

A FEASIBILITY STUDY:

SHOULD A MAJOR NEW YORK COMMERCIAL BANK OFFER TELEPHONE BILL PAYMENT

by

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Submitted to the Department of Management on
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ABSTRACT

Retail banking has not been a particularly profitable business for most large commercial banks recently. The high fixed costs required to build and maintain large branches and the massive volume of checks they process have forced banks to seek alternative methods to the paper-based transfer of funds. One alternative, which was first introduced to the public in June, 1973, involves the use of telephones to deliver certain banking services directly to consumers' homes. By telephoning the bank and authorizing specific payments to be made, the process of paying bills is made more simple and convenient.

Although some 30 financial institutions are now offering telephone bill-payment throughout the United States, there is still a question as to whether a large commercial bank should introduce this service in the New York City market.

By forecasting the potential revenues and costs which could be generated by offering this service, we have been able to make a recommendation with regard to such a proposed investment.

Name and title of Thesis Supervisor: Geoffrey P.E. Clarkson, Ph.D.
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I. INTRODUCTION

The vast amount of checks processed in the United States - a number exceeding 25 billion this year¹ - has prompted financial institutions,* management consultants, electronics manufacturers and a host of other banking services-related groups to seek alternative methods to the paper-based transfer of funds. Beyond the need to reduce the cost of processing and handling checks, financial institutions are seeking new ways to attract deposits. The banks believe they can attract these deposits by offering services to retail and commercial customers which will meet their banking needs in a more convenient, efficient and speedy manner.

There is one alternative method to the paper-based transfer of funds which was recently introduced called telephone bill-payment (TBP). This service enables customers, through the use of any telephone, to call a bank and authorize certain specific bills to be paid out of their checking or savings account. Most banks now offering this service have preferred to cut the postage costs they incur in mailing checks to pay their customers' bills by only paying a limited number of payees or

*Throughout this thesis, "financial institutions" and "banks" imply commercial banks, mutual savings banks, savings and loan associations, and credit unions. They are used interchangeably.

merchants. To use this bill-paying service, the customer would dial the bank and give the teller an account number, a password, the name of the merchant to be paid and the amount. The bank would provide the TBP customer with a monthly statement showing who was paid and the amount they were paid.²

In order to fully assess the advantages and disadvantages of TBP, it is necessary to consider the customer, the merchant and the bank. Each of these three parties must be satisfied that TBP will offer them more benefits than problems before such a service can be successfully launched.

Advantages

One of the most appealing characteristics of TBP is that it utilizes the telephone - a vehicle for communication which the customer is already familiar with. Simplicity of operation and locational convenience are perceived as primary advantages by the customer in addition to cost savings. The present cost for consumers to pay a bill is essentially 13 cents compared with TBP which is often free for consumers. The time saved by paying bills from one's home instead of walking to the post office is another distinct advantage of this service.

The merchant is most likely now receiving bill payments through the mail which often include bad checks. With TBP, the merchant would receive one check from the bank as payment for many customer's accounts. A computer print-out, listing the customers paying, their account numbers with that merchant, and the amount of payment would be sent to the merchant along with the bank's check. Eventually, if the volume was large enough, merchant's could receive magnetic tapes with this customer information. This would certainly provide a more efficient means of updating their accounts receivable.

In most cases, banks are offering TBP as a feature of an account and consequently must evaluate this service in terms of market demand, potential revenues and potential costs. There are many advantages to this service for a bank. The thrift institutions offering TBP have found their cost of funds lowered by money being shifted from high-interest accounts to 5-1/4% accounts. They have also found that this service can attract new deposits and provide them with a larger market share. Commercial banks can cut costs and reduce their overhead expenses by routing customer payments through TBP instead of through their check processing systems. If they would like to begin using the telephone as a vehicle to deliver other banking services, TBP can be a logical first step.

Disadvantages

One of the greatest disadvantages that consumers perceive with TBP is the potential for errors or mistakes. They want control over their personal finances as well as protection from unauthorized use of their funds. Some do not trust computers and dislike the automated nature of TBP transactions. Many consumers are concerned about not receiving cancelled checks as proof of payment.

There have been few complaints from the payees except for a small number of larger merchants. These organizations, such as large oil companies, utilities or the telephone company, have highly standardized procedures for handling their accounts receivables. In many cases they expect computer punched cards to be returned with their payments.

Some banks see TBP as just one more dish on a long menu of bank services. They question whether it might not be wiser to offer a fewer number of packaged services with wider appeal which would enable them to capture greater economics of scale.

In summary, the question as to whether or not a major New York commercial bank should offer TBP is not a simple one. It is the goal of this thesis to answer that question.

By first reviewing the "state-of-the-art" in Chapter 2, we will familiarize the reader with those financial institutions which have already offered this service. Legal and technological constraints will be briefly highlighted, as well as the responses from our questionnaire to 29 banks now offering TBP.

In Chapter 3, the New York market will be analyzed to determine how receptive it is to TBP. The results from our telephone survey of 100 New York residents will also be discussed and the size of the potential market for this service will be estimated.

In Chapters 4 and 5, methodology by which the revenues and costs from this service can be estimated. This methodology is then utilized in Chapter 6 to evaluate the proposed investment. All assumptions made in forecasting the five year pro-forma income statement will be stated.

Finally, our findings will be summarized in order to determine the feasibility of offering TBP in the New York market.

II. STATE OF THE ART

In 1970, while working at the Boeing Corporation in Seattle, Howard Phillips and Joe Gelzer came up with the idea of making computer services accesible to individuals in their own homes. The Touch-Tone* telephone would be the means of communication, linking the individual to the computer. The computer services considered were family budget keeping, income tax calculations, a personal calendar, household records, mathematical calculations, and checkless bill payment. Confident of the potential for such a service, Phillips and Gelzer left Boeing to venture into business, becoming incorporated in February, 1971, as Telephone Computing Service (TCS), a subsidiary of the Seattle-First National Bank.

In-Touch

The Seattle-First National Bank began its ambitious banking and computer service in June, 1973 with the introduction of In-Touch, operated by Telephone Computing Service, Inc. By December, only six months later, Seattle-First National Bank had ceased operation of the service and withdrawn all financial support. To understand why this first effort failed, one must begin by understanding the service itself.

In-Touch was a home-computing service, encompassing various banking, computational, and record-keeping functions that could be accessed through a Touch Tone tele-

*"Touch Tone" is a registered trademark of the American Telephone and Telegraph Corporation.

phone. Nine distinct services were included in the package offered to its customers:

- 1) Checkless bill payment. This required having a checking account with the Seattle-First National Bank and had a maximum payment limit of \$500.00, although larger payments could be made by making two or more entries. It was, however, further limited by the fact that only companies participating in the program, approximately 50, could be paid electronically.
- 2) Family budget keeping. The computer would do all the bookkeeping for family money management. It would organize and summarize all expenses each month and for the year, and issue to the customer 6 personal bi-weekly reports to keep him up-to-date. This allowed him to make entries under at least 24 different income and expense accounts, which In-Touch figured was more than adequate for the average family's budgeting needs; and a bi-weekly mailed report summarizing the items and expenditures by month, and year-to-date, to keep him constantly informed.
- 3) Income tax service. The manual describing the service says: "This income tax program is not a complete income tax service, but rather a tool to help you to do your own return. You are responsible for verifying all data submitted to the Internal Revenue Service. The computer does not prepare the government Form 1040, nor submit anything to the IRS, but this makes the chore of record keeping for tax deductions less difficult and assists you in choosing the most advantageous method of preparing your own return." The service included the mailing of an itemized deduction summary, and a tax calculation for the tax year.

- 4) A personal calendar. The computer served as a secretary to remind the subscriber, in advance, of dates which were important to him. These could range from business appointments to such personal things as birthdays, dental appointments, and the date auto insurance should be paid. Each two weeks a report was mailed out itemizing the significant dates for the following two week period.
- 5) A system of household records. This included such things as identification numbers, dates of purchase, and purchase prices, which the computer permanently stored and could supply on request up to date. As In-Touch pointed out in its advertising, "The computer records will be of help when you wish to notify authorities of theft, make claims to insurance companies, stop payments on lost credit cards, replace lost license numbers, registration certificates, etc., inventory personal property for any reason, claim income tax deductions for contributions of securities and property, and for determining capital gains, and or, losses on the sale of property."
- 6) Mathematical calculations. The In-Touch computer was made available to the individual subscriber for a variety of operations. It would perform addition, subtraction, multiplication, and division with an immediate answer by computer voice over the telephone. Suggested uses were for children to verify their homework, to balance the checkbook, calculate income tax, and bills, check the budget, and any other problem solving requirements.
- 7) Practice service. A practice unit was available for the subscribers to use to gain familiarity with the various programs, to improve their skill in instructing the computer, and to practice with any of the programs. This service permitted a

normal operation of the computer except that none of the practice service entries were recorded or included in the bi-weekly report. The connect time, however, was included in determining the service charges.

- 8) A cancel call service. This allowed all entries to be cancelled and a new start made if errors were made in prior entries of the same telephone call. If the error was caught immediately, there was a provision in the system for the customer to erase the original error, but if he had gone too far, then the cancelled call system had to be brought into play and all entries remade.
- 9) Correction system. There also was a correction system, by which the computer files could be changed. This allowed the subscriber to change any past entry by entering a new number for that same item code. However, TCS pointed out that it could not retract payments once a call had been completed. The telephone payment was the same as if the customer had mailed a check and the customer then had to contact the bank directly to initiate a stop payment procedure.¹

The cost to the customer for using In-Touch was \$6.50 per month for the first one hundred minutes of connect time, and four cents for each additional minute. A related cost to the consumer was the necessary conversion from conventional rotary dial to Touch Tone telephone. In Seattle, this meant a \$20 installation charge and an increase of \$1.50 per monthly phone bill. Subscribing to the system involved a sizable outlay by the consumer.

Seattle-First National Bank discontinued the service because the bank felt that In-Touch was ahead of its time and needed a bigger base of Touch Tone phones. An estimated 21.9 percent of the telephones in the Seattle area were Touch Tones.² Howard Phillips, however, does not believe that these are the reasons for the failure of In-Touch. He felt that the biggest cause of failure was mispositioning the product. In-Touch was advertised as "an amazing information system that turns your home phone into a high speed computer." (See Table 2-1) The reference to the Seattle-First National Bank was only secondary in the advertising campaign. Although the direction of the advertising was the result of a marketing research study, Phillips now believes that the key element of In-Touch was the bill paying feature and that the service should have been positioned as a banking service of the Seattle-First National Bank.

Other factors also contributed to the failure in Seattle. In-Touch was dependent upon the customer owning a Touch Tone phone - if the service could be adapted to all phones, then the market potential would extend into almost every home. Many feel that the \$6.50 per month charge was prohibitive. The large number of somewhat unrelated services offered was confusing to customers, and the instruction book was quite lengthy, intimidating many individuals.

TABLE 2-1



This is In-Touch.^{T.M.} It's here. Now.

The idea is beautifully simple.
In-Touch is a way to link
the push-button telephone
in your home to a high-speed
computer....that talks!
With In-Touch you merely

call a special number and that
connection lets you operate
the computer by using the
buttons on your telephone
keyboard.
It's that easy.

Thus, In-Touch discontinued service only six short months after it had begun. Only about 500 customers had signed up to participate - much less than the estimated break-even of between 5000 and 6000.

Telephone Computing Service, Inc.

Following the failure of In-Touch, Joe Gelzer returned to Boeing. Phillips, however, was not convinced that the concept should be abandoned. He reacquired control of Telephone Computing Service, Inc. and began to seek financial backing from other banks or thrift industry markets. Phillips did not agree with the Seattle-First National Bank in their thinking that the service was ahead of its time:

"The bank decided that In-Touch was ahead of itself," Phillips said, "but I cannot agree. First, the customers that were using the service were delighted with it and very disappointed when it was discontinued. Second, it was promoted primarily as a telephone computing service, rather than as a banking service, and, I think, this was a marketing error. Third, one of the limitations which previously existed, the need for a touch telephone, has now been removed by the development of low cost tone pads, available from a variety of sources, which generates tones which may be sent over any telephone circuit once the dial connection has been established. Fourth, the service worked as it was intended to, and no serious problems developed. And fifth, there is an easily demonstratable need for the service and almost no informed person in the discipline fails to predict that it will be a system of the future."³

Phillips' faith paid off. In 1974, seven savings banks acquired a majority interest in TCS:

- (1) Buffalo Savings Bank, Buffalo, N.Y.
- (2) Community Savings Bank, Rochester, N.Y.
- (3) Farmers & Mechanics Savings Bank, Minneapolis, MN
- (4) New York Bank for Savings, N.Y.
- (5) People's Savings Bank, Bridgeport, CT
- (6) Syracuse Savings Bank, Syracuse, N.Y.
- (7) Washington Mutual Savings Bank, Seattle, WA

An eighth bank was originally going to participate but later backed out of the arrangement.

The seven participating banks purchased a little more than 50 percent of Phillips' corporate entity, with Phillips controlling the remainder of the stock. The seven banks and TCS worked together to develop a TBP service that could be accessed with either a touch tone or rotary dial telephone. This service was entitled Pay by-Phone, a registered trademark of TCS.

TCS is in business to help financial institutions to successfully offer Pay-by-Phone. The firm is small, employing approximately fifteen people, but hopes to grow with the expected surge in telephone bill payment. William Koenig, Vice-President, emphasizes that the service must be kept simple for the consumer, but the banks need to realize that it is not simple from their viewpoint

of operating the system. Having visited TCS and many of the banks working with TCS, we recommend any bank that considers offering a TBP service should contact Howard Phillips.

What Is Being Done Today?

People's Savings Bank tried to introduce Pay-by-Phone in September, 1974. However, the commercial banks stopped the effort, saying that the bank could not offer third party transfers. The courts eventually decided in April of 1975 that People's could try TBP as an "EFTS experiment" but stipulated that the bank could not advertise in any way.

During that same time period, Community Savings Bank also tried to introduce Pay-by-Phone in Rochester, New York. The operation began on October 15, 1974 and was closed down three days later by the State Banking Department.

Farmers & Mechanics Savings Bank was the first institution to successfully offer Pay-by-Phone. The service was introduced in November, 1974, "with heavy promotion beginning in January 1975."⁴ As of February 25, 1977, twenty-nine financial institutions in the United States were known to us to be offering either Pay-by-Phone or a TBP service of their own. (see Table 2-2)

In order to gain a thorough understanding of what had been done to date with respect to TBP we developed a survey (see Appendix I) that was mailed to the twenty-nine financial institutions listed in Table 2-1. The objective of the survey was to familiarize us with the TBP services that were operational as of February 25, 1977.

Of the twenty-nine surveys that were mailed out, twenty-one were completed and returned to us - a response rate of 72 percent. With the exception of a few items not known by some institutions (the level of sophistication in tracking the performance of telephone bill payment services varied markedly from bank to bank), the surveys were completed in entirety. Eight* of the twenty-one respondents did not require that the survey results remain confidential.

In Appendix II, we have summarized the results from the survey responses. Identifying individual data items with the individual banks has been avoided to preserve the confidentiality of the respondents. We have used some of these results elsewhere in the thesis, but concisely present all the data in Appendix II so that anyone wishing to carry out their own analysis may do so.

*Farmers & Mechanics Savings Bank
 Honolulu Federal Savings & Loan Association
 Mechanics Exchange Savings Bank
 Provident Savings Bank
 Savings Bank of New London
 Surety Savings Association
 Syracuse Savings Bank
 University Savings Association

TABLE 2-2

1. American Federal Savings & Loan - Des Moines, Iowa
2. Buffalo Savings Bank - Buffalo, New York
3. Cambria Savings & Loan - Johnstown, Pennsylvania
4. Commercial Federal Savings & Loan, Omaha, Nebraska
5. Community Savings Bank - Rochester, New York
6. Dollar Savings Bank - Pittsburg, Pennsylvania
7. Erie County Savings Bank - Buffalo, New York
8. Farmers & Mechanics Savings Bank - Minneapolis, Minnesota
9. First Federal Savings & Loan - Little Rock, Arkansas
10. Germantown Savings Bank - Bala-Cynwyd, Pennsylvania
11. Greater New York Savings Bank, New York, New York
12. Hollywood Federal Savings & Loan - Hollywood, Florida
13. Home Federal Savings & Loan Association - San Diego, California
14. Honolulu Federal Savings & Loan Association - Honolulu, Hawaii
15. Houston First Savings Association - Houston, Texas
16. Louisiana National Bank - Baton Rouge, Louisiana
17. Maine Savings Bank - Portland, Maine
18. Mechanics Exchange Savings Bank - Albany, New York
19. Occidental Savings & Loan Association - Omaha, Nebraska
20. People's Savings Bank - Bridgeport, Connecticut
21. Perpetual Federal Savings & Loan Association - Washington, D.C.

22. Provident Savings Bank - Jersey City, New Jersey
23. St. Joseph Bank & Trust Company - South Bend,
Indiana
24. Savings Bank of New London - New London, Connecticut
25. State Federal Savings & Loan Association - Beatrice,
Nebraska
26. Surety Savings Association - Houston, Texas
27. Syracuse Savings Bank - Syracuse, New York
28. University Savings Association - Houston, Texas
29. Washington Mutual Savings Bank - Seattle, Washington

The thrift institutions are the leaders in telephone bill payment services, competing for the checking account deposits of the commercial banks by means of telephone banking. However, some commercial banks are not willing to stand quiet and watch their deposits slip away - two commercial banks (Louisiana National Bank and St. Joseph's Bank & Trust) have begun operation of their own system and many others are investigating the potential for offering the service.

Many thrift institutions are interested in telephone banking services as a means of lowering their cost of funds. Chronologically, an individual usually needs a bank for credit initially, then as a savings institute, and eventually as a place to accumulate wealth. The thrifts are finding that the average age of their depositors is growing older, and the older people are holding their funds in certificates of deposits (CDs). Since the CDs pay a higher interest rate than allowed on ordinary time deposits, the cost of funds is rising. Furthermore, large deposits such as CDs are rate sensitive and do not provide for a stable deposit base. One bank projected CDs to be 66 percent of the deposit base by 1980. As a result, the thrifts want to attract cheaper money - they need to get those people needing credit and holding small savings accounts.

Telephone bill payment is one way to attract this cheaper money. The target market, or at least the market the banks are ending up with, is the young professional couple, both college graduates (and, hopefully, some post-graduate work), owning two cars and a color television, and earning approximately \$30,000 to \$35,000 a year.

The commercial banks also stand to gain from TBP. Any move in the direction of reducing the paper flow of checks through the bank is certainly desirable. The commercial banks can offer TBP as a feature of the existing checking account, attracting their existing checking account depositors, especially those who prefer to make payments from their checking account and rarely touch their savings accounts. The checking account is currently the primary transaction account, so merely adding an additional method of payment will be easier for the customer to understand than if used in conjunction with a savings account.

How then does one explain the apparent disinterest in TBP by commercial banks? We see three possible explanations:

- 1) Banks have been using checks for 70 years. The top management in banking today has spent the last 35 years being committed to paper instruments of transaction - they are good with paper instruments, as that is what got them where they are. The resistance to change is strong.

- 2) Offering the service as a feature of the checking account and allowing telephone transfers between savings and checking could raise the bank's cost of funds. If the customer can instantaneously transfer money from his savings to his checking account over the telephone, he might maintain a lower balance in the checking account, which pays no interest, and keep the money in the savings account paying five percent interest.
- 3) EFTS is promoting inter- and intra-industry competition, making "location control" an important factor. In the race to install automatic teller machines, cash dispensers, and point-of-sale terminals, the banks are concerned with controlling the key locations by being there first. Thus, the commercial banks are concentrating their efforts on installing their EFTS equipment in these prime locations, knowing that the telephone will always be there and cannot be monopolized by one bank.⁵

Taking these factors into consideration, it appears that although the commercial banks have not been as energetic in implementing telephone bill payment, they will be rapidly catching up in the near future, if only to remain competitive with the services offered by the thrift institutions.

Among the thrifts and commercial banks offering the service, there exists a wide range of sophistication electronically. (see Table 2-3) Some systems are processed primarily by hand, while others are almost completely automated. Many institutions begin with a service where the customer dials the bank and speaks with

TABLE 2-3

How It's Done

"Telephone bill payments are handled by a variety of methods, from the primitive to the highly sophisticated.

In the simplest system, the customer calls a special number, gives his name, account number and personal identification number to a clerk, then proceeds with the bill payment.

He gives the clerk the name and address of the payee, the amount to be paid and the customer's account number with the payee.

The clerk transcribes the information on a two-part transaction ticket/remittance advice. The ticket is sent to another clerk who draws the check. The transaction is entered on a terminal by a teller. On-line processing is identical to an ordinary check withdrawal, except that it is identified by code as a telephone transaction. The clerical and remittance advice are mailed to the payee.

With volume, a vendor file can be created, with a separate number for each vendor. A plastic card is created for each vendor and used to emboss his name and address on each check. The clerk at the telephone has a list of vendor numbers to which he refers. This helps reduce the transcription load.

In a semiautomated system, the clerk sits before a cathode ray tube, a terminal with a television-like screen on which a customer's entire file is displayed. If the customer wishes to pay a vendor he has paid before, only the amount needs to be entered. If the vendor is new for the customer, the clerk first checks if that

vendor has ever been paid by anyone else on the system. If so, the clerk enters the vendor's number into the customer's account, then adds the amount. If the vendor is new, the clerk sets up a vendor account and number.

If the vendor is not commonly known, in some systems a hold will be placed on the payment until the customer can verify the payment by mail. This is done to prevent fraud.

If the vendor already has an account with the association, the funds are transferred internally.

In a fully automated system, customers with 12-key touch-tone telephones can deal directly with the computer.

The customer calls a special number, keys in his account number and secret identifier, then hears the computer either give the customer's current balance or ask for the transaction. The customer proceeds to punch out the vendor number and the amount. The computer already has a record of the customer's identifier with the vendor.

In some systems, the customer has the option of selecting the date on which the payment is to be made. Timing the bill for up to a month in the future gives the customer the options of anticipating cash flow or handling payments when he is on a trip or vacation.

If the payment is to be made on the day of the call, the customer is asked to call before a designated hour if he wants a guarantee that the payment will be made the same day.

The computer confirms each transaction by repeating all the data. The customer signals that the transaction is correct and the computer processes it.

Instead of a receipt or a cancelled check, the customer receives a descriptive statement listing the vendor, the amount and the date of each payment. This is the only record the customer has of these transactions. At one institution, the computer has the capability to create an annual statement as well, listing totals paid to each vendor for the year.

Most systems send payments daily to each merchant. The merchant receives a check drawn on the association. If only one customer payment is being made, the customer's number may be on the check. If payments are being made for several customers, the merchant receives one check and a typewritten list of customer names, their account numbers with the merchant and the amounts of their payments. The merchant may receive a punched card or magnetic tape with the same information.

In addition to decreasing bad checks, since the funds have already been withdrawn from the customer's account, merchants benefit by not having to open a pile of envelopes or process a batch of checks.

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a teller who sits at a cathode ray tube and inputs the payments into the computer. The payment data is either batch processed once daily or processed immediately by an on-line, real-time interactive system. More advanced institutions allow those customers with Touch-Tone telephones to enter the data directly into the computer by pressing the buttons on their phone. The Dollar Savings Bank has such a system and also provides a toll-free number that one can dial to make practice payments (see Table 2-4).

Merchants have been very receptive to participating in the service, especially if their role and the benefits to them are carefully explained before being mailed their first telephone bill payment. Hollywood Federal Savings Bank will pay anyone without contacting them beforehand, but most institutions have felt that this is an unwise approach and prefer to operate hand-in-hand with the merchant. However, few merchants have refused to accept telephone bill payments. Those merchants usually require that a document (such as an IBM punch card) be returned with the remittance, and the telephone service cannot satisfy this need.

TABLE 2-4

HOW TO MAKE PRACTICE PAYMENTS WITH A PUSH-BUTTON PHONE

Call 1 8 0 0 2 4 2 1 6 3 0

The Automatic Teller will answer, "Dollar Savings Bank Pay-By-Phone...Please enter your account number."

Press 1 2 3 4 5 6 7 8 4 and #

This is the special practice account number. The Automatic Teller will repeat this account number and say, "Enter Secret Code."

Press 7 7 3 2 and # for the secret code number.

Even if you have a Pay-By-Phone account, be sure to use this official practice code and not your own secret code. For security reasons, the Automatic Teller will not repeat your code, but will, if the cost is correct, say, "please enter payment code."

.....

To Make The First Payment

Press 2 1 2 4 and # for the payment code.

The Automatic Teller will repeat the payment code, then say, "Enter payment amount."

Press 2 3 * 8 8 and # (for a \$23.88 payment)

The Automatic Teller will repeat the payment amount. Then, the Automatic Teller, ready for the next payment, will say, "Enter Payment Code."

.....

To Make a Second Payment

Press 3 9 7 1 and # for the second practice payment code.

Press 1 0 0 * 0 0 and # (for \$100.00)
for the second payment amount

NOTE: You must add the "decimal" and "cents" to every payment; if not, the Automatic Teller will say, "ERROR, Please repeat last entry."

.....

Press 0 2 # at the end of your payments to obtain the total of the payments you have made.

Pay-by-Phone's Automatic Teller will give you the total of \$123.88 and then say, "Thank you for calling Dollar Savings Bank."

An advantage of the TBP over the POS debit card approach is that the merchant maintains a link with the customer by means of a monthly bill. If a debit card is used to pay for the purchase, then the funds are instantaneously transferred and there is no need for billing the customer. However, the merchant likes using the monthly bill to communicate with the customer - to advertise special sales, for example. Both the telephone bill payment and the debit card reduce the volume of checks, but only TBP allows the continuation of the monthly bill as the merchant's means of communication with the customer.

Finally, the process of determining which merchants the bank will pay varies from case to case. Some banks will pay anyone, while others require that a minimum number of customers request to pay a merchant before that merchant will be included in the data base. The minimum number ranges from 5 to 25.

A key factor in the cost efficiencies of TBP is the percentage of the payments which can be routed through the Automated Clearing House (ACH). TCS estimates the cost of processing a transaction going through the ACH to be only one cent. Currently, the ACH can only handle telephone bill payments and transfers to financial institutions, but technicians are developing the

capability to process payments to merchants. Clearly, when this capability to process merchant payments is realized, the ACH will greatly reduce the per transaction cost of processing a telephone payment.

Massachusetts Automated Transfer System

Forty Massachusetts savings banks formed a consortium in 1975 to investigate the feasibility of developing a statewide multi-institution network to offer Pay-by-Phone. The forty banks, or Massachusetts Automated Transfer System (MATS), has contacted TCS to aid in the specification of system design, software, and hardware procurement, selection of a facility manager, development of a joint marketing campaign, merchant training of MATS, and individual bank personnel. A central facility will be located in the Boston area, housing the hardware and personnel involved in operating Pay-by-Phone.

John Wood, the president of Melrose Savings Banks, is heading up the consortium. Although a joint venture, each bank will maintain its unique identity to its depositors. The banks will independently decide upon the transaction fees to be charged and the level of promotional expenditures.

During the initial start-up phase, MATS will be off-line, the banks exchanging data with one another by magnetic tape. Later, the banks will directly communicate the data in an on-line mode, permitting immediate retrieval of account information and posting of transactions to the customer file.⁶

It all goes as planned, MATS will begin offering Pay-by-Phone at the beginning of 1978. A substantial boost for TBP will occur when they begin operation, more than doubling the current number of banks offering the service.

Legal/Regulatory Constraints

The government has the potential to shape the future development of TBP services. The regulations defined by government agencies may place limitations on the banking services that can be offered over the telephone.

The regulatory environment of banking today is "highly fractionalized, with many federal, state, and local agencies responsible for different components of depository institution chartering and regulation, deposit insurances, and disintermediation actions."⁷ The discontinuity between regulatory bodies makes it difficult to develop a consistent national policy. The advent of

EFTS (and TBP, in particular) compounds the problem of discontinuity by introducing additional regulatory agencies such as the Federal Communications Commission, the Federal Trade Commission, and the Antitrust Division of the Justice Department, all of which are represented on the National Commission on Electronic Funds Transfers.

The regulatory uncertainty produced by this discontinuity is disturbing to many financial institutions. Many potential and existing participants in telephone bill paying are reluctant to surge ahead while not feeling confident of what will be legally permitted. Although activity is not entirely halted and banks are implementing banking services by telephone, some of the efforts may be wasted if government policy changes the existing legal and regulatory environment.

Arthur D. Little believes that the National Commission on Electronic Funds Transfers should recommend a move to clarify regulatory charters and responsibilities. They are not advocating a concentration of regulatory power, since the existing power distribution appears to be a result of deliberate policy action. The decentralization of authority produces a tension that helps to protect many public interests and is a source of creativity. However, a clarification of the existing

ambiguities and inconsistencies would assist the financial institutions in more accurately developing long-range scenarios for electronic banking services.⁸

Let us examine the evolution of the regulatory environment. In 1936, the Federal Reserve Board (FRB) passed a ruling that member banks could not allow a depositor to withdraw funds from his savings account by means of a telephone or any other verbal command. The ruling came about for two reasons: a concern for the security of member banks, and a concern that telephone access to funds in a savings account might lead depositors to utilize their accounts as extensions of the checking accounts.⁹ The FRB did not want to destroy this distinction between savings and checking.

The Community Savings Bank began offering Pay-by-Phone on October 15, 1974. Three days later the operation ceased - a result of a cease-and-desist order issued by the New York State Superintendent of Banks, Harry W. Albright, Jr., prohibiting the bank from offering the TBP service. The order was issued on the grounds that "the Banking Department needed more time to study legal authority to offer the service and the entire matter of electronic payments and off-premise payment activities by thrifts and commercial banks."¹⁰ Frustrated by the intervention, Community took the Banking

Department to court, charging them under Article 78 of abusing their regulatory powers.

No immediate action took place in response to Community's accusation. However, on April 7, 1975, the FRB rescinded, effective immediately, the 1936 ruling that opposed the withdrawal and transfer of funds from savings accounts by telephone or any other verbal command. The Board had closely followed the development of telephone withdrawal systems by the member banks and was confident enough of the security precautions and record keeping devices made possible by the latest technological advances. The FRB recognized the telephone as an acceptable medium for transmitting financial data and its application as an additional method by which the depositor could communicate instructions regarding his account to the bank. The new ruling was influenced by the fact that other financial institutions, such as nonmember commercial banks and savings and loan associations, had been able to offer telephone withdrawal services for some time.¹¹

On the same day, the Board of Directors of the Federal Deposit Insurance Corporation (FDIC) reaffirmed that its regulations permitted the withdrawal of funds from savings accounts upon the order of a depositor transmitted by means of a telephone or other communication

device. The FDIC announcement was made to dispel any concern on the part of insured nonmember banks that might arise in reaction to the announcement by the FRB.¹²

In view of the FRB and FDIC announcements, the Banking Department of New York rescinded the "cease-and-desist" order that had been issued to the Community Savings Bank in 1974. The order was withdrawn on April 15, 1975, and Community immediately resumed offering Pay-by-Phone.

The rulings were a step in the direction of making interest bearing savings accounts more like non-interest bearing checking accounts. A second step was taken on July 28, 1975 when FRB authorized member banks to offer bill-paying services from savings accounts. The ruling only provided broad authority to design and offer the service. Although the form of such a service was not specified, the FRB did describe a savings account bill-paying service that would be permissible under the new regulation:

In most cases a bill paying service will be based upon a written contract between the bank and the depositor. The transfer may be accomplished by means of an internal bank transaction or by sending a bank check to the transferee or the transferee's bank.

The depositor will give the bank the names of those organizations or individuals to whom funds are to be transferred, indicating either the specific amount to be paid, or a maximum amount and the frequency of payment.

Subsequent additions to the list of transferees or changes in instructions may be communicated to the bank in person, by writing, or by telephone.

If the depositor uses a written withdrawal form to convey transfer instructions to the bank, such a form must contain language in boldface type that it is not negotiable or transferable.¹³

The FRB has been monitoring the development of TBP services to determine whether or not additional regulation is necessary, and the member banks have been advised to audit and track these accounts in a "manner which will facilitate identification of such deposits for reporting purposes."¹⁴

The regulation was an amendment to Regulation Q and took effect on September 2, 1975. As adapted, it was essentially identical to the proposal made in July with the exception of three modifications:

- (1) It specifies that transfer from savings accounts may not be made to cover overdrafts or the use of a checking account line of credit.
- (2) The amendment makes it clear that it does not permit a member bank to agree to transfer funds automatically - i.e., without specific instructions - from a customer's savings account to the customer's checking account.

- (3) The amendment states that withdrawal orders or authorizations for payment to third parties may be received by a member bank only from a depositor.¹⁵

Thus, the distinction between checking and savings accounts is being slowly eroded, resulting in more direct competition between commercial and thrift institutions. If automatic transfers from savings to checking accounts were allowed, the distinction would be erased.

From the results of our survey and interview efforts, two items are worth mentioning here. First, in the state of New York, no thrift institution can accept deposits from profit-making organizations (see Paragraph 237, Section II, of the New York Law). This clearly gives the commercial banks a competitive edge in acquiring merchant accounts.

Second, one bank has drawn a categorical constraint limiting merchant participation - doctors are not allowed to be included as payees. This constraint arose from the fear that, legally, being included in a list of payees could be considered advertising.

Technological Constraints

Historically, technological advances have supplied much of the inspiration for new approaches to electronic banking. Today, however, the technology is capable of supporting any hardware requirements in the move to a

less check society. New discoveries will continue to aid in the development of EFTS, but will be considered a tool and not the determining factor. Technology and the banking industry's direction toward a less check society are now moving somewhat independently of each other.

Technology is no longer constraining the development of electronic banking. New discoveries may enhance certain aspects of the system, but the capability to support the electronic banking services already exists. For example, Buscom Systems, Inc. of Sunnyvale, California has created "Soft-Touch," a means for converting rotary dials to Touch Tone. The telephone tone encoder is inexpensive (approximately \$20.00, having come down from an initial cost of \$75.00) and screws in to replace the mouthpiece on the rotary dial telephone. With Soft-Touch, any rotary dial telephone can be used to access many banking and financial services, such as direct data input, electronic funds transfer, branch office tie-in to central computers, check verification, and data transfer between branches.¹⁶

A T & T has developed Transaction Telephone, allowing a user to perform any function requiring communication with a remote computer. The transaction telephone serves as a regular telephone, but also "automatically

dials the number of your data base, reads the magnetic stripe on the back of most credit cards, and has sequential instruction lights to guide even inexperienced operators through each step."¹⁷ The promotional efforts are emphasizing the applications to banking, advertising the transaction telephone as one you would swear was invented by a banker.

The Transaction Telephone serves as the terminal for the new data exchange service offered by A T & T's Transaction Network Service (TNS). TNS is a common user, switched network service offering that provides the capability for fast inquiry-response communications where there are applications for large volumes of short message, inquiry response traffic between terminals located in customer premises and computer-based data centers. EFTS is one such application. The features of TNS are:

- 1) Fast credit verification for checks, credit cards, and debit cards at customer locations. A three-second transaction response time on the average from transaction execution to completed transaction.
- 2) Very high message handling capability. In excess of 10 million messages per month for a fully developed TNS System.
- 3) Diverse application polled or dialed terminals with audio voice answerback. Meets the application needs for low, medium (dialed terminals), or high (polled terminals) volume transaction messages.

- 4) Shopping center or customer located concentrator for polled terminals. Optimizes the communications network in remote locations.
- 5) Fully automatic network test features via extensive diagnostics. Provides maximum reliability. Estimates of as high as 90% of the troubles will never be seen by the customer through rapid trouble shoot and repair.
- 6) Multiple data base switching. Terminal to computer data base and data base switching capability.
- 7) Total network management from the terminal to the data base communications port. Frees the customer from communications management duties, leaving the communications problems to Bell, "The Communications Problem Solver."
- 8) Total redundant hardware allowing reliability levels unmatched in the past.
- 9) Network error control and message screening. No messages lost. Undeliverable messages are returned to the originator.¹⁸

An east coast firm, Threshold Technology, Inc. of Cinnaminson, New Jersey, is leading the field in the development of voice recognition - a system where the user can verbally communicate with the computer. Seven years ago, Thomas Martin and Marvin Herscher left their engineering positions at RCA to found Threshold. Today, six firms are marketing a voice recognition system.

In order to access the computer verbally, the user must record his voice on tape, enunciating each word in the computer's vocabulary base (generally, 30 to 50

words). Each individual user's unique voice print is stored in the computer and is identified by a code peculiar to each user. To use the system, a user keys in the code, indicating to the computer who wants to "talk" to it, and then proceeds to verbally input the instructions.

Because a person's voice print is as unique as one's fingerprint, voice recognition has the potential to virtually eliminate any risk of an unauthorized person accessing someone else's telephone account. This uniqueness is also causing problems, as the computer sometimes cannot identify the voice of a user when the enunciation is interferred with by a bad cold, for instance.¹⁹ However, voice recognition is successfully converting the spoken word into data understood by the computer, and the implications for telephone banking are enormous.

The telephone bill payment accounts being offered today are at various levels of technological sophistication. The Savings Bank of New London is operating an entirely manual, paper-based system. At the other extreme, Farmers and Mechanics Savings Bank worked with Aurora, Inc. and Dycon International to develop a voice-activated recording system to service the rotary dial payments. This computerized telephone system is the Dycon 1350 and will simultaneously handle four telephone

lines, prompt the customer with instructions, and record the payment instructions on a cassette tape. The voice-activated recording system was developed in an effort to reduce the manpower requirements of the telephone service. More and more tellers sitting at CRTs were needed to handle the increasing number of rotary dial transactions (approximately two thirds of all transactions) and costs were growing at an alarming rate. Instead of talking to a CRT teller, the customer now replies to the instructions on the tape that guide him through the payment process. Dictaphone Corporation also manufactures a voice-activated recording system that is currently being used by the Maine Savings Bank. The systems are especially beneficial in that they allow the bank's customers to make payments during non-banking hours.

A number of the financial institutions are offering on-line service to customers with access to Touch Tone phones. In many cases, the individual can deal directly with the computer by utilizing the bank's voice-response or audio response unit. Here, the customer "dials" the computer, and then keys in the merchant codes and payment amounts. After each transaction, the computer verbally repeats the merchant code and the payment amount

that were just entered. Thus, the customer "talks" directly to the computer, and the system is entirely automated. Periphonics Corporation has made many advances in this field.

From the point of view of technology, the limiting factors will most likely be the non-technical, human-related issues. Privacy is being argued legally, politically, and psychologically - the policy makers are not looking for a technological solution. Often, the technological feasibility or cost justification is ignored, and other factors, such as market competition and industry rivalry, affect the advancements that are made. Arthur D. Little's study prepared for the National Science Foundation states:

...proponents and developers of EFTS will simply have to address the key non-technical issues first; otherwise, they will be gambling dangerously with the substantial investments required. From the point of view of technology, the stage has been set. The tools are ready and, although they will improve with time, this factor is not critical. The sociological, market, political, and competitive issues will now determine the pattern of future progress.²⁰

FOOTNOTES

1. "Why Seattle's In-Touch Service Was Out of Touch or Was It?" Bank Systems & Equipment, April 1974, pp. 36-38.
2. Ibid., p. 36.
3. Ibid., p. 36.
4. Nancy E. Grant and Kenneth E. Reich, "Bill-Paying By Phone, A Case Study of the Pay-By-Phone Service at Farmers & Mechanics Savings Bank, Minneapolis, Minnesota", United States League of Savings Associations, Chicago, August 13, 1975, p. 3.
5. Linda Fenner Zimmer, "The Role of Telephone Banking in Future Payment Systems", a speech presented before the Pay By Phone Seminar in Minneapolis, Minnesota, September 17, 1975.
6. "Pay-By-Phone News", Vol. 1, Issue 1, Telephone Computing Service, Inc., Seattle, February 1977, p. 3.
7. Arthur D. Little, The Consequences of Electronic Funds Transfer, U. S. Printing Office, Washington, D.C., June 1975, p. 216.
8. Ibid., p. 216.
9. Federal Banking Law Service, April 1975, pp. 2-3.
10. "Ban on Pay-by-Phone is Removed by NYS", American Banker, April 16, 1975, pp. 3 & 14.
11. Federal Banking Law Service, April 1975, pp. 2-3.
12. FDIC News Release, Washington, D.C., April 7, 1975.
13. Joseph D. Hutnyan, "Fed Permits Banks to Offer Bill-Paying Service for Savings Depositors September 2", July 29, 1975, pp. 1 & 11.
14. Ibid., p. 11.
15. "The Fed's Bill-Paying Regs", Bank Operations Report, October 1975, p. 8.

16. "Tone Encoder", American Banker, September 15, 1976.
17. Advertisement for "Transaction Telephone", AT & T.
18. Notes from Donald L. Wells, Marketing Management, AT&T, Morristown, N.J.
19. "Its Master's Voice: To a New Computer, Your Word is Law", Wall Street Journal, April 13, 1977.
20. Op. Cit., Arthur D. Little, p. 43.

III. MARKET ANALYSIS

Introduction

The key to introducing any new product or service is whether the market for it is sufficiently large to return a profit. The high failure rate of new products is often due to the fact that companies do not really know their markets. Until unsatisfied consumer needs are accurately identified and understood, there is little hope of introducing and positioning a new product successfully.

Bankers have traditionally been more interested in inventing new gimmicks with the hope of finding a buyer than they have been in determining whether the invention is something of honest value to the consumer. At times, they see the world myopically through the dynamics of profit and loss statements rather than through the eyes of their customers. Many argue that banks do not really know what "service" means. Technology will keep flowing from the inventors to the corporations to the trade magazines to the local street corners. But behind this machine, there may be a consumer who feels that the world is moving too fast. It is from the consumer's viewpoint, not the banks, that this chapter will be approached.

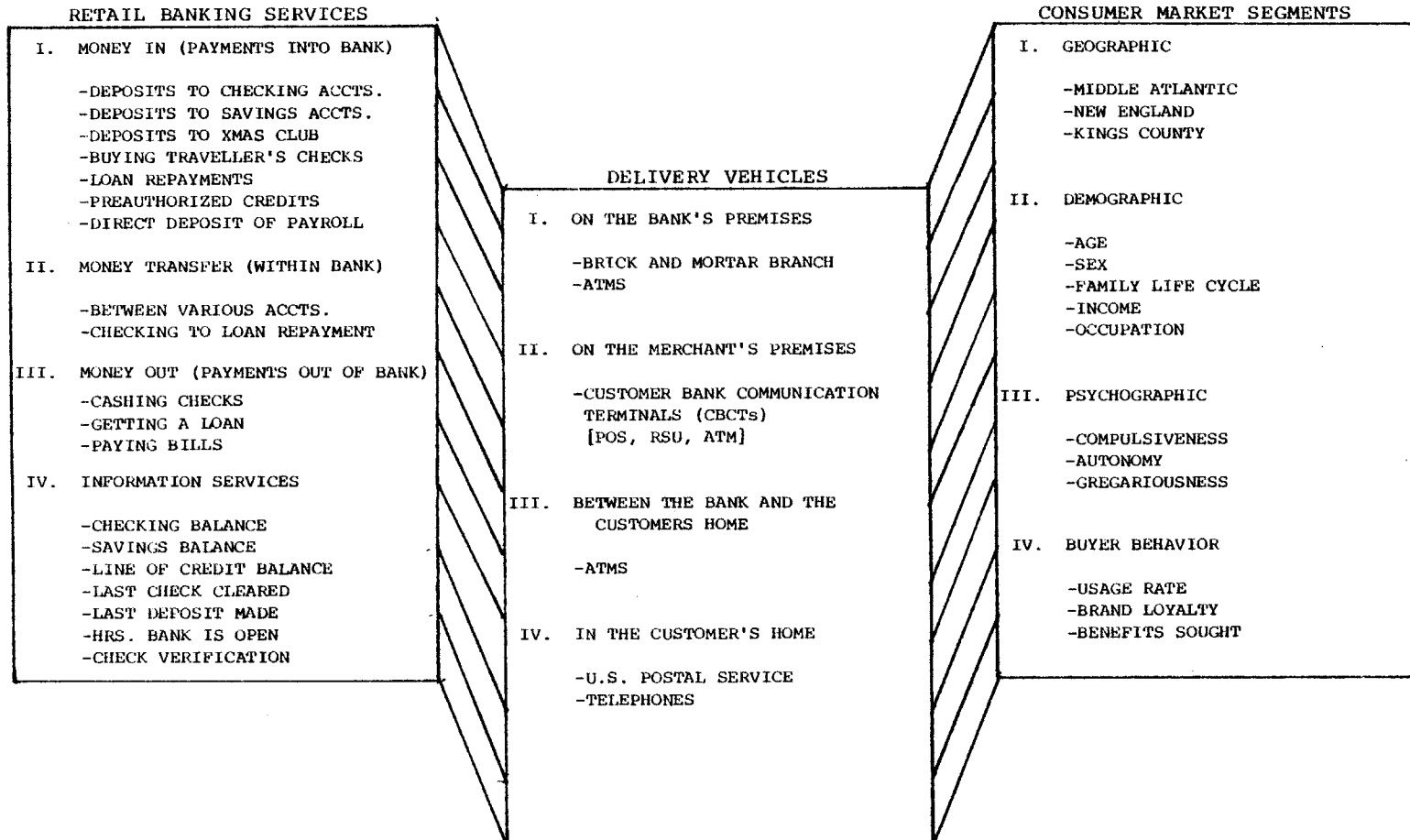
Are today's retail banking customers really satisfied with the service being provided or do they simply

believe that there are no meaningful alternatives? Some see banks as being impersonal, having inconvenient hours and requiring overly restrictive credit criteria.¹ They wait in long lines to hand a teller their deposit or to cash a check. They have trouble getting a local store to cash their checks. If they travel to another city, the chance of having a check cashed diminishes significantly. Certainly, there must be other ways to offer these consumers service that is both efficient and personalized.

It is clear that a TBP system, like other EFTS innovations, is simply a different means by which retail banking services are delivered to customers. The service itself is not changed since the merchant invoices are still getting paid either by check or telephone. All that is new is the vehicle which is being utilized to move funds from the customer's bank account to the merchant's bank account. The relationships between banking services, delivery vehicles and market segments is shown in Table 3-1 on the following page.²

While we have isolated bill-paying as one specific service, one can easily note the potential for cross-selling other services which could also be delivered by telephone. Examples may include: getting a loan, obtaining an account balance, or transferring funds between

TABLE 3 - 1



accounts. Each of these complementary services is being offered at the present time, however, the emphasis of this paper is on telephone bill-paying.

Paying Bills With Checks

Before one can argue effectively for a new way to pay monthly bills, it is necessary to highlight the sources of consumer satisfaction and dissatisfaction with using checks. By accurately outlining the dimensions of any fundamental consumer needs which are not currently being satisfied in using checks to pay bills, a foundation for recommending changes can be constructed.

Brand, Gruber, Stander & Co. carried out a series of interviews for the Monetary and Payment Systems (MAPS) committee in 1970 and found that:

The chief result among consumers is that there is no reason to depart from checks. First, checks are not regarded as inconvenient. The amount of labor is minor, the charges are relatively low, and the cost of stamps and envelopes is hardly considered.³

Many other studies have suggested that consumers are satisfied with using checks to pay bills. There is reason to believe, however, that these studies are ignoring one essential fact - consumers really do not have any meaningful alternatives. Before assuming that the bill-paying public is content with using checks, it is worth exploring the process more deeply.

During one year, assume an individual works 2,000 hours and earns \$15,000. This person's time is worth \$7.50 an hour. He probably writes three checks to cash at the bank, six to the drugstore or supermarket and eleven to pay his bills at home.⁴ He usually sits down in the evening or on a weekend to pay his bills and balance his checkbook. Since the bank statement comes once a month, he may not be sure that his balance is correct. If a statement has come recently, he may be off by 11¢ and may spend half an hour finding the problem. If he can't solve the problem, he may go to his local bank, wait in line and get an officer's assistance. Aside from a bit of confusion, embarrassment, and/or frustration, his problem is rectified.

The cost of an envelope does not bother him, assuming he can find one. The cost of a stamp has been rising steadily as shown in Table 3-2 below.⁵

TABLE 3-2

CHANGES IN FIRST CLASS MAIL RATES

<u>Date Changed</u>		<u>Time Between Changes</u>	<u>From</u>	<u>To</u>
	1886		?	2¢
	1944	58 years	2¢	3¢
	1958	14 years	3¢	4¢
March	1966	8 years	4¢	5¢
January	1968	1.2 years	5¢	6¢
April	1971	3.3 years	6¢	8¢
March	1974	2.9 years	8¢	10¢
December	1975	1.8 years	10¢	13¢

Source: Mailing Requirements Department
Main post Office
Boston, Massachusetts

A recent article in the Wall Street Journal stated:
"Despite a \$5 million surplus for the past 12 months,
the U.S. Postal Service still will need a rate increase
in 1978 to cover higher costs and future wage boosts,
Postmaster General Benjamin F. Bailar declared."⁶

Market research has shown that consumers still want
more convenient banking, better financial information,
more personal service, financial counseling and improved
record keeping services.⁷ There is certainly room for
improvement but before discussing the rationale for chang-
ing to telephone bill-paying, it may be helpful to outline
the consumer's basic needs.

TABLE 3-3
CONSUMER'S BILL-PAYING NEEDS⁸

<u>Need</u>	<u>Description</u>
Convenience	Anything that makes work easier increases comfort, or saves time.
Maintain Control	Choose <u>how</u> , <u>when</u> and <u>where</u> purchases are paid for.
Information	Accurate and timely data about transactions.
Proof of Payment	Documentation to confirm that a payment was made and received. It should also satisfy the IRS.
Human Contact	Financial transactions through people rather than computers.
No Errors	Customers do not want mistakes or accounting errors.
Security	Having personal finances safe from theft or fraud.
Privacy	From the IRS, credit rating organizations, bank employees, un-requested mail or phone calls.
Maximum Recourse	Against sellers of goods and services which have not met their expectations.
Autonomy	Feeling of making their own decisions.
Cost	They want honest value for the least possible cost.

Paying Bills by Telephone

The rationale for using telephones rather than checks is relatively simple. The telephone satisfies most of the consumer needs listed above equally as well as checks do. In two cases, however, the telephone offers a better deal for the consumer. First, convenience has been the primary factor in the customer's process of choosing a bank. It is primarily because of this that New York banks have been adding new branches at a frantic pace for the past five years. (See below)

GROWTH IN NYC BANK BRANCHES

Dec. 1970 - Dec. 1975*

	<u>12/70</u>	<u>12/75</u>
Citibank	200	250
Chase	163	226
Manufacturers Hanover	160	189
Chemical	147	256
Morgan Guaranty	6	8
Banker's Trust	95	113

*In January, 1976, State-Wide branching went into effect.

Source: Carmen Carlo; Director of Research; Office of the New York Superintendent of Banks.

In Table 3-1, many types of delivery vehicles were listed. Clearly, those that the consumer can access from his own home are more convenient. The telephone, as a vehicle to deliver retail banking services, is more convenient to the consumer than the local bank branch, the CBCT, or even the U.S. Postal Service. In fact, the telephone is so convenient that the art of letter writing has been all but lost.

The second consumer need which particularly supports telephones over checks is that of minimizing cost. With rising postal rates, unless a bill is paid in person, a telephone call will appear to be a money saving alternative.

There is no question that one could debate, for each consumer need listed earlier, as to whether the telephone or the check is a better alternative. Rather than become helplessly entwined in such a discussion here, it seems more appropriate to find out exactly how consumers themselves evaluate the tradeoff.

Survey Results

It does not make sense to superimpose the preferences of bill payers in various other markets onto the New York market. However, it is at least useful to review briefly, some of the market research which has been done throughout the country.

One consumer research study (Study A) was conducted through 1,001 telephone interviews with residents of a major metropolitan area. Telephone bill-paying was briefly described and the individuals were asked to rate the service as very desirable, fairly desirable, not very desirable, or not at all desirable.⁹ The results are listed in Table 3-4 on the next page.

The same respondents were then asked how likely it was that they would use this service if it were offered at their present bank. Table 3-5 presents a distribution of the responses to this question.

Another consumer research study (Study B) involved four groups of people in a market area offering telephone bill-paying. The four groups consisted of the following:¹⁰

- 25 customers of the institution who signed up for TBP.
- 25 who were not previously customers of the institution, who signed up for TBP.
- 25 customers of the institution who did not sign up for TBP.
- 25 who were not customers and who did not sign up for TBP.

There were 73 in this group who had rotary dial telephones and 27 who had Touch Tone phones. The findings from Study B can be found in Table 3-6.

TABLE 3 - 4

STUDY A FINDINGS

	<u>VERY DESIR- ABLE</u>	<u>FAIRLY DESIR- ABLE</u>	<u>NOT VERY DESIR- ABLE</u>	<u>NOT AT ALL DESIRABLE</u>	<u>DON'T KNOW</u>	<u>PER- CENTAGE BASE</u>
	<u>%</u>	<u>%</u>	<u>%</u>	<u>%</u>	<u>%</u>	
<u>TOTAL</u>	35	27	16	20	2	(1001)
<u>SEX</u>						
Male	34	26	16	22	2	(501)
Female	38	27	16	18	1	(500)
<u>EDUCATION</u>						
Less than high schl.grad.	48	16	10	25	1	(68)
High school graduate	38	25	16	20	1	(287)
Some college	31	29	20	18	2	(263)
College grad. or more	33	28	16	21	2	(371)
<u>AGE</u>						
18-24 years	46	31	15	8	*	(206)
25-34 years	31	30	18	20	1	(303)
35-49 years	36	26	19	17	2	(208)
50-64 years	29	23	14	31	3	(182)
65 years and over	35	15	14	33	3	(87)
<u>INCOME</u>						
Under \$10,000	36	30	16	17	1	(220)
\$10,000-\$14,999	33	24	23	20	*	(230)
\$15,000-\$24,999	42	27	14	15	2	(247)
\$25,000 and over	32	26	17	23	2	(133)
<u>MARITAL STATUS</u>						
Single	38	31	13	17	1	(321)
Married	33	26	18	21	2	(570)
Other	35	19	17	26	3	(110)

*Less than .5 of 1%

Source: Telephone Computing Services, Inc.

TABLE 3 - 5

STUDY A FINDINGS

	<u>VERY LIKELY</u>	<u>FAIRLY LIKELY</u>	<u>NOT VERY LIKELY</u>	<u>NOT AT ALL LIKELY</u>	<u>DON'T KNOW</u>	<u>PER- CENTAGE BASE</u>
	%	%	%	%	%	
<u>TOTAL</u>	30	21	19	27	3	(1001)
<u>SEX</u>						
Male	29	20	19	29	3	(501)
Female	33	22	19	24	2	(500)
<u>EDUCATION</u>						
Less than high schl.grad.	32	21	12	34	1	(68)
High school graduate	31	21	17	28	3	(287)
Some college	30	23	19	26	2	(263)
College grad. or more	31	19	21	26	3	(371)
<u>AGE</u>						
18-24 years	36	31	17	16	*	(206)
25-34 years	30	19	22	26	3	(303)
35-49 years	37	18	17	26	2	(208)
50-64 years	26	18	17	35	4	(182)
65 years and over	24	14	18	39	5	(87)
<u>INCOME</u>						
Under \$10,000	28	27	18	25	2	(220)
\$10,000-\$14,999	26	23	20	29	2	(230)
\$15,000-\$24,999	39	20	17	21	3	(247)
\$25,000 and over	34	17	20	26	3	(133)
<u>MARITAL STATUS</u>						
Single	29	29	18	22	2	(321)
Married	32	17	19	28	4	(570)
Other	30	16	20	33	1	(110)

*Less than .5 of 1%

Source: Telephone Computing Services, Inc.

TABLE 3-6

STUDY B FINDINGS

I. Respondents signing up for Pay-by-Phone:

- 48% took a week to decide to subscribe
- 28% took a week or more; 24% took a month or more.
- two benefits attracted them:
 - . 90% liked convenience
 - . 92% liked 5¼% interest
- new customers to the institution recommended service to friends while previous institutional customers did not.
- 64% expected their usage of the service to increase
- wanted to see more payees (there were over 500 on the service)
 - . 62% mentioned utilities
 - . 48% mentioned stores
 - . 26% mentioned banks

II. Respondents not signing up for Pay-by-Phone:

- all were aware of Pay-by-Phone:
- did not feel a strong need to change current habits
 - . like writing their own checks
 - . like their present banking arrangement and don't need another bank
- also felt there were not enough merchants in the service
- 60% see Pay-by-Phone as the coming way to bank
- might subscribe if they could:
 - . pay all their bills (50%)
 - . didn't have to worry about mistakes (46%)
- thought service was best for:
 - . people who can't get out (88%)
 - . businessmen with lots of bills (70%)
 - . people who want to save every nickel (56%)

TABLE 3-6 (continued)

III. Other Findings:

- bill paying has negative attributes for:
 - . highly affluent who feel it is a chore beneath their productive and creative ability
 - . truly poor who cannot pay bills
 - . compulsive buyers who feel guilt when paying bills

- bills are paid in two ways:
 - . methodically and ritualistically once or twice a month
 - . part of bills paid ritualistically, and others randomly to avoid interest charges or until funds accumulate

Finally, another consumer research study (Study C) conducted by a nationally known research organization, involved interviews with 400 randomly selected shoppers in two major shopping centers.¹¹ First, the concept of TBP was explained and then the respondents were given a chance to perform the telephone banking transactions by calling a TBP demonstration number.

The findings from Study C included the following:

- 77% Said they would be interested in the TBP service.
- 61% Preferred a monthly service charge instead of a per transaction charge.
- 93% Preferred TBP tied to their checking accounts instead of savings accounts.

Since various market areas can be so different in their acceptance of new products or services, the remainder of this chapter will be devoted to market research done in the New York Metropolitan area.

One of the problems in researching the market for a product or service which the respondents are unfamiliar with is that they have no first-hand experience from which to judge. For this reason, any study interviewing those who have tried TBP, either by opening an account or by trying a demonstration, has greater credibility.

The last study to be discussed in this chapter, except that which we conducted ourselves, involves 200 adults having both checking and savings accounts (Study D). These people were interviewed, by a market research firm, in their homes, in-person. They lived in Manhattan, Queens, Bronx, Brooklyn, Nassau and Westchester. Half were male and half female. The respondents were exposed to a written concept of TBP and then asked to use their telephones to make the transactions. Finally, diagnostic attitudinal data was asked. By matching the respondents' interest in the concept and their willingness to open an account with several attitudinal statements, the data in Table 3-7 was generated.¹²

Our Survey

The methodology for our consumer survey (see Appendix III) can be explained as follows. We identified three segments of the New York market which were of primary interest: individuals, small businesses, and professionals. The small business segment is appealing because, in the state of New York, thrift institutions cannot accept deposits from profit-making organizations. In addition, small businesses would most likely maintain higher average balances than individuals. Similarly,

TABLE 3 - 7
 STUDY D FINDINGS
 (NY METROPOLITAN AREA)

RATINGS ON ATTITUDE STATEMENTS - BEFORE TRIAL (RATINGS REPRESENT THE PERCENT OF RESPONDENTS WHO SAID "AGREE COMPLETELY" OR "AGREE SOMEWHAT.")

	<u>INTEREST IN CONCEPT</u>				<u>NOT AT ALL</u>	<u>WILLINGNESS TO OPEN ACCOUNT</u>	
	<u>TOTAL</u>	<u>EX- TREMELY</u>	<u>VERY</u>	<u>SOME/ SLIGHT</u>		<u>WOULD OPEN ACCOUNT</u>	<u>WOULD NOT OPEN ACCOUNT</u>
BASE: Total Respondents	(202)	(24)	(32)	(73)	(71)	(77)	(123)
<u>Attitude Statements</u>							
I enjoy using the telephone	56%	62%	66%	52%	52%	58%	54%
Computers seldom make mistakes	18	4	34	14	20	16	20
I prefer to use the telephone	32	54	53	30	18	48	22
I'm afraid to conduct financial business on the phone	38	21	28	42	44	26	46
I like to see who I'm talking to when I conduct business	61	25	31	67	76	42	73
Computers are only as good as the people who work them	88	86	84	90	86	91	87
There is no way to avoid using computers to take care of your business	45	67	62	45	30	64	33
I wouldn't mind talking directly to a computer	28	46	44	27	17	47	17
Personal service will never be able to come back and replace computers	34	38	31	36	34	35	34

the professionals are probably more interested in their field of law, medicine or architecture than in the process of paying bills. Those with the greatest number of bills to pay would also stand to gain convenience from the TBP service. Throughout the country, the responses we received from those now offering TBP indicate that the mean average distribution among individual, small business and large company TBP accounts is:

Individuals	94%
Small Businesses	5%
Large Companies	1%

It is obvious that the segment of individuals has the greatest number of TBP accounts, but we do not know how the TBP deposit base is distributed among these three segments.

Since we would expect the greatest number of TBP accounts to be opened by individuals, this segment was selected for our survey. It should be noted that the market segment of individuals could be separated into those currently having an account at the bank proposing to offer the service and those not having an account there.

Names of 100 individuals were randomly selected from telephone directories and the following distribution of telephone calls resulted:

Manhattan	31
Brooklyn	30
Queens	14
Staten Island	14
Bronx	<u>11</u>
	100

While the survey was designed for both users and non-users of TBP, we did not expect to reach any users. There are currently only 1,400 individuals in the New York area using a TBP service. These users all have accounts at the Greater New York Savings Bank, the only New York City institution now offering TBP. We gave the "user" portion of our survey to the Greater and asked them if they would be willing to have an independent market research firm complete telephone interviews with 50 of their TBP customers. Understandably, they declined to participate. Consequently, all respondents to our survey had never opened a TBP account.

There were 12 objectives for this survey. It was to determine the:

- . Level of awareness (unaided & aided)
- . Source of awareness
- . Perceived desirability of service
- . Likelihood of opening a TBP account
- . Ratings of TBP attributes

- . Perceived benefits or advantages of service
- . Perceived problems or disadvantageous of service
- . Pricing tolerances
- . Preferred mode of pricing
- . Preference between commercial and savings bank for service
- . Preference between checking account and savings account for service
- . Personal demographics

The results will now be reviewed briefly. First, the level of awareness was surprisingly high:

. unaware of TBP	28%
. aware of TBP with aid	34%
. aware of TBP without aid	38%
	100%

For those who were aware of TBP, either with or without aid:

. unaware of the Greater's "Tellerphone"	57%
. aware of the "Tellerphone" with aid	32%
. aware of the "Tellerphone" without aid	11%
	100%

Those who were familiar with TBP cited the following sources of awareness (more than one source is possible):

T.V.	64%
Newspaper	19%
Radio	18%
A friend	3%
Other	10%

Table 3-8 on the following page shows the perceived desirability of a TBP service by demographic category.

When the respondents were asked how likely it was that they would open a TBP account, if it was offered at their present bank, they answered:

Very likely	21%
Fairly likely	25%
Not very likely	23%
Not at all likely	21%

One of the more interesting survey questions asked the respondents to rate eight different TBP attributes as to how important they were to them on a scale of one to four. One meant very important, and four meant not at all important. The results, in descending order of importance, were:

Convenience	1.58
How simple it is to operate	1.60
Control over your personal finances	1.60
Whether it is cheaper than writing checks	1.74
The interest paid on a TBP account	1.87
Number of places you can pay	2.01
Confidentiality and privacy	2.01
The hours that it is available	2.20

TABLE 3 - 8

CONSUMER SURVEY FINDINGS

	<u>VERY DESIRABLE</u>	<u>FAIRLY DESIRABLE</u>	<u>NOT VERY DESIRABLE</u>	<u>NOT AT ALL DESIRABLE</u>	<u>DON'T KNOW</u>	<u>PERCENTAGE BASE</u>
<u>TOTAL</u>	28	32	20	18	2	(92)
<u>SEX</u>						
Male	31	39	19	8	3	(36)
Female	28	24	20	26	2	(54)
<u>EDUCATION</u>						
Not high school grad.	20	50	10	20	0	(10)
High school grad.	26	29	24	18	3	(34)
Some college	35	25	15	20	5	(20)
College grad. or more	25	32	25	18	0	(28)
<u>AGE</u>						
Under 15	0	0	0	0	0	(0)
15-24	33	33	22	12	0	(9)
25-34	33	33	25	9	9	(24)
35-44	15	35	40	5	5	(20)
45-64	35	31	12	22	0	(26)
65 +	9	9	9	64	9	(11)
<u>INCOME</u>						
Under \$7,500	16	32	10	42	0	(19)
\$7,500-\$15,000	29	32	29	7	3	(28)
\$15,000-\$37,500	9	12	8	4	1	(34)
\$37,500 +	3	2	1	2	0	(8)
<u>MARITAL STATUS</u>						
Single	38	29	24	5	4	(21)
Married	20	42	22	14	2	(50)
Other	30	15	15	40	0	(20)
Now have an acct. at a commercial bank	24	26	18	17	0	(85)
Now have an acct. at a thrift institution	21	26	11	16	1	(75)

There was a variety of replies to our open-ended question, "What do you see as the greatest advantages or benefits to using a telephone bill-paying service?" The most valuable aspect of these replies is that they are completely spontaneous. If two different respondents mentioned that same benefit, they did so without a prompt. Table 3-9 summarizes perceived benefits and advantages while Table 3-10 presents problems and disadvantages.

If both a commercial bank and a thrift institution offered telephone bill-paying our respondents would prefer to use the TBP service at the:

Commercial Bank	49%
Thrift/Savings Bank	35%
Doesn't Matter	<u>16%</u>
	100%

We then asked, "assuming that you had both a checking account and a savings account and that you could transfer money between these accounts, would you prefer to pay your bills by telephone out of a checking account or a savings account?" The results were:

Checking Account	63%
Savings Account	22%
Doesn't Matter	15%

TABLE 3-9

PERCEIVED BENEFITS & ADVANTAGES

I. Benefits Mentioned By More Than One Respondent:

- Convenience (34)
- Saves time (21)
- Easy/easier (15)
- Saves money/postage (7)
- Simple (4)
- Saves going to bank (2)

II. Interesting Comments

- "Avoids writing and mailing checks"
- "Cuts paper work I have to do"
- "All you do is just pick up the phone"
- "If you're lazy, you don't have to move"
- "Good for senior citizens, blind, disabled, shut-ins, and people who are confined"
- "It's easy...like having a private secretary"
- "Good for high volume check writers."
- "Easier to organize"

TABLE 3-10

PERCEIVED PROBLEMS & DISADVANTAGES

I. Problems Mentioned by More Than One Respondent:

- Mistakes and errors in general (11)
- No cancelled checks (6)
- Limited number of payees (6)
- Safeguarding the code number from others (6)
- Must keep records for both TBP and checking account (5)
- Have to wait a month to find out what happened (4)
- Mistakes by the bank (4)
- Dealing with a computer (4)
- Incompetent tellers (3)
- Statement errors (2)
- Errors by me are hard to fix (2)
- Impersonal/automation: No human contact (2)

II. Interesting Comments:

- "Don't trust banks"
- "You don't really know who you're talking to"
- "You can't pay all your bills"
- "Not having an immediate receipt"
- "You can't bargain/haggle"
- "You wouldn't feel like you really paid the bill"

In a recent list of financial institutions offering TBP, it was reported that five out of thirty were tying it to a checking account while the other twenty-five tied it to a statement savings account. However, most of these cases involve thrifts which are unable to offer checking accounts.

It is also interesting to note that in one of the consumer research studies (Study C) discussed earlier, "93% of those interviewed preferred TBP tied to their checking accounts instead of savings accounts."

These findings suggest that when consumers think of paying their bills, they think of not only checks, but commercial banks and checking accounts. From this, one might infer that the commercial banks will enjoy a distinct advantage over the thrifts in competing for new TBP deposits.

Although various pricing strategies for this service will be briefly discussed in the next chapter, it is certainly desirable to test the market's reaction to several alternatives. Unfortunately, since the respondents have never used a TBP service, the usefulness of their input will be limited.

There was an even split between those preferring a monthly charge and those preferring a fee per telephone call with 52% and 48% respectively. This might

indicate that an option to pay either for each call or one monthly charge would be well received.

If a monthly charge was the only alternative, the respondents would Pay:

\$10.00/month	(7%)
5.00	(7%)
3.00	(17%)
2.00	(13%)
1.00	(13%)
Nothing	(43%)

Finally, when asked how they felt about the process of paying bills, those being interviewed replied by saying:

I enjoy it	(10%)
I don't mind it	(55%)
I dislike it	(22%)
I hate it	<u>(5%)</u>
	100%

Sources of Appeal

There are four aspects of the TBP service which respondents find most appealing. They are listed here in decreasing order of importance:

- Convenience
- Saves time
- Easy/simple
- Saves money/postage

Convenience was emphasized by many as the primary source of TBP's appeal. Only ten percent of those interviewed actually enjoyed the process of paying their bills and more than 25% either disliked it or hated it. The bill-paying public has a need for a better alternative, such as TBP. Consumers have a desire to lessen their workload and make their lives more comfortable. The telephone is seen as a vehicle which can save them a trip to the post office.

Time is important to customers. They see the long teller lines as a nuisance and a waste of their time. The TBP service is perceived as a time-saver. No checks have to be written, no stamps need be used, no trips out of the house are necessary.

Simplicity is one of the consumer's most important needs and probably one of the least satisfied. Advertisements, regulations, procedures and explanations

leave today's retail banking customers baffled and confused. Banks of all types and sizes are seen as unflexible and impersonal. It is essential that any new service be simplified as much as possible for the consumers. If a new service appears uncomplicated, it has a greater chance to succeed.

Finally, almost all consumers are somewhat price concious. In this regard, they are quick to evaluated the new service as an alternative to checks. Postal costs essentially constitute all of the perceived cost of paying a bill by check. Those that we interviewed rarely considered the cost of their time or other indirect costs. Consequently, they believe that the present cost of paying one bill is 13 cents.

Sources of Resistance

There are six aspects of the TBP service which our respondents felt concerned about. In decreasing order of concern, they are:

- Mistakes and errors
- No cancelled checks
- Limited number of payees
- Safeguarding the code number from others
- Record keeping complications
- Computers and automation: No human contact.

The potential for mistakes and errors is perceived as the greatest problem to having a TBP account. Respondents felt that when they wrote out a check and mailed it to pay a bill, there was relatively little chance for mistakes or errors. If bills are paid by telephone through a third party or middleman such as a bank, there appears to be a greater potential for mistakes. The tellers may enter the wrong number on a CRT or the monthly statements may have errors in them. One of the respondents' greatest concerns about the potential mistakes was that it takes time to correct them. This possible aggravation seems to act as a deterrent. Essentially, these people believe that both human beings and computers can make mistakes. Why increase the chance for errors by adding a third party to the bill-paying process?

Cancelled checks have been used by consumers for many years as a legal record showing proof of payment. Respondents felt confident that the Internal Revenue Service (IRS) would accept their checks as such a legal record. A monthly TBP statement does not provide these customers with their own written authorization to transfer funds nor does it show the recipient's signature. They are also not yet convinced that the IRS will accept the TBP statements as proof of payment.

Checks can now be used to pay any institution, organization, clinic, association or, individual that one would conceivably want to pay. They are seen as a versatile instrument in today's payments system. The TBP service, however, has been set up to only pay high volume payees in most cases. The consumer is puzzled because TBP is then seen as a poor alternative to checks. Why should they sign up for an alternative that does not satisfy their need to pay anyone that they choose to pay?

A fourth category of consumer resistance involves the consumers' need to safeguard their personal identification number (PIN) from others. This issue is related to the broader concerns for security and privacy. Respondent's expressed a need to protect themselves against others who may fraudulently gain access to their bank accounts.

The records which a consumer must keep now for their checking or savings accounts could certainly be modified to accommodate a TBP account. However, there is a belief that the TBP account would require a new set of records to be kept. This anxiety could be easily overcome with a well designed register and a minimal amount of promotion.

Finally, the sixth source of consumer resistance to TBP involves people's preference for transacting business with another human being instead of a machine. Some respondents to our telephone survey did not like the prospect of dealing with a computer. For them, the impersonal nature of the automated TBP service is disturbing.

Potential Market Size

Table 3-9 shows the total number of occupied housing units in each of the nine counties which comprise the greater New York Metropolitan Area.¹³

TABLE 3-9

Occupied Housing Units in NYC

	<u>Occupied Housing Units</u>
NYC Counties:	
Bronx	497,000
Brooklyn (Kings)	876,000
Manhattan (NY)	687,000
Queens	690,000
Staten Island (Richmond)	<u>86,000</u>
Sub-Total:	2,836,000
Other Counties in NY Metropolitan Area:	
Nassau	401,000
Rockland	60,000
Suffolk	296,000
Westchester	<u>283,000</u>
Sub-Total:	1,040,000
Grand Total:	3,876,000

If we assume that about 90% of all occupied households in this market area have at least one account at a New York commercial bank, the market size would be reduced to 3,488,400.

From the consumer telephone survey, the following figures indicate the likelihood of TBP accounts being opened. For each category, we have estimated the percent that might actually open an account.

Very likely	21%	(.7) =	14.7%
Fairly likely	25%	(.5) =	12.5%
Not very likely	23%	(.3) =	6.9%
Not at all likely	21%	(.1) =	<u>2.1%</u>
Total			36.2%

If the forecasted market size is now reduced to 36.2%, it would be 1,262,800.

By December, 1976, there were 11 financial institutions that had offered TBP for longer than one year. By applying the same methodology described above to the nine of these that completed our survey, we found that the mean average penetration in their respective markets was 5.65% in the first year of operation. This reduction in the New York market would leave 71,350 potential accounts.

If the market shares of the major New York banks remained relatively unchanged, due to most of them offering TBP at approximately the same time, it is fair to expect somewhere between 15,000 and 20,000 during the first year. It should be noted that those estimates are unusually conservative.

Market Growth Rate

In forecasting the potential market size above, there were many assumptions made. These same assumptions will be used in estimating the market growth rate.

Briefly, they include:

- TBP service specifications
- Geographic market area
- Marketing environment (legal & technological)
- Marketing program (price, promotion, distribution)

Most of the people we interviewed found their market growth to be essentially linear. We have made the same assumption in our forecasts.

Everett Rogers has discussed the process by which new ideas spread throughout the marketplace in his Diffusion of Innovation.¹⁴ He has formulated four propositions to explain the process by which people accept new ideas.

TABLE 3-10

Everett Rogers' Propositions

I. The Individual consumer goes through a series of stages of acceptance in the process of adopting a new product.

- Awareness
- Interest
- Evaluation
- Trial
- Adoption

II. People differ markedly in their penchant for trying new products. They can be categorized by the amount of time that it takes them to adopt the innovation.

- Innovators (2.5%)
- Early adopters (12.5%)
- Early Majority (34%)
- Late Majority (34%)
- Laggards (16%)

III. Personal influence plays a very large role in the adoption of new products.

IV. The character of the innovation itself affects the rate of adoption. The following product characteristics are particularly influential:

- Relative advantage over previous ideas.
- Compatability with consumers values and experiences
- Complexity: How difficult to understand and use.
- Divisibility: Can it be tried on a limited basis?
- Communicability: Are results observable and describable.

A product's design and promotion can be altered to accelerate its rate of adoption with respect to the five characteristics listed above.

Summary

The telephone can be utilized by banks as a vehicle through which banking services can be delivered to the customers home. There are several sources of satisfaction and dissatisfaction with paying bills by check. In fact, it is possible to outline the consumer's basic bill-paying needs so that the check and the telephone can be accurately compared.

Several consumer research studies have shown that TBP has a relatively broad appeal. Our telephone survey in the New York market indicates that 72% of the population is aware of TBP. About 46% of our sample mentioned that they would be likely to open a TBP account if it was offered at their present bank. Convenience, simplicity, control over finances, and cost are the most important TBP features to consumers.

The perceived benefits and problems were briefly reviewed and synthesized as sources of appeal or resistance.

The market demand for TBP was estimated to be between 15,000 and 20,000 accounts for a major New York commercial bank per year.

Finally the general process of encouraging a market to adopt an innovation was examined through the framework developed by Everett Rogers.

FOOTNOTES

1. Peter Gray, "The Benefits to Consumers of EFTS", Citibank N.A., March 29, 1976.
2. Philip Kotler, Marketing Management, Second Edition, Prentice Hall, Englewood Cliffs, New Jersey, 1972, p. 170; and conversations with Robert G. Stemper, AVP, Citibank N.A.
3. Arthur D. Little, "The Consequences of Electronic Funds Transfer", Cambridge, Massachusetts, June 1975, p. 45.
4. Op. Cit., Peter Gray.
5. Mailing Requirements Department, Main Post Office, Boston, Massachusetts.
6. "Postal Chief Sees Need for Rate Rise Despite Surplus", The Wall Street Journal, April 20, 1977.
7. Op. Cit., Peter Gray.
8. Op. Cit., Arthur D. Little, p. 44.
9. "General Marketing Document", Telephone Computing Services, Inc., permission from William Koenig, Seattle, Washington.
10. Ibid.
11. Ibid.
12. "A Report on a Concept Test of Telephone Banking," Citibank N.A., November 1975, p. 20.
13. "1970 Census of Housing", U.S. Department of Commerce, Bureau of the Census, New York State.
14. Everett Rogers, Diffusion of Innovation, The Free Press, New York, 1962.
15. Ibid.

IV. REVENUE CONSIDERATIONS

Basically, the revenue generated from a TBP account can come from two sources: earnings on the newly acquired deposits, and fees charged to the customer and/or the merchant. The earnings on the deposit base will depend on the net interest margin that can be earned, which itself is a function of the investment rate and the interest rate paid on the account. The fees charged can be per transaction or a flat fee for a specified time period with unlimited use of the service during that period. In addition to these readily quantifiable variables, many indirect qualitative benefits may accrue to the financial institution.

Earnings on the Deposit Base

To determine the net interest margin on the telephone account, one needs to calculate the difference between the interest rate earned on the deposit base and the interest rate paid on the deposit base. The interest rate earned, or investment yield, will be identical, on the average, to yield on other deposits within the institution. Thus, this figure should be easily accessible to any bank considering implementing a TBP service.

The interest rate paid on the telephone account is a discretionary variable. The extremes are either in-

cluding the TBP service as part of the existing checking account and not paying any interest or including the service as part of the existing savings account and paying five percent to the depositor. Alternatively, the TBP service could be offered as a separate account, yielding an interest rate of anywhere from zero to five percent.

Most of the thrift institutions who replied to our survey are paying 5-1/4 percent on their telephone accounts - the legal limit. One would assume that any bank attempting to initiate its own TBP service in any of these markets would have to be competitive and offer the same rate. However, this need not be the case. Non-interest bearing checking accounts have been able to survive the challenge presented by interest bearing savings accounts with third-party payment capabilities, such as the NOW account. Thus, to determine the net interest margin, the bank simply takes the difference between the investment yield and interest rate they decide to pay on the account featuring TBP as a service. This margin is then applied to the deposit base to arrive at the earnings on the deposit base. However, what deposit base is used?

The deposit base can be divided into two categories by source of funds: funds from depositors previously holding accounts with the bank and funds from depositors

previously with other financial institutions. In the first case, the depositor has merely transferred funds from one account within the bank to another - no new deposits have accrued to the bank. In this situation, one must compare the interest rates paid on each account to determine if revenue will be affected. For example, if the depositor transfers funds from his checking account, which pays no interest, to the new telephone account, which also pays no interest, then the net effect on revenue to the bank is zero. (Note: We are only considering the net interest margin, here - potential fee charges are ignored for the moment). On the other hand, if the depositor transfers funds from his savings account, which pays 5 percent interest, to the non-interest bearing telephone account, then the bank receives a 5 percent net gain on that money. Similarly, if the telephone account pays 5 percent interest and the depositor transfers funds from his non-interest bearing checking account to the new telephone account, then the bank suffers a 5 percent loss on those funds.

The second case is of more interest to the bank offering TBP - funds from depositors previously holding accounts with other financial institutions. Here is where the bank offering the service stands to gain and the other institutions stand to lose. The potential

exists here to significantly change the bank's market share. Nancy Grant of the U.S. League of Savings Associations cites several factors to be kept in mind when evaluating the deposit acquisition potential:

- 1) Being first in the market and continuing to have an exclusive in the market means that the bank would be able to draw on the entire market area for customers interested in the service. If competitors also offered the service, the market for this service would then be shared and the deposit acquisition potential for each institution would be more limited. Ultimately, if everyone offered the service, no further change in market share would be likely.
- 2) The service may not appeal to all customers. For example, some depositors may be willing to subscribe to a telephone transfer service but have no interest in converting to a telephone bill-payment service.
- 3) Different opinions exist concerning the size of the market for this service. The Farmers & Mechanics Savings Bank, with its heavy promotion of the service, has shown substantial, steady growth in the number of Pay-by-Phone accounts without any clear sign of a slowdown in growth. On the other hand, Booz, Allen & Hamilton in their study for the United States League of Savings Association commented that, based on their consumer surveys - "This service is perceived as requiring a greater change in habits than others, which leads to greater resistance to its use."

- 4) The concept of perceived utility has apparently been a factor in motivating customers to sign up for the service. As of August, 1975, about 50 percent of the Pay-by-Phone accounts at the Farmers & Mechanics Savings Bank do not use the service during any given month. If the service is not used, these customers may eventually be attracted to other institutions because they perceive more utility in the offerings of a competitor institution, for example, convenience of office location.

Fees

Most banks currently offering TBP as a service are charging fees to the customer. These fees are charged on a per transaction basis and/or on a monthly basis. Some of the banks, however, are not charging any fees for use of the service.

The Hollywood Federal Savings & Loan Association is an example of a bank offering TBP without charging any fees. The bank felt that charging a service fee might discourage potential users. They feel that the service charges would only cover a small percentage of the transaction cost (assuming a fee of 10 or 15 cents per transaction). In addition, some of the other financial institutions in their market are offering checking accounts that do not impose service charges. Since Hollywood Federal is marketing the TBP feature as a primary deposit account and a replacement for the checking account, they desire to be competitive and also not charge any fees.

Other institutions feel that not charging a service fee is a less than desirable approach. One bank charges the customer 15 cents per payment. Their philosophy is to communicate the value of their service by the amount they charge. Thus, since 13 cents per payment is the cost of postage to pay a bill, the customer is only paying two cents per payment for the convenience of the bank handling the paper work. An executive with this bank feels that this issue is part of the reason for the poor quality of one bank's service, especially in their particular case, where the system is highly labor intensive - "no charge is ridiculous. If they knew their costs, they would charge."

If the institution decides that charging a service fee is appropriate, the next step is to choose between a per transaction fee or a flat monthly fee. The majority of the banks currently offering the service that do charge a fee are doing so on a per transaction basis. One bank charges ten cents per transaction, hoping to eliminate all the \$50.00 average balance accounts of those individuals who do not look beyond the ten cent fee. Howard Phillips, believes that the "proper method of pricing would be to have a transaction charge of say 10 to 15 cents, with possibly a small minimum charge,

so the subscriber would pay only for the amount of time he was connected to the system."

Assuming a per transaction fee is chosen, then an appropriate amount must be decided upon. Currently, banks are charging 10 or 15 cents per transaction. Many choose this range with the intention of marketing it to the potential customer as comparable to the cost of a postage stamp. The Dollar Savings Bank charges ten cents. When the postage rates went up to 13 cents, the bank initiated a campaign called "Stamp out 13 cents," which was disturbing to the postal officials. (The senior assistant postmaster has told a federal commission that since the postal service derived almost half of its revenue from delivering bills and payments, the EFTS third-party transfer services could eliminate the service as a middleman and thus deprive it of a fair amount of income. As a result, the Postal Service is now thinking about creating its own electronic payment system). Another bank introduced its telephone account with a ten cent transaction fee and later raised it to 15 cents, for the simple purpose of raising more revenue. As the executive stated, "400,000 transactions translates into \$20,000 additional revenue." Further, he believes that the 15 cent fee is not too high. If his bank were starting up the service

today, he would do more extensive research into the pricing aspect.

On the other hand, some institutions are charging the customer a monthly fee. One bank feels that this approach encourages transaction usage. If the monthly fee is \$2.00, then the customer's first payment of the month credits him \$2.00, and the rest are free - once the customer makes that first payment, he's into it. From the bank's point of view, entering a monthly charge to the customer's account is much simpler than entering a service charge everytime a transaction is made.

To date, no bank offering a telephone account has charged the merchant. Merchant acceptance is essential to securing customer acceptance - they could not risk scaring away the merchants by charging them any sort of fee. Currently, however, some banks are considering the potential for charging the merchant. Transfer Systems, Inc. summarizes the benefits to the merchant:

- 1) Guaranteed funds because the funds are withdrawn from the customer's account before the merchant is paid.
- 2) Convenience of the service promotes prompt payment of the merchant's bills.
- 3) Accuracy of payment record data: hard copy list of customers making payments including their account numbers, names, and amount of payment.

- 4) Reduction of labor paperwork because the merchant receives one combined list for all payments.
- 5) Reduction of items lost in the mail, unsigned checks, and insufficient funds.

Thus, revenue can be generated by charging fees to the customer and/or merchant. These charges can be either per transaction or per month.

V. COST CONSIDERATIONS

The costs associated with a TBP service can be divided into three major categories: initial investment, operating costs, and cost savings. Initial investment and operating costs encompass all expenses incurred in offering a TBP account. On the other hand, cost savings include the check processing costs previously incurred by the bank, but now displaced by the TBP service.

Initial Investment

The initial investment includes the system hardware, system software, voice response unit, CRTs, management administration time, and promotional expenses.

The system hardware and software requirements of a financial institution will be a function of the existing computer systems, the degree to which the TBP service will be automated, and the number of accounts to be serviced. A financial institution already possessing a well-developed systems division with excess processing capacity might need little additional hardware to support the operation. The excess capacity of the existing system could possibly take on the marginal demands on the TBP service. On the other hand, an institution already operating at full capacity or having a minimal level of system hardware will require a greater investment. Our

analysis assumes that all hardware necessary to support the TBP service must be purchased as initial investment.

Based on our forecasted volume levels, the system should be able to support up to 100,000 accounts by the fifth year of operation. Further, we recommend that the voice recording units be operational from the start and that the voice-activated recording devices be operational at the start of the third year. The system must be able to handle both of these peripherals. William Koenig of TCS has advised us that a DEC 11/70 will adequately meet these requirements.

The system software may be developed internally or contracted out to an independent organization. Currently, several firms are in business as consultants to specifically assist financial institutions in planning and implementing TBP - Telephone Computing Services, Inc. (TCS), Transfer Systems, Inc. (TSI), and Payment and Transfer Services, Inc. (PATSI). Our survey has shown that 53% of the banks fully developed their system software through in-house systems personnel, and 35% through outside firms. A financial institution needs to consider the capabilities of internal resources and the constraints in deciding where to turn for software development.

Touch Tone telephone owners may directly access the TBP system if a voice response unit (VRU) is implemented. The VRU will moderate personnel costs, as no CRT tellers or supervisors are required for direct interaction between the Touch Tone telephone and the computer system. In determining how many voice response units will be needed, one should consider the percentage of projected incoming calls made through Touch Tone telephones. Another determinant is the frequency distribution of the incoming calls - the system must be capable of supporting the periods of peak load.

For those calls not made through a Touch Tone telephone, CRT terminals will be needed for the teller to input the transaction data into the system. At least one CRT will be needed for each teller. Our analysis assumes that a CRT may either be purchased for \$3000 or leased for \$500 per year.

During the initial phases of planning and implementation, a manager will be needed to administer and coordinate the effort. The individual fulfilling this job description will probably already be employed at the bank, but the time allocated to the TBP service must be charged accordingly. Our assumption is that the manager will be needed full-time for a period of eight months.

The final component of the initial investment is promotional expenses. This expense will be a function of the customers previous awareness of TBP. If a financial institution is the first in the market area to offer TBP, then customer awareness will probably be minimal and a greater promotional effort will be needed. However, in the New York metropolitan area, the Greater New York Savings Bank is already offering a TBP service, called the Tellerphone. The Greater's promotion has already begun to build customer awareness, and a competitor entering into the same market will be able to spend less on building awareness and more on distinguishing its own TBP account from the Tellerphone account.

The costs of initial investment that have been itemized above will be capitalized and then amortized over a seven year period.

Operating Costs

The operating costs are the annual expenditures incurred to operate the TBP system. These costs are comprised of the amortization of the initial investment, additional hardware and/or software, hardware maintenance, personnel, advertising, telephone charges, postage, forms, supplies, and overhead.

Annual maintenance will be required for the system hardware. We assume the annual expense to be six percent of the initial investment, based on advice from TCS. In addition to maintenance costs, additions to the system may be needed as increased capacity is required. As account and transaction volumes increase, the demands on the system will correspondingly rise. Additional central processors, supporting peripherals, CRTs, and answering devices may be needed. More specifically, we recommend implementing the voice-activated recording device at the beginning of the third year. This will be a one-time annual expense for year three.

Personnel expenses account for the majority of the annual operating costs. Many of the banks interviewed stressed the critical nature of minimizing manpower costs and felt that the success or failure of the service hinged on keeping these costs down. The staffing requirements include CRT tellers, supervisors, administrators, and EDP personnel.

The number of CRT tellers required is a function of the transaction volume, the distribution of this transaction volume, and the efficiency of the tellers. Two other factors deserve mentioning. First, the requirements for CRT tellers is inversely related to the number of calls transacted directly through the voice response

unit. The VRU allows depositors with Touch Tone phones to conduct business by interacting directly with the computer - no CRT teller is needed. Thus, as the percentage of calls going through the voice response unit increases, the need for CRT tellers decreases. Second, if a voice-activated recording device is utilized, then the efficiency of the CRT tellers can be substantially increased. If the calls are taken by a voice-activated recording device, then the CRT tellers can simply transcribe the transactions recorded on the tape directly into the CRT terminal. The teller will be able to work at a constant pace without interruption. On the other hand, if the depositor deals directly with the CRT teller (assuming no voice-activated recording device), then additional time will be taken up by conversation with the customer and periods of waiting between calls.

Supervisors will be required to administer the work of the CRT tellers. The number of supervisors required is directly related to the number of CRT tellers. We have used TCS's assumption that one supervisor is required for every ten tellers.

The remaining requirements are administrative and EDP personnel to manage the system and keep it operating. These individuals will be full-time, salaried employees.

Advertising costs varied widely among the financial institutions surveyed. Many could not estimate annual expenditures on TBP because the advertisements were not conducted separately but as one of a number of banking services. Some banks, such as the Greater New York Savings Bank, continue to advertise as heavily after system start-up as before. The Germantown Savings Bank has expanded its advertising campaign to include well known sports figures and broadened its media scope to include television. The three banks competing in the Houston market have found that if one bank steps up its advertising campaign, then the accounts at all three banks increase. Advertising costs are discretionary to each bank, probably determined by an overall institution policy, and accurate generalizations cannot be made here.

Telephone costs include both installation and monthly charges. Depending on the size of the market serviced, the financial institution may want to utilize both WATS lines and local lines. WATS service may be acquired either as a full intrastate line or a measured intrastate line. The full intrastate WATS line permits unlimited usage, while the measured intrastate WATS line permits free usage up to a predetermined number of hours

(usually ten hours) and then charges by the hour for additional use. Furthermore, the telephone costs will be a function of the quality of the service that will be offered, the anticipated volume and frequency of calls, and the rate structure of the market area to be served.

The annual cost of postage is merely the current postal rate multiplied by the number of checks mailed to the merchant payees. Forms and supplies are directly related to the number of merchant checks that are mailed and have been approximated as 40 percent of total postage costs.

Finally, the overhead costs associated with the TBP service should be allocated appropriately.

Cost Savings

Cost savings are those costs associated with the processing of a check which have been displaced by making the payment through the TBP account. For each payment that is made, the financial institution saves the cost that would have been incurred to process the check. According to Arthur D Little, Business Week, and Stanford professors Baxter, Cootner, and Scott, the average processing cost is approximately 30¢ per check.¹ Thus, the total cost savings would be the total number of payments multiplied by 30¢.

FOOTNOTES

1. Arthur D. Little, The Consequences of Electronic Funds Transfer, U.S. Printing Office, Washington, D.C., June, 1975, p. 8; "Electronic Banking: A Retreat From the Cashless Society," Business Week, April 18, 1977, p. 81; William F. Baxter, Paul H. Cootner, and Kenneth E. Scott, Retail Banking in the Electronic Age, Alanhead, Osmun, & Co., New Jersey, 1977, p. 35.

VI. AN EVALUATION OF THE PROPOSED INVESTMENT

Offering telephone bill payment as a banking service requires a substantial investment by the financial institution. The investment decision to be made should not take a "seat-of-the-pants" approach. An in-depth cost-benefit analysis is recommended.

A cost-benefit analysis will assist the financial institution in evaluating the potential for telephone bill payment. All costs and benefits must be identified and examined. The variables should be quantified in dollar terms where possible, and the remaining qualitative variables presented separately for consideration in making the decision. The preceding two chapters have presented the quantifiable variables. In this chapter, the revenues and the costs are brought together to forecast the profitability of TBP. The profitability forecast relies on the market forecasts developed in Chapter III. The revenue and cost figures fluctuate with different levels of the deposit base and transaction activity. As the deposit base increases, the revenue generated by these deposits also increases. Similarly, as the transaction activity increases, the demand for equipment and manpower to service these transactions rises, increasing the costs. The fluctuation of profits in response to different levels of the deposit base and transaction

activity will be evaluated by sensitivity analysis - several distinct levels of the potential deposit base will be examined, as will several distinct levels of transaction activity.

As the returns from offering TBP are uncertain (the market share cannot be forecast with certainty), the risk associated with the investment must be considered. Sensitivity analysis illustrates the variability of the returns, which is an index of the risk. All other variables being held constant, a lower variance of the returns indicates less risk. Thus, a risk averse individual will prefer the investment proposal with the lower variance.

Revenues

As indicated in Chapter IV, the revenue generated from a TBP account can come from two sources: (1) earnings on the newly acquired deposits, and (2) fees charged to the customer and/or merchant.

Our analysis assumes that the TBP service will be offered as a feature of the existing checking account. Thus, the account will not earn interest, and the net interest margin will equal the investment yield on the checking account deposits. Assume that a large commercial bank in New York, can earn 7.5 percent on its

checking account deposits, and use this as the investment yield.

The fees charged must also be quantified. We will not charge the merchant in our analysis. Although we recognize the potential revenues to be generated by charging the merchant, we feel that during the infancy of telephone bill payment, it is essential to secure the merchants' cooperation. Thus, no fee will be charged to the merchant.

Turning to fees charged to the customer, five alternatives are presented:

- (1) 10¢ per transaction
- (2) 15¢ per transaction
- (3) \$1.00 per month
- (4) \$2.00 per month
- (5) free of charge

For the transaction fees, the revenue generated will be the fee per transaction (either 10 or 15 cents) multiplied by the total number of payments made. From our survey, we found that an average of 5.25 payments are made per account per month. To calculate the total payments made per year, we multiply 5.25 payments/account/month times 12 months/year times the total number of accounts.

In the case of the monthly charges, the revenue that will be generated is simply the monthly charge multiplied by 12 months/year times the total number of accounts.

Of course, when the service is offered free of charge, no revenue will be generated beyond the earnings on the newly acquired deposits.

Initial Investment

The initial investment encompasses the system hardware, system software, voice response unit, CRTs, management administration time, and promotional expense. These will be examined one at a time.

The system hardware must have the capacity to support the forecasted levels of accounts and transactions. No bank currently offering TBP has even approached the volume levels that we anticipate, giving us no empirical data upon which to base our estimates. However, William Koenig of TCS feels that a DEC 11/70 will be adequate to process our volume forecasts. The cost of a DEC 11/70 and the associated peripheral equipment is approximately \$180,000. Although not covered here, a bank that offers TBP and experiences a high volume level (such as 100,000 transactions per year) might consider operating with two central process-

ing units in parallel. The greater processing capability will increase throughput and also increase reliability (each processor acts as a back-up for the other, in the event of one processor "crashing").

The estimate for system software is based upon the results from our survey. Four banks were automated to a level comparable with our recommended TBP service. The software expenditures by these four banks were averaged to calculate our estimate of \$90,000. This assumes that the financial institution develops the software internally - one might want to consider contracting an outside consulting firm to do the development (for example, TCS offers a software package that operates their Pay-by-Phone service).

To support the direct access to the TBP system by Touch Tone telephones, a voice response unit must be purchased. Our recommendation is to utilize a Wavetek microprocessor. Either of two units is feasible, the only difference being the size of the vocabulary. One unit has a larger vocabulary so that when the customer keys in the merchant codes as part of the payment data, the voice response unit will reply with the name of the merchant, not the code. The smaller unit only has the capability to repeat the merchant code. The costs are \$90,000 and \$44,000 respectively. Our evaluation assumes the smaller Wavetek microprocessor priced at \$44,000.

The TBP system will require a number of CRTs to handle the rotary dial transactions. The requirements depend on the number of CRT tellers required, which is a function of the total number of transactions, the distribution of the transactions throughout the day, and the efficiency of the CRT tellers. Assuming ten percent of the incoming calls are through Touch Tone telephones and interact directly with the computer, then 90 percent of the calls will be input by CRTs. Our evaluation also assumes that the TBP system will handle rotary dial calls with a "live" CRT teller for the first two years and then switch to a voice-activated response unit. When transcribing transactions from the voice-activated response tapes, the CRT tellers are assumed to be four times as efficient as when they handled the incoming calls directly.

Each teller is estimated to process the transactions associated with 1000 accounts each year (see Table 6-1). However, this only applies in the first two years. At the beginning of the third year, we are utilizing a voice-activated response unit, which will alleviate the problem of peak load periods. With the voice-activated response unit, we assume that the tellers can be four times as efficient, processing the transactions associated with 4000 accounts each year.

TABLE 6-1

Staffing Requirements: CRT Tellers

Assume a teller can process 60 transactions/hour
(where transactions include transfers and payments)

60	transactions/teller/hour
X 8	hours/day
<u>480</u>	transactions/teller/day
X 24	operating days/month
<u>11,520</u>	transactions/teller/month
X 12	months/year
<u>138,240</u>	transactions/teller/year
X.75	assuming 75% of transactions are payments
<u>103,680</u>	payments/teller/year
- 63	payments/account/year
<u>1646</u>	accounts/teller/year

If we assume that the tellers are 60 percent efficient (allowing for periods of peak load, fatigue, coffee breaks, etc.), then a teller can handle approximately 1000 accounts/year.

Applying this to our volume forecasts (remembering that only 90 percent of the accounts will be input over rotary dial telephones), we find our staffing requirements for CRT tellers to be as follows:

	<u>15,000 accounts/yr.</u>	<u>20,000 accounts/yr.</u>
Year 1	14	18
Year 2	27	36
Year 3	11	14
Year 4	14	18
Year 5	17	23
Year 6	21	27
Year 7	24	32

Roughly speaking, a CRT may be purchased for \$3000 or leased for \$500 per year. We propose that the bank purchase the minimum number of CRTs that are required during one of the first seven years as an initial investment, leasing the additional CRTs that are required for the first two years. Starting in year 4, the CRTs should be purchased as needed.

Clearly, the number of CRTs required is equal to the number of CRT tellers. Thus, for the first seven years the expenditures on CRTs will be as follows:

15/000 accounts/year

	<u>Purchase</u>	<u>Lease</u>	<u>Total</u>
Initial Investment	\$ 33,000	\$1,500	\$34,500
Year 2	-	8,000	8,000
Year 3	-	-	-
Year 4	9,000	-	9,000
Year 5	12,000	-	12,000
Year 6	9,000	-	9,000
Year 7	9,000	-	9,000
			<u>\$81,500</u>

20,000 accounts/year

	<u>Purchase</u>	<u>Lease</u>	<u>Total</u>
Initial Investment	\$ 42,000	\$2,000	\$44,000
Year 2	-	11,000	11,000
Year 3	-	-	-
Year 4	12,000	-	12,000
Year 5	15,000	-	15,000
Year 6	12,000	-	12,000
Year 7	15,000	-	15,000
			<u>\$109,000</u>

To administer the start-up effort, the bank will need to hire a manager. Assuming that a manager can be employed for \$30,000 per year (including fringes and benefits) and that the start-up period will be eight months, then the cost for the manager will be \$20,000.

The final cost of initial investment is promotional expenditures to announce the offering of the TBP service. Based on the experiences of those banks who are currently in operation, we estimate the initial promotion to be \$150,000.

Operating Costs

The operating costs are those expenditures incurred annually to keep the TBP system operational. These costs include the amortization of the initial investment equally over a seven year period, hardware maintenance, personnel, advertising, telephone postage, forms, supplies and overhead.

Hardware maintenance is a function of the initial investment in hardware. Our analysis uses TCS's assumption which estimates hardware maintenance to be 6% of the initial investment, or \$10,800 per year.

Personnel requirements contribute a substantial percentage of the operating costs. Staffing needs consist of CRT tellers, supervisors and administrative and EDP personnel.

The estimate for CRT tellers was calculated earlier in the Chapter, under Initial Investment. Instead of hiring one teller for an eight hour shift, we propose to hire two part-time tellers, each working a four hour shift. The tellers' task is very repetitive, and the shorter shift will help alleviate the inefficiencies resulting from fatigue and boredom. The tellers will be paid \$3.25 per hour plus 33 percent for fringes. As we mentioned previously, each teller will handle 1000 accounts per day during the first two years, and then 4000 accounts per day in each of the following years as the voice-activated response units are implemented. If one supervisor is needed for every ten CRT tellers, Then our requirements are as follows:

	<u>15,000 accounts</u>	<u>20,000 accounts</u>
Year 1	2	2
Year 2	3	4
Year 3	2	2
Year 4	2	2
Year 5	2	3
Year 6	3	3
Year 7	3	4

The supervisors will be paid \$4.25 per hour plus 33 percent for fringes.

The remaining personnel, administrative and EDP, are employed to manage the system and keep it operating. These two individuals will be salaried employees, each paid \$18,000 per year plus 33 percent for fringes.

Annual advertising costs will be substantially less than the initial promotional expenditure. The larger expenses are incurred during the early stages of building customer awareness to a new product. Our recommended advertising expenses are as follows:

Year 1	\$150,000
Year 2	75,000
Year 3	50,000
Year 4	25,000
Year 5	25,000
Year 6	25,000
Year 7	25,000

Telephone costs include installation and monthly charges for both WATS and local lines:

	<u>Monthly Rate</u>	<u>Installation</u>
Local line to teller	\$ 25	\$ 40
Local line to voice response unit	40	40
Full intrastate WATS line	765	40

The annual cost of postage is the total number of merchant payments at the current postage rate. As observed from our survey, an average of 2.3 customer payments are made per merchant check. Thus, dividing the total payments by 2.3 yields the total number of merchant checks. The total postage is calculated by multiplying the total number of merchant checks by 13 cents. Finally, this total is multiplied by 140 percent to cover forms and supplies.

	<u>15,000 accounts</u>	<u>20,000 accounts</u>
Total payments	945,000	1,260,000
Customer payments/ merchant check	$\div 2.3$	$\div 2.3$
Total merchant checks	<u>410,870</u>	<u>547,826</u>
Postage per merchant check	<u>X .13</u>	<u>X .13</u>
Total postage	53,413	71,217
Forms and supplies	<u>X 1.40</u>	<u>X 1.40</u>
Total postage, forms, and supplies	\$ 74,778	\$ 99,704

Simulation Model

TCS currently offers, as a part of their consulting business, a simulation model forecasting the revenues and costs generated by offering TBP. William Koenig has generously allowed us to input our assumptions into the TCS model and provide us with the output. Our assumptions are summarized in Table 6-2.

TABLE 6-2

Simulation Assumptions

Initial Costs

Central processor and peripherals	\$180,000
Software development	90,000
Voice response unit	44,000
CRT terminal	3,000
Amortization period (straight-line)	7 years

Operating Costs

Postage, forms, and supplies (per merchant check)	18.2¢
Monthly phone rates	
Full intrastate WATS line	\$765/month
Measured intrastate WATS line	\$175/month
Administrative personnel	\$18,000/year
EDP Personnel	\$18,000/year
Fringe benefit rate applied to wages and salaries	33%
Current cost of processing a check	30¢

Account Information

Merchants participating initially	2,000
Merchants participating after 5 years	5,000
Transactions routed through the ACH	5%
Transactions/call (average)	2.5
Calls placed over local telephone lines	85%
Hours of operation	24 hrs/day, 7 days/wk
Transactions placed through Touch Tone phones	
Initially	14%
After 5 years	20%
Average consumer deposit balance	\$1000
Voice response unit operational from the beginning	
Voice-activated recording system operational after two years	

These parameters are no reflection of the opinions of TCS (and in some cases, differ substantially), and, as a result, the output is also no reflection of the opinions of TCS.

Through the TCS simulation model, we have tested ten cases. Two different volume levels are considered - 15,000 accounts per year and 20,000 accounts per year. For each of these volume levels, five different transaction fees are tested - 10¢ per transaction, 15¢ per transaction, \$1.00 per month, \$2.00 per month, and free of charge.

A summary of the simulations is presented in Table 6-3. The net present value is calculated for each of the ten cases, using a ten percent cost of capital.

We believe that a major New York Commercial bank can charge ten cents per transaction and still attract 20,000 accounts per year. A higher per transaction fee or a monthly charge could be prohibitive, but the ten cents per transaction fee compares favorably with the cost of postage associated with mailing a check. The size of the New York metropolitan market and the results of our marketing survey indicate that 20,000 accounts per year is a conservative estimate. Thus, our best estimate is case 7 - 20,000 accounts per year with a ten cents service charge per transaction. A reproduction

TABLE 6-3

Net Present Value of Earnings During First Five Years

<u>Simulation</u>	<u>Accounts/Year</u>	<u>Fee</u>	<u>NPV</u>
Case 1	15,000	free	\$2,486,566
Case 2	15,000	10¢/transaction	\$3,503,865
Case 3	15,000	15¢/transaction	\$4,012,518
Case 4	15,000	\$1.00/month	\$4,168,365
Case 5	15,000	\$2.00/month	\$5,850,163
Case 6	20,000	free	\$3,262,014
Case 7	20,000	10¢/transaction	\$4,920,310
Case 8	20,000	15¢/transaction	\$5,598,511
Case 9	20,000	\$1.00/month	\$5,806,305
Case 10	20,000	\$2.00/month	\$8,048,703

of the TCS output for case 7 is presented in Table 6-4. One should note that the majority (roughly 65%) of the revenue generated is a result of cost savings from a reduced volume of checks. The revenue generated by earnings on the deposit base and by transaction fees will cover the costs of operation, but the real money to be made comes from the cost savings.

TABLE 6-4

CASE 7: 20,000 ACCOUNTS AFTER ONE YEAR WITH \$.10 SERVICE CHARGE PER TRANSACTION.

	OPERATING PROJECTION (EQUIPMENT AND SOFTWARE EXPENSES AMORTIZED)				
	<u>YEAR 1</u>	<u>YEAR 2</u>	<u>YEAR 3</u>	<u>YEAR 4</u>	<u>YEAR 5</u>
VOLUME					
ACCOUNTS AT YEAR END	20000	40000	60000	80000	100000
TRANSACTIONS FOR YEAR	<u>461500</u>	<u>1613500</u>	<u>3627000</u>	<u>5751000</u>	<u>8307000</u>
REVENUE					
CONSUMER ACCOUNTS	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
CONSUMER TRANSACTIONS	46150	161350	362700	575100	830700
NEW CONSUMER DEPOSITS	105624	300624	390000	390000	390000
NEW MERCHANT DEPOSITS	19266	28577	34000	35562	37116
MERCHANT PAYMENTS	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
TOTAL REVENUE	\$171040	\$490551	\$786708	\$1000662	\$1257816
COST SAVINGS-DISPLACED TRANS					
	<u>\$161526</u>	<u>\$564725</u>	<u>\$1269450</u>	<u>\$2012850</u>	<u>\$2907450</u>
EXPENSES					
EQUIPMENT & MAINTENANCE	46709	51375	69378	87432	110958
SOFTWARE & LICENSE FEE	12852	12852	12852	12852	12852
WAGES	129259	217644	283302	412920	572310
FRINGE BENEFITS	42655	71821	93486	136260	188862
REMITTANCE PROCESSING	15484	61232	119868	153852	181446
TELEPHONES	23485	27647	36264	52116	67866
FACILITY	<u>12000</u>	<u>12000</u>	<u>20256</u>	<u>29256</u>	<u>40500</u>
TOTAL EXPENSES	\$282444	\$454571	\$635406	\$884688	\$1174794
NET REVENUE	<u>\$ 50122</u>	<u>\$ 600705</u>	<u>\$ 1420752</u>	<u>\$ 2128824</u>	<u>\$ 2990472</u>
CUMULATIVE NET REVENUE	<u>\$ 50122</u>	<u>\$ 650927</u>	<u>\$ 2071579</u>	<u>\$ 4200403</u>	<u>\$ 7190875</u>

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VII. SUMMARY & CONCLUSION

Summary

As bankers watch the flood of checks flowing through their back offices, technological innovations continue to permeate the marketplace. In an age of space exploration, minicomputers and voice recognition systems, is it possible that there is no better media to effect payments?

The consumers have not been asking for an electronic banking system nor is it clear that they would accept it if they were offered the option to use such a system. Yet bankers feel caught in the middle. The costs of building and operating large branches is becoming prohibitive. The labor-intensive check processing operations are also draining the profits of the retail banking business. Are large point-of-sale networks or automatic teller machines the only solution?

There is an alternative which does not require tremendous overhead costs. This alternative was only invented in 1970 yet consumers have already accepted it.

The Seattle-First National Bank introduced this electronic banking service to the public in June, 1973. Although they withdrew their "In-Touch" program six months

later, many other banks throughout the country had noticed it. The Farmers and Mechanics Savings Bank, the People's Savings Bank, and the Community Savings Bank were the only three financial institutions to offer it during 1974. Both People's and Community were told to discontinue their TBP service by the banking authorities that year. By December, 1975, there were nine banks offering TBP. Approximately 22 TBP services, with some 98,800 accounts were operating by the end of 1976. About eight more banks have been offering TBP since January 1, 1977.

From a legal perspective, a 1936 FRB ruling prohibited withdrawals from savings accounts by means of a telephone or verbal command. This ruling was rescinded by the FRB on April 7, 1975. The Federal Deposit Insurance Corporation, on the same day, reaffirmed that its regulations permitted savings withdrawals by telephone. Finally, the Federal Home Loan Bank Board removed its restrictions on third party payments on April 16, 1975. There appears to be no legal restriction to offering a TBP service across state borders.

From a technological perspective, there have been many advances by Threshold Technology, Inc. and others, in the field of voice recognition. These firms have programmed computers to understand 30 to 50 words spoken

by human beings. Such systems may soon be taking over the jobs now held by TBP tellers.

From a marketing perspective, there is data to support the contention that TBP has a broad appeal. About 72% of the New York City area is aware of TBP, some 60% believe that the service would be desirable, and approximately 46% would open a TSP account if their present bank offered the service. Consumers find convenience, simplicity and control over their finances to be the most important features of TBP.

The primary sources of appeal are convenience, time saved, simplicity, and money savings in that order. The primary sources of resistance are:

- Mistakes and errors
- No cancelled checks
- Limited number of payees
- Safeguarding the PIN number
- Record keeping complications
- Computers and automation: No human contact.

A major New York commercial bank should expect at least 15,000 to 20,000 new TBP accounts each year that the service is offered. This is a conservative estimate.

In terms of positioning this service, there are several findings which should be considered. From our marketing survey, we found that when consumers generally think of bill-paying, they think of checks. When they think of checks, they think of checking accounts and

commercial banks. For this reason, our respondents preferred to have a bill-paying service at their commercial bank. Most of them, (63%) would rather have the TBP service attached to their checking account rather than their savings account (22%).

The revenues which will be generated by this service will come from two sources, fees and earnings on newly acquired deposits. There are essentially four options in pricing this service: a fee per telephone call, a fee per payment, a fee for each transfer between bank accounts, a monthly fee. Half of the respondents indicated that they would prefer a monthly charge and half preferred some sort of transaction fee.

Basically, customers want to only pay 13 cents per payment or less. They readily compare the TBP price to the cost of a stamp. There is enough price sensitivity so that a lesser charge will attract a greater number of customers. Seven out of 20 banks that returned our survey do not charge any price at all.

The revenue generated from earnings on newly acquired deposits depends on the spread between the investment yield and the interest paid. Thrifts have emphasized TBP because it moves some of their customers money from time deposit accounts to 5-1/4 accounts, thereby giving the banks a larger spread on their funds.

The initial investment costs can include: Computer hardware, a voice response unit, software, allocation of management time and promotion.

The annual costs can include: Hardware maintenance, supervisors, CRT operators, EDP staff time, administration time, advertising, telephone costs, postage, supplies, and allocated overhead.

Telephone Computing Services, Inc. offers many services to financial institutions considering TBP as a banking service. The firm is partly owned by seven of the largest and most successful thrift institutions now offering TBP. One of TCS's services involves making various marketing, revenue and cost assumptions, this model will generate pro-forma cash flow statements.

We have made several runs on TCS's computer simulation model to determine how profitable it would be for a major New York commercial bank to offer TBP.

Stated briefly, an initial investment of approximately \$300,000 will be required for hardware, software, a voice response unit and CRT's. There will be about 20,000 accounts opened every year that the service is offered, including some 4,000 new accounts to the bank during the first two years. Annual revenues from this service, including cost savings, would increase from \$330,000 in year one to \$4,165,000 in year five.

Annual operating costs, including the amortization of initial startup costs, would increase from about \$280,000 in year one to \$1,175,000 in year five.

The TBP service would therefore pay for itself during the first year and, after five years, yield a net present value of \$5,000,000 in cumulative earnings.

Conclusion

There are essentially five reasons why a major New York commercial bank should offer a telephone bill-paying service.

First, 72% of the New York market is aware of TBP and 60% believes that the service is desirable even though they have never tried it. Approximately 50% of the market is currently ready to use this service if their present bank offered it. In addition, the minor sources of consumer resistance could be overcome with a well designed promotional campaign. Briefly, the market is large enough and the appeal is broad enough to justify offering TBP.

Secondly, the cost savings realized by using TBP to make customer payments instead of checks would be tremendous. The current cost for a commercial bank to process a check, as mentioned earlier, is estimated to be 30¢. By the end of year five, with TBP, the average cost per transaction is 14¢. (the cost for transactions processed by the voice-response unit would be 6¢ and the cost for transactions processed by CRT tellers would be 16¢). The large volume of checks currently processed by commercial banks could be displaced by this electronic transfer of funds.

Thirdly, TBP has been proven to be a viable means by which significant increases in market share can be attained.

The fourth reason involves a strategic consideration, often referred to as "Desired Experience." If a commercial bank considers the telephone to be a vehicle through which they would like to deliver many banking services then TBP may be a desirable first step.

Finally, TBP represents an alternative to the present check processing system which would require much less overhead. By utilizing a common carrier, banks could significantly reduce their investment in fixed assets.

An executive of a major New York commercial bank was recently questioned about the potential for this service. He replied, "I know this service is coming. There is no question about it. It is now only a matter of time."

APPENDIX I

TELEPHONE BILL - PAYMENT SURVEY

=====

=====

CONFIDENTIALITY OPTION: I wish all information that I supply on this survey to remain confidential.

It is not necessary that the information supplied on this survey remain confidential.

THESIS OPTION: Yes, I would like to receive a copy of your thesis.

I. GENERAL ACCOUNT INFORMATION

A. Please approximate the following as of 12/31/76:

- 1. Total number of accounts (all types) _____
- 2. Total dollar amount of accounts \$ _____
- 3. Total number of savings accounts _____
- 4. Total dollar amount of savings accounts \$ _____
- 5. Interest rate paid on savings accounts _____ %
- 6. Total number of checking accounts _____
- 7. Total dollar amount of checking accounts \$ _____
- 8. Interest rate paid on checking accounts _____ %
- 9. Average number of checks/account drawn
per month _____
- 10. Average number of overdrafts/account drawn
per month _____
- 11. Average number of transfers between savings
and checking per account per month _____
- 12. Average number of deposits made per account
per month _____

II. TELEPHONE BILL - PAYING INFORMATION

A. Please approximate the following as of 12/31/76:

- 1. Start-up date of your telephone bill - payment
service _____ / _____ / _____
- 2. Per cent of your customers using telephone
bill payment that have
 - a) Touch - Tone Phones _____ %
 - b) Rotary Dial Phones _____ %
- 3. Average number of bills paid per call _____
- 4. Average number of bills paid per customer
per month _____

II. TELEPHONE BILL - PAYING INFORMATION

A. (Continued)

- 5. Average amount of payment per call per customer \$ _____
- B. Do you offer an account exclusively for telephone bill - paying users ? YES NO
- C. If so, what is the interest rate paid on this account ? _____ %

III. SYSTEM

A. Please check the appropriate items:

1. Your system's software was developed:

- a) By your in-house systems personnel, in full
- b) By your in-house systems personnel, in part
- c) By Telephone Computing Service, Inc...
- d) By an outside firm (Please specify)..

B. What do you estimate the total expenditure on "system hardware" to be as of this date ? \$ _____

C. What do you estimate the total expenditure on "system software" to be as of this date ? \$ _____

D. What portion of your system is operated:

- 1. Automatically %
- 2. Semi-automatically %
- 3. Manually %

E. What additions have there been, if any, to:

- 1. The total number of personnel, due to the implementation of your telephone bill-payment service ? _____
- 2. Per cent of Personnel time spent in on-the-job training ? _____

IV. CUSTOMER INTERFACE

A. Please approximate the following as of 12/31/76:

1. Total number of telephone bill-payment accounts _____
2. Total dollar amount of telephone bill-payment account deposits \$ _____
3. Per cent of customers using bill-payment system that had accounts at your institution prior to their use of this system % _____
4. Per cent of customers that are
 - a) Individuals % _____
 - b) Small Businesses % _____
 - c) Large Businesses/Corporations % _____
5. Limitation on the
 - a) Amount of payment/call \$ _____
 - b) Amount of transfer/call \$ _____
 - c) Number of payments/call _____
 - d) Number of payments/month _____
 - e) Number of transfers/month _____
6. What is the frequency of statement rendering per customer ? _____

V. MERCHANT INTERFACE

A. Please approximate the following as of 12/31/76:

1. How many merchants (payees) were participating in your telephone bill-payment service ? _____
2. What percentage of merchants contacted by your institution declined to participate ? ... % _____

V. MERCHANT INTERFACE

B. Please check the appropriate items:

1. How do the merchants (payees) receive payment ?
 - a) By check
 - b) By direct deposit to the merchant's account at your institution
 - c) By direct deposit to the merchant's account at another institution
 - d) Other (Please specify) _____

2. Does your institution have the capability of capturing telephone bill-payment information for use by the merchant (payee). YES NO

3. Do geographic constraints exist that limit participation by the merchant ? YES NO
 - a) If yes, what are they ? _____

4. Are there categorical constraints limiting participation of the merchant ? (e.g. doctors, lawyers, etc.) YES NO
 - a) If yes, what are they ? _____

5. Which of the following categories of payees are included in your telephone bill-payment service ?
 - a) Local Department Stores
 - b) Out-of-town Department Stores
 - c) Utilities
 - d) Credit Card Companies
 - e) Payments to other financial institutions (transfers, loan payments etc.)
 - f) Private Professionals (MD's, lawyers, consultants, etc.)

V. MERCHANT INTERFACE

B. (Continued)

5. (Continued)

- g) Insurance Payments
- h) Pre-authorized payments
- i) Individuals
- j) Other (Please specify) _____

C. What percentage of your merchants are willing to accept magnetic tapes ? %

VI. PROCESSING

A. Are remittances to a common merchant paid in one check by your institution

- 1. To all merchants ?
- 2. To some merchants ?
- 3. To none of your merchants ?

B. Is a central information file kept, recording all customers and payees ? YES NO

1. If so, is it fed from your on-line system ? YES NO

C. If you have a central information file, how is a new payee included on your system ?

D. Once payment data is entered on-line, what other manual steps must be taken to complete the processing ?

VII. MARKETING AND PROMOTION

A. Is there a minimum balance required to use the telephone bill-payment service ? YES NO

1. If so, how much ? \$ _____

VII. MARKETING AND PROMOTION

- B. How much do you charge the customer for
- 1. Each telephone call ? \$ _____
 - 2. Each transfer of funds between accounts ? .. \$ _____
 - 3. Each payment made ? \$ _____
- C. How much do you charge the merchant for each customer payment received ? \$ _____
- D. What are the total promotional expenditures thus far ? \$ _____
- E. Briefly describe the geographical area that you think contains 80 % or more of your customers: (e.g. which counties, SMSA's, etc.) _____

- F. Within this geographical area
- 1. About how many financial institutions are there _____
 - 2. About how many dollars are deposited in total \$ _____
 - 3. About how many checking accounts are there ? . _____
 - 4. About how many savings accounts are there ? .. _____

VIII. OPERATION

- A. Does your institution have on-line service for the telephone bill-payment
- 1. touch - tone customers ? YES NO
 - 2. rotary dial customers ? YES NO
- B. If so, during what hours is the on-line system in operation ?
- C. Does the teller operate the on-line system for
- 1. touch - tone customers ? YES NO
 - 2. rotary dial customers ? YES NO

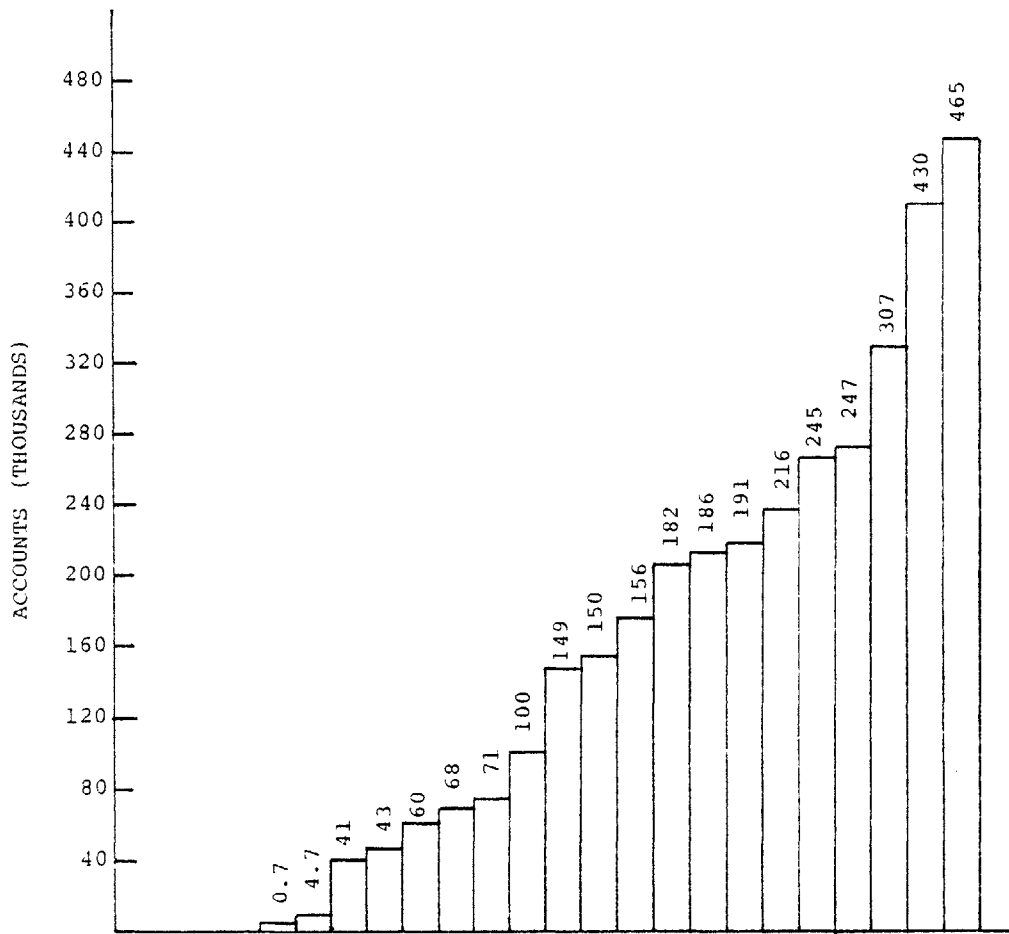
VIII. OPERATION

- D. During what hours is your telephone bill-payment service available to customers ? _____

- E. At what point is the transaction posted to the customer's account ?
- F. What is the average turn-around time for the remittance to reach the merchant from the time of the telephone payment order ? _____
- G. How is a "stop-payment" order handled ?

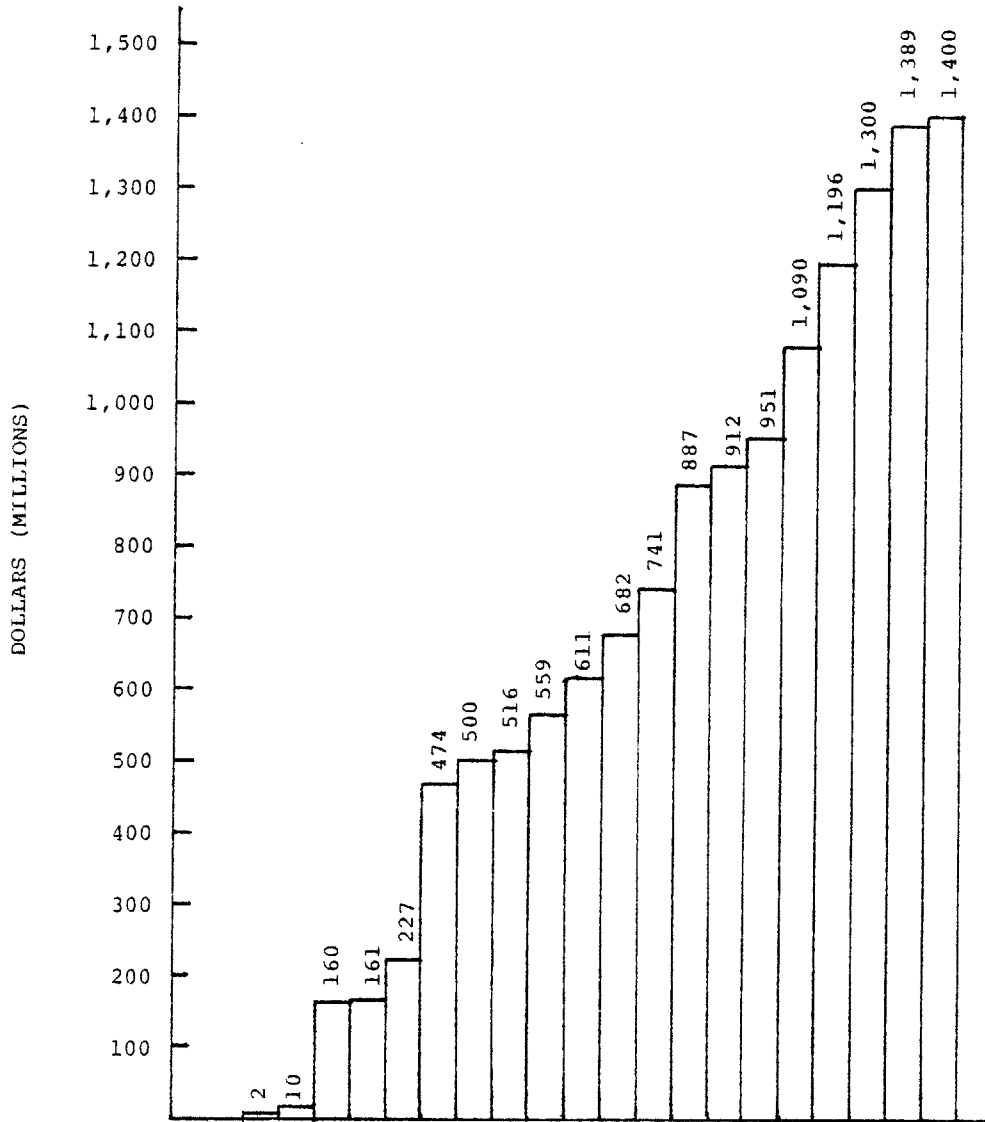
APPENDIX II

TOTAL ACCOUNTS



BANKS RESPONDING TO SURVEY

TOTAL ACCOUNTS - DOLLARS



BANKS RESPONDING TO SURVEY



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Email: docs@mit.edu
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DISCLAIMER

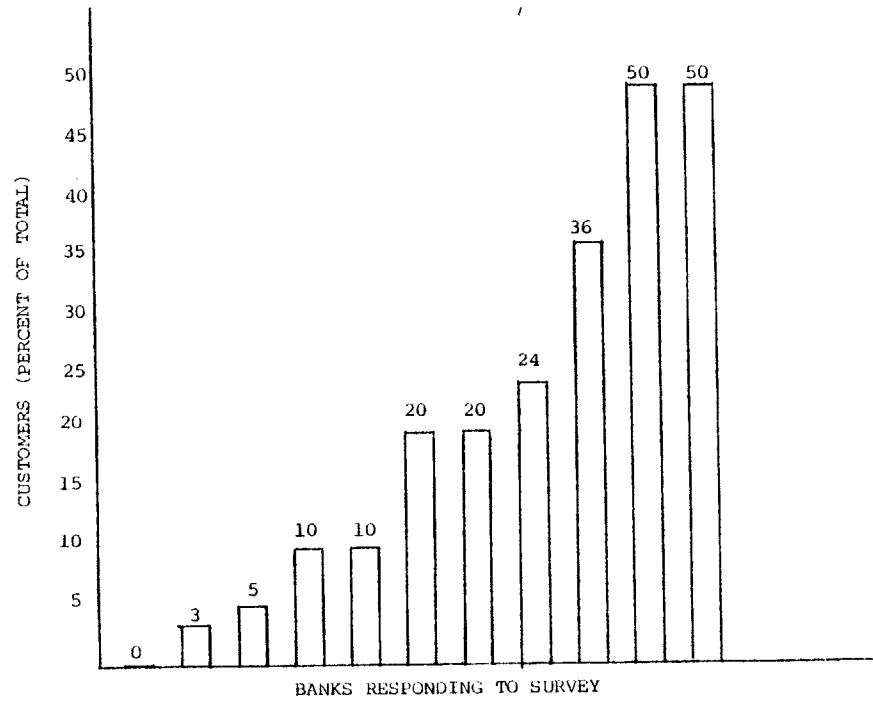
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by the author.**

(Pages 143 - 145)

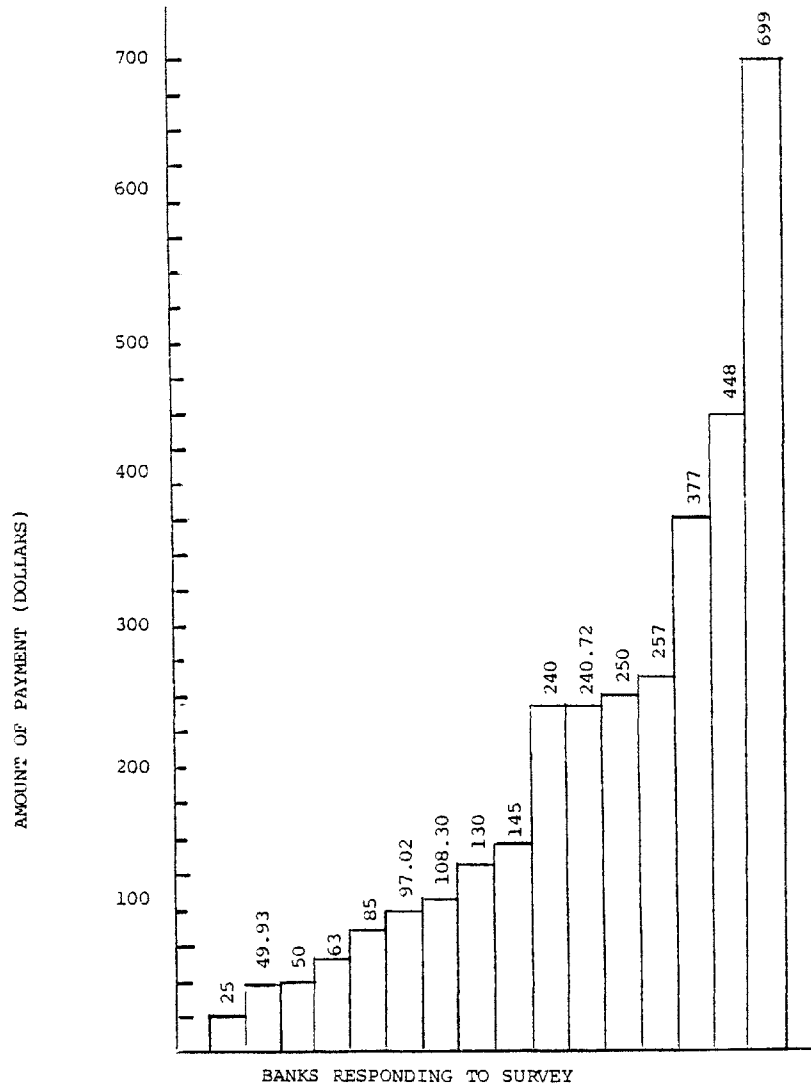
START-UP DATES

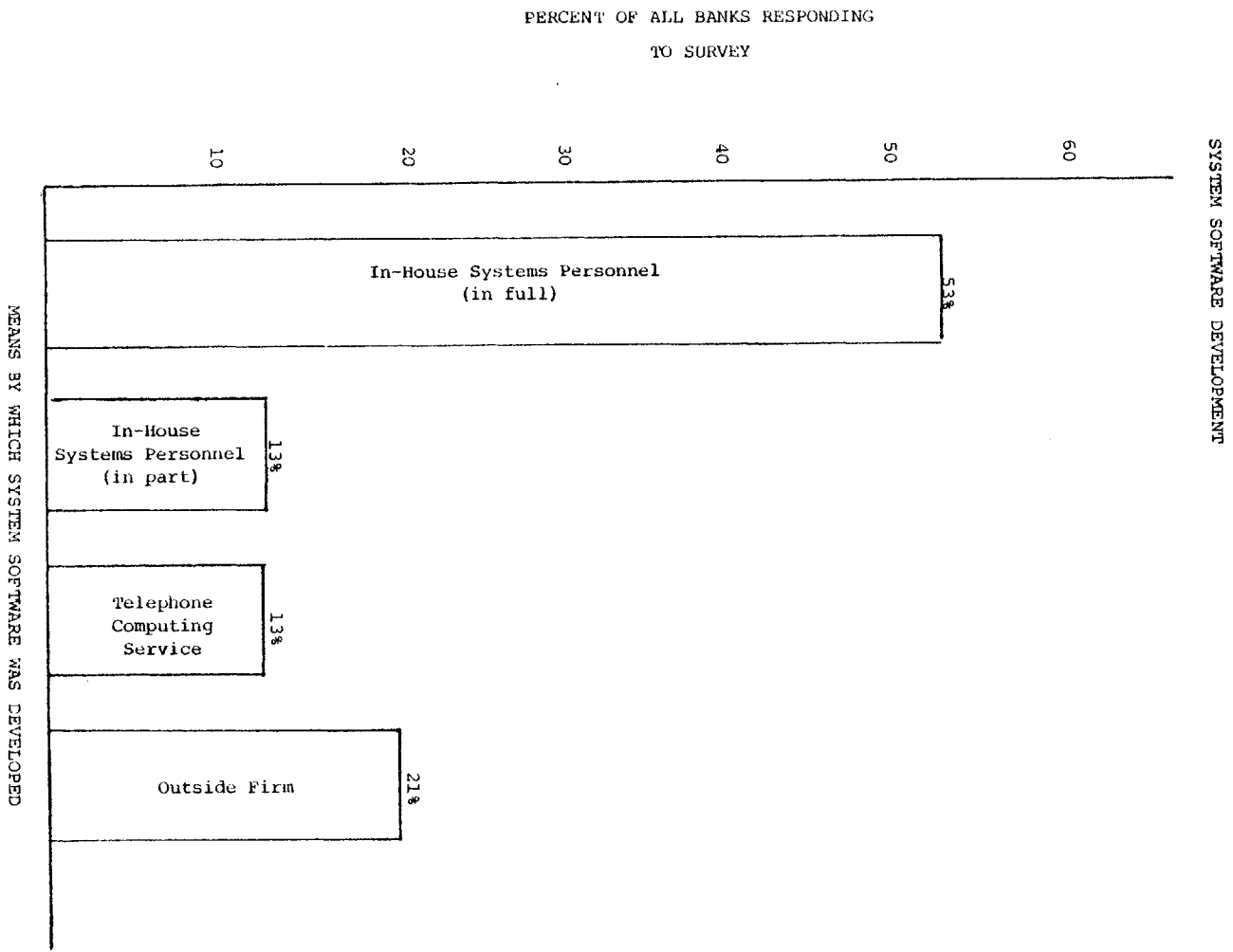
6/73 to 12/73	Seattle - First National Bank
11/1/74	Farmers & Mechanics Savings Bank
1/1/75	State Federal Savings & Loan
4/1/75	Dollar Savings Bank
4/15/75	Community Savings Bank
4/24/75	Hollywood Federal Savings & Loan
4/30/75	People's Savings Bank
10/1/75	First Federal Savings & Loan
10/1/75	Erie County Savings Bank
1/2/76	Syracuse Savings Bank
2/1/76	University Savings Association
4/1/76	Cambria Savings & Loan
4/1/76	Washington Mutual Savings Bank
6/30/76	Houston First Savings
7/1/76	Honolulu Federal Savings & Loan
9/1/76	Surety Savings Association
10/1/76	Provident Savings Bank
10/12/76	Perpetual Federal Savings & Loan
11/1/76	Mechanics Exchange Savings Bank
11/28/76	Greater New York Savings Bank
12/1/76	Commercial Federal Savings & Loan

% OF CUSTOMERS USING TBP THAT HAVE TOUCH-TONE PHONES

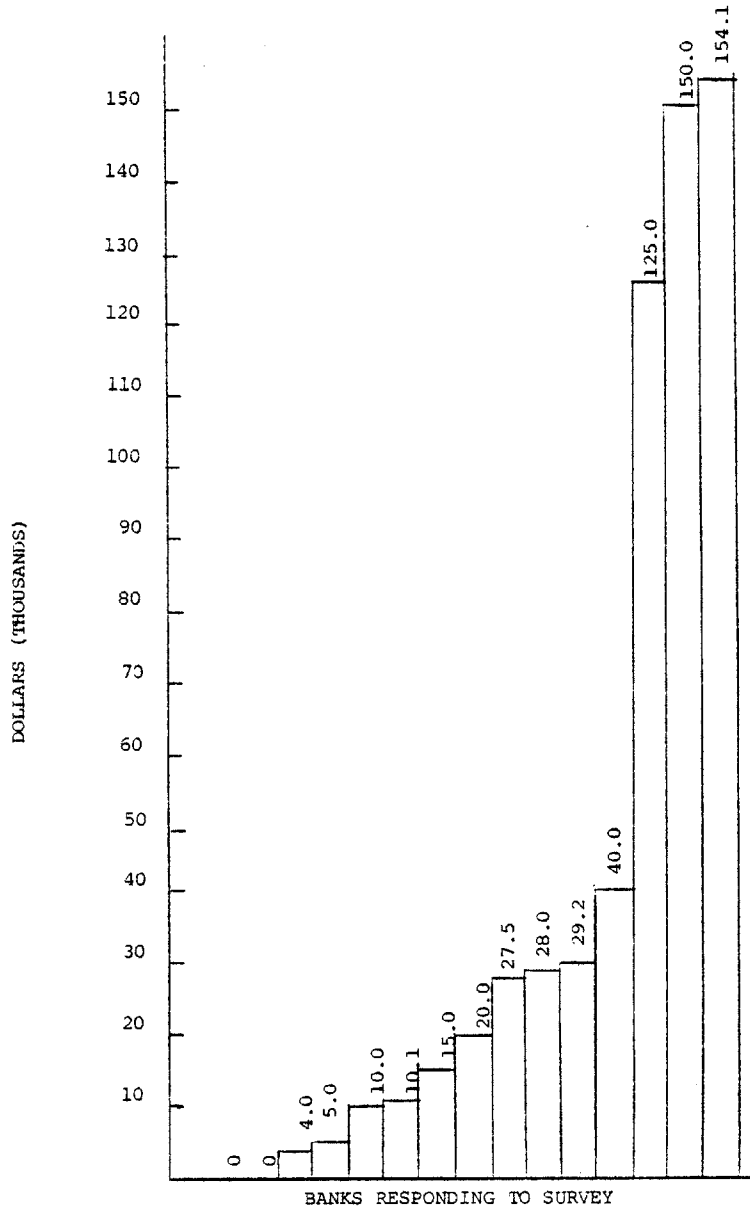


AVERAGE AMOUNT OF PAYMENT PER CALL PER CUSTOMER

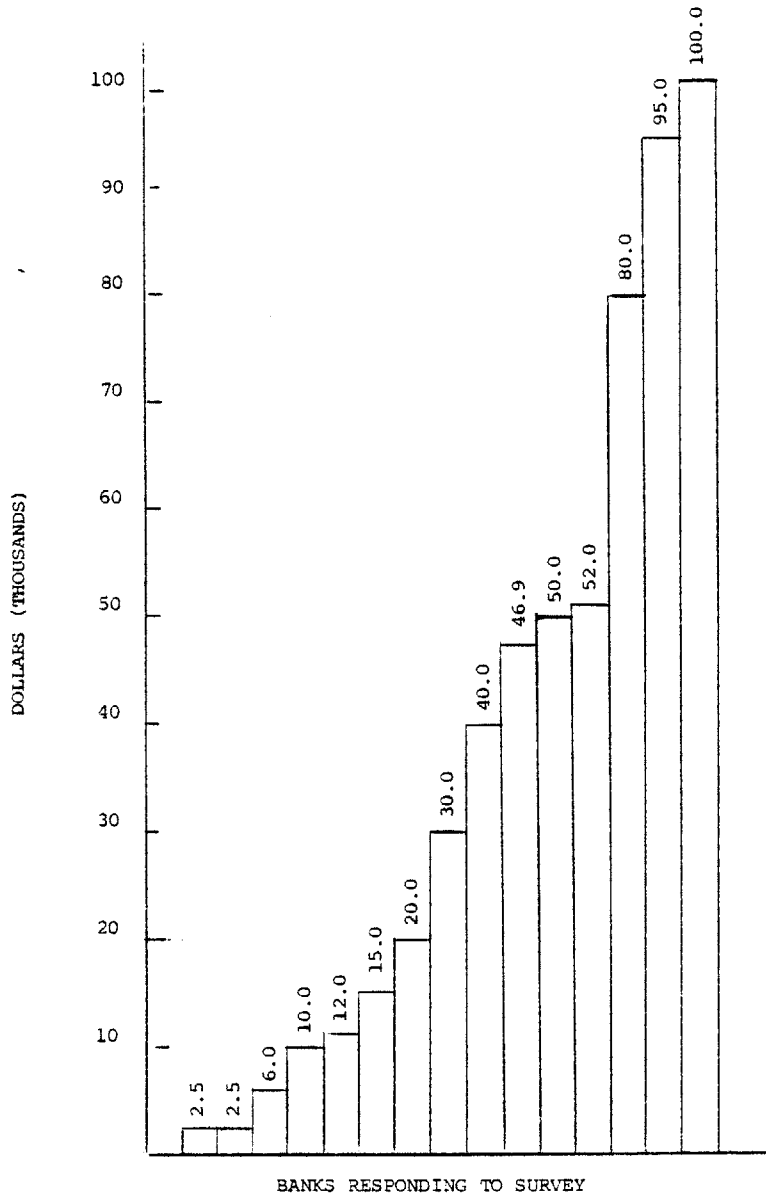




TOTAL EXPENDITURES ON SYSTEM HARDWARE



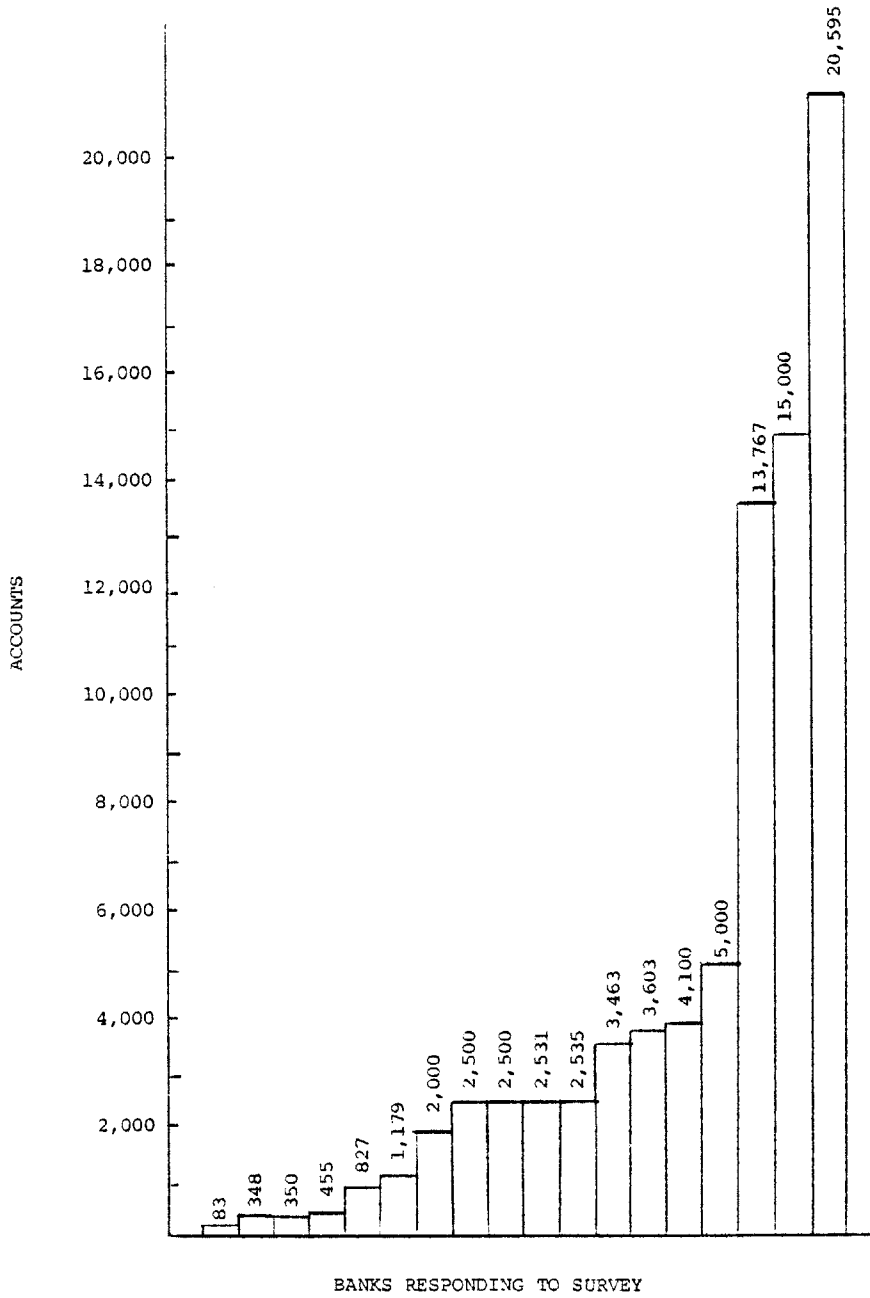
TOTAL EXPENDITURES ON SYSTEM SOFTWARE



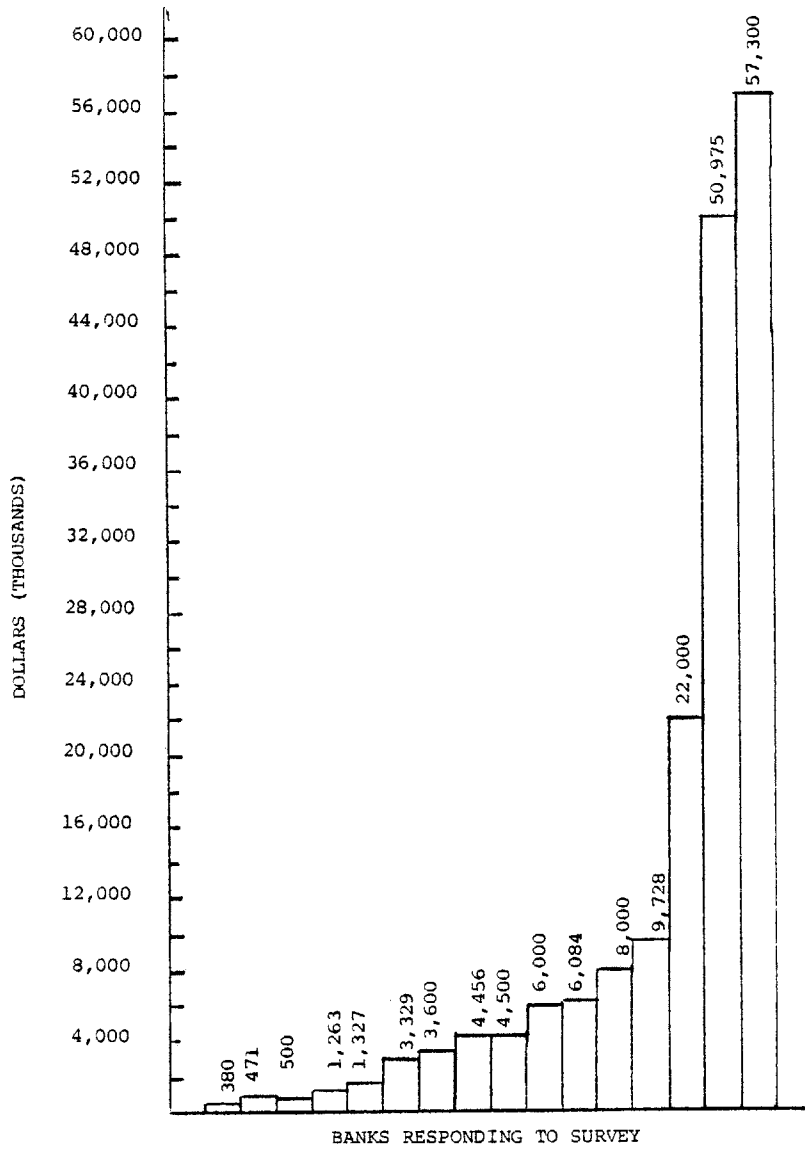
OPERATION OF SYSTEM

<u>AUTOMATIC</u>	<u>SEMI-AUTOMATIC</u>	<u>MANUAL</u>
0%	50%	50%
0	50	50
0	50	50
0	95	5
0	100	0
5	95	0
35	65	0
36	64	0
50	25	25
50	50	0
75	15	0
80	10	10
80	15	5
95	5	0
100	0	0
100	0	0
100	0	0

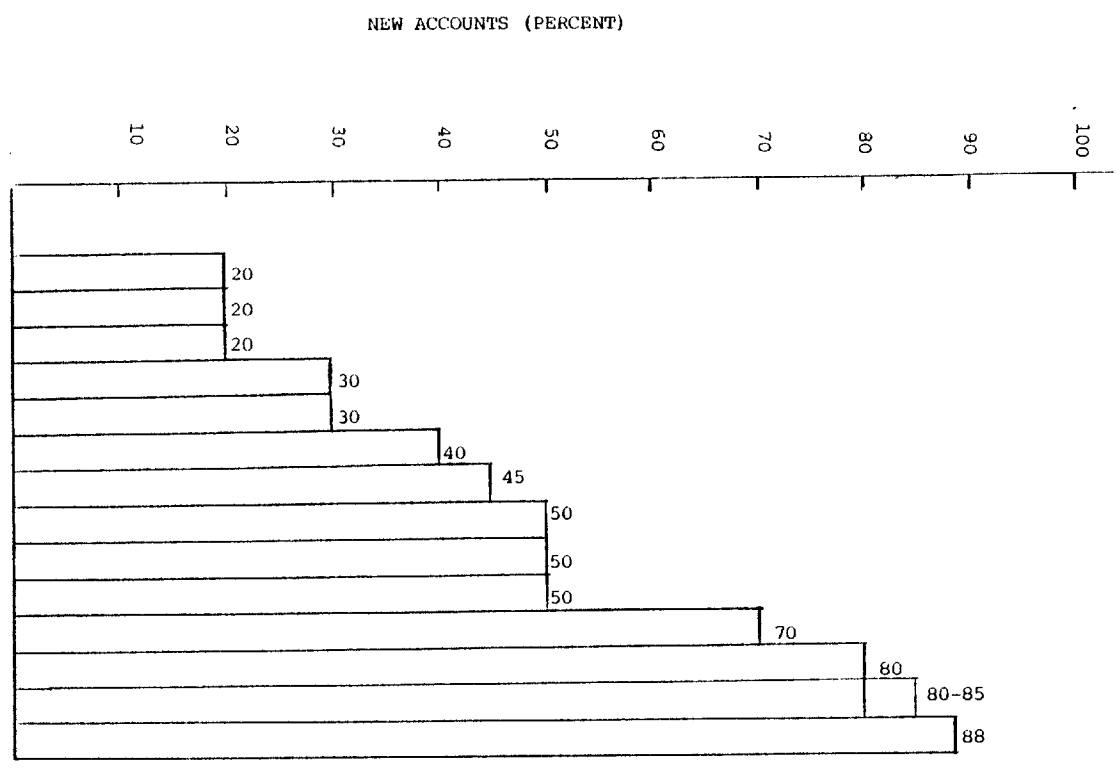
NUMBER OF TELEPHONE BILL PAYMENT ACCOUNTS



DOLLAR AMOUNT OF TELEPHONE BILL PAYMENT ACCOUNTS



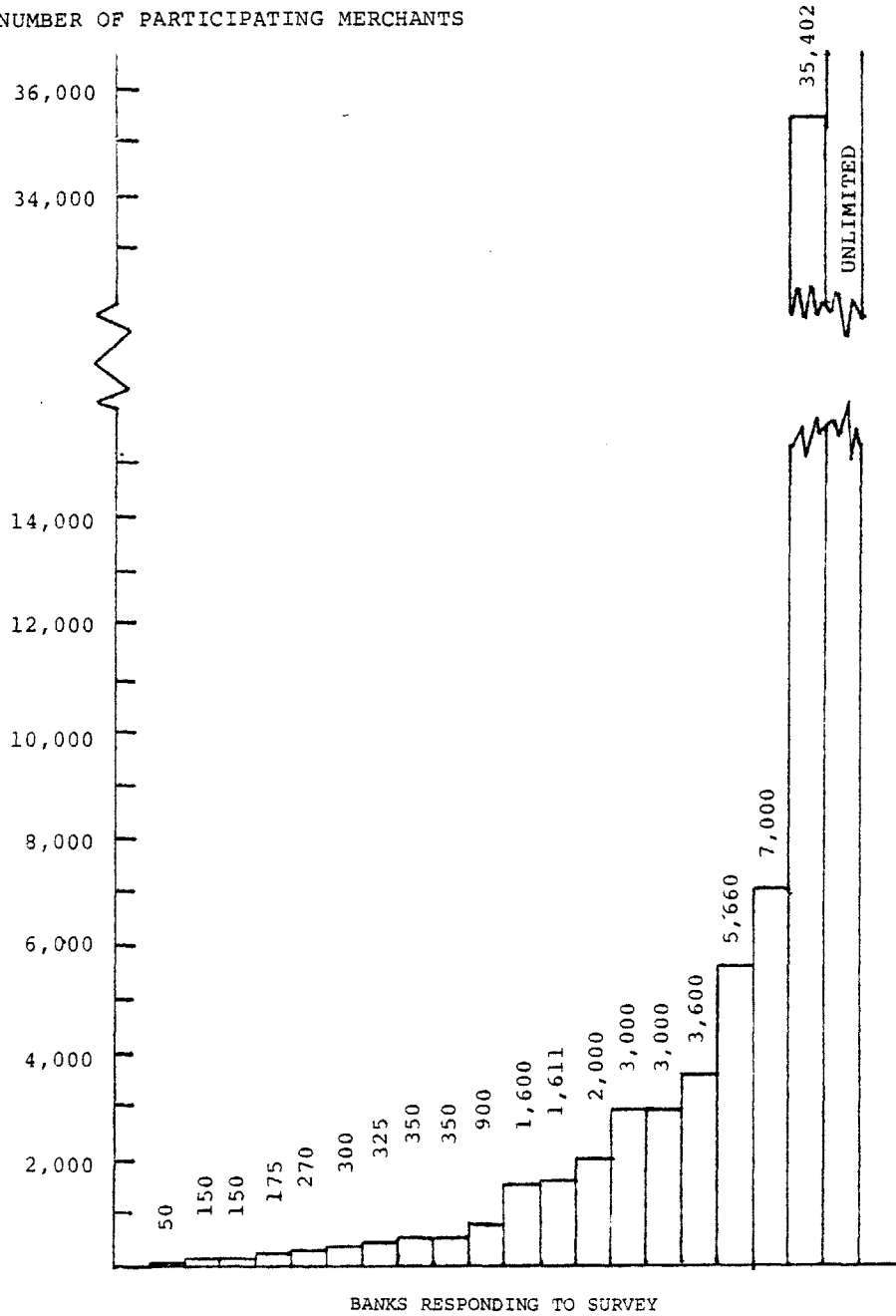
CUSTOMER ACCOUNTS NEW TO THE BANKS



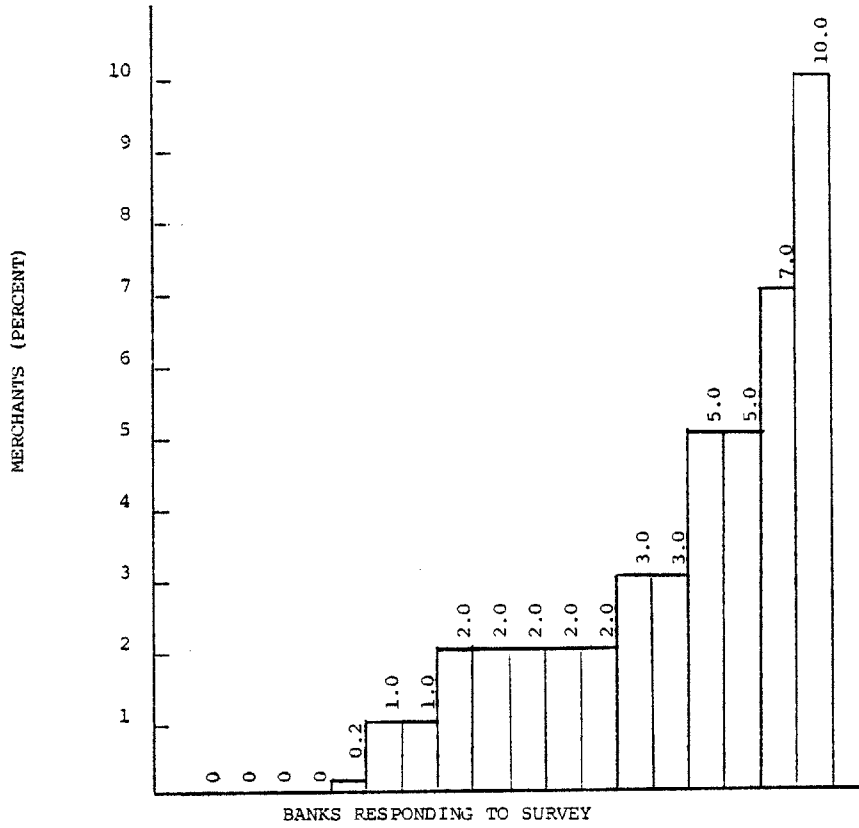
LIMITATIONS ON PAYMENTS AND TRANSFERS

<u>PAYMENT AM'T/CALL</u>	<u>TRANSFER AM'T/CALL</u>	<u>PAYMENTS/CALL</u>	<u>PAYMENTS/MONTH</u>	<u>TRANSFERS/MONTH</u>
1.00 (Min)	1.00 (Min)	12	-	-
10,000.00	Balance	-	-	-
Balance	Balance	8	-	-
Balance	50.00 (Min)	-	-	-
500.00	10,000.00	-	-	-
Balance	100.00 (Min)	-	-	-
Balance	Balance	-	-	-
10,000.00	1,000.00	-	-	-
2.00 (Min)	Balance	-	-	-
Balance	Balance	-	-	-
Balance	Balance	-	-	-
Balance	Balance	-	-	-
Balance	Balance	-	-	-
Balance	Balance	-	-	-
Balance	Balance	-	-	-
Balance	Balance	-	-	-
Balance	Balance	-	-	-
500.00	500.00	-	-	-
0 if on-line	0 if on-line	-	-	-
500.00 if touch-tone	500.00 if touch-tone	-	-	-
10,000.00 banks & self	10,000.00	-	-	-
5,000.00 merchants				

NUMBER OF PARTICIPATING MERCHANTS



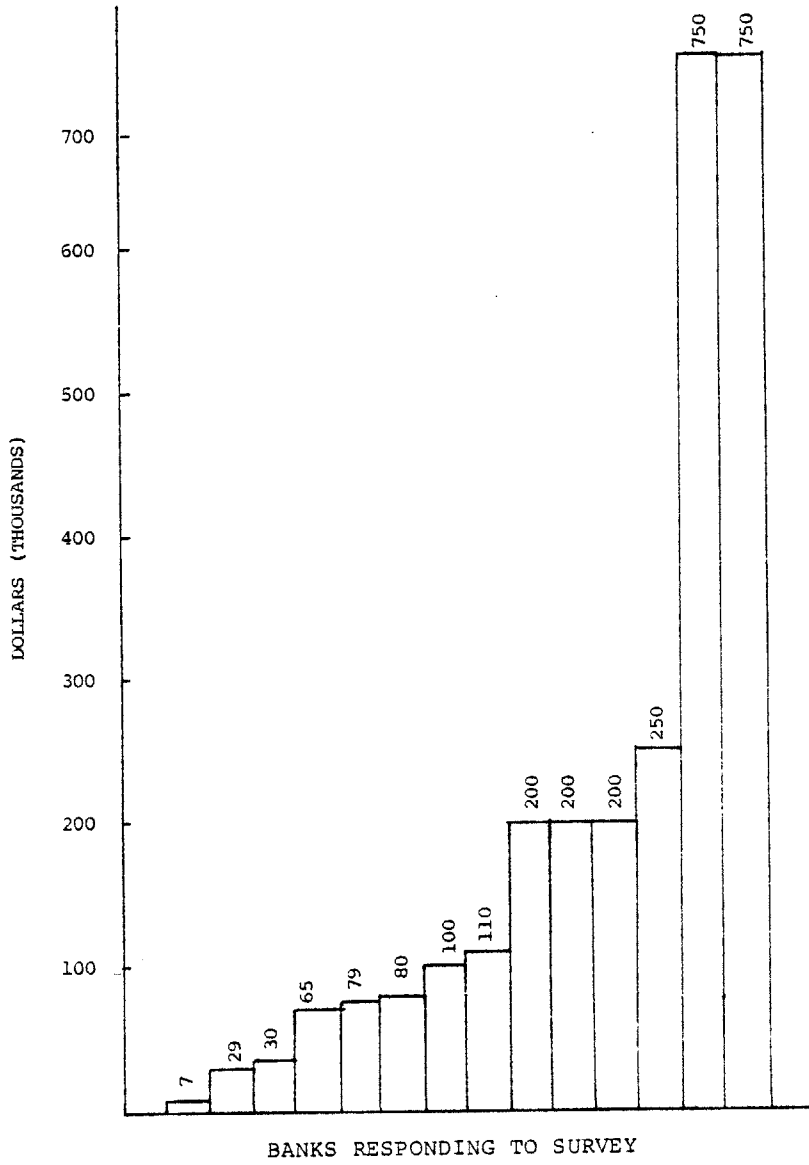
PERCENTAGE OF MERCHANTS DECLINING TO PARTICIPATE



CUSTOMER CHARGES

<u>Per Call</u>	<u>Per Payment</u>	<u>Per Transfer</u>
10¢	10¢	-
-	10¢	-
\$2.00/Month	-	-
-	10¢	-
-	15¢ or \$1.50/month	35¢
-	15¢	15¢
-	-	-
10¢	-	-
-	-	-
-	10¢ or \$1.00/month	-
-	-	-
-	10¢	-
-	-	-
-	10¢	-
-	10¢	-
-	-	-
-	-	-
-	10¢	-
-	-	-
\$2.00/month	-	-

PROMOTIONAL EXPENDITURES



HOURS OF ACCESS

<u>TOTAL - 7 DAYS</u>	<u>TOTAL - 5 DAYS</u>	<u>SCHEDULE</u>
168	120	24 hours/day
168	120	24 hours/day
168	120	24 hours/day
168	120	24 hours/day
168	120	24 hours/day
168	120	24 hours/day
168	120	24 hours/day
114	90	6 am to 12 pm
110	80	7 am to 11 pm, M-F 8 am to 11 pm, S & S
88	80	7 am to 11 pm, M-F 9 am to 5 pm, Sat.
78	60	9 am to 9 pm, M-F 9 am to 6 pm, S & S
78	60	8 am to 8 pm, M-F 8 am to 5 pm, S & S
74	60	9 am to 9 pm
73	65	7:30 am to 8:30 pm, M-F 8:00 am to 4:00 pm, Sat.
71.5	67.5	8:30 am to 10:00 pm, M-F 9:00 am to 1:00 pm, Sat.
68	60	9 am to 9 pm, M-F 9 am to 5 pm, Sat.
66	60	8 am to 8 pm, M-F 9 am to 3 pm, Sat.
65	60	8 am to 8 pm, M-F 8 am to 1 pm, Sat.
61.5	57.5	9 am to 8:30 pm, M-F 9 am to 1:00 pm, Sat.
49	35	9 am to 4 pm

APPENDIX III

CONSUMER SURVEY
April 14, 1977

GENERAL

- | | <u>YES</u> | <u>NO</u> |
|--|------------|-----------|
| 1. Do you currently have an account at a commercial bank in New York City? | --- | --- |
| 2. Do you currently have an account at a savings bank in New York City ? | --- | --- |

FAMILIARITY WITH TBP

- | | | |
|--|-----------|-----|
| 1. Are you aware of any new way to pay your monthly bills ? | --- | --- |
| Yes: (TBP) Go to #3 | | |
| No: Continue | | |
| 2. Did you know that it is now possible to pay your monthly bills by telephone ? | --- | --- |
| Yes: Continue | | |
| No: Go to <u>PART B</u> | | |
| 3. How did you learn about the telephone bill-paying service ? | | |
| | Newspaper | --- |
| | T.V. | --- |
| | Radio | --- |
| | A Friend | --- |
| | Other | --- |
| 4. Do you know which banks in the New York Area are now offering this type of service ? | --- | --- |
| 5. Did you know that the Greater New York Savings Bank now offers a telephone bill-paying service called "Tellerphone" ? | --- | --- |
| 6. Are you currently using a telephone bill-paying service ? | --- | --- |
| Yes: Go to #10 | | |
| No: Continue | | |
| 7. Did you ever use a telephone bill-paying service ? | --- | --- |
| Yes: Continue | | |
| No: Go to <u>PART B #1</u> | | |

A. FAMILIARITY WITH TEP

8. Why did you close it ?

9. About how many bills do you pay by telephone per month ?

Go to PART C

B. PERCEPTIONS OF TEP BY UNAWARE CONSUMERS

"The service that I have been asking about is one which would enable you - through the use of your home telephone - to call a bank and have certain specific bills paid automatically out of your checking or savings account. Bills could be paid in this manner in any amount, at any time you wish. Those to whom bills could be automatically paid would normally include: local department stores, utility companies, the Telephone Company, oil companies, national credit card companies and others. To use this bill paying service, the customer would dial the bank and give the teller an account number, a password, the name of the party to be paid and the amount. In addition to the customer's own records, the bank would provide monthly statements showing who was paid and how much."

1. (Aware customers - begin here)

Would you consider such a service to be:

Very desirable _____
Fairly desirable _____
Not very desirable ... _____
Not at all desirable . _____
Don't Know _____

2. How likely is it that you would use this service if it was offered by your present bank ?

Very Likely _____
Fairly Likely _____
Not very likely _____
Not at all likely _____

- B. 3. For each of the following telephone bill-payment features, please tell me how important they are to you on a scale of one to four. One is very important, four is not at all important.
- Convenience 1 2 3 4
 - # of places you can pay 1 2 3 4
 - The hours that it is available 1 2 3 4
 - How simple it is to operate 1 2 3 4
 - Whether it is cheaper than writing checks ... 1 2 3 4
 - The interest paid on a TEP account 1 2 3 4
 - Confidentiality and privacy 1 2 3 4
 - Control over your personal finances 1 2 3 4
4. What do you see as the greatest advantages or benefits to using a telephone bill-paying service ? _____

5. What do you see as the greatest disadvantages or problems with using a telephone bill-paying service ? _____

6. If both a commercial bank and a savings bank offered a telephone bill-paying service, which type of bank would you prefer to use for telephone bill-paying ? CB SB
- WHY ?
7. Assuming that you had both a checking account and a savings account and that you could transfer money between these accounts, would you prefer to pay your bills by telephone out of a checking account or a savings account ? C S
- WHY ?
8. If there was a monthly charge for using this service, would you pay _____ per month for it ? \$ 10
 5
 3
 2
 1
 0
9. If there was a fee per phone call for this service, and you could pay as many bills per call as you want, would you pay _____ per telephone call for it ? \$.25
 .20
 .15
 .10
 .05

- B. 10. If you were using this service and you had to either pay a monthly charge or a fee per telephone call, which would you prefer ? MC FPC
11. In general, how do you feel about the process of paying bills ? Do you Enjoy it
Don't mind it ..
Dislike it
Hate it

C. CONSUMERS WHO HAVE USED TEP

1. For each of the following telephone bill-paying features, please tell me how important they are to you on a scale of one to four. One is very important, four is not at all important:
- Convenience 1 2 3 4
 - # of payees it is possible to pay 1 2 3 4
 - The hours that it is available 1 2 3 4
 - How simple it is to operate 1 2 3 4
 - Whether it is cheaper than writing checks 1 2 3 4
 - The interest paid on a TEP account .. 1 2 3 4
 - Confidentiality and privacy 1 2 3 4
 - Control over your personal finances . 1 2 3 4
2. Now that you have told me how important these features are to you, please tell me to what extent each of them is being satisfied by your current telephone bill-paying account on a scale of one to four. One is very satisfied, four is not at all satisfied.
- Convenience 1 2 3 4
 - # of payees it is possible to pay ... 1 2 3 4
 - The hours that it is available 1 2 3 4
 - How simple it is to operate 1 2 3 4
 - Whether it is cheaper than writing checks 1 2 3 4
 - The interest paid on a TEP account .. 1 2 3 4
 - Confidentiality and privacy 1 2 3 4
 - Control over your personal finances . 1 2 3 4

- 5 -

- C. 3. What do you think are the greatest advantages or benefits to your telephone bill-paying account ? _____

4. What do you think are the greatest disadvantages or problems with your telephone bill-paying account ? _____

5. What changes could be made in your telephone bill-paying service that would encourage you to use it more ? _____

6. Have you recommended the telephone bill-paying service to friends ?
Yes _____
No _____
7. If you now have a "Tellerphone" account with the Greater New York Savings Bank, were you a customer there before opening this account ?
Yes _____
No _____
8. After you first heard about the telephone bill-paying account, how long was it before you signed up ? _____
9. Why did you hesitate ? _____

10. If both a commercial bank and a savings bank offered a telephone bill-paying service, which type of bank would you prefer to use for telephone bill-paying ? CB SB
WHY ?
11. Assuming you had both a checking account and a savings account and that you could transfer money between these accounts, would you prefer to pay your bills by telephone out of your checking or savings account ? C S
WHY ?

- C. 12. If there was a monthly charge for using this service, would you pay _____ per month for it ? \$ 10
5
3
2
1
0
13. Do you feel that paying 10¢ per telephone call is a fair price to be charged for this service ? Yes: _____
No: _____
14. If you had a choice of either paying a monthly charge or a fee per telephone call, which would you prefer ? MC FPC
15. In general, how do you feel about the process of paying bills ? Do you Enjoy it ... _____
Don't mind it _____
Dislike it . _____
Hate it _____

D. DEMOGRAPHICS

1. Sex M F
2. Age Under 15 _____
15 - 24 _____
25 - 34 _____
35 - 44 _____
45 - 64 _____
64 + _____
3. Education Not High School Graduate _____
High School Graduate _____
Some College _____
College Graduate or more _____

D. 4. Marital Status:

Single
Married
Other

5. Income

Under \$7,500
7,500 - 15,000
15,000 - 37,500
37,500 +

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And interviews with the following individuals:

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Washington Mutual Savings Bank, Seattle, WA
- Edward H. Buenis, AVP
People's Savings Bank, Bridgeport, CT
- Cindi Causey, Assistant Supervisor
University Savings Association, Houston, TX

Gary Clark, AVP
Hollywood Federal Savings & Loan, Hollywood, FL

Sabatine DiGiambattista, Jr., AVP
Buffalo Savings Bank, Buffalo, NY

Earl Hord, SVP
Dollar Savings Bank, Pittsburg, PA

Michael J. Hosemann, AVP
Louisiana National Bank, Baton Rouge, LA

Addison J. Keim, President
Mechanics Exchange Savings Bank, Albany, NY

Austin Kelley, SVP
Germantown Savings Bank, Bala-Cynwyd, PA

Ralph W. Klappevich, VP
Farmers & Mechanics Savings Bank, Minneapolis, MN

Paul Messing, AVP
Greater New York Savings Bank, New York, NY

Raymond O'Meara, Secretary
Provident Savings Bank, Jersey City, NJ

James Perkins, SVP
Savings Bank of New London, New London, CT

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