
The Emergence of EFT/POS

The Global Context

The 1980s saw the emergence of electronic funds transfer services at the point of sale (EFT/POS) in numerous countries. The technology for what became known as the debit card had already been well tested and was widely distributed, having been successfully applied both nationally and internationally by the large credit card networks.¹ Despite this technological readiness, the emergence of EFT/POS in most countries was noticeably slowed by controversy. Retailers were understandably cautious about anything that could fundamentally change procedures at the point of sale—especially at the checkout counter, where consumers came face to face with store personnel. Speedy, pleasant, low-cost service in a restrictive space had to be maintained. The retailers worried that bank-led POS initiatives might reduce their control of the relevant computer systems. They viewed the shopper as *their* customer, not the bank's. Indeed, several large department stores and oil companies wanted to issue their own debit cards, similar to their existing in-house credit cards. Such cards would link shoppers to the firm by means of various incentive schemes and would provide a cumulative record of the tastes of particular individuals—data that could then be used for target marketing.

On the other side of the controversy, the banks felt very strongly about their responsibilities to protect the deposited funds of their clients and to allow a debit against an account to occur only if there was sufficient evidence that the payment had, in fact, been authorized by the proper individual. The consumer was equally *their* customer. The funds on deposit had to be protected by appropriate security procedures, and the confidentiality of the individual's transactions had to be preserved.

1. The major difference between a debit card transaction and a credit card transaction is that the former leads to a debit (withdrawal) from a purchaser's deposit account, while the latter leads to an extension of credit to the purchaser, together with a payment from the card-issuing institution to the vendor.

At least three other parties were involved in the lengthy discussions concerning EFT/POS: consumer-advocacy groups, companies that were selling small computer terminals, and providers of telecommunications services. In many countries, conferences were organized that brought speakers with these points of view together with representatives of major banks and large retailers. Viewed from a global perspective, an interesting aspect of these national developments was the differing degrees of emotion generated during the debates. After an early stumble (described below), the CPA's efforts probably helped to keep the Canadian debate on a civilized plane.

Initial Discussions in Canada

Serious multi-sectorial discussions of EFT/POS began in Canada in the early 1980s in an organization called the Payment Alternatives Communications Exchange, or PACE. During 1981 to 1983, while the CPA was dealing with the main challenge of beginning to operate the national clearing and settlement system for payments, PACE gained sufficient momentum and resources to be able to run full-scale conferences on EFT/POS. In 1984, its officers were drawn from the Retail Council of Canada and from two major banks, and its members included the two Canadian telecommunications networks and two large computer suppliers.

At this time, the principal forum used by financial institutions for discussions of EFT/POS was not the CPA but the association of deposit-taking institutions known as Interac. Although the criteria for membership in Interac made it necessary for any applicant to be a CPA member, there was no formal link between the two associations. On the other hand, various experts on the intricacies of EFT/POS served on the working committees of both organizations. The areas of the greatest overlap were, necessarily, the procedures, terms, and conditions under which electronic payment transactions generated at the point of sale (and involving more than one financial institution) would subsequently pass through the CPA's clearing and settlement system so as to move value from the purchaser's institution to that of the vendor.

Shared Cash Withdrawals—The Dress Rehearsal

In 1984, the five financial institutions that were the founding members of Interac decided to link their proprietary networks of automated teller machines (ATMs) to give their depositors broader and more convenient access to cash-dispensing services. This sharing arrangement would, in effect, be a stripped-down form of EFT/POS—one without a retailer involved in the transactions. Customers would receive something of value

that they wanted (the withdrawn bank notes); they would use a debit card in a terminal (often at a financial institution other than their own); their identity, payment authorization, and sufficient holdings of funds would all be checked electronically by means of standardized messages passing over a telecommunications network; a debit would be entered in the customer's deposit account to reflect the transaction; and, finally, the transaction would be cleared and settled according to the national arrangements. All these steps would be equally necessary in the future when the transaction might also involve a purchase of goods or services from a retailer.

The initial action of the CPA in this field was to create a set of standards for networks of shared ATMs. During the discussions of these standards at a CPA Board meeting in early 1985, it was noted that one particular aspect of the standards would, if promulgated, have the effect of constraining certain innovations already beginning to be observed in Canada and elsewhere. These innovations involved the use, by large retailers and others, of the existing arrangements for the clearing of pre-authorized debit (PAD) transactions—often on the medium of magnetic tape—in order to draw funds from the institutions holding the deposits of customers who had made purchases at the point of sale. This caused considerable worry for the financial institutions because they would receive a tape of debits through the clearings, process the transactions against clients' accounts, but have no way of verifying that the customers had, in fact, authorized such a use of the funds on deposit. Consequently, the CPA Board decided to issue its first-ever policy statement, the two summary points of which follow:²

1. The use of the Pre-Authorized Payment facility for the interchange of ATM and POS transactions in any medium; i.e., paper or electronic form, is not permitted.
2. No card issuer may issue or purport to issue a card that, when used by the cardholder, results in the initiation of a transaction to his/her account at a CPA member institution without prior authorization and agreement of that CPA member.

The CPA staff handled the translation and public distribution of the policy statement quickly; it was felt that time was of the essence. In addition, a copy of the statement was included in each delegate's package at the CPA Payments System Conference in Montréal that April. These actions brought the CPA immediately into the centre of the multi-sectorial debate on EFT/POS and taught the Association a painful lesson about the dangers of unilateral, sudden, and high-profile actions. The corporate treasurer of Imperial Oil, who had been invited to speak at the conference on other payment-related topics, used her allotted time to challenge the need for

2. CPA, *Policy Statement on the Use of Pre-Authorized Payments* (Ottawa, March 1985).

real-time, risk-control calculations and to criticize the process used by the Association to develop the policy.

The Framework for the Evolution of the Payments System

Four months later, in September 1985, the CPA Board met for a full day of discussions motivated by the second legislated objective of the Association; namely, “to plan the evolution of the national payments system.” With respect to small-value payments and the ongoing EFT/POS controversy, the discussions focused on the right—indeed, the contractual responsibility—of the member institutions to control the processes that provided access to their customers’ accounts. These included the identification of the customer, the validation and authorization of transactions, together with the maintenance of a high degree of protection for the privacy of the customer and the data surrounding the transaction. In principle, these duties were seen as applicable not only to existing payment mechanisms such as pre-authorized payments, but also to EFT/POS. The Board felt an urgent need for a statement of such principles that could be used in future discussions with the retail community and others; it would also help document how the CPA was proceeding with respect to its legislated mandate. All members of the Board were asked to contribute to the preparation of the text. The Senior Planning Committee of the Board determined the manner in which the statement of principles would be communicated to the Retail Council of Canada and the Consumers Association of Canada. The document, titled *The Framework for the Evolution of the Payments System*, was subsequently published in February 1986.³ Five principles were stated:

1. Most payments are ultimately made from or to deposit accounts at CPA member institutions; all will have to meet the definitions and criteria set out in the CPA by-laws and rules if they are to be cleared and settled through the national system.
2. The privacy of depositors and the confidentiality of their financial affairs must be rigorously maintained.
3. The means of access to deposit accounts at CPA member institutions must be controlled by those institutions and by the contractual relationship between them and their account holders.
4. Techniques for identifying depositors and authorizing their payments must be the responsibility of the account-holding institutions.

3. CPA, *The Framework for the Evolution of the Payments System* (Ottawa, February 1986).

5. The national standards necessary for the secure, confidential, efficient, and cost-effective handling of electronic payments are the responsibility of the CPA and its members.

These five principles were to shape the approach of the Association to customer authorization, both in existing channels such as pre-authorized payments⁴ and in EFT/POS.

The Long Road to Consensus

Two full years proved necessary before the strongly held views of financial institutions and those of large retailers gradually converged to a mutually tolerable configuration for EFT/POS. The key common ground was a “model” in which the retailer could issue a payment card to its customer, in an arrangement in which there would be a personal identification number (PIN) associated with the card and used to initiate each purchase. Importantly, the PIN would be issued to the individual by the financial institution where his/her funds were on deposit. The processing of such POS transactions would take place on a real-time basis, rather than occurring later in a batch with other transactions. In two other models, also viewed as acceptable, both the card and the PIN would be issued by financial institutions but would be equally acceptable at the point of sale in the retail context.

The first pilot project employing one of these models was launched by the Mouvement Desjardins in the cities of Laval and Victoriaville in 1988. A multi-institution pilot was started by Interac in Ottawa in 1990, and it was gradually extended in subsequent years to become, in effect, the Canadian national network for EFT/POS transactions.

One factor that facilitated forward movement during this period was a further opening of the payment-system planning processes of the CPA. Initially, the representatives of the retail industry were invited to participate in “Operational Planning Teams,” which dealt with subjects such as security, error correction, and the layout of keys on the PIN “pads.” Later, the composition of the Senior Planning Committee of the CPA itself was opened to “consulting members,” who could join in the debates on more strategic questions.⁵ A procedure was subsequently requested by the representative of

4. CPA Rule H4 governing pre-authorized debits was revised, after a lengthy public consultation process, in 1989 to preclude the use of PAD arrangements for variable debits, such as those arising from debit card transactions processed on a batch basis, without real-time client authorization.

5. The increasing direct involvement of representatives of the users of payment services led to the establishment of the Stakeholder Advisory Council in 1997. This body was later enshrined in legislation.

the Treasury Management Association of Canada, and promptly instituted, in which all new CPA standards and rules were issued first in “discussion draft” form, with an appropriate time interval for review by stakeholders. This would be followed by the circulation of the CPA’s responses. The procedure was used successfully in the development of the CPA’s standards and guidelines for EFT/POS, which were published in 1990.⁶ The major topics covered in the standards were:

1. Card standards
2. Message standards
3. Message handling
4. Cardholder-interface requirements
5. Acceptor-interface requirements
6. Inquiry and complaint handling
7. Security, auditability, and control
8. Interchange, reconciliation, settlement, and default
9. Contingency arrangements

In each of the nine areas, the CPA standards were stated in very general terms, leaving the choice of the particular techniques used to achieve the required security, for example, up to the participants in the relevant EFT/POS network.

The Canadian Love Affair with EFT/POS

The degree to which Canadians embraced EFT/POS in the decade of the 1990s was remarkable by world standards. The volume of debit card transactions grew very rapidly, and during the four years 1997 through 2000, there were more of these transactions per capita in Canada than in any other G-10 country.⁷

In the year 2000, for the first time, Canadians made payments using their debit cards more often than they wrote paper cheques. In that year, the number of such electronic payments exceeded 1 1/2 billion, surpassing the volume of cheques by 14 per cent. It was a noteworthy crossover point with respect to the medium of exchange for small-value payments.

6. CPA, *Standards and Guidelines Applicable to Electronic Funds Transfer at the Point of Sale (EFT/POS)* (Ottawa, March 1990).

7. Bank for International Settlements, *Statistics on Payment and Settlement Systems in Selected Countries* (Basel: BIS, 2002).

Although the evolution towards electronic payments moved rapidly in the 1990s, it had not yet affected the 20 to 30 thousand payments per day in Canada that were, in each case, greater than \$50 thousand. These “large” payments now accounted for well over 90 per cent of the value of payments passing through the national clearings and settlement system. This substantial value carried with it substantial risk, as explained in Chapter 5. The building of a large-value transfer system to curtail this risk was the CPA’s next challenge.



Author, Jim Dingle, Deputy Chair of the Board of Directors of the Canadian Payments Association, 1980–2003.