| ACH   | Automated Clearing House                                    |
| ATM   | Automated Teller Machine                                    |
| CBA   | Canadian Bankers Association                                |
| CNCP  | Canadian National-Canadian Pacific                          |
| CPA   | Canadian Payments Association                               |
| CRTC  | Canadian Radio-Television and Telecommunications Commission |
| EFT   | Electronic Funds Transfer                                   |
| EFTS  | Electronic Funds Transfer System(s)                         |
| EMTS  | Electronic Money Transfer System                            |
| EPS   | Electronic Payments System                                  |
| FCC   | Federal Communication Commission                            |
| IBAA  | Independent Bankers Association of America                  |
| MICR  | Magnetic Ink Character Recognition                          |
| NACHA | National Automated Clearing House Association               |
| NOW   | Negotiable Order of Withdrawal                              |
| PIN   | Personal Identification Number                              |
| POS   | Point of Sale   |
| TCTS  | Trans-Canada Telephone System                               |





## GLOSSARY<sup>1</sup>

**ANALOG:** The representation of numerical quantities by means of physical variables such as voltage, current, resistance, and so on.

**AUTOMATED CLEARING HOUSE (ACH):** A computerized facility used by member depository institutions to process payment orders in machine-readable form (computer tapes or punched cards).

**AUTOMATED TELLER MACHINES (ATM):** An unattended device either on or off bank premises which can dispense cash, accept deposits, and transfer funds between accounts. ATMs have also been called Customer-Bank Communication Terminals (CBCTs) and Remote Service Units (RSUs).

**BATCH PROCESSING:** A system in which data are collected over a period of time, aggregated and processed in a group.

**CASH DISPENSERS:** An unattended device which dispenses cash when activated by a plastic card.

**CENTRAL PROCESSING UNIT:** The unit of a computer system that controls the interpretation and execution of instructions.

**CHEQUE AUTHORIZATION/VERIFICATION:** An inquiry process undertaken to reduce the risk of accepting a fraudulent cheque or a cheque written for an amount which exceeds the account balance. Cheque authorization systems may be provided and maintained by the party accepting the cheque, by a financial institution, or by a third party engaged in such a business. These systems may be designed to access bank records directly or may rely on secondary data sources. In some systems, a cheque approval may be accompanied by a guarantee of payment.

**CIRCUIT SWITCHING:** Equipment which connects one device to another through a switch, preserving the connection for the duration of the call. Used primarily in telephone networks.

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1. This glossary relies heavily on prior glossaries prepared by Arthur D. Little Inc. and D.L. McQueen and J.R. Savary.

**CLEARING AND SETTLEMENT:** As used herein, this refers to the process whereby cheques or other records of financial or point-of-sale transactions are moved (physically or electronically) from the point at which they were originated to the organization (bank, thrift institution or other organization) which keeps the accounts for and expects to collect from and account to, the responsible payor. The settlement process completes the internal financial transactions among the parties involved in the clearing operation.

**COMMON CARRIER:** A company that furnishes communications services to the general public.

**COMPUTER:** A device which is capable of solving problems by accepting data, performing prescribed operations on that data and supplying the results of these operations.

**COUNTRY CLUB BILLING:** A billing system in which the account statement is accompanied by copies of original invoices.

**CREDIT AUTHORIZATION/VERIFICATION:** An inquiry process undertaken to reduce the risk of credit fraud or of extending credit in excess of an imposed credit limit.

**CREDIT CARD:** A card (usually plastic) which identifies the holder of a charge account. Credit cards may contain the name and address of the account holder, the name of the creditor, the charge account number, an expiration date, and information about businesses which have agreed to accept payment from the card issuing organization for goods or services provided to the card holder.

**DATA ACQUISITION:** The act of obtaining data from external sources, and converting it into a form which can be processed directly by a computer system.

**DATA BASE:** A computerized file or set of files of data stored on magnetic disk and cross-referenced.

**DATA PROCESSING:** Any operation on data. Normally associated with computers and their functions.

**DEBIT CARD:** A card which identifies the holder of a deposit account. Its use in exchange for goods and services would result in the withdrawal of funds from the buyer's account and the deposit in the seller's account.

**DESCRIPTIVE BILLING:** A billing system in which an account statement is not accompanied by copies of original invoices. Instead, the statement contains sufficient detail to permit the customer to identify the nature, date and amount of each transaction processed during the statement period.

**DIGITAL:** A device or technique that uses binary signals to represent data.

**DIRECT DEPOSIT OF PAYROLL:** A payroll system in which employee earnings are deposited directly to the employee's account at a depository institution in lieu of payment by cash or cheque.

**ELECTRONIC FUNDS TRANSFER SYSTEMS (EFTS):** A term used to describe computerized systems which process financial transactions or process information about financial transactions, or which effect an exchange of value between two parties.

**FLOAT:** Funds which have been credited to one account before they have been debited from another account, and therefore are temporarily credited to two accounts.

**FLOOR LIMIT:** The largest amount for which a merchant may accept noncash payment (cheque or credit card) without obtaining an authorization.

**HARDWARE:** The units making up a computer system, as opposed to the programs (software).

**INTELLIGENT TERMINAL:** A terminal which includes some memory and independent processing capability.

**LEASED LINE:** A communications channel provided by a common carrier at a fixed monthly flat rate for a customer's exclusive use.

**MAGNETIC INK CHARACTER RECOGNITION (MICR):** System by which characters are embossed on cheques and the ink magnetized so as to be machine readable.

**MINI-COMPUTER:** A processor much smaller, less costly and with much less core capacity than the central processor. Used as terminal controller or front end in data communications networks.

- NATIONAL COMMISSION ON EFT:** A U.S. commission authorized by a 1974 Act of Congress to conduct a two-year investigation into electronic funds transfer system policy and planning issues, concluding with reports and recommendations for Congressional action.
- NEGATIVE FILE:** An authorization system file which contains a simple list of accounts for which credit, cheque cashing, etc., should be denied.
- NETWORK:** A set of points that are interconnected by communications channels. Networks may be either common to all users or for a customer's exclusive use.
- NODE:** An end point of a branch in a network, or a junction common to two or more branches in a network.
- NOW (NEGOTIABLE ORDER OF WITHDRAWAL) ACCOUNT:** A time deposit account which permits the account holder to write negotiable orders for withdrawal (similar to a cheque).
- ON-LINE:** A computer system is considered to be on-line if it is directly controlled by the central processor.
- OVERDRAFT:** A deposit account withdrawal for an amount in excess of the current account balance. Some institutions will process such a transaction and will automatically extend a loan for the overdraft amounts.
- PACKET SWITCHING:** A system which divides a message into fixed length segments, or packets, and routes them dynamically through the network from source to destination. Packets making up the same message may take different routes depending on network traffic conditions. The packets are reassembled at the destination.
- PAYMENTS SYSTEM:** A system (composed of people, machines and procedures) used to transfer value from one party to another.
- POINT OF SALE (POS) TERMINALS:** Terminals located at the point of the transaction, in stores, airports, etc., which permit remote data capture. May be operated either on or off-line.
- POSITIVE FILE:** An authorization system file which contains information about every account holder and is capable of providing a variety of data to be evaluated prior to response to an authorization request.

**PREAUTHORIZED PAYMENT:** An EFT service which enables a debtor to request the funds to be transferred from the customer's deposit account to the account of a creditor. Such a transfer would be effected automatically on a regular (e.g., monthly) basis for transfers of fixed amounts. For variable amounts (e.g., utility bills), transfers would be made upon receipt by the depository institution of an invoice or statement from the creditor.

**REAL TIME:** A system is operating in real time if the processing of input data occurs virtually simultaneously with the generation of the data.

**SHARE DRAFTS:** An order to pay written to a third party by a credit union member against funds on deposit with the credit union, cleared through a commercial bank as a payable-through draft.

**SOFTWARE:** The system program which activates and controls a computer system.

**SWITCHING AND PROCESSING CENTER:** A facility which would link point-of-sale transaction terminals to depository and credit granting institutions in order to accomplish instantaneous authorizations and funds transfers.

**TERMINAL:** A device connected to a computer system used for the input and/or output of data. Technically, a terminal may be as simple as a telephone or as complex as a small computer.

**TERMINAL CONTROLLER:** A device which permits several terminals to be served by one communicating line.





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