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Abt Associates Inc.
55 Wheeler Street, Cambridge, Massachusetts 02138-1168
Telephone • 617-492-7100
TWX: 710-3201382

ELECTRONIC BENEFIT TRANSFERS IN THE FOOD STAMP PROGRAM: THE READING DEMONSTRATION

William L. Hamilton

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CHAPTER ONE

INTRODUCTION

In exercising its responsibility for overall administration of the Food Stamp Program, the Food and Nutrition Service (FNS) of the U.S. Department of Agriculture continually seeks ways to improve the program's efficiency and integrity. For the past several years, FNS has been exploring the possibility of achieving such improvements by changing the way food stamp benefits are issued. One such modification would replace paper food stamp coupons with an electronic benefit transfer (EBT) system. EBT proponents hope the electronic approach will reduce the program's vulnerability to fraud and abuse, contain administrative costs, and offer greater convenience to recipients and retailers.

FNS accordingly funded a demonstration of an EBT system in Reading, Pennsylvania. At the same time, FNS contracted with Abt Associates Inc. to evaluate the demonstration. The evaluation has produced a series of reports concerning the EBT system design and operations, as well as the system's impacts on the Food Stamp Program and its various participant groups.[1] After briefly reviewing the demonstration's history, this document provides an overview of the key findings presented in those reports, summarizing what has been learned about EBT systems for the Food Stamp Program.

Beginning the demonstration. In January 1983, FNS solicited proposals from independent contractors to design, develop, and pilot test an Electronic Benefit Transfer system. The solicitation did not specify where the system should be tested or how it should be designed, but it contained a lengthy statement of functional requirements that any proposed system had to meet. Prospective contractors had to submit a preliminary system design. They also had to select a test site and show evidence that the State and local food stamp agencies, local food retailers, and local financial institutions would cooperate in the test.

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[1]Appendix A provides a list of these reports.

Planning Research Corporation (PRC) won the competition, and in July 1983, FNS awarded PRC the contract to carry out the demonstration in Reading, Pennsylvania. PRC proposed an on-line, direct debit system, in which a recipient's food purchase would involve automated communication with a central computer to deduct the amount of the purchase from the individual's food stamp account.

The ATP/coupon system. The food stamp issuance system that existed in Reading before the demonstration uses Authorization-to-Participate (ATP) documents and food stamp coupons. Each month, food stamp recipients receive an ATP in the mail indicating their food stamp allotment for the month. They take the ATPs to local bank branches and exchange them for the appropriate amount of coupons. Recipients then buy food with the coupons at retail food stores. The retailers, in turn, deposit the coupons at local banks, which pass them on to the Philadelphia Federal Reserve Bank for credit.

The EBT system. In the EBT system, each household has a plastic, magnetic-stripe card (like a bank debit card) and an "account" at the EBT computer center. Recipients' benefits are electronically added to their accounts each month. PRC installed terminals at the checkout counters of all participating stores, and recipients can use their EBT card to buy food at any store with terminals. When a recipient makes a purchase, the computers at the EBT Center automatically debit the purchase amount from the recipient's account and post a corresponding credit to the grocer's account. At the end of each banking day, the EBT Center initiates an electronic funds transfer process to deposit funds into grocers' bank accounts.

Participants in the demonstration. The Berks County Assistance Office (BCAO) administers the Food Stamp Program in Reading, which is the largest city in the county. About 5,300 households in Berks County received benefits each month during 1984-85. Because the original solicitation specified that the demonstration would involve no more than 4,000 cases, only those food stamp recipients living in the four central ZIP code areas of Reading participated in the EBT system. This area had a caseload of about 3,400 households, all of whom were placed on the EBT system. The remaining 1,900 food stamp cases continued to use the ATP/coupon system during the demonstration.

All food retailers operating within a five-mile radius of central Reading were allowed to participate in the EBT system. Participation was not mandatory, however. Retailers could refuse the EBT equipment and still continue to accept food stamp coupons, but they would not be able to make food stamp sales to the demonstration recipients, who no longer had coupons. Virtually all eligible retailers participated. About 125 retailers made EBT sales in any given month. Because of store turnover, the number equipped at one time or another during the demonstration totaled 162.

Chronology. PRC began elaborating the EBT design in July 1983, immediately upon contract award. Recipients first used the system 15 months later, in October 1984. About 100 stores were equipped and operational at that time. Recipients were phased onto the system. February 1985 was the first full month of operations with the entire demonstration caseload.

The EBT system successfully performed its most basic functions--issuing benefits, authorizing purchases, and crediting retailers--from the beginning. During the first few months, however, a number of system failures and slowdowns occurred. These stemmed from several factors: underestimating the number of transactions the system had to process and store; software and hardware choices that limited processing speed; and the minor "bugs" and operator errors common in new systems. During the late spring and summer of 1985, PRC modified a number of system features. System performance is viewed as stabilizing at an improved level by about August 1985, and continuing at that level through the end of the year.

The original plan called for the demonstration to end in December 1985, and for Reading recipients and grocers to return to the ATP/coupon system. Because the EBT system was widely seen as successful, however, the Pennsylvania Department of Public Welfare (PDPW) asked FNS to continue operating the EBT system. The participating retailers, through their statewide trade organization, lobbied in support of this request. Pennsylvania's Governor and Congressional delegation also expressed strong support. FNS and PDPW ultimately worked out an arrangement extending the demonstration. PDPW assumed PRC's responsibility for the EBT system, undertook a substantial redesign effort to enhance the system, and agreed to reimbursement ceilings for the system's operating costs.

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FNS funded an evaluation of the extended demonstration which is still on-going. This report, however, focuses exclusively on the system characteristics and evaluation results of the original demonstration, which concluded at the end of December 1985.

CHAPTER TWO

KEY FEATURES OF AN EBT SYSTEM

In an electronic benefit transfer system, food stamp benefits are stored in an account, similar to a bank account. The system must provide ways for the State to put benefits into the account, for the recipient to give benefits to the retailer in payment for food, and for the retailer to receive dollar value for the benefits accepted. This section describes how the Reading EBT system accomplished these objectives.

2.1 Authorizing Clients to Get Benefits

The Pennsylvania Department of Public Welfare (PDPW) authorizes a certain amount of benefits for each food stamp household each month. Authorized benefits are electronically recorded in recipients' EBT accounts and debit cards are issued to recipients.

Benefit issuance. PDPW sends file extracts containing case numbers and authorized issuance amounts to the EBT Center. It transmits supplemental, prorated, and other non-recurring issuances electronically over a commercial telephone line. For the regular monthly issuance, which involves more cases, a computer tape is physically delivered to the EBT Center. When the EBT Center receives issuance information for new cases, it creates account records for the EBT Master File and credits the corresponding issuance amounts to the accounts. For existing cases, the issuance amounts are added to the recipients' existing balances.

Card issuance. Each demonstration household receives an encoded EBT card. The head of household goes to the welfare office to obtain the card, although under certain circumstances, an authorized representative may make this visit. An issuance clerk takes the recipient's picture and produces a photo identification card. The recipient signs the card, which is then laminated to prevent tampering. The recipient selects a four-digit Personal Identification Number (PIN).

To encode the card, the issuance clerk first queries the EBT data base with the household's case number, using an IBM-PC microcomputer linked by telephone line to the EBT Center. The system responds with information about the recipient and a system-generated card number.

Three pieces of identifying information are then encoded on the card: the card number, a PIN offset number, and a check-sum digit. The PIN offset number is computed by the microcomputer and is based on the card number and the PIN. The check-sum digit, also computed by the microcomputer, is based on the card number and the PIN offset and serves as an additional security feature.

After encoding, income maintenance workers train recipients in how to use the EBT card to purchase groceries, how to find out their current account balance, and what to do in the event of problems. Recipients practice using their cards with EBT equipment like that located in the grocery stores.

To allow other members of the food stamp household or authorized representatives to purchase groceries, the recipient is given a paper Alternate Shopper Card with the recipient's name and case number. Using the Alternate Shopper Card together with the recipient's benefit card and PIN, a person designated by the recipient may buy groceries with the recipient's food stamp benefits.

2.2 Allowing Recipients to Buy Food with Benefits

Two methods are available for buying food with EBT benefits. When the central computer system and the retailer's EBT equipment are working, payment for food is handled electronically. If either the central system or the store equipment fails, manual back-up procedures are used.

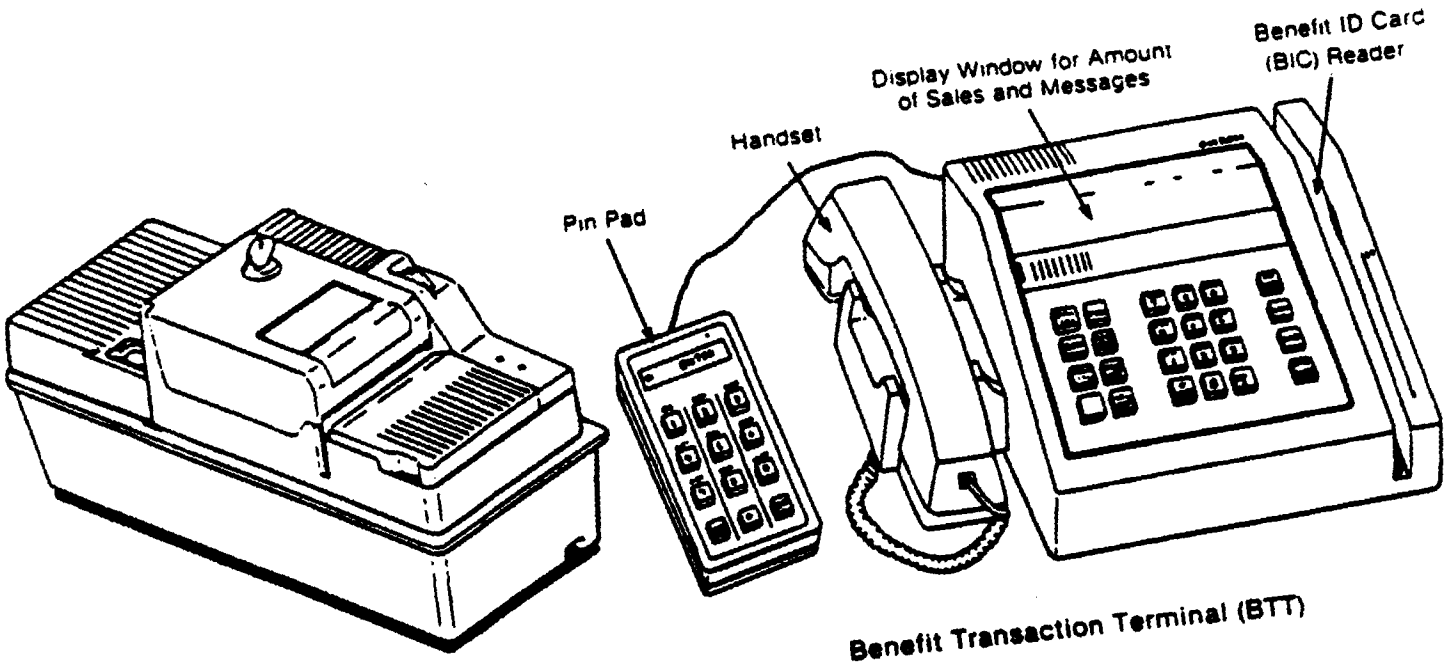
Electronic purchases. Nearly all checkout counters in participating stores are equipped with Benefit Transaction Terminals, which include PIN-pads, and printers. Recipients may make food stamp purchases at any counter that is so equipped. As illustrated in Exhibit 2-1, each BTT also has a card reader and a handset which may be used to call the EBT Center for assistance.

After the cashier rings up the sale, the BTT verifies the recipient's identity. The cashier then enters the total food stamp purchase amount on the BTT and presses a "Send" key. The BTT automatically dials the EBT Center computer and transmits recipient and store identifiers, the amount of the purchase, and a code to make sure the information is transmitted correctly.

The computer at the EBT Center verifies that a valid EBT account exists. It then compares the recipient's balance to the purchase total. If

Exhibit 2-1

Benefit Transaction Terminal and Printer



the balance is sufficient, the recipient's account is debited and the retailer's account is credited by the purchase amount.

The EBT Center then sends the BTT a message indicating that the transaction is complete. The BTT prints a two-part receipt stating the amount of purchase, the recipient's remaining account balance, the date and time, and some identifying codes. The cashier gives the recipient one copy of the receipt. The other copy is retained on a journal tape within the printer and serves as the retailer's record of the EBT transaction.

If the recipient's balance is less than the purchase total, the BTT displays the difference. The recipient may pay this amount in cash or remove some items from the purchase. In either case, the cashier re-enters the transaction with the new purchase total.

Verifying the recipient's identity. Cashiers are expected to check the photo on the EBT card before initiating the EBT purchase. If someone other than the recipient uses the card to purchase groceries, that person must present the recipient's Alternate Shopper Card.

The EBT system also verifies the recipient's identity through the four-digit PIN. The BTT performs the check. The cashier passes the recipient's card through the BTT's card reader and instructs the recipient to enter his or her PIN, which the BTT verifies internally. If the recipient fails to enter the correct PIN in three tries, the BTT will accept no further attempts to use the card until another recipient's card has been used at that BTT. After the third incorrect entry, the BTT automatically transmits information about the unsuccessful PIN entry to the EBT Center.

Manual backup purchase procedures. If an electronic transaction cannot be processed because the store terminal or the EBT Center computers are down, a recipient may still purchase up to $35 worth of groceries each day.

The cashier telephones an operator at the EBT Center to request authorization for a manual EBT transaction. The cashier tells the operator the client's case number (printed on the card) and the purchase amount. The operator checks the most recent balance for the recipient; this balance information is never more than 24 hours old. If the recipient's balance is sufficient, the operator gives the cashier an authorization code and debits the recipient's account. The cashier records this authorization code, the

case number, the purchase amount, and the store's identification number on a three-part manual sales form. The cashier retains one copy for the store, gives one copy to the recipient, and sends the third copy to the EBT Center, which credits the retailer's account.

Providing balance information. Recipients have three ways to determine their current EBT account balance. First, every time the recipient makes a purchase, the BTT receipt shows the remaining balance. Therefore, the most recent receipt usually shows the recipient's current balance. If the recipient's account has been credited with an issuance or debited with a manual sale since the last EBT transaction, however, the balance shown on the last receipt will be incorrect.

Second, recipients may check their current account balance by using a BTT. In addition to the regular terminals located at checkout counters, recipients may use balance-only terminals located in 23 of the larger stores or a terminal located at the welfare office.

Third, recipients can learn their account balance by using a touch-tone telephone to dial a special EBT Center number. This connects to the EBT computer, where a synthesized voice asks for the PIN and tells the account balance.

2.3 Crediting Retailers for Benefits Accepted

The EBT system credits retailers through an electronic transfer of funds to the retailers' bank accounts. Every afternoon, except weekends and legal holidays, the EBT Center totals each retailer's transactions for the prior banking day, which runs from 2:00 PM to 2:00 PM. The Center translates the retailers' account numbers and total transaction amounts into the standard National Automated Clearing House Association (NACHA) format used by financial institutions for electronic funds transfers. An EBT Center operator then physically delivers a tape containing this information and data on each retailer's bank to American Bank and Trust (AB&T) staff.

Each night, AB&T transmits this deposit information to the Third District Federal Reserve Bank in Philadelphia. The Federal Reserve Bank debits AB&T's account by the sum of all retailer credits and distributes the retailer credits to the retailers' bank accounts. Thus, the system is

designed to credit retailers' accounts within one banking day after an EBT transaction.

Reimbursement of AB&T's Federal Reserve account occurs when AB&T initiates a wire funds request through the Treasury Financial Communications System network. This request goes to the Federal Reserve Bank in New York (FRBNY). FRBNY draws down USDA's letter of credit with the United States Treasury, a special account established for the EBT demonstration. FRBNY simultaneously credits AB&T for the sum of the previous day's retailer credits.

2.4 Reconciling the Flow of Funds

Account balances and benefit transfers are reconciled at numerous points in the EBT system. The major reconciliations occur when benefits are issued by PDPW, when accounts and daily EBT purchase transactions are balanced, and when retailer accounts are credited through the Automated Clearing House (ACH) funds transfer network. In addition, retailers may balance their sales receipts against deposits to their bank accounts, and retailer deposits are checked against drawdowns of USDA's letter of credit with the Treasury.

2.5 Managing Retailer Participation

The FNS Field Office in Philadelphia authorizes new retailers and monitors compliance. Upon authorizing a new retailer the Field Office notifies the EBT Center that equipment installation can take place. For a store closure or disqualification, the Field Office notifies the EBT Center to remove the EBT equipment. FNS responsibilities also include investigatory visits to stores suspected of non-compliance with program regulations.

2.6 Alternative EBT Systems

The Reading system is but one example of an EBT system, and many variations on that system design are possible. Some would involve only minor differences in equipment or software, in security features, or in the procedures used for funds transfers. But major variations are also possible, such as the choice of an off-line design or a "piggybacked" system.

The Reading system uses an on-line approach: a purchase cannot be authorized until the store terminal communicates with the central computer holding the recipient's account. In an off-line system, the retailer terminal would authorize the purchase and debit the account on the recipient's card; only later, probably once a day, would data about the purchase be forwarded so the store could receive dollar credits.

In a piggybacked system, food stamp functions would be integrated with those of a commercial point-of-sale (POS) payment network. Store terminals would accept both EBT cards and commercially issued cards (typically bank cards). The network operator would perform some or all of the food stamp functions that PRC performed in the demonstration. A piggybacked system could use either on-line or off-line authorization.

In interpreting the findings of the Reading demonstration, then, it is important to remember that substantially different EBT systems are possible, and they might have importantly different results.

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CHAPTER THREE

IMPACTS OF THE ELECTRONIC BENEFIT TRANSFER SYSTEM[1]

The basic purpose of the Reading demonstration was to determine whether an EBT system is feasible in the Food Stamp Program and, if so, what impacts it has on the program and its participants.

The demonstration clearly showed the feasibility of the EBT concept. The system works: recipients get their benefits and use them to buy food, and grocers are credited for the benefits they accept. Moreover, the people who deal with the system received it warmly. Some problems occurred, but the various parties to the demonstration considered the system successful enough to extend its life beyond the scheduled end of the demonstration.

All this was evident quite apart from the evaluation. The evaluation's role is to probe more deeply into the question of the EBT system's impacts. It compares the EBT system to the ATP/coupon system previously used in Reading (and still operating in most other parts of Pennsylvania). The comparison focuses on five areas:

- The cost of administering the Food Stamp Program;
- Program integrity--i.e., fraud, theft, abuse, and error in the delivery of program benefits;
- The opinions of food retailers participating in the Food Stamp Program, and their costs of participation;
- The opinions and participation costs of food stamp recipients; and
- The opinions and participation costs of financial institutions that interact with the Food Stamp Program.

In all areas except administrative cost, where unanswered questions remain, the evaluation findings are extremely promising for EBT systems. These findings are reviewed in turn below.

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[1]Material summarized in this chapter is presented in William L. Hamilton, et al., The Impacts of an Electronic Benefit Transfer System in the Food Stamp Program. Cambridge, MA, Abt Associates Inc., 1987.

3.1 Administrative Costs

What does an EBT system cost? To find out, the evaluation team examined accounting records for both the EBT and coupon systems in Reading, conducted time studies in the local food stamp office and the EBT Center, and interviewed staff of PRC and the national, regional, state, and local agencies participating in the demonstration. The analysis compared operating costs for all major issuance functions -- authorizing benefits, allowing recipients to buy food, crediting retailers, reconciliation and monitoring, and managing retailer participation -- as well as measuring EBT design and development cost.

Operating costs. Operating costs of the EBT system during the demonstration dramatically exceeded the costs of the conventional ATP/coupon system. Total administrative costs for issuing and redeeming benefits under the ATP/coupon system are estimated at about $3 per food stamp case per month. Equivalent costs for the EBT system are nine times greater, about $27 per case month.

The high costs of the EBT system come from several sources, as indicated in Exhibit 3-1. The largest is the cost of the EBT Center, which amounts to more than $13 per case month. This occurs in part because of the system's stand-alone nature and the small caseload it serves. For example, the system must be staffed round-the-clock in order to deal with special problems, even though system operators have little to do during much of that time.

Another major cost item is the retailer terminals, at nearly $9 per case month. Communications, mainly between the terminals and the EBT Center, and EBT card issuance each add costs of about $1 per case month--small in the context of total demonstration system costs, but significant when compared to coupon system costs.

The largest single cost in the coupon system is the fee paid to the banks that act as issuance agents, accepting recipients' Authorization to Participate documents (ATPs) and giving them coupons. At more than $1 per case month, this is about 40 percent of total coupon system costs. The next largest cost item is for printing and mailing ATPs, which amounts to $0.50 per case month. Apart from issuance fees, then, the coupon system has no cost item approaching the level of the main EBT cost elements.

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Exhibit 3-1

KEY OPERATING COST ELEMENTS OF THE EBT AND ATP/COUPON SYSTEMS IN READING
(Per Case Month)

ATP/Coupon System	
Print/Mail ATP	$ 0.50
Produce/Ship Coupons	0.33
Issuance Office Fee	1.19
FNS Management	0.18
Other	0.72
	$ 2.92
EBT System	
Issue Cards	$ 0.78
EBT Center -- Hardware	4.62
EBT Center -- Labor	7.14
EBT Center -- Other	1.29
Store Terminals	8.87
Communications	1.34
Indirect, Other	2.98
	$27.02

Source: Figures are derived from tables in Hamilton, et al., pp. III-24 - III-35.

Pre-operational costs. The figures above exclude the cost of designing, developing, and starting up the EBT system. These totaled about $2.3 million, counting the efforts of various governmental agencies as well as the value of the PRC contract. The costs occurred in four phases, illustrated in Exhibit 3-2.

- The pre-design phase, in which FNS developed system specifications and solicited proposals, expending efforts valued at about $77,000;
- The design phase, consisting mainly of PRC's planning of the general structure and detailed technical specifications for the system, and extensive monitoring review by FNS, with costs totalling nearly $300,000;
- The development phase, in which PRC obtained and modified

Exhibit 3-2

DESIGN, DEVELOPMENT AND IMPLEMENTATION COSTS

	PRC	FNS	State and Local	Total
Pre-design	---	$ 77,000	---	$ 77,000
Design	$ 257,000	38,000	$ 4,000	299,000
Development	1,076,000	58,000	36,000	1,170,000
Implementation	591,000	70,000	89,000	750,000
Total	$1,924,000	$243,000	$129,000	$2,296,000

Source: Hamilton, et al., p. 29.

equipment; and the need for more highly skilled (and paid) staff than a routine operational setting would demand.

Apart from these demonstration features, two factors have a critical impact on EBT operating costs. The first is the cost of maintaining the recipient and grocer files, authorizing transactions, and reconciling and monitoring the system--functions the EBT Center carried out in the demonstration. These costs are largely fixed, and must be spread over a large number of households and transactions for the average cost to reach economical levels. One strategy, which Pennsylvania plans to implement, is to integrate the EBT system with the large computer operation supporting the Food Stamp Program and other programs administered by the Department of Public Welfare. Thus, even though the scale of the EBT system itself may be limited, the central processing equipment and labor costs can be averaged over a larger transaction volume.

The second critical factor is in-store terminal costs. These depend not only on the equipment's price, lifetime, and maintenance needs, but also on the number of terminals required to serve the food stamp caseload. The ratio of households to terminals is determined by the caseload and the number and size of participating stores in an EBT area. The Food Stamp Program cannot influence the ratio much, unless it restricts the number of terminals per store or the number of stores allowed to participate in the program. "Piggybacking" EBT with commercial point-of-sale systems, however, could be an effective strategy for managing terminal costs. With piggybacking, the cost of at least some terminals in the EBT system would be shared with other users. Operators of commercial systems would welcome the piggybacking, because it would increase their transaction volume and reduce average costs.

A permanent EBT system operated on a larger scale would clearly have lower unit costs than those observed in Reading. Whether the costs of such a system could reach the $3 ATP/coupon cost is less clear. Costs are projected for several scenarios, some involving the integration of central processing operations and some involving piggybacking with commercial systems (Exhibit 3-3). All but one of the scenarios have costs exceeding $4.50 per case month, not counting development costs. The only scenario yielding costs under $3 assumes that all retailers accepting food stamps participate in commercial

Exhibit 3-3

PROJECTED OPERATING COSTS FOR NON-DEMONSTRATION EBT SYSTEMS

Scenario	Small City System Cost Per Case Month	Major City System Cost Per Case Month	Large State System Cost Per Case Month
Integrated State EBT System - High Cost[a]	$9.85	$7.80	$7.54
Integrated State EBT System - Low Cost[a]	9.85	5.39	5.64
Partial Piggyback EBT System	7.66	4.92	4.61
Full Piggyback EBT System	2.28	2.28	2.28

Source: Hamilton, et al., p. 80.

[a]The difference between high-cost and low-cost estimates stems from alternative assumptions about the ratio of terminals to recipients and about economies of scale in labor for maintaining the main data base.

point-of-sale systems, an assumption that is unlikely to be met in most areas for the next few years.

The projections cannot be taken as conclusive evidence that EBT costs will always exceed ATP/coupon levels. They do not attempt to predict, for example, how quickly the costs of equipment and software will decline or what cost-sharing arrangements might be negotiated. The extended EBT demonstration in Pennsylvania may shed light on some of these issues.

3.2 Program Integrity

An issuance system must protect the integrity of the Food Stamp Program by making sure that just the intended amount of benefits goes to only the intended people, and that benefits are used only to buy authorized items. The EBT system appears to accomplish these purposes better than the coupon system.

In discussing the value of error, fraud, and abuse associated with the issuance of food stamp benefits, it is important to distinguish between problems resulting in actual losses (i.e., extra costs to the taxpayer), and diversions of benefits that keep them from serving their intended purpose but do not add to program costs. If someone steals a recipient's ATP, the Food Stamp Program will replace it; if both the recipient and the thief use the ATPs to get coupons, program costs increase. On the other hand, if someone steals the recipient's coupons, the program does not replace them. The benefits fail to help the needy household buy food, but program costs are not affected.

No exact measures of loss and diversion exist. Reporting systems cover only some kinds of coupon losses. In the case of the EBT demonstration, the novel and highly visible project would be expected to experience lower losses than a non-demonstration system. Accordingly, evaluation estimates are based not only on data from existing reporting systems, but also on the expert opinions of individuals familiar with security issues in the Food Stamp Program and in commercial electronic funds transfer systems.

Losses. Actual benefit losses in the Reading ATP/coupon system are estimated at $0.13 per case month, or about one tenth of one percent of food stamp benefits. The losses stem mainly from thefts or "leakage" from coupon

inventory and from replacing ATPs reported lost or stolen (Exhibit 3-4). These figures are approximations, based on expert judgements as well as FNS reports. Even if very substantial adjustments are made to the estimates, however, the losses remain quite small.

An EBT system is expected to reduce these losses. No significant losses were discovered during the EBT demonstration, but losses under a non-demonstration system are projected at $0.03 per case month. This is roughly comparable to estimates that debit card transactions in Automatic Teller Machines involve losses of about 0.02 percent of the transaction value.[1]

The EBT system would thus generate savings equal to about three-fourths of the losses in the ATP/coupon system. The dollar value of the savings is only about $0.10 per case month, however--too little to offset the substantial differences in administrative cost seen earlier.

Diversions. As much as $4 in coupon benefits per case month, or three percent of total food stamp benefits, may not serve the purpose of helping recipients buy authorized food items. The EBT system is estimated to reduce this potential diversion to just over $1 per case month.

The EBT system's largest estimated impact on benefit use does not mainly cncern fraud or abuse. A recipient may get up to $0.99 in cash change from a food stamp coupon purchase. Based on average spending patterns, this feature of the coupon system may allow about $2.50 per case month to be spent on non-food purchases. The EBT system deducts the exact value of a purchase from the recipient's account, giving no cash change, thereby redirecting all or nearly all of these benefits to food purchases.[2]

The EBT system also provides greater security for the benefits in recipients' possession. The value of lost or stolen coupons is estimated at

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[1]James M. Tien, Thomas F. Rich, and Michael F. Cahn, Electronic Fund Transfer Systems Fraud. Washington, DC: U.S. Dept. of Justice, Bureau of Justice Statistics. April 1986.

[2]The EBT system completely eliminates cash change. However, if some recipients were deliberately generating cash (e.g., by making a 15-cent purchase with a $1 coupon) they might turn to buying unauthorized items or selling benefits for cash in the EBT system.

Exhibit 3-4

FOOD STAMP BENEFIT LOSSES AND DIVERSIONS

	ATP/Coupon System $ Per Case Month	EBT System $ Per Case Month
Vulnerabilities Adding to Program Costs		
Excessive Authorizations (e.g., duplicate ATPs)	$0.05	$0.02
Excessive Redemption Credits	0.01	< 0.01
Losses in Production and Handling (e.g., inventory leakage)	0.07	0.00
Subtotal -- Losses	$0.13	$0.03
Vulnerabilities Detracting From Achievement of Program Goals		
Benefits Lost by or Stolen from Recipients	0.79	0.24
Benefits Used in Unintended Manner		
-- Unauthorized Uses	0.69	0.89
-- Cash Change	2.49	0.00
Subtotal -- Diversions	$3.97	$1.13
All Vulnerabilities	$4.10	$1.16

Source: Hamilton, et al., p. 109.

$0.79 per case month, based on recipient survey data. Recipients reported that equivalent losses under the EBT system were $0.24 per case month.

In addition to its impacts on specific losses and diversions, an EBT system may improve public confidence in the integrity of the Food Stamp Program. The expert informants interviewed in the evaluation unanimously believed the EBT system could provide tighter control. Recipients and retailers agreed. In survey responses, they reported positive impacts even on problems where the experts were skeptical of an EBT effect, such as the sale of benefits for cash.

3.3 Retailers

How the EBT system would affect retailers, and how retailers would respond, was a major concern before the demonstration. The food retail industry has been slow to adopt electronic payment systems. If a large proportion refused to accept EBT terminals, recipients' ability to use their food stamp benefits could be severely limited. As it turned out, however, retailers became strong proponents of the EBT system.

The evaluation surveyed all retailers participating in the EBT system several times during the course of the demonstration. In addition, three observation studies of checkout counters in a sample of 40 stores measured the time to complete purchases with varying forms of payment, including EBT, food stamp coupons, cash, checks, and manufacturers' coupons.

Retailer participation and attitudes. Virtually all retailers who were eligible to participate in the Reading EBT system did so. Several factors contributed to the high sign-up rate. Retailers did not have to pay for terminals or make other direct expenditures to participate. If they chose not to participate, they could make no food stamp sales to Reading recipients. PRC worked hard to publicize the system to retailers and solicit their participation.

Retailers clearly prefer EBT to the food stamp coupon system. Surveys throughout the demonstration consistently found a strong majority for EBT. After about a year of experience with the system, retailers preferred the EBT system by a three to one margin, as shown in Exhibit 3-5. During the same

Exhibit 3-5

SYSTEM PREFERENCE BY MAJOR STORE TYPE
(Late Demonstration Period)

Preference	Supermarket	Grocery Store	Convenience Store	Other	All Stores
EBT	79%	58%	68%	68%	66%
Coupon	5	28	11	21	20
No Preference	16	14	21	11	14
(Number of Stores)	(19)	(51)	(19)	(19)	(108)

Source: Hamilton, et al., p. 117.

period, retailer organizations actively supported the effort to extend EBT operations past the scheduled end of the demonstration.

Preferences depend somewhat on the type of store. The establishments authorized to accept food stamps range from supermarkets to milk routes, convenience stores to drug and alcohol treatment centers. Supermarkets express the strongest preference for EBT, while the small independent groceries are least favorable. Even the latter group, however, prefers EBT by a two to one margin over coupons.

The retailers' main reason for preferring EBT is that it reduces the irritating post-sale handling effort required for food stamp coupons. (Retailers must endorse each coupon, count them, fill in a special form, and take the coupons and the form to their local bank for deposit. The EBT system, in contrast, credits retailers automatically.) Retailers also value what they perceive as substantial reductions in fraud and abuse with EBT, and not having to give cash change for food stamp purchases.

The preference differences across store types reflect two main factors. Supermarkets, with their high-volume operations, seem to place a particularly high value on the reduced paperwork and tighter control that the EBT system offers. Second, a number of respondents believed that recipients shop more in supermarkets and less in some of the smaller stores with the EBT card. Redemption data from central Reading support their view: the proportion of food stamp benefits redeemed in supermarkets rose about four percentage points under the EBT system, while the grocery share fell correspondingly.

Retailers' participation costs. The EBT system reduces retailers' costs of participating in the Food Stamp Program. Although retailers pay no fees to participate, they incur a variety of costs in the process of accepting food stamp benefits, as indicated in Exhibit 3-6. The level of participation costs is one factor determining the profit the retailer makes from sales to food stamp customers. Total participation costs are estimated at about $18 per $1000 of food stamp coupons redeemed, compared to $13 per $1000 of EBT benefits. The major factors in this difference are:

- Handling is much more complicated with coupons; EBT saves over $8 per $1000 in redemptions.

Exhibit 3-6

RETAILER PARTICIPATION COST
(Per $1,000 Redeemed)

	Coupon	EBT
Checkout	$ 3.63	$ 3.93
Handling	12.93	4.69
Training	0.43	1.29
Accounting Errors	0.00	0.58
Float	0.29	0.05
Reshelving	0.46	0.44
Space	0.00	2.24
Total	$17.74	$13.22

Source: Hamilton, et al., p. 165.

- Space is needed for the EBT terminal, a $2 cost with no equivalent in the coupon system.
- More cashier training is needed with EBT, a difference of about $1.

Checkout time in the Reading system was slightly longer for EBT than coupon purchases. Transaction time in an EBT system depends on many details of system design, however, and other systems might yield quicker transactions.

Although the EBT system reduced participation costs by a substantial percentage, the dollar impact was small. The effect translates into a savings of just $14 per month for the average store in Reading. Not surprisingly, then, the overwhelming majority of retailers felt that the EBT system made no difference to their overall operating costs or profits. They strongly prefer the EBT system mainly because it eliminates much of the "hassle" they see in the coupon system.

3.4 Recipients

Food stamp recipients, like retailers, were a source of some concern for EBT planners. Few recipients could be expected to have experience with similarly sophisticated financial systems. Some, such as the elderly or non-English speakers, might find the system so difficult or intimidating that they would be forced to stop participating in the program. As was the case for retailers, however, the demonstration's results belied the planners' fears: recipients responded extremely positively to the EBT system.

The evaluation included three surveys of a sample of demonstration recipients, a baseline survey before the EBT system was implemented, one about six months after implementation, and another after six more months. Parallel surveys were conducted with a comparison group of recipients served by the Reading food stamp agency but living just outside the demonstration area. The surveys measured not only recipients' attitudes and experiences with the EBT system, but also the amount of time and money they spent each month to get their benefits.

Recipient opinions. Food stamp recipients strongly prefer the Reading EBT system to the ATP/coupon system. Recipients who had experienced both systems preferred EBT to coupons by a margin of more than three to one in the

first survey (Exhibit 3-7). Six months later, the margin surpassed four to one.

Groups that were expected to have trouble with the EBT system prefer it just as strongly as other recipients. They include older recipients (75 percent of those over age 50 preferred EBT), non-English speakers (81 percent), those with less than a ninth grade education (81 percent), and those who report they have some physical handicap (87 percent).

Recipients say the EBT system is easier to use than the coupon system, particularly in the retail store. A routine EBT purchase requires only that the recipient hand over the EBT card and key in a four-digit number. With coupons, the recipient has to select an appropriate number of coupon books to match the purchase amount and tear out individual coupons when the books do not match the sale amount exactly. Recipients also like not having to go to the bank every month to exchange their ATP for coupons, and they believe their benefits are more secure in the EBT system.

Recipients report few problems in dealing with the system. Only seven percent say they ever forgot their PIN. EBT system data, which record instances in which three incorrect PINs were entered in succession, show this problem in only 0.2 percent of all purchases. Similarly, hardly any recipients say they have trouble keeping track of their account balance. Most recipients rely mainly on their purchase receipts for this purpose.

A small percentage of recipients report having substantial difficulty with the EBT system, and a survey of closed cases found a few former recipients who said the system caused them to leave the program. These tended to be elderly and disabled persons with very small food stamp allotments, some of whom said they could not leave home to get their EBT card. Special efforts may be needed in an EBT system to follow up on such cases, but it must be recalled that a large majority of Reading's elderly and disabled recipients preferred EBT.

Participation costs. The EBT system reduces the time and money recipients spend to participate in the Food Stamp Program. Obtaining benefits and dealing with problems takes about 48 minutes of the average recipient's time per month in the ATP/coupon system, and entails an average expenditure of

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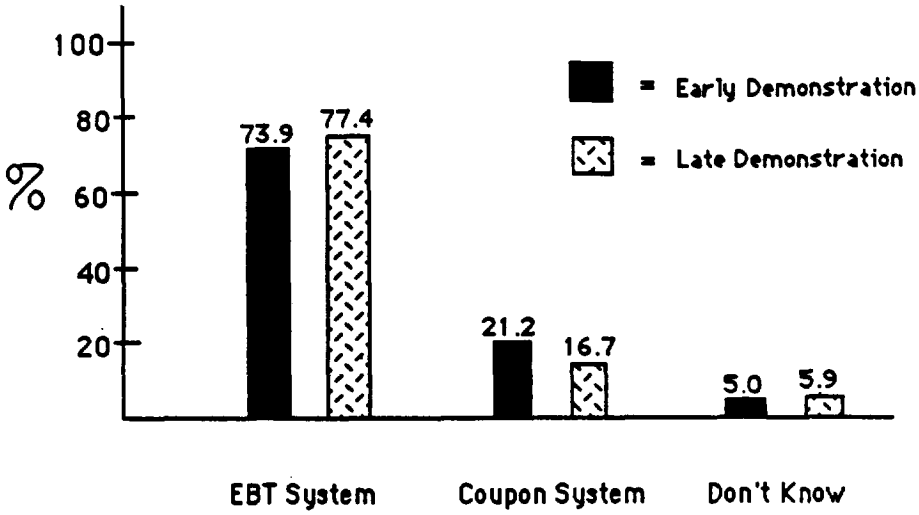
Exhibit 3-7

OVERALL PREFERENCE OF DEMONSTRATION PARTICIPANTS



Source: Hamilton, et al., p. 183.

more than $2, as shown in Exhibit 3-8. The EBT system requires only 12 minutes and a $0.26 expenditure.

Much of the difference occurs because coupon recipients in Reading have to go to the bank each month to exchange their ATPs for coupons. EBT recipients, in contrast, normally need only an initial visit to the welfare office to get their card. In addition, the value of coupons lost and stolen from recipients is substantially above the value of comparable EBT losses.

3.5 Financial Institutions

Local banks play two roles in the ATP/coupon system in Reading. First, they act as issuance agents, giving recipients coupons each month when they bring in their ATPs. Second, the banks accept food stamp coupon deposits from retailers, crediting the retailers and passing the coupons on to the Federal Reserve to get credit themselves. The banks' main role in the EBT system is to accept electronic deposits to the retailers' accounts (one bank also initiates the electronic funds transfer actions).

The evaluation included interviews with representatives of the local banks in Reading that participated in the EBT demonstration. Representatives of the Federal Reserve Bank in Philadelphia, which handles both coupons and EBT redemptions for the Reading area, were also interviewed.

Local banks. The bank representatives unanimously prefer EBT to the coupon system. They see the elimination of the bank role in issuing coupons as the EBT system's greatest benefit. The banks receive fees for their issuance role, and evaluation estimates indicate that the fee more than covers operating costs (see Exhibit 3-9). Nonetheless, the banks consider issuance a nuisance that detracts from their main business and is not worth the fee revenue.

The EBT system substantially reduces the banks' estimated costs of handling and redeeming food stamp benefits, for which they receive no direct compensation. These handling costs affect the profit the banks earn on the retailers' depository accounts. Costs are estimated at about $6 per $1000 in benefits redeemed in the coupon system. EBT costs are only $0.40 per $1000 because the bank simply receives incoming electronic deposit messages and credits the appropriate accounts. The banks also prefer EBT because the

Exhibit 3-8

RECIPIENT PARTICIPATION COSTS
(Per Case Month)

	Coupon	EBT
Obtaining Benefits		
Time	47 minutes	8 minutes
Expenses	$1.43	$0.08
Dealing with Problems		
Time	1 minute	4 minutes
Expenses and Opportunity Costs	$0.78	$0.18
Total		
Time	48 minutes	12 minutes
Expenses and Opportunity Costs	$2.21	$0.26

Source: Hamilton, et al., p. 215.

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Exhibit 3-9

LOCAL BANK PARTICIPATION COST
(Per $1,000 Redeemed)

Coupon System	
Issuance	
Cost	$7.71
Compensation	9.91
Redemption	
Cost	5.96
EBT System	
Transfer Origination[a]	
Cost	0.78
Compensation	1.37
Transfer Receipt	
Cost	0.40

Source: Hamilton, et al., p. 242.

[a]Only the ACH interface bank has transfer origination responsibilities.

incoming electronic deposits fit indistinguishably into their other business, while coupon redemption requires a set of special, largely manual procedures.

Federal Reserve Bank. The EBT system also reduces operating requirements at the Federal Reserve Bank. The coupon system involves special procedures for receiving, counting, and destroying coupons, while the EBT system involves electronic transfers like others that pass through the Automated Clearing House network. Estimated operating costs are $0.75 per $1000 of coupons redeemed, compared with $0.24 with the EBT system. Because the Federal Reserve is compensated for both services, it is not affected financially by the operating differences between the systems.

CHAPTER FOUR

OPERATING ISSUES FOR ELECTRONIC BENEFIT TRANSFER SYSTEMS

Although the Reading demonstration's primary mission was to provide information on the feasibility and impacts of an EBT approach, it also yields a rich base of operational experience. If further EBT systems are implemented, as seems likely, their planners may find as much or more benefit in this operational lore as in the demonstration's central results. Accordingly, this chapter reviews the Reading experience from three perspectives relevant to possible future EBT implementations.

4.1 Planning Factors

The Reading demonstration contributes the first actual experience in designing and operating an EBT system. It thus provides new information about what an EBT system has to do and how often it must be done--critical parameters for an EBT system designer. This section briefly characterizes the transactions the Reading system performs and the patterns of recipient and retailer behavior that underly those requirements.

EBT purchase transactions.[1] The average household in the Reading EBT system makes about eight electronic purchases per month. This figure initially seemed surprisingly high, because most recipients said in surveys that they shop with food stamp benefits only once or twice a month. Comparing individual' responses with their actual purchase records makes it clear that survey responses systematically underestimate EBT purchases, and should not be taken at face value in system planning.

The number of purchases per household ranges widely: about a third of the households make three or fewer purchases in the average month, while eight percent make 20 or more and one household made 89 purchases in a single month. Much of this variation simply reflects allotment amounts--households with more benefits to spend make more purchases--but some demographic characteristics also make a difference. Smaller households, male-headed households,

[1]Most of the findings presented in this section are reported in Susan H. Bartlett and Margaret M. Hart, Food Stamp Recipients' Patterns of Benefit Redemption. Cambridge, MA: Abt Associates Inc., May 1987.

and households headed by a person over 50 years old make more purchases than other households, other things being equal. The differing concentrations of these characteristics in different States' food stamp caseload could make the average number of purchases vary by as much as ten percent from one State to the next.

Purchases are concentrated in the days immediately after issuance, as illustrated in Exhibit 4-1. Households make an average of nearly 20 percent of their purchases within two days of issuance, over 50 percent within one week, and over 75 percent in two weeks. The great bulk of purchases occur between 9:00 AM and 9:00 PM, peaking in the late afternoon hours, as shown in Exhibit 4-2.

These purchase patterns can cause a high peak demand on the EBT system, particularly if all households receive their regular monthly issuance on the same day. Single-day issuance was used in the early months of the Reading demonstration, and the peak hourly volume averaged more than one percent of the total month's transactions. A staggered schedule was later adopted, with half the issuances on one day and half one week later. This is estimated to reduce peak demands by about one-fourth.

Most households use all or nearly all of their allotment in the month it is issued. About a third have a positive account balance by the next issuance date, but only 13 percent have a balance exceeding $1 or one percent of their allotment. Among those who do carry forward more than $1 or one percent, the average balance is $4.

Households spend three quarters of their food stamp benefits in supermarkets. They make an average of only three supermarket purchases, but the average purchase uses $25 in benefits. They make roughly the same number of purchases in grocery stores, but those purchases average less than $7. Households make fewer and smaller purchases in convenience stores and other categories of retail establishments.

Other transactions. Although the EBT system focuses on electronic purchases, these represent only about three-quarters of all transactions in a month. Other kinds of transactions the EBT system has to accomplish include:

- New account initializations, amounting to about 4 percent of the active caseload each month in Reading.

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Exhibit 4-1

Daily Volume of Purchase Transactions

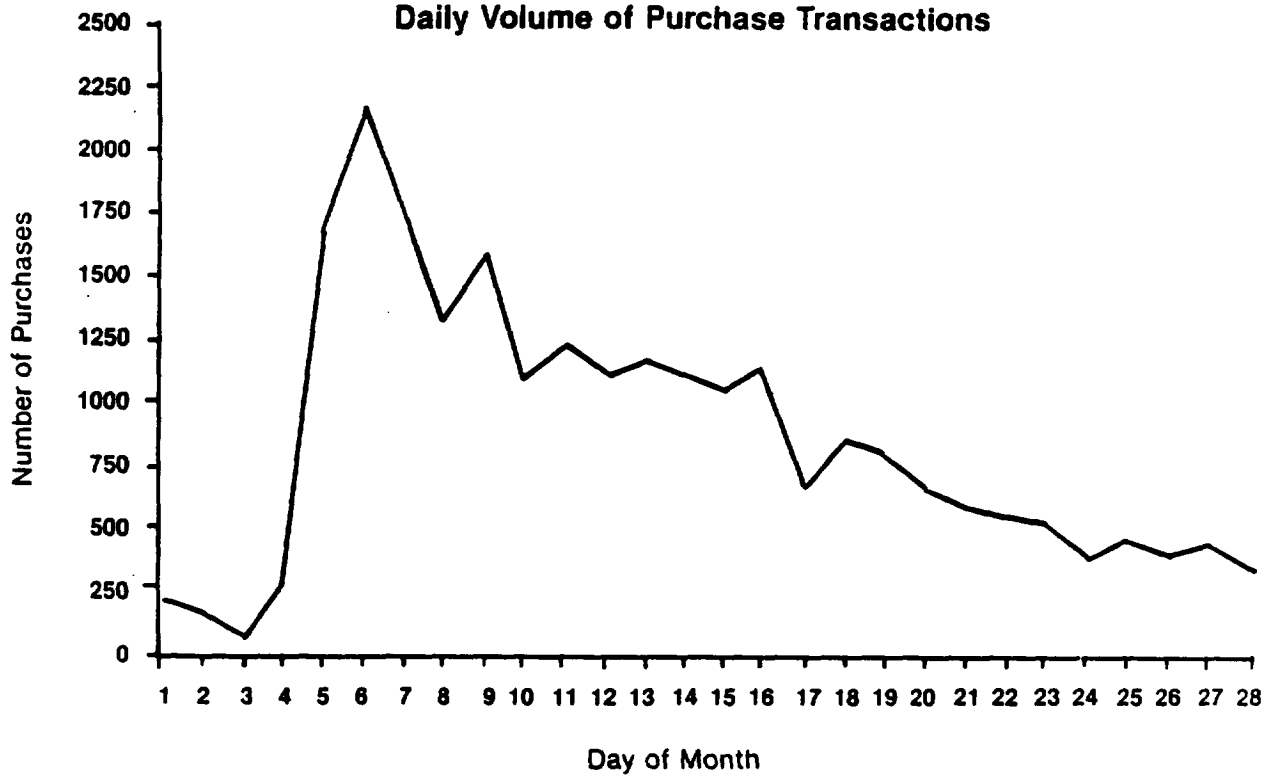
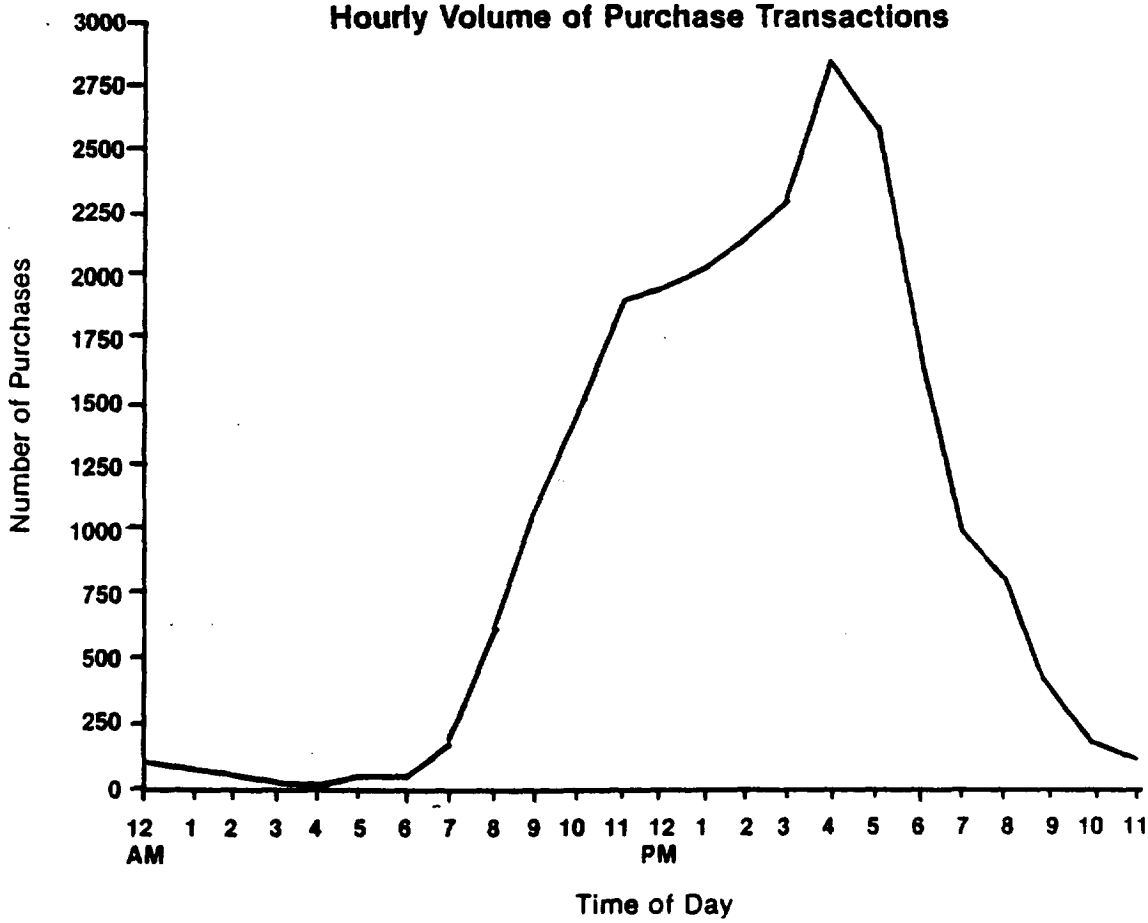


Exhibit 4-2

Hourly Volume of Purchase Transactions



Note: Figures reflect electronic purchases (manual purchases are excluded) for open cases in February 1985. Benefits became available on February 5.

Source: Kirlin, p. 66.

- Regular issuances, generally one to each household each month.

- Other issuances occurring throughout the month in a ratio of 8 per 100 regular issuances.

- Refunds, reflecting either a mistake in a purchase transaction or a return of goods, occurring in a ratio of 0.5 per 100 electronic purchases.

- ATP purchases to allow recipients leaving the area to convert their EBT benefits to coupons, amounting to 0.06 per 100 electronic purchases.

- Manually authorized purchases when electronic purchases could not be completed, occurring in Reading at a rate of 0.4 per 100 electronic purchases.

- Balance inquiries by recipients at in-store terminals or from telephones (no figures available).

- Transactions rejected for incorrect PIN, estimated at 3.6 percent of purchases. The recipient usually enters the PIN successfully on the second try. Card lockouts after three consecutive incorrect entries occur for 0.2 percent of purchases.

- Purchases rejected for insufficient balance, occurring at a rate of 3 per 100 completed purchases. Often this represents the recipient's effort to spend all remaining benefits: the rejection is immediately followed by a purchase for the exact amount of the balance.

Inactive accounts. The EBT system files in any given month contain some accounts for households that make no purchases or other transactions. This can happen when the household has not begun to use its benefits, when it has stopped participating in the Food Stamp Program, or when it simply does not use its benefits for a time.

About one percent of newly certified households never come to the food stamp office to have their cards encoded, and another five percent have their cards encoded but never use any of the benefits. Apparently these recipients' circumstances change right after they apply, and they no longer need the benefits.

In an average month, four percent of the households that are issued benefits do not make any purchase transactions. About half of these are new households that have not yet begun redeeming benefits. The other half redeem

benefits in previous and subsequent months, but experience at least a one-month interlude in which they accumulate benefits rather than using them immediately. These tend to be one- or two-person households with small allotments.

When households temporarily or permanently stop participating in the Food Stamp Program (i.e., are not issued further allotments), about 40 percent still have more than $1 or one percent of their last allotment in their account. Most of the permanent[1] non-participants never use any of the remaining benefits. Most of the temporary non-participants use at least part of their balance during the time they get no allotments. For both groups, most of the benefits redeemed during non-participation periods are redeemed in the first month, and practically all within five months.

4.2 Performance Issues[2]

The EBT system is considered successful in many respects, as indicated by the decision to extend the system's life beyond the original demonstration. It did not operate flawlessly, however. Reviewing some of the problems the system experienced and some more trouble-free areas helps define dimensions and levels of performance that future system planners may wish to bear in mind.

Processing speed. What happens at the checkout counter--in particular, how long it takes to complete a purchase--is critical to retailer and recipient acceptance of an EBT system. Payment time for a typical EBT purchase[3] averages 57 to 70 seconds in Reading, as shown in Exhibit 4-3. Payment time is measured from when the cashier announces the purchase total

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[1]For purposes of the evaluation, a "permanent" non-participant was one that did not resume participation during the demonstration. Some of these households doubtless received food stamps again at a later date.

[2]These issues are discussed in more detail in John A. Kirlin and William L. Hamilton, Performance Issues in an Electronic Benefit Transfer System for the Food Stamp Program. Cambridge, MA: Abt Associates Inc., 1987.

[3]This excludes purchases in which the recipient pays partly with cash and partly with food stamp benefits and purchases in which some problem arises.

Exhibit 4-3

AVERAGE PAYMENT TIMES FOR ROUTINE TRANSACTIONS, IN SECONDS
(Late Demonstration Period)

Payment Mode	Grocery Supermarkets	Convenience Stores	Stores
EBT Card	70.1	57.0	56.5
Cash	39.1	20.7	20.4
Card Minus Cash	31.0***	36.4***	36.1***
Coupon	72.2	25.1	26.6
Coupon Minus Cash	33.1***	4.5	6.2**
EBT Minus Coupon	-2.1	31.9***	29.9***

Notes: Statistical significance: *, p<.05; **, p<.01; ***, p<.005. Estimates are derived from regression models that take into account various features of the transactions within each store type, such as the number of items purchased.

Source: Kirlin and Hamilton, p. 40.

until the customer has a receipt. Although EBT times exceed cash payment times for equivalent purchases, and exceed food stamp coupon payment times in grocery and convenience stores[1], retailers and recipients expressed general satisfaction with normal transaction times.

Retailers and recipients are much less forgiving about system failures or slowdowns, which can cause lengthy delays in completing the purchase. Such problems occurred frequently in the early months, and observations found problem transactions to have average delays of more than four minutes.

Commercial point-of-sale payment systems similar to Reading's often incorporate standards for transaction processing. These usually cover only some components of the payment process, such as "response time" measured from when the store terminal connects with the central computer until the central computer finishes sending the authorization message. Although exact comparisons are not possible, the commercial standards generally seem to imply shorter overall payment times than Reading's.

System capacity. An EBT system's capacity is less visible than processing times to its users, but can be an important determinant of performance. Key capacity issues are:

- Communications capacity, particularly the number of incoming transaction calls that can be received simultaneously;
- Processing throughout, which refers to the number of transactions that can be processed in a specified short time period (e.g., one minute); and
- File capacity for maintaining recipient and retailer accounts and transaction records.

The Reading system experienced some problems in each of these areas, partly due to underestimates of the overall and peak activity levels. Some commercial system operators apply a rule of thumb that the expected activity level should use only 40 to 60 percent of the system's capacity, and that the system should be expanded when utilization reaches 80 percent.

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[1]The average purchase amount is considerably larger in supermarkets than elsewhere. This adds substantially to coupon payment time, but has less effect on the EBT payment.

System reliability. Because a failure of the central computer potentially affects all retailers and recipients, the primary issue in system reliability is the "uptime rate"--that is, the percentage of all scheduled operating hours that the central computer system is working and able to accept transactions. Trade literature often mentions a standard of 99.5 percent uptime. The Reading system approximated this level during the demonstration, with a rate of 99.7 during daytime hours and 99.4 overall.

Reliability is also important for other system components--store equipment, communication lines, and recipient cards--even though a problem usually affects only one retailer or recipient. Although few general performance standards exist in these areas, most components of the Reading system performed reliably during the demonstration. Exceptions are the audio response unit that responded to recipients' telephone requests for balance information, and the benefit card, which does not conform to bank card standards and had a relatively high replacement rate late in the demonstration.

Processing accuracy is another key ingredient of reliability. System users normally expect accuracy rates to exceed 99.9 percent of transactions correctly processed. The Reading system meets this expectation.

Security. The security of an EBT or similar system is generally judged in terms of the features it incorporates to protect funds and data. Key issues in an EBT system are:

- Physical access controls, such as restricted access to workstations and secure storage for blank cards and program listings;
- Communications access controls, such as PIN verification for recipients, message encryption or authentication, and identity verification for terminals originating messages;
- Manual transaction controls, such as positive balance verification and a daily limit on transaction value; and
- Administrative and operational controls, including software restrictions on access to system functions and security screening for employees.
- Reconciliation procedures that routinely verify the integrity of all flows of benefits into and out of the EBT system as well as all recipient and retailer account balances.

The Reading system is considered reasonably secure. Some weaknesses existed during the demonstration, however, including a failure to use prescribed encryption routines and an absence of system records of certain account adjustments.

System ease of use. Recipient and retailer satisfaction with an EBT system depends not only on whether it performs its required functions, but also on how easily they can interact with it. To be easy to use, the EBT system must minimize the number of separate or complicated actions the recipient or retailer performs, and must provide adequate training and financial information.

Both retailers and recipients indicate that the Reading system is quite easy to use. The exceptions for retailers included information on EBT deposits (not frequent enough for some retailers, and difficult to reconcile with internal records) and cumbersome procedures for manual transactions. For recipients, the procedures for using up all of their remaining balance often required mutiple transactions at the checkout counter. Both groups viewed these as relatively minor issues, to be taken in the context of a high level of overall satisfaction.

4.3 Impact on Food Stamp Administrative Operations[1]

Replacing the coupon system with an EBT system changes many aspects of the way FNS, State agencies, and local offices administer the Food Stamp Program. The impacts will depend on the nature of a State's coupon issuance system as well as the design chosen for an EBT system, but the Reading demonstration provides a basis for anticipating some general patterns.

Issuing ID cards and handling account problems are the primary points of interaction between program staff and recipients in the issuance process. An EBT system increases the staff time and non-personnel resources needed for these activities, because producing an EBT benefit card is more complex than

[1]This discussion summarizes material in Christopher W. Logan, Food Stamp Program Administration in an Electronic Benefit Transfer System. Cambridge, Massachusetts: Abt Associates Inc., July 1987.

producing the typical paper ID card. No major changes occur in state or local operational roles, however.

An EBT system radically alters the activities performed in issuing benefits to recipients. State and FNS responsibilities for ordering, printing, distributing, and controlling coupons are eliminated, as well as the responsibility for physically delivering them to recipients. Instead, the State focuses on maintaining an electronic system, and FNS has mainly a monitoring and oversight role. Local office functions in EBT and coupon systems are similar (e.g., dealing with lost and stolen ATPs or dealing with redemption problems). In Reading, however, the EBT system reduced local office staff time and, in removing the need to deal with lost and stolen ATPs, eliminated an activity that workers considered particularly burdensome.

An EBT system centralizes and automates crediting retailers for food stamp purchases, giving the State responsibility for some functions performed by retailers and banks, and overseen by FNS, in the coupon system. The practical impact of these changes is slight, however, because the crediting operation is a small and highly automated part of an EBT system.

An EBT system may shift much of the responsibility for managing retailer participation--which in the coupon system includes authorization, training, provision of supplies, monitoring, and compliance enforcement--from FNS to the State. Based on the Reading example, the State will be responsible for equipping and training retailers, providing supplies and service for their terminals, and handling retailer problems and inquiries. This responsibility may be divided between State-level and local staff. FNS will have to coordinate with the State in performing some retailer functions, such as authorization and compliance enforcement.

The activities required for reconciliation and monitoring change substantially in an EBT system, even though the locus of responsibility is largely unaltered. In the Reading case, automated EBT reports replaced reconciliation activities in separate State units; this implies a potential reduction in staff time. The automation can reduce FNS' responsibility for paper processing and data entry, but it can also complicate the analytic component of FNS' monitoring responsibilities.

CHAPTER FIVE

NEXT STEPS

The Reading demonstration provides two clear messages about delivering food stamp benefits through an electronic funds transfer system.

First, an EBT approach is technically and operationally feasible. It is not easy, and entails some risk of major problems, but it is certainly feasible.

Second, an EBT approach is desirable, provided that its costs can become comparable with the coupon system costs of about $3 per household per month. In other respects, the Reading experience suggests that an EBT approach generates mainly positive impacts on the Food Stamp Program and all of its major participant groups.

In sum, the Reading results are promising and suggest that FNS continue to pursue an EBT strategy. This will require addressing some questions not answered by the Reading demonstration. If those questions receive positive answers, major revisions of Food Stamp Program regulations will be needed. The unanswered questions and needed regulations are summarized below.

5.1 Unanswered Questions

The most important question raised by the Reading demonstration is whether EBT costs can be brought down to the coupon system's level. This requires strategies to control costs by achieving economies of scale in one or both of two key areas: the central computer facility that maintains accounts and authorizes transactions, and store terminals.

Central computer. Costs of the central computer, related equipment, and personnel represent relatively fixed costs that increase more slowly than transaction volume. Scale economies might be achieved by having the EBT system serve a very large caseload, by sharing the system with other program uses, or by sharing the system with commercial users. The extended Reading demonstration will provide information on programmatic sharing, because the EBT system uses the facility already used for other food stamp functions and for other public assistance programs in Pennsylvania.

Store terminals. Economies of scale in store terminal costs could be achieved in two ways. As with the central computer, terminal usage could be shared with other users, most likely commercial POS systems. Alternatively, the ratio of food stamp households to terminals could be increased by reducing the number of terminals in stores with multiple checkout stations.

The government also might save on terminal expenditures by requiring retailers to bear some of the cost. The fact that the EBT system reduces retailers' participation costs might justify some cost-sharing (the effects shown in Exhibit 3-6 are equivalent to about $0.50 per case month). However, because such a policy merely transfers the cost from one segment of society to another, it is clearly less desirable than achieving economies of scale that reduce total costs.

In addition to the cost issues, two other major questions are not addressed by the Reading demonstration:

- Alternative system designs. The Reading system represents just one possible EBT system design. Both small and radical variations on the design are possible. In an off-line approach, for example, the benefit balance would reside on the recipient's card and purchases would be completed without immediate communication with the central computer. Would alternative designs be more cost-effective than that used in Reading?

- Different environments. The Reading system operated in a single, relatively small area. Would such a system fare as well serving a dense urban area, a sparsely populated rural area, or a whole State's caseload distributed in many kinds of environments?

Much is at stake in establishing an EBT system--not only the cost of system development and operations, but the potential for fraud and theft or for disruption of retailer operations and recipient service. FNS must therefore obtain answers to as many as possible of these questions before allowing or prohibiting widespread EBT implementation. FNS is currently undertaking a series of demonstrations and studies, and with careful structuring these will provide much of the needed information.

5.2 Regulations[1]

Current Food Stamp Program regulations do not allow benefits to be delivered by means of electronic benefit transfer systems except in demonstrations. To incorporate EBT systems into normal program operations will require some minor alterations, such as changing the word "coupons" to "benefits," and some substantive additions to ensure that EBT systems function in a manner acceptable to the program.

One major group of regulations will need to delineate the functional requirements of an EBT system. Many of these are obvious, at least in the light of the Reading system. In some cases, however, policy decisions will be needed to determine what an EBT system must be required to do. For example, must all previously authorized stores in an EBT area be equipped for electronic transactions? Under what circumstances will lost and stolen benefits be replaced (for example, what happens if an outsider penetrates a State-maintained system and causes unauthorized debits to a recipient's account)?

Another key area of regulation will concern EBT system design and performance requirements. These regulations seek to protect program integrity, to promote compatibility among EBT systems and with analogous commercial payment systems, to safeguard recipient and retailer interests, and to ensure cost-effectiveness. Regulations may mandate or prohibit particular features or system components, including the choice between on- and off-line systems, allowable types of benefit cards, and the extent to which EBT system components will conform to industry standards. Regulations may also cover issues of security, system performance levels, and user convenience.

Finally, regulations will have to cover States' delegation of EBT-related responsibilities. This will be particularly important because of the likelihood that EBT systems will share some functions or equipment with other assistance programs or with commercial users. Regulations will have to delineate the allowable types of delegation, define States' and other organizations' liabilities, indicate what financial arrangements are acceptable (including the charging of fees to commercial users of EBT equipment and to

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[1]This discussion summarizes material in William L. Hamilton, Regulating Electronic Benefit Transfer Systems in the Food Stamp Program. Cambridge, Massachusetts: Abt Associates Inc., July 1987.

retailers), and specify whatever procurement and contractual procedures will be required to establish relationships with other entities in an EBT system.

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Appendix A

REPORTS FROM THE EVALUATION OF THE EBT DEMONSTRATION

John A. Kirlin, Developing an Electronic Benefit Transfer System for the Food Stamp Program. Cambridge, Massachusetts: Abt Associates Inc., August 1985.

John A. Kirlin and William L. Hamilton, Performance Issues in an Electronic Benefit Transfer System for the Food Stamp Program. Cambridge, Massachusetts: Abt Associates Inc., February 1987.

Susan H. Bartlett and Margaret M. Hart, Food Stamp Recipients' Patterns of Benefit Redemption. Cambridge, MA: Abt Associates Inc., May 1987.

William L. Hamilton, Susan H. Bartlett, Stephen D. Fisher, David C. Hoaglin, Christopher D. Kane, Christopher W. Logan, and Thomas R. Marschall, The Impact of an Electronic Benefit Transfer System in the Food Stamp Program. Cambridge, Massachusetts: Abt Associates Inc., May 1987.

William L. Hamilton, Regulating Electronic Benefit Transfer Systems in the Food Stamp Program. Cambridge, Massachusetts: Abt Associates Inc., July 1987.

Christopher W. Logan, Food Stamp Program Administration in an Electronic Benefit Transfer System. Cambridge, Massachusetts: Abt Associates Inc., July 1987.