Planning an Evolution: The Story of the Canadian Payments Association, 1980-2002

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Cover photos: Gord Carter

May 2003

ISBN: 0-662-67377-8

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The Canadian Payments Association was established by an Act of Parliament in 1980 as a regulated public-purpose organization, with a mandate to “establish and operate a national clearings and settlement system and to *plan the evolution of the national payments system*.”

Contents

Acknowledgements

I wish to thank Chuck Freedman of the Bank of Canada, Deputy Governor and a long-standing colleague, for commissioning this work and for reading each section as it emerged. Serge Vachon, who was Chairman of the Board of the Canadian Payments Association (CPA) from its inception in 1980 until just before his retirement in 2001, also read the complete manuscript.

Wm. C. Hood, Bill Kennett, and Bob MacIntosh helped me recapture the thoughts of the 1960s and 1970s regarding the need (or otherwise) for an arrangement such as the Canadian Payments Association.

Frank MacDonald and Hirsh Tadman commented on the early years of the Association and on the way the non-bank deposit-taking institutions were brought into the national clearing system, which had been operated since 1900 by the Canadian Bankers Association.

Two technically oriented individuals directly involved with the development of the Automated Clearing Settlement System, Larry Moncrieff and Marc Parent, read and improved the material on the first significant automation project of the CPA.

John Roberts and Al Lamb, both of whom were caught in the tangles created by the defaults of the two western Canadian banks in 1985, refined the text on that complex topic.

Three people who lived through the lengthy negotiations necessary for the emergence of electronic funds transfer services at the point of sale in Canada, namely Jack Speake, Jane Hamilton, and Ken Morrison, helped me recall all the forces at play and the many steps that ultimately proved necessary.

The building of Canada's large-value transfer system (LVTS), was largely directed by Don Marcotte and Fredda Cole, LVTS project owner and project manager, respectively. They helped me handle the intricacies of that 10-year endeavour.

Bob Hammond and Penny-Lynn McPherson, who were CPA General Manager and Legal Counsel, respectively, during much of the 1990s, read the chapter on the legislative changes at the turn of the millennium and

helped me assess what appeared to be the significant trends for the Association at that time.

In preparing the document, I greatly appreciated the skill and good will of the editors and translators of the Bank of Canada: Jill Moxley and Lea-Anne Solomonian; Eddy Cavé, Denyse Simard-Ebert and Lyse Brousseau.

Introduction

In simple societies, money itself—whatever its physical form—provided the medium of exchange in economic transactions. More recently, payments systems have evolved to provide the medium of exchange, facilitating the numerous transfers of money—now largely recorded as deposit liabilities of financial institutions—from payors to payees. In Canada, as generally in the world, the decades of the 1980s and 1990s saw the medium of exchange move away from paper and increasingly towards electronic form. This was true both for individual consumers, who began using payment cards to make purchases at retail stores, and for corporate treasurers, who increasingly paid for manufacturing inputs or financial investments by using a direct computer link to their financial institutions.

Such evolution in Canada and elsewhere can be viewed as the latest phase in the long and diverse history of money.[1] What makes this two-decade Canadian story noteworthy is that, for the first time, a national government established a planning mechanism in order to reconcile in one entity—the Canadian Payments Association (CPA)—the views of the numerous parties involved in *consciously* changing a national payments system.

This account is organized chronologically. Chapter 1 addresses the ways in which Canadians in the 1970s anticipated the electronic era—in particular, foreseeing some sort of payment card. Chapter 2 presents the details of the 1980 federal law that created the CPA, emphasizing the planning mandate of the Association. Chapter 3 deals with a key theme for the early years of the CPA; namely, how non-bank, deposit-taking institutions would fit into the existing clearing arrangements for cheques and the forthcoming electronic payment items. Chapter 4 describes the first major information technology application of the CPA—namely, the Automated Clearing Settlement System. Chapter 5 presents the cautionary tale of the default of two small western Canadian banks in 1985, events that

1. See J.K. Galbraith, *Money: Whence It Came, Where It Went (*Boston: Houghton Mifflin Company, 1975).

revealed the noticeable level of systemic risk in the national arrangements for the clearing and settlement of payments and the need for a radically different method for handling large-value funds transfers. Chapter 6 covers the appearance of card-initiated electronic payments at the point of sale in Canadian retail establishments. The theme of minimizing risk returns in Chapter 7, which describes the building of Canada's large-value transfer system, the LVTS. The final chapter summarizes the contents of the 2001 Canadian Payments Act, which refocused—and articulated more fully—the planning mandate of the CPA for use during the expected developments of the decade to come.

1

Anticipating the Electronic Era

The Seminal Statement

The earliest statement containing the idea of an association of all the institutions that provide payments services to Canadians appeared as one of the recommendations of the 1964 Royal Commission on Banking and Finance, commonly known as the Porter Commission. The recommendation was worded as follows: "The clauses of the Canadian Bankers' Association Act which give the Association the right of operating the clearing system should be repealed, and an association of all clearing institutions formed to manage the system and allocate costs equitably among all members in relation to the work done by each."[1] All types of clearing institutions could, via their membership in the proposed association, settle their clearing obligations at the central bank, rather than being required to make arrangements to do so with one of the chartered banks.

The Commission felt that it was inequitable for the banks alone to run the payment clearing system, which other types of financial institution had to use in order to provide transferable deposits to the public. Moreover, existing clearing arrangements were probably not as efficient as possible nor as conducive to full and free competition among all the providers of funds-transfer services.[2]

These views of the Porter Commission and its staff were to inform the developments of the subsequent decade. Their perception of inequitable and inadequate competition would be joined a few years later by a further idea, namely, the need to address these shortcomings in a radically different context—the electronic era.

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1. Canada, *Report of the Royal Commission on Banking and Finance* (Ottawa: Queen's Printer, 1964), 393.
2. Communication between the author and Wm. C. Hood, Director of Research of the Commission, 25 June 2001.

The Computer/Communications Revolution

It is a challenge today to recapture the degree to which the financial world of the 1970s, indeed the entire society of that time, was awakening to the astonishing power of the combined technologies of computers and communications devices. The titles of two widely read and influential books of the period are suggestive: *The Coming of the Post-Industrial Age*, by American sociologist Daniel Bell was published in 1975, and a report entitled *L'informatisation de la société*, by publisher and intellectual Simon Nora, appeared in 1978 in response to a request from the President of France. It is also noteworthy that, during this decade, the Canadian government felt it appropriate to have a Department of Communications, a ministry that worked jointly with the Department of Finance on several major policy papers shaping financial sector legislation.

Branching Out

This was the title of the 1972 report of the Canadian Computer/Communications Task Force, a semi-autonomous, multisectoral body established within the Department of Communications to recommend policies and institutions that would ensure the orderly and efficient growth of combined computer/communications systems in the public interest. Volume II of the report included detailed examinations of three fields of broad social significance, namely, education, health care, and banking. The following excerpt from the section on banking makes for interesting reading in hindsight:

> "Notwithstanding their rivalry, the banks find it essential to co-operate on certain rules and arrangements in order to provide a flexible, workable payments system. Because of their mutual dependence, they have some reciprocal arrangements, such as lending equipment or services in case of emergency.... Through the Canadian Bankers Association, the banks have standardized much of their interchange of information. More co-operative efforts are almost certain to evolve in situations where there is recognizable mutual advantage. However, such changes must occur at their natural pace to gain acceptance and to undergo the development necessary for the emergence of a smoothly running system.

> The managerial, technical, economic, and human problems are too complex to be amenable to solution by means other than an evolutionary process."[3]

The word "evolution" would be used similarly in the Canadian Payments Association Act, eight years later.

Towards an Electronic Payments System

The Government of Canada's 1975 Blue Book of this title on the future payments system was jointly presented by the Minister of Finance, John Turner, and the Minister of Communications, Gérald Pelletier.[4] It noted that the movement away from a paper-based system of payments should occur in a way that protected the rights of individual Canadians and that enhanced the competitive environment for deposit-taking institutions, as well as for the computer/communications service industry. The emerging electronic payments system should be efficient and equitable. The government therefore proposed to take the lead and indicated that it supported a "common user communications network" for the payments system. An essential prerequisite for this approach was the development of suitable standards that would allow deposit-taking institutions, common carriers, and computer manufacturers to coordinate their efforts. The government therefore invited representatives of these three industries, as well as users of the payments system, to come together and develop the interface standards and then encourage their use as the network was put in place. A body called the Canadian Payments System Standards Group (CPSSG) was duly formed, but neither its output nor the pattern of evolution in the payments system proved to be as expected.

The Canadian Payments System Standards Group

After more than two years of deliberation, the members of the CPSSG came to the following conclusions:[5]

1. Government principles and policies, as stated in the Blue Book, are based on considerations pertaining to future achievements, many of which are less certain than the Government would seem to think.

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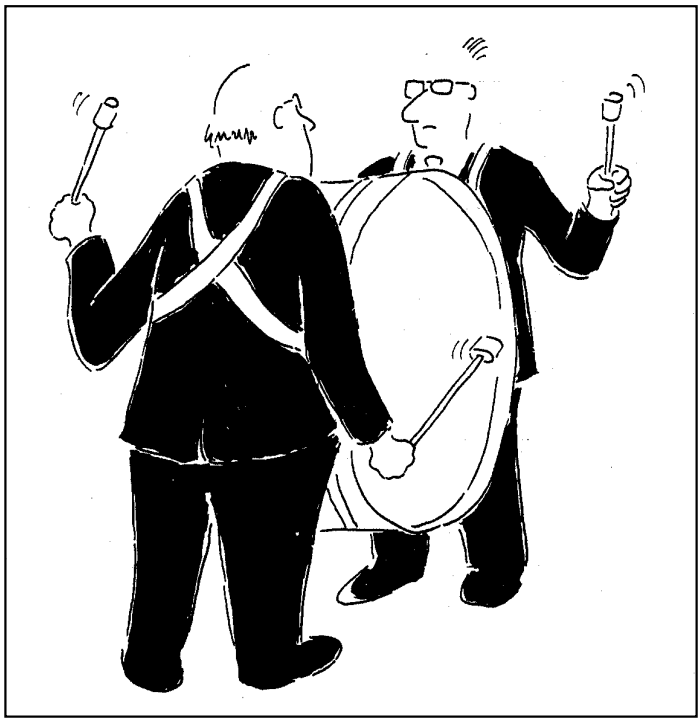
3. Canada. Task Force on Canadian Computer/Communications, *Branching Out (*Ottawa: Information Canada.Volume II, 1972), 54.
4. Canada. Department of Finance, *Towards an Electronic Payments System* (Ottawa: Information Canada, 1975).
5. R. Charbonneau and P. Lévesque, *Canadian Payments System Standards Group - Final Report* (Ottawa: monograph, 1978), 13.



From *Different Drummers: Banking and Politics in Canada* by Robert MacIntosh

2. The mandate entrusted to the CPSSG makes only indirect reference to principles that form the backbone of business in the private sector, e.g., competition, cost-benefit concepts, choice of appropriate means, and customer service. The group members generally feel it too early, as things now stand, to discern clearly how those principles will be applied within the context of developments being considered by the government or how they will affect such future developments.

3. The general framework for application of government policies extends beyond the traditional responsibilities of the deposit-taking institutions participating in the CPSSG.

4. Several bodies represented in the group find themselves in a position of "party and judge" when it comes to application of government communications policy.

The reality behind these conclusions was the fact that the closest thing to a "common user communications network" in Canada in the mid-1970s was DATAPAC, a high-capacity facility offered to businesses by the Trans-Canada Telephone System. During those years, the larger financial institutions were beginning to use terminals and software produced by companies such as IBM, Burroughs, and NCR to establish on-line services in branches. These banking systems could function economically using a combination of local and high-speed telephone lines—they did not need DATAPAC. The individuals representing financial institutions on the CPSSG therefore understandably declined to state a preference for the approach that involved the use of a common user communications network.

While the CPSSG was still at work, the Government of Canada published its White Paper on the revision of banking legislation. In it, the Minister of Finance proposed that a Canadian Payments Association be established. This "sparked keen interest" among the members of the CPSSG, who, in their own words, "virtually passed over the questions of standards setting, which they felt would be dealt with at a later date."[6] Indeed, five of these keenly interested persons later became directors of the CPA.

The White Paper on the Revision of Banking Legislation

The government's 1976 White Paper stated that all institutions in Canada accepting deposits transferable by order would be required to join the CPA. The expectation was that non-bank financial institutions, such as trust companies, credit unions, and *caisses populaires*, would be better able to offer chequing facilities to their customers and they would have the right to

6. R. Charbonneau and P. Lévesque, op. cit., 14.

have their cheques cleared through the national clearing system. Members would have a voice in the management of that system; they would also have certain obligations, such as sharing its operating costs, and certain rights, such as being accorded borrowing facilities at the central bank. The White Paper also proposed that all CPA members maintain a minimum reserve against specified liabilities.[7]

The pattern of evolution anticipated in the White Paper was the gradual emergence of an electronic payments system that would lead towards greater use of a "payment card" by individuals, corporations, and other entities wishing to transfer funds to another party. This card would resemble a bank credit card, and it would meet certain established standards that would enable it to be read by point-of-sale computer terminals.

The business of the new Association would be managed by a Board of Directors that was chaired by an officer of the Bank of Canada and made up of other directors representing groups of members (i.e., classes of financial institution). The directors would propose the by-laws of the Association, which would be subject to approval by the Governor-in-Council. Although the government would have a supervisory role through its power to approve by-laws, the detailed work of running the system and planning its evolution would be the responsibility of the members of the Association.

The 1976 White Paper on banking legislation established many of the key characteristics of the Canadian Payments Association that would appear in legislation four years later and that are described in some detail in Chapter 2. A small number of the proposed elements did not, in fact, appear in the Canadian Payments Association Act of 1980; this was largely because of discussions about the White Paper with provincial financial authorities. For example, the requirement that membership in the CPA be compulsory for provincially established institutions was dropped. Similarly, the requirement for non-banks to hold a minimum level of reserve deposits at the central bank was not included in the legislation when it finally appeared.

7. Canada. Department of Finance, *White Paper on the Revision of Canadian Banking Legislation* (Ottawa: Supply and Services, 1976), 18.

2

The Act of Creation

The Key Idea

When the Canadian Payments Association Act was proclaimed on 1 December 1980, the federal government established a mechanism for addressing the principal concern outlined in the last section; namely, the need for equitable competition in the provision of payments services in a rapidly changing environment requiring major investments in computers and telecommunications devices. John Roberts, the General Manager of the CPA for its first decade, put it very well:[1]

"As far as we know, this approach to developing the payments system of the future is the first of its kind in the world. Its uniqueness lies in the fact that this mandate has been entrusted, not to a central government authority or crown corporation, nor to a regulated monopoly or oligopoly such as the banks, but to a private association of all types of interested financial institution, some of them private companies, some cooperatives and some government entities."

Objectives and Powers

The two objectives of the CPA were stated in the 1980 Act as follows: "The Association shall establish and operate a national clearings and settlements system, and shall plan the evolution of the national payments system." One objective was practical and focused; the other, future-oriented and multi-faceted.

The first of these two mandates entailed bringing the non-bank deposit-taking institutions into partnership with the banks in the management of Canada's payment clearing and settlement system. The Act provided that the CPA could arrange for the exchange of payment items at appropriate places in Canada, make by-laws governing such clearing arrangements and also the

1. J.S. Roberts, "The 1980 banking legislation; implications for the payments system in Canada." Address to a meeting of foreign diplomats (Ottawa: 25 November, 1981).

John Roberts, General Manager of the Canadian Payments Association, 1980–90.

settlement procedures for the obligations determined in the clearing process. The by-laws passed by the CPA Board would become effective only when approved by Order-in-Council; i.e., by the Cabinet of the federal government.

The second mandate, to plan the evolution of the national payments system, was stated succinctly in those few words in the Act; there were no additional sections suggesting what (or whom) the planning process might involve. There were no sections on the modalities to be used, and no reference to technical standards. Consequently, there was no guidance giving concrete form to the somewhat paradoxical idea of *planning an evolution*. What the Board and the Association in due course did to fulfill this future-oriented mandate is the subject of the following chapters.

But first it is necessary to list the players. Who had access to membership in the Association? The principal criterion for membership was accepting deposits transferable by order to third parties—in 1980, this meant being in the chequing business. The institutions that met this criterion fell into classes. First, all banks (whether domestic or the subsidiaries of foreign institutions) were automatically members. Second, there were trust and mortgage loan companies, some of which were provincially incorporated. Third, there were "centrals;" i.e., the provincial or regional groupings of credit unions or *caisses populaires*, together with their three over-arching organizations—the Canadian Cooperative Credit Society, *La Confédération des caisses populaires et d'économie Desjardins du Québec*, and *La Caisse centrale Desjardins du Québec*. Fourth, there were "other" deposit-taking institutions, including government savings organizations, such as the Province of Alberta Treasury Branches and independent credit unions (in Ontario), that had chosen not to join a central. Membership was voluntary for the second, third, and fourth classes. Fifth and last, the Bank of Canada was required by the Act to be a member.

It is worth noting that the very broad sectoral representation of the standards-oriented CPSSG described in Chapter 1 was not repeated in the CPA Act. Access to membership in the Association was defined solely from the supply side of the equation; namely, the financial institutions that, together, provided Canadians with the payments services they needed to conduct their affairs. Computer manufacturers, telecommunications companies, life insurance companies, and the many categories of users of payments services were not mentioned in the Act.[2] Some of the ways in

2. This was a carefully considered decision on the part of the federal officials preparing the Act, according to William A. Kennett, who was on the staff of the 1964 Porter Commission, then a director in the Department of Finance in the early 1970s, and who was Inspector General of Banks when the CPA Act was passed in 1980. (From a conversation with the author, 6 July 2001.)

Serge Vachon, Chair of the Board of Directors of the Canadian Payments Association, 1980–2000.

which the CPA drew these other players into the planning processes are described in Chapter 6 in the context of electronic payments at the point of sale—EFT/POS.

In addition to the fact that each member of the CPA provided payments services to Canadian consumers, corporations, financial institutions, or governments, the membership of the Association reflected a sensitivity on the part of the federal authorities to the requirement that a national payments system should be sound. In other words, the system should be stable and maintain its integrity in both calm and turbulent times. This consideration required that each CPA member (other than the central bank) be a regulated, supervised, deposit-taking institution whose liabilities were covered by a federal or provincial deposit-insurance arrangement or equivalent guarantee. In addition, certain revisions to the Bank of Canada Act (which were proclaimed simultaneously with the CPA Act on 1 December 1980) broadened the powers of the central bank, allowing it to make loans to any member of the CPA that had an account at the Bank. In practical terms, this meant that the central bank could lend to any CPA member institution—if the circumstances warranted such support.

Governance: The Board of Directors

The composition of the Board of the Canadian Payments Association reflected the desire to bring the banks and the non-bank deposit-taking institutions together to manage the payments system. The eleven seats on the Board consisted of five elected by banks, five elected from the various classes of non-bank institutions, and the final seat, that of the chairperson, filled by a senior officer of the Bank of Canada, appointed by the central bank. The equal number of bank and non-bank seats was intended to give the institutions that were competing against the banks a meaningful voice in Board deliberations. The chairperson from the central bank, or in his/her absence, the deputy chair, held a second vote to be used in the event of a tie vote on any matter before the Board. Serge Vachon, Chairman of the CPA during the Association's first 20 years, worked diligently to achieve consensus on all issues and never found it necessary to use his second vote.

The Board had the authority to make by-laws covering (in addition to the clearing and settlement by-laws already mentioned) the administrative requirements for membership in the Association, the conduct of meetings, and the management of the business of the CPA, including the payment of dues and the establishment of penalties to be paid by members for failing to comply with the by-laws (and the detailed rules created pursuant to the by-laws). Were a question to arise at a meeting of the Board as to whether or not a proposed rule conformed with the by-laws, the chair had the power to decide, and the decision would be final. The use of this additional power

never proved necessary. (Of course, the directors either knew the power existed, or could be reminded of the power by the chair, an event that occurred just once in 20 years.)

Voting at meetings of the Board was, without exception, by a show of hands, reflecting the fact that each director had one vote. Voting at the Annual Meeting, and at any other meeting of the members of the Association, was potentially more complicated. Most importantly, the votes held by each member institution, to be used for either budgetary questions or for the election of the directors, corresponded to the number of payment items received from and delivered to the clearings by that institution in the most recent fiscal year. In this manner, the major banks and other large institutions, which accounted for the bulk of payments processed via the CPA, had significant power, and each had the ability to elect a director, or at least an alternate director who could act in the absence of a director. Moreover, the directors and alternate directors representing banks regularly met prior to each CPA Board meeting.

The international reception of the newly created Canadian Payments Association was particularly positive in the discussions and publications concerning payment matters that occurred outside Canada in subsequent years. For example, the Bank for International Settlements, in its 1986 reference book, *Payment Systems in Eleven Developed Countries*, suggested that "the need for increased co-operation in the development of (payments system) infrastructures has led a growing number of countries, both within and outside the Group of Ten, to follow the Canadian example and establish permanent public co-ordinating bodies for this purpose."[3]

3. Bank for International Settlements, *Payment Systems in Eleven Developed Countries (*Basel: BIS, 1986), 3.

3

Integration of the Non-Bank Financial Institutions

The NBFIs in the Cheque-Based Payments System

In the 1970s, the principal non-bank deposit-taking financial institutions (NBFIs) in Canada were trust companies, mortgage loan companies, credit unions, and *caisses populaires*. Their ability to offer payments services—the equivalent of chequing accounts—to their clients depended on three elements: (i) the degree to which persons being offered an NBFI "cheque" in payment for goods and services found the offered item acceptable; (ii) the degree to which financial institutions taking an NBFI "cheque" over the counter on deposit from their client found that item acceptable (perhaps in immediate exchange for bank notes); and (iii) the degree to which an NBFI wishing to offer chequing accounts would be viewed by a bank offering clearing services as a suitable client at a reasonable fee. To grasp the ways in which the creation of the Canadian Payments Association significantly improved acceptability in all three of these aspects, one must examine the pre- and post-1980 situations in some detail.

Acceptability of NBFI Items to the General Public

For several decades prior to the CPA era, many non-bank deposit-taking institutions attempted to provide payments services to their clients. Nothing of a legal nature prevented an NBFI from opening deposit accounts and providing each depositor with a set of cheque-like printed documents for the purpose of making payments. Such items would be written instructions to the institution where funds were held on deposit to transfer value to the payee in the transaction. The documents were entirely legal negotiable instruments. But the payee might well refuse to accept an NBFI item for a number of reasons. Perhaps the financial institution identified would be unfamiliar; its name would not include the reassuring word "bank." The long-standing Bills of Exchange Act made no reference to such payment items (although including considerable detail concerning bank cheques and the procedures by which they were to be used) which might also create

uncertainty for a payee being offered an NBFI item. These legal niceties led to conventions (for example, in tendering for government contracts) that only a certified (bank) cheque or bank draft would be acceptable.

The legal aspects of the situation changed significantly in 1980 with the revision of banking legislation, together with the passage of the Canadian Payments Association Act and a number of consequential amendments to other laws. For example, the Bills of Exchange Act was revised so that payment items drawn on any member of the CPA would have the same legal status as cheques. The definition of payment item in the CPA Act was "a bill of exchange drawn on or payable through a member and includes any other class of items approved by means of a by-law;" the NBFIs were eligible to become members and, in most cases, did so. In the years following the creation of the CPA, these changes worked to extend the acceptability of NBFI items in various contexts, including financial-market transactions and payments to governments at all levels.

Acceptability of NBFI Items Presented on Deposit

When a payee receives a paper payment item such as a cheque, he or she will generally wish to deposit it (or cash it for bank notes) in a financial institution. The willingness and promptness with which that institution accepts the item can vary depending on the particular circumstances. For some items, the institution will be able to debit the payor's account or, more likely, deliver the items through the national clearing arrangements and gain the corresponding value in its settlement account, located either at a major banking institution or at the central bank. It therefore follows that the legal and other provisions that determine precisely which items may be delivered through the clearings are important for the acceptability of payment items being deposited at a teller's counter.

The CPA Act, the by-laws, and the associated technical rules—as a package—established the two ways in which payment items drawn on a particular NBFI (or bank) could be delivered to it in the clearings process. First, the NBFI could be a "direct clearer," with the right and obligation to participate in the daily clearings in at least one region of the country. In this way, the NBFI would receive the items drawn on it and would subsequently settle the obligation created (whenever the value of such items exceeded that of any deliveries it had made of other clearers' items) via a debit in a settlement account maintained by it at the Bank of Canada. Second, the NBFI could be an "indirect clearer," using a direct clearer—often a bank—as its agent for clearing purposes. Whenever that clearing agent received an item drawn on its NBFI client via the daily clearings, it would initiate a debit if necessary (as a component of an amount reflecting all the clearing flows

for that client that day) in a settlement account of the NBFI maintained with it for this purpose.

Although being either a direct clearer or an indirect clearer meant that the payment items drawn on an NBFI would be acceptable for clearing and, hence, normally acceptable at tellers' counters across the country, there were distinctions between these two configurations, particularly with respect to the degree of risk. Any *direct* clearer had to be a relatively significant institution; pursuant to the Clearing By-law, it had to account for at least one-half per cent of the national payments volume—the number of cheques and other items passing through the clearings. In the early 1980s, only 8 banks and 6 NBFI private institutions qualified. Moreover, each direct clearer had a line of credit from the Bank of Canada that could be drawn upon in the event that the institution's settlement account was in deficit as a result of the day's clearing calculations. If a solvent NBFI direct clearer experienced financial difficulty and began to lose deposits, the corresponding clearing losses could—at least in the short run—be offset by liquidity support from the central bank. In contrast, an *indirectly* clearing NBFI would operate in a manner little changed from the pre-CPA arrangements. Such an institution would obtain a line of credit from its clearing agent to be used when its settlement account at that institution was in deficit. (Further information about how the smaller NBFIs functioned in the clearing system is given in the next section.)

Acceptability of the NBFIs to the Clearing Agents

The negotiation of a clearing-agency arrangement between an NBFI and a major clearing bank in the pre-CPA world was shaped by various factors. The bank would wish to know if the possible client was a regulated and supervised institution. This might lead to additional questions about the differences between the federal and provincial regulatory structures. If the institution suffered a rapid decline in deposits, was there an arrangement by which it could receive liquidity support, perhaps from a provincial government? What volume and value of payment items would flow to and from the NBFI on a typical day? What fee per item might prove mutually satisfactory? Would the fee revenue compensate not only for the processing work being done, but also for any risks entailed?

The legal structure governing the clearing-agency arrangements before 1980 involved certain sections of Article 24 of the By-laws of the Canadian Bankers Association (CBA), particularly those dealing with the liability of a bank functioning as the clearing agent for an NBFI and with the procedures

to be used in a default situation.[1] The clearing agent was required to accept through the clearings all items drawn on its NBFI client—including items so received in the daily clearing cycle, which concluded on the business day following the day on which the bank gave notice to a failing NBFI that it was terminating the agency relationship. The clearing agent was, however, permitted to subsequently return this last flow of items, also through the clearings, to the other participants that had originally delivered them. This provision would presumably be followed diligently, because a complete return flow would lead to an increase in the settlement account of the clearing agent at the Bank of Canada broadly equal to the debit the agent had experienced on the preceding day while still performing services for the failing NBFI. (A minority interpretation of the relevant CBA by-law sections, and one that concluded that the risks borne by the clearing agents were much greater, existed among knowledgeable bankers as the Canadian Payments Association came into being.)[2]

At the first meeting of the CPA Board in February 1981, a committee was established to prepare a draft of the new clearing by-law. This committee reflected the broadened membership of the new Association, with two directors from banks, two from the centrals, and a representative of the trust companies. It was chaired by the alternate director for the Bank of Canada. There was lengthy deliberation as to the correct interpretation of the former default provisions and the precise rights and obligations of clearing agents. In the end, the majority view concerning the integration of the smaller NBFIs in the clearing system as set out in the above paragraph was accepted, and it was subsequently confirmed when the CPA Board approved section 13.07 (on the liability of clearing agents serving indirect clearers) in the Clearing By-law.

Integration of the NBFIs—in Human Terms

There is no better description of the process by which the representatives of banks and non-bank deposit-taking institutions gradually came to work together as directors of the CPA than that of one of the senior bankers, Robert MacIntosh, who was on the CPA Board from its first meeting in 1981 until he retired in 1989.

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1. See the By-laws of the Canadian Bankers Association, as amended in 1976, Article 24, sections 11 and 17(c). (The full text of Article 24 is reproduced in Charbonneau and Lévesque, op. cit. 257–65.)
2. J. Crean, “Automation in Canadian Banking. Part 2, The Canadian Payments System,” *The Canadian Banker and ICB Review* 85 (October 1979): 28.

"The evolution of the personal relationships on the board of directors was an interesting exercise in human dynamics. The bankers were wary of the directors who had arrived by virtue of their political clout and who had limited expertise in the technology of the payments system. The newcomers were suspicious of the bankers' willingness to share authority.... The near-banks soon learned that their long-held belief that the banks overcharged them for clearing services was mistaken. (Only two of the four trust companies which met the test of processing 0.5 percent of the clearings volume.... elected to become direct clearers like the banks.) The bankers found that the representatives from the *caisses populaires* and some other institutions brought mature technical skills to the table."[3]

3. R.M. MacIntosh, *Different Drummers: Banking and Politics in Canada* (Toronto: Macmillan Canada, 1991), 290.

4

Automation of the Clearings

The State of the Clearing Process in the Early 1980s

By the spring of 1983, five of the non-bank deposit-taking institutions that had joined the CPA had determined that they each accounted for the necessary one-half per cent of the national volume of payment items passing through the clearings, and had decided to become direct clearers. The five had established or modified data centres to be in a position to read and sort cheques, and they were operationally ready to participate in the daily procedures. The CPA's Clearing By-law had been given Order-in-Council approval and was in force.

Despite these changes, the nature of the clearing process was fundamentally the same as it had been for decades. Clerks from each of the direct clearers still met each morning at clearing houses located in eight regions of the country to compare their summary statements about the volume, and particularly the value, of the payment items that had been delivered to, and received from, every other direct clearer in the physical exchanges of cheques, etc., during the preceding evening. Once the value statistics had been found accurate by the pairs of institutions involved (i.e., had been reconciled after the detection and correction of errors) the clearing house staff could manually calculate the bilateral net gains or losses associated with the day's clearing flows, and from these they could calculate the value of the multilateral (all-institution) net gains or losses. These positions were then promptly delivered to the nearest Agency of the Bank of Canada, forwarded by telex to the Bank's head office in Ottawa, and fed into the calculations of the overall national clearing result for each institution. That afternoon, the settlement accounts maintained at the central bank for this purpose would be adjusted—up for those direct clearers with multilateral net gains and down for net losses. All in all, the payment clearing process in Canada was overdue for a dose of contemporary computer and communications technology. The Board of the CPA had, in fact, approved such a development project at a meeting in early 1982, barely one year after the creation of the Association.

Design Objectives of the ACSS

The CPA's Automated Clearing Settlement System (ACSS) had three broad objectives: First, the Association wished to reduce the cost and increase the efficiency of the record-keeping, reconciliation, balance calculation, and settlement procedures within the national clearing and settlement system. Second, there was a desire to provide more timely and accurate information to the direct clearers about the dollar amounts gained or lost by them during the evening exchanges of payment items. Third, the CPA wanted to establish a settlement mechanism that was sufficiently flexible to accommodate future developments within the national payments system.

The design of the ACSS included a number of attractive elements that addressed these objectives. Workstation terminals would be used to facilitate the daily activities of personnel in several departments of each direct clearer, including the central bank. In the cheque-processing data centres, for example, the ACSS terminals would allow a person to prepare the summary statement for a particular package of deposited cheques about to be sent by courier to another direct clearer upon which the items had been drawn. (This statement, known as a clearing log, would give the total value and volume of the items contained in the delivery.) As soon as the statement was finalized, it would become part of that evening's flow of clearing information, and it could be immediately read by the personnel of the receiving institution—even before the courier arrived. This early availability of information would allow the process of reconciliation and correction to proceed quickly once the package was actually delivered.

The ACSS terminals would also link to a central computer that would add the value of each delivery of items to the calculations of bilateral net positions and, ultimately, the national multilateral net positions, of each direct clearer. Cash-management personnel in the treasury departments of each institution could read their continually updated positions by calling for the display of a particular ACSS statement. This facility would prove particularly useful to the cash managers early each morning, when the regional activities approached their final status, and after certain entries by the central bank (described on page 23) had been made. Information from the ACSS would thus be a crucial part of the data needed before the money market decisions of the day could be addressed. For example, a direct clearer learning about a larger-than-expected clearing gain could begin to decide about the appropriate investment of the funds later that morning.

The central bank would be able to call up the clearing positions of each direct clearer at any time. Of particular interest would be the *national* clearing gains or losses calculated by the ACSS for each institution. These data would be used by the Bank of Canada to make the corresponding credits or debits in the direct clearers' settlement accounts. Thus, the ACSS

would be an integral part of the daily process of settlement following the clearing of payment items.

Lastly, the ACSS would be an important building block for the more automated payments system that was beginning to emerge in Canada. For example, the clearing information would be processed and maintained in "streams" such as small-value cheques, large-value cheques, non-standard paper items, and debits or credits exchanged on magnetic tape. Over time, the ACSS data archives would compile information on the volume and value of (cleared) payments that had these particular physical forms. It would thus be possible to quantify with considerable accuracy the degree to which the Canadian payments system was evolving away from paper and in the direction of electronic media. The CPA could then pursue its planning mandate with better perspective and be able to monitor the effects of its efforts to promote such developments.

Project-Management Challenges Posed by the ACSS

The process by which an association of financial institutions moved from a design concept, through a systems-development sequence, and on to the operation of a structure such as the ACSS involved some novel aspects. The applications of information technology in the Canadian financial sector up until the early 1980s had been, with a very few exceptions, internal to particular firms, addressing back-office operations such as deposit accounting and the maintenance of the general ledger. Now a cluster of 14 direct clearers of contrasting character, location, and size, wished to establish a common cross-country system. It would have to work for all 14, regardless of their particular internal systems.

The Board of the CPA established a steering committee of direct-clearer representatives to assemble the desired ACSS specifications, obtain the services of a systems-development company, and oversee the assembly of the hardware and software. This committee, chaired by Larry Moncrieff of the Bank of Canada, was called the ACSS Working Party. Three CPA staff members were dedicated full-time to the project. (At this early stage in the history of the Association, the total staff numbered only 20 people, all in Ottawa.) The development company, Ducros, Meilleur, Roy and Associates Ltd., was headquartered in Montreal, and most of the committee members were in Toronto. The somewhat complicated working arrangement that emerged was one in which there could easily be failures in communication. But in the end, the ACSS project was completed in under two years at a cost of about $750,000—an accomplishment for all involved.

The Technology Used for the ACSS

The ACSS-related hardware used by each of the 14 direct clearers consisted of the newly marketed "personal computers" of the early 1980s, one hundred in all, each linked by a modem to the national telephone system and from there to the IBM Computer Centre in Toronto. Linked in this way, the terminals comprised an on-line, interactive, computer/communications network. Each terminal could send and receive clearing information to and from the host computer, where the information was held and consolidated to provide a database for inquiries as to the direct clearers' positions throughout the clearing cycle. The host system at the service bureau in Toronto was available for ACSS transactions from 7 a.m. on one day to 6:30 a.m. on the following day.

The various ACSS programs for the terminals were grouped together by type of user. There were five sets of programs; namely, those for the cheque-clearing staff in the various regions, for the treasury department officers managing the cash and money market positions in each institution, for security personnel in each direct clearer, for the Bank of Canada as the settlement institution, and finally for the Canadian Payments Association as the system manager. This separation of ACSS program sets according to particular user requirements was an essential security feature of the system. No one could use the system without access to a recognized terminal, possession of the appropriate set of program diskettes, and proper authority.

The ACSS in Production

The ACSS began operations on 19 November 1984. In the subsequent year, it facilitated and accounted for the clearing of 6.6 million payment items on a daily average basis. The daily average value of these payments cleared was $33.4 billion.

The database associated with the ACSS quickly produced a picture of the Canadian payments system that showed just how far it still had to evolve. For example, the volume of items cleared through the "stream" in the ACSS labelled "magnetic tape credits" accounted for only 160,000 of the 6.6 million items per day recorded in all streams. (There were no other streams at that time that could be considered to involve "electronic" payments.) A second example stresses the value, rather than the item count, of the payments being cleared through the ACSS. In 1985, the "large cheque" stream (i.e., all cheques individually worth at least $50,000) accounted for fully $30 billion of the $33.4 billion total flow of items cleared on an average day. The evolution to electronic media, particularly in the case of these large-value transfers, would be the major development of the next 15 years.

The ACSS was soon modified to facilitate the daily implementation of the monetary policy of the Bank of Canada. In these early years of the 1980s (and indeed until the opening of the CPA's Large Value Transfer System in 1999, described in Chapter 7), the regularly used daily technique of adjusting the liquidity of the financial system in order to manage interest rates was the drawdown or redeposit of government funds placed with the direct clearers.[1] In 1985, the ACSS became the channel through which the direction and dollar amounts of the day's drawdown or redeposit transactions were both communicated to all the direct clearers and simultaneously effected for each of these institutions at 8:30 each morning.

The ACSS operated in a satisfactory manner in the subsequent years—so much so that, in 1986, the software was cloned for use in a similar context; namely, the bulk exchanges of U.S.-dollar-denominated payment items occurring once a day among the majority of the private direct clearers. The shared cost of this broadening of the scope of the ACSS was under $60,000. While some portion of the contrast between the original and the cloned cost is explained by the fact that no settlement arrangements at the Bank of Canada were needed in the latter case, the main explanation lay in the substantial economies of scope. (Once an investment in an automated system has been made to achieve one operational purpose, it often proves economical to apply a slightly modified version of the system in similar operating contexts.)

If the automation of the clearings and the building of the ACSS proved to be a success story for the CPA during the mid-1980s, the economic environment in which the new system was functioning produced a story of very different character. The CPA was about to be drawn into the turbulence caused by a sharp cyclical downturn and the failure of two small Canadian banks.

1. See K. Clinton, "Bank of Canada cash management: The main technique for implementing monetary policy," *Bank of Canada Review* (January 1991): 3–25.

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The Bank Failures of September 1985

Background

Because no Canadian bank had failed since the Home Bank in 1923, very few players in the financial system had any knowledge of what happens to the payments being processed on the day that such a situation arises. Virtually everyone—even the financially sophisticated—believed that the receipt of a certified cheque or a bank cashier's cheque, represented a final, irreversible payment. Through the Great Depression, the Second World War, and its aftermath, the handful of Canadian banks that suffered significant difficulties were absorbed into larger institutions without creating problems for their creditors or depositors. Partly as a result, and also because of other mergers, the degree of concentration in the banking system increased noticeably, a situation that led the federal government to look favourably on new entrants. This was particularly the case for institutions being formed in western Canada, because they might enhance economic opportunities in that part of the country. The Canadian Commercial Bank (CCB) and the Northland Bank of Canada (NBC), established in 1975, were such new players.[1] Both banks concentrated their activities in the western provinces, and both invested heavily in oil, gas, and real estate loans. By mid-1985, their total assets had reached $2.7 and $1.4 billion, respectively. (Together they accounted for only 3/4 per cent of the total assets of the banking system.)

The ways in which each of these banks operated in the national clearing and settlement system reflected the fact that they came into existence before the CPA structure of direct clearers and indirect clearers became operational. (Prior to the CPA, any new bank immediately became the equivalent of a direct clearer, with an account for settlement purposes and for reserve purposes, at the Bank of Canada.) In 1983, the CCB was too small in the clearings to qualify under the CPA by-laws for direct clearer

1. W. Z. Estey, *Report of the Inquiry into the Collapse of the CCB and Northland Bank (*Ottawa: Supply and Services Canada,1986), 405 and 536.

status, but it chose to take advantage of a five-year transitional provision in this regard.[2] It was formally recognized by the Board of the CPA as a direct clearer. Its clearing activities thus appeared in the daily calculations and statements generated by the Automated Clearing Settlement System. The CCB represented itself in the clearing exchanges either directly, as it did at the Calgary regional settlement point, or indirectly via a clearing agent (the Toronto-Dominion Bank) at all other settlement points. In contrast, the even smaller NBC chose to function in the clearings as an indirect clearer, using the Royal Bank as its clearing agent at all regional settlement points. Its name did not, therefore, appear in the calculations made by the ACSS. To understand what transpired in the autumn of 1985, it is important to realize that the NBC continued to hold its reserves at the Bank of Canada and continued to conduct a few daily transactions through that (transferable) reserve account, even though it had located its settlement account for clearing purposes at the Royal.[3]

Main Events

In western Canada, the economic recession in the early years of the 1980s was centred in the oil and gas sectors and, hence, was particularly stressful for investors in energy-related real estate and for banks that specialized in financing such activities. In 1983, the situation at the CCB still appeared manageable, but was sufficiently uncertain that the federal authorities encouraged five large chartered banks to provide the CCB with support in the form of a special liquidity facility. Early in 1985, downward pressure on the Canadian dollar was met with upward movements in interest rates which made the carrying of real estate positions by investors even more difficult. The loan portfolios of both the western banks deteriorated, and both banks began to experience difficulty in rolling over their maturing wholesale (non-personal) deposit liabilities. In this context, the CCB received a further support package involving six chartered banks and two levels of government in March 1985.[4] Nevertheless, over the summer months, the deposit outflows from both banks continued to worsen, and on most days it proved necessary for them to receive additional liquidity support from the central bank. By the Labour Day weekend, the outstanding Bank of Canada loans to

2. CPA By-law 3, section 10, required each direct clearer to account for at least 1/2 per cent of the number of payment items exchanged in the clearings. But a CPA member receiving items directly in the clearings at the point in time when the by-law came into force could, with the approval of the Board, continue to do so for five years.
3. This arrangement was rare but not unique; two subsidiaries of foreign banks operating in Canada also chose to hold their reserves in this way.
4. Bank of Canada, *The Submission of the Bank of Canada to the Commission of Inquiry on Certain Banking Operations* (Ottawa: Bank of Canada, 1986), 8.

the CCB had reached $1.3 billion; this implied that more than half of the CCB's total assets were being pledged as collateral to the central bank. The similar outstanding loans to the NBC had risen to $0.5 billion, over one-third of its total assets.

Events came to a head on the three-day weekend of 31 August through 2 September. The Inspector General of Banks issued a press release on the Sunday, 1 September, stating that he had informed the Minister of Finance that the CCB and the NBC were unable to meet their liabilities as they came due. The Minister of State (Finance) issued a press release the same day indicating that, since the two banks were no longer viable, the Bank of Canada had ceased to provide liquidity support to the two institutions. Curators (accounting firms) were appointed by the Minister of Finance at 7 p.m. that Sunday evening to take over the management of the banks' affairs. The Governor of the Bank of Canada also issued a press release on 1 September, stating that he had received the notification from the Inspector General of Banks that neither of the two banks could be considered viable operations and that there was thus no basis for further liquidity support to them. Accordingly, the Bank of Canada was ceasing immediately to provide advances to the CCB and the NBC. The Bank's press release included the exact amounts of outstanding advances as at Friday, 30 August.[5]

On the Labour Day holiday, Monday, 2 September, there were communications by conference call between senior officers of the CPA and officers of the two firms that had been appointed as curators: Price Waterhouse Limited for the CCB and Touche Ross Limited for the NBC. In the course of these conversations, it was agreed that in each case the settlement account of the bank would be frozen and that notifications to this effect would be issued as soon as possible. (The two accounting firms were subsequently appointed as liquidators pursuant to the Winding Up Act.)

On the following morning, Tuesday, 3 September, it became apparent that the two closed banks were in very different positions in terms of the just-completed results of the clearings process, which had taken place, as usual, on the evening of Friday, 30 August. Calculations by the ACSS indicated that the CCB, the direct clearer, was in the fortunate position of experiencing a very slight net *gain*. (Its degree of success in rolling over its maturing wholesale deposit liabilities that Friday, together with any creditors' loan repayments, had been sufficient to offset outflows of other types of deposits.) As a result, the CCB settlement account at the Bank of Canada was actually slightly higher on Tuesday than on the preceding business day. The $1.3 billion figure for outstanding advances from the

5. Bank of Canada, "Record of press releases," *Bank of Canada Review (*September 1985): 19–26.

central bank published on Sunday was thus still correct. Moreover, in the strict sense of the CPA by-laws, the CCB was not in default *in the clearings*.

In contrast, the indirect clearer, the NBC, needed another $30 million in its settlement account at the Royal Bank to offset substantial net maturities of term deposit liabilities (and to cover other debits reflecting the clearings of Friday evening, 30 August, particularly the impact of cheques written on the NBC by clients wishing to reduce their deposits at the troubled institution). The Bank of Canada thus faced an awkward and complex problem. In order to complete the daily settlement process, it had to expand its assets vis-à-vis the NBC one more time, but it had announced on Sunday that it was immediately ceasing to lend. Several additional details compounded the problem.

On the basis of operating procedures that had been in place for many months, the NBC had, on the Friday, written a cheque drawn on its central bank account, in an amount (net of offsetting flows) that would approximate the firmly expected clearing loss for value on that day, and had deposited it in the Royal. (Such deposited items had regularly been used by the NBC to pass the funds advanced to it by the central bank along to its clearing agent.) The problem arose because, according to the CPA by-laws and rules, the Bank of Canada could claim that the amount in the deposit account of the NBC at the Bank was insufficient and that the cheque could therefore be returned to the institution that had delivered it in the clearings, with the result that the accounting effects would be unwound. Had the central bank acted in this way, it would have forced the NBC's clearing agent into the risky position of having a new and unsecured $30 million claim on the estate of the NBC.

After numerous telephone communications on Tuesday, 3 September, and after holding the cheque for one day to allow for careful consideration, the central bank chose not to return the item. The net effect of this decision was a $30 million increase in the indebtedness of the NBC to the Bank of Canada, recorded on the central bank's balance sheet under *other assets.* In coming to its decision about what should properly be done in such circumstances, the Bank concluded that "it was essential for the integrity of the payments system" that a financial institution acting as a clearing agent should not be placed in a position of jeopardy on account of payments initiated by its indirect clearer client and drawn on its account at the central bank.[6]

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6. Bank of Canada, "Record of press releases," *Bank of Canada Review (*September 1985): 26

Immediate Aftermath

On Tuesday, 3 September, the Royal Bank fulfilled its obligation under the CPA Clearing By-law in the context of the default of an indirect clearer. It proceeded to return, through the clearings, all those payment items that had been drawn on its client the Northland Bank—items that had been remitted to payees in the underlying financial or commercial transactions at some point during the preceding week, subsequently deposited in various other deposit-taking institutions, and ultimately cleared on Friday evening to the Royal. The Royal correctly indicated that the reason why the items were being returned was "funds frozen." This long-standing default-sharing procedure immediately produced numerous effects throughout Canada, depending on the circumstances of particular payees, payors, and their respective institutions. For example, payors (who had written cheques on the NBC and assumed that their funds had been successfully transferred to the relevant payees) now received unexpected communications from payees to the effect that the payments had failed and that replacement cheques had to be delivered. Payees were informed by their deposit-taking institutions that the accounting credits of the preceding business day had necessarily been reversed; in some cases unexpected overdrafts were the result. For the Royal Bank, the return of NBC items through the clearings on Tuesday had the effect of producing a clearing gain approximately equal to the preceding business day's net shortfall in the account of its indirect clearer client. For the curator/liquidator of the NBC, the deposit liabilities of the estate grew by the same amount. In summary, the reversals required by the default-sharing procedure had the effect of widely redistributing the financial burdens associated with the event—often in unforeseen ways.

A different, yet equally surprising, story was unfolding during that week in the case of the Canadian Commercial Bank. In the rush to take over management of the CCB, the liquidator took several days before communicating that the settlement account of that bank at the Bank of Canada was frozen. It was therefore several days before the CPA deleted the CCB from the set of direct clearers and before the bank was eliminated from the clearing and settlement procedures of the ACSS. The liquidator took full advantage of this delay and ordered the return, through the clearings, of a number of large-value payment items that had earlier been drawn on the CCB, then deposited elsewhere in the financial system, and eventually cleared to the western bank. For example, some the CCB's own cashier's cheques, issued on Friday, 30 August to pay out funds as required by

maturing wholesale term deposits, were so returned.[7] The result was most painful for the corporate and government treasurers involved.

Longer-Term Impact

The failure of the two small western banks in 1985 had serious consequences, some of which persisted for more than a decade. Two additional banks, the Bank of British Columbia and the Continental Bank of Canada, which also depended on wholesale deposit funding, proved unable to weather the period of extreme caution about institutions that relied on such financing. Both needed liquidity support from the Bank of Canada, and both ended by merging with larger banks. In addition to these developments caused by "contagion" among similar institutions, the extensive court proceedings surrounding the closures of the CCB and the NBC continued for a full 15 years. In retrospect, it is surprising to note that all this could result from problems originating in less than one per cent of the banking system.

If the 1985 bank failures had one salutary aspect it was the increased awareness that the pervasive use of cheques in Canada, especially for large-value transfers in the securities markets and in the foreign exchange market, carried significant risks because such payments were not final. A large-value funds transfer system (LVTS) that did not involve the unwinding of the clearings in the event of a default and that provided immediate finality of payment; i.e., a system similar to those either existing or emerging in other countries, was essential for Canada. It is one of the ironies of the history of the CPA that the first extensive discussion by the Board about the need to create an LVTS had already been scheduled; it took take place in a planning session on 18 September 1985, less than two weeks after the bank defaults occurred.

Developments in the Canadian payments system during the subsequent five years were, as it turned out, focused not on large-value payments but on the small-value payments made at retail locations such as department stores and gasoline stations. (Chapter 7 takes up the LVTS story.)

7. Some items received by the CCB in clearing exchanges *prior to* 30 August were also returned.

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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.

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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.

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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 payments[4] 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.

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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.

7

Building the LVTS

The Magnitude of the Task

The design and construction of a new national system for the transfer of large-value payments is a major endeavour, as is clearly suggested by the remarks made in the CPA Board and in its Senior Planning Committee. Don Marcotte of the Bank of Nova Scotia, the Board member who eventually became the "project owner" for the LVTS initiative, said that it looked like a "juggernaut." (In ancient Hindu mythology, the juggernaut was a huge vehicle under which religious devotees would be thrown during an annual festival.) On another occasion, during an informal planning session in 1989, the CPA Deputy Chairman told the Board that "the scope of the project is at least as large as everything that the CPA has achieved since 1980."

Behind these cautionary remarks was the fact that a contemporary electronic LVTS must include a number of complex and interlocking components. There must be a telecommunications network that allows participating financial institutions to send payment messages to each other securely and reliably. There must be an arrangement similar to the ACSS, in other words, a computer system that keeps track of the value flows embedded in the messages and continually calculates various cumulative positions for each participant. There must be a way of settling the obligations created by the payment activity of each day, together with a process to handle the situation in which a particular institution is unable to settle. The treatment of default will, in turn, influence the criteria under which an institution gains access to the LVTS and becomes a direct participant. In Canada, such essential elements must be described in a CPA by-law and must receive the approval of the appropriate federal authorities. Lastly, the computer systems must be designed, built, and successfully tested. Even under optimal circumstances (i.e., when the necessary understanding and consensus of the many relevant parties involved are already present), the creation of a national LVTS is likely to take four or five years.

Convincing the Banks

The LVTS project posed a number of problems for the Canadian banking community and, hence, for the directors elected to represent the banks on the CPA Board. First, the various risks to direct clearers inherent in the default provisions of the existing clearing arrangements were esoteric matters understood only by specialists in the major institutions. The task of convincing more senior colleagues that the CPA should spend substantial sums on an LVTS to reduce these risks was not an easy one.

Second, some bankers considered that Canada already had a large-value transfer system; namely, the Interbank International Payments System (IIPS), which used procedures established by the Canadian Bankers Association. The IIPS had been operating since 1976, using the SWIFT[1] telecommunications network, but without central calculations of positions. Until 1991, each IIPS transfer was settled individually via the traditional clearing arrangements—and in a default situation each transfer could be reversed.

Third, it proved difficult for the banking community to accept the necessity of a collateralized risk-control structure. (In such a structure, each participant could, for example, be constrained such that no payment would pass the risk-control tests if that payment would cause the net amount owed by the institution to all the other participants to exceed a certain amount—an amount covered by collateral pre-pledged to the system and ready to be used in a default situation.) The increasing use of liquid securities that were owned by banks, but either lent to other institutions or sold under repurchase agreements, meant that the amount of the banks' liquid assets that could be pledged in the LVTS context had been noticeably reduced. Moreover, the opportunity costs that would be associated with increases in suitable liquid assets were perceived by several banks to be substantial.

Fourth, the banks were uneasy about the concept of a new system for which the access criteria would be quite broad. The IIPS had both a volume criterion and, for many years, a requirement that a participant had to be a domestic bank or the subsidiary of a foreign bank. In the opinion of the banks, any new system that took over the activity of the IIPS (primarily the large daily flow of interbank payments used to settle transactions involving the sale and purchase of foreign exchange) should maintain the membership relevant for that internationally oriented context.

The log-jam finally broke in 1992 at a CPA Board meeting in Regina, when agreement was reached in principle to pursue an LVTS that would involve the telecommunications arrangements of the IIPS, together with

1. Society for Worldwide Interbank Financial Telecommunication.

three enhancements: a multilateral cap on exposure; a risk-sharing formula; and the integration of the IIPS under CPA by-laws and rules, including equitable access criteria. Several elements combined to attract the support of all the classes of members. For example, the Board had recently received a detailed business case for an LVTS that relied on existing facilities such as the ACSS and SWIFT, showing that an adequate system could be put in place for about $7 million, and that the project could pay for itself in under three years.[2] The Board was also increasingly aware that the still-paper-based system for large-value payments in Canada was lagging behind the electronic mechanisms operating in the United States, the United Kingdom, and other trading partners, with a consequent negative effect on our international competitive position in both trade and finance. Lastly, senior officials, such as the Governor of the Bank of Canada, were saying in informal meetings and in public, "We need to get on with it."[3]

Gaining Regulatory Approval

In late 1992 and early 1993, three working groups of Board members articulated the risk-control characteristics, the access criteria, and the systems-development plans for the LVTS. With respect to risk control, the thought within the CPA was strongly influenced by the mechanisms that had been built into the large-value transfer system in New York called the Clearing House Interbank Payment System (CHIPS), in which participants' contributions in the event of a default were calculated as a function of their regularly declared credit assessments of each other. In addition, CHIPS was a net settlement system, one that used early evening transactions with the central bank to extinguish the settlement obligations of those participants in a net debit (i.e., disbursement) position for the day as a whole. The Canadian extension of these ideas involved the use of two categories of LVTS transfers: those in Tranche 1 and those in Tranche 2. Any transfer in Tranche 1 had to be fully covered by collateral pre-pledged by the sending institution to the Bank of Canada. For transfers in Tranche 2, each participant's maximum permitted net debit position was covered by a collateral pool. Before daily operations commenced, each institution had to pledge securities to the central bank equal to a certain percentage (about 25 per cent) of the largest bilateral line of credit it had extended to any other LVTS participant. As the day proceeded, an institution could not send a Tranche 2

2. B. Kelman, J. Tullett, and J. Dingle, *The LVTS Using Existing Structures*. Unpublished document prepared for the Banff meeting of the CPA Board of Directors (September 1991).
3. J.W. Crow, "What Makes a Good Payments System?" Remarks to the Third Annual Conference of the Canadian Bankers Association, 18 June, 1992. Montréal, Quebec. Reprinted in *Bank of Canada Review* (June 1992): 11–16.

transfer that would result in its multilateral net debit position becoming greater than the same percentage applied to the sum of the bilateral lines it had received from other participants that morning. The collateral pool was thus always sufficient to cover the negative position of the participant with the largest permitted net debit.[4]

With respect to access criteria, the CPA took advantage of the two-tranche arrangement in the LVTS to allow a relatively broad set of participants. Since a participant experiencing financial difficulties could continue, if necessary, to function on a self-collateralized basis by sending only Tranche 1 transfers, there was no need to restrict access to the LVTS to those CPA member institutions that satisfied some sort of financial-strength criterion. Only technical criteria such as the capacity to use SWIFT were necessary.

On 25 March 1993, the basic characteristics of the LVTS were put before senior representatives of the four relevant Ottawa agencies (Department of Finance, Bank of Canada, Canada Deposit Insurance Corporation, and Office of the Superintendent of Financial Institutions) at a special meeting of the CPA Board in Toronto. The proposed characteristics were summarized as follows: (i) The SWIFT telecommunications network will be used to send electronic credit-transfer messages. (ii) Risk-control mechanisms will be applied to each and every payment throughout the day. (iii) The risk-control mechanisms will be such that any loss caused by a defaulting institution will be fully covered by collateral put up by the defaulting institution and the surviving institutions. (iv) Certainty of settlement will be provided for each payment immediately on passing the risk-control tests, and same-day settlement with finality will take place in the early evening at the Bank of Canada. (Subsequently, while the LVTS was under construction, the Bank of Canada agreed to guarantee completion of the daily settlement process in the rare circumstance of a multiple default on the same day.)[5] These characteristics would make it possible for CPA member institutions to offer finality of payment to their customers.

Three months later, in July 1993, a letter signed by executives of the four agencies was delivered to the Chairman of the CPA, stating, “We are in agreement with the broad characteristics proposed for the LVTS.” The letter noted that the use of net sender limits, prespecified loss-allocation procedures, and the pledging of collateral would mean that the LVTS would meet the relevant international “Lamfalussy” standards published by the

4. See J. Dingle, “The LVTS—Canada’s Large-Value Transfer System.” *Bank of Canada Review* (Autumn 1998): 47.

5. Bank of Canada, *Annual Report of the Governor to the Minister of Finance* (Ottawa: Bank of Canada 1996), 20–22.

Bank for International Settlements.[6] The proposed access criteria were judged acceptable because the full range of financial institutions involved in the payments system found them workable. It was anticipated that the access criteria, together with the details of the netting mechanism, would be contained in a CPA by-law to be approved by Governor-in-Council; i.e., by the Cabinet of the federal government. (This legally significant event occurred almost five years later.)

The Construction Phase

Since the basic characteristics of the LVTS involved the application of risk-control tests with respect to each and every payment message, it would be necessary to establish (or hire) a central computer facility for the CPA. The chosen telecommunications network and the central facility would also have to be linked. (At that time, SWIFT was offering a service to national systems by which an automated copy of each payment message could be forwarded to such a facility; this was found to be workable for the LVTS.) The particular user specifications for the system—for example, those of each major deposit-taking institution, those of the CPA as the LVTS operator, and those of the Bank of Canada as the national monetary authority—had to be assembled. This process alone was viewed as likely to take as long as 18 months. Fortunately, the CPA succeeded in obtaining the assistance of Fredda Cole, a person of remarkable energy and intellect, to marshal the distinctly heterogeneous user needs and mould them into a workable whole. Her documentation of user needs and the system specifications that addressed them ran to several hundred pages.

The CPA selected a suitable systems-development company by the usual request-for-proposal process, and in April 1996, the General Manager signed a contract worth over $10 million with DMR Group Inc. to both build the LVTS software and join with CDSL Limited in providing the operating platform. As is so often the case in large-scale systems-development projects involving many parties, the fixed-price contract took longer to complete than either side anticipated, and required significantly more resources. But, in the end, the development of the LVTS was completed in a satisfactory manner. Moreover, it was subsequently nominated for a Computerworld Smithsonian Award for the use of technology to produce educational, social, or economic benefits.

The development costs of the LVTS, which were initially paid by the CPA members at large as part of their annual dues, were recorded for later

6. Bank for International Settlements, *Report of the Committee on Interbank Netting Schemes of the Central Banks of the Group of Ten Countries* (Basel: BIS, 1990).

reallocation over a five-year period to particular members on the basis of the recorded volumes of LVTS messages received and sent by each institution. The total costs so accumulated were $14.9 million. Of this amount, the portion relating to software development was about $7 million.

The LVTS commenced full-scale operations on Thursday, 4 February 1999. On that first day, the value of payments moving through the system exceeded $90 billion, in some 11,400 transactions. Within a year, the value of paper cheques and other traditional payment items cleared through the ACSS had declined by two-thirds, to about $20 billion per day.

Adjusting the Daily Implementation of Monetary Policy

The procedures used by any central bank to transmit the thrust of monetary policy into the short-term financial markets are closely linked to the national system (or systems) through which payments clear and settle. This reflects the fact that the very-short-term decisions of major banking institutions regarding the management of assets and liabilities are largely driven by their expected—and unexpected—clearing gains and losses. As early as 1995, the Bank of Canada had begun the public process by which a new way of implementing monetary policy in the LVTS context could be determined, issuing the first of two discussion papers on the subject.[7] The Bank of Canada refined the procedures in the light of comments received, and the revised documents were published in time for the procedures to go into effect on the first day of LVTS operations in February 1999.

The central features of the new approach as initially implemented can be described as follows: From time to time, the Bank of Canada would announce changes in its 50-basis-point operating band for the overnight (i.e., one-day maturity) interest rate; this occurred at 9 a.m. via a press release.[8] The upper limit of the band was the Bank Rate—the rate charged for overdraft loans to LVTS participants still in a negative position during the early evening settlement process. The lower limit of the band was the rate paid by the Bank of Canada on positive LVTS balances left by participants at the central bank overnight. In the broader money market, overnight interest rates would typically stay within the same 50-basis-point band because of the arbitrage opportunities available to LVTS participants whenever an extraordinarily high or low rate was spotted.

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7. Bank of Canada, "A proposed framework for the implementation of monetary policy in the Large Value Transfer System environment. Discussion paper 1," *Bank of Canada Review* (Winter 1995–96): 73–84.
8. The practice of using previously announced fixed dates for such actions began in December 2000.

As a general rule, the Bank of Canada planned to conduct daily transactions involving the LVTS to set the total level of LVTS settlement balances at essentially zero. These transactions would, for example, offset the net amount of federal government revenues and expenditures flowing over the LVTS. The various LVTS participants, being aware of this procedure, could confidently enter into transactions with each other so as to even out long and short LVTS positions during the half hour following the general closing time but still before the final settlement process.[9]

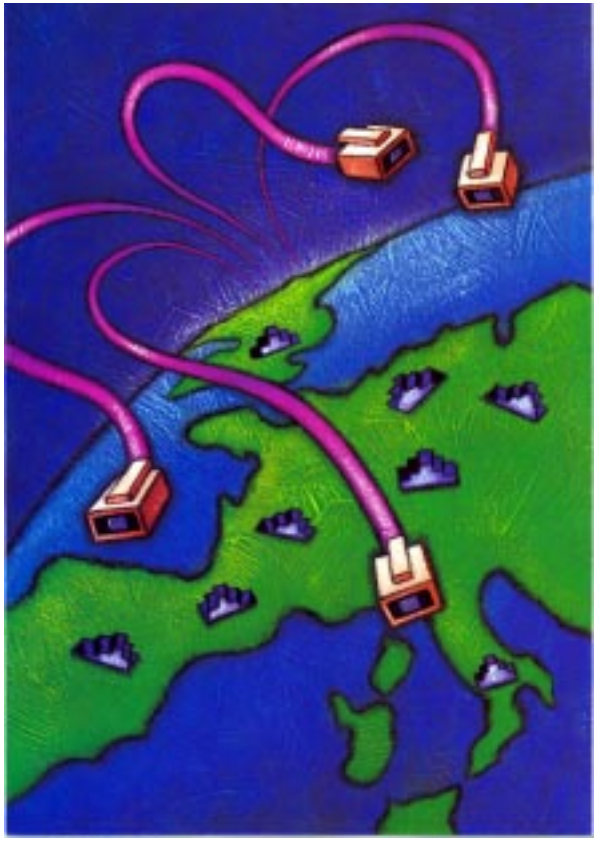
Although the ACSS continued to operate in the LVTS era, the great majority of the value of federal government receipts and disbursements, as well as most transactions related to the financial markets, were rerouted through the LVTS. As a result, the LVTS became the sole focus of monetary policy operations. Nevertheless, a significant flow of cheques and other traditional payment items was still cleared via the ACSS and still settled on the books of the Bank of Canada about noon on the business day following the physical exchanges of such items. The relevant settlement entries in the accounts of the direct clearers held at the central bank continued to be made on a "retroactive" basis; i.e., back-dated to the preceding business day when the exchanges of payment items had occurred. For any one direct clearer, the retroactive clearing result could—despite good forecasting techniques and special transactions to locate settlement balances appropriately—involve occasionally large adverse surprises and the need to take correspondingly large overdraft advances from the central bank. For several years, the rate charged on ACSS overdrafts was substantial, being 150 basis points over the Bank Rate. This pricing policy of the Bank of Canada encouraged CPA members and their customers to use the LVTS rather than cheques wherever possible. The more that Canada's payment flows were cleared and settled with finality over the LVTS, rather than via the ACSS, the lower would be the residual risk in the Canadian payments system.[10]

The LVTS in the Domestic Context

The LVTS contributed significantly to the soundness of other parts of the Canadian financial system. For example, the LVTS was used by the participants of the Debt Clearing Service (DCS) operated by the Canadian Depository for Securities Limited. At the close of business each day, those DCS participants that were required to make payments to the depository sent

9. D. Howard, "A primer on the implementation of monetary policy in the LVTS environment." *Bank of Canada Review* (Autumn 1998): 57–66.

10. In 2003, the CPA accelerated this migration by instituting a maximum of $25 million for individual cheques passing through the ACSS clearings.



the payments via the LVTS to the Bank of Canada, which served as the settlement agent or "banker" for the DCS. Conversely, all participants that were entitled to receive payments received them from the Bank of Canada (on behalf of the depository) via the LVTS. The ability of DCS participants to receive and send final payments promptly and efficiently, with no overnight risk (as existed with cheques), implied a major strengthening of the risk-containment mechanisms in the securities markets. The relationship between the LVTS and the DCS was complementary, because the DCS provided the securities-pledging facilities required for the risk-control features of the payments mechanism.

The LVTS in the Global Context

The strong orientation of the LVTS to the settlement of foreign exchange transactions and to cross-border payments was regularly observed whenever the major payments systems in the United States were closed for a holiday that was not observed in Canada. On such days, the value of LVTS transactions generally dropped by over half. Accordingly, the LVTS was viewed by both Canadians and foreigners as an important component of the global payments infrastructure, handling the large-value transactions denominated in one of the world's major trading currencies. It was therefore of some significance that the LVTS differed noticeably from most of the other national systems for large-value transfers that were established in the 1990s. The LVTS was a deferred net settlement system (with one entry per participant per evening on the books of the central bank), as opposed to a gross-settlement system (in which every transaction led simultaneously to adjustments in two settlement accounts at the central bank). Canadian central bankers expended considerable effort in convincing the international community of financial authorities that the LVTS did, in fact, provide the highly desirable properties of well-designed large-value payments systems; namely, certainty of settlement and intraday finality. This positive perception of the LVTS was subsequently confirmed in 1999 in the Financial Sector Stability Assessment of Canada conducted by the International Monetary Fund. The IMF judged that the LVTS was in "full compliance" with the Core Principles for Systemically Important Payment Systems.[11]

11. International Monetary Fund, *Report on the Observance of Standards and Codes - Canada* (Washington: IMF, 2000).

In 2002, the LVTS came to be used for Canadian-dollar transfers within the new global arrangements for the settlement of foreign exchange transactions, a process called Continuous Linked Settlement.[12] This innovation required a significant extension of the operating hours of the LVTS in order to support some 100 time-critical transfers among several scores of large institutions taking place between the early hours of 1 a.m. and 6 a.m., Monday through Friday. The staff of the CPA responsible for the smooth operation of the LVTS was necessarily reorganized to function on what was virtually a 24-hour-a-day basis. There could hardly be a more concrete indication of the globalization of the national payments system.

12. See J. Dingle, *The Elements of the Global Network for Large-Value Funds Transfers*. Bank of Canada Working Paper No. 2001-1. (2001), 14–15.

8

Looking Ahead: The Canadian Payments Act

Five Years of Significant Legislative Change

The second half of the 1990s was an active period for changes in federal financial legislation, and two acts were passed that were of fundamental significance for the CPA. The first, the Payment Clearing and Settlement Act of 1996, was important because the clearing and settlement processes within the LVTS gained additional legal force through the provisions of the act, as well as through actions taken subsequent to its passage. In 1999, the Bank of Canada, with the approval of the Minister of Finance, designated the LVTS as falling within Bank oversight in matters relating to the control of systemic risk. As a result of this designation, the system gained protection against legal challenge from stays of a failed participant, which in turn, supported the certainty of settlement and finality of LVTS transfers.

The second legislative change was Bill C-8, one of the most extensive omnibus pieces of legislation ever put before Parliament, approaching 1,000 pages in length. Included in Bill C-8 was the Canadian Payments Act, which updated and refined the CPA's mandate, expanded the membership, and added new governance features. This act was given royal assent in June 2001. The preparation of the regulations containing the detail necessary to implement many of the provisions of the act were completed in the course of 2002.

The Canadian Payments Act

Rather than the two legislated objectives for the Association contained in the CPA Act of 1980; namely, "establish and operate a national clearings and settlements system and . . . plan the evolution of the national payments system," the 2001 legislation stated in section 5 that:

R.M. (Bob) Hammond, General Manager of the Canadian Payments Association, 1990–2003.

> "The objects of the Association are to: (a) establish and operate national systems for the clearing and settlement of payments and other arrangements for the making or exchange of payments; (b) facilitate the interaction of its clearing and settlement systems and related arrangements with other systems or arrangements involved in the exchange, clearing or settlement of payments; and (c) facilitate the development of new payment methods and technologies."

In addition, section 5 added a duty, stating that "In pursuing its objects, the Association shall promote the efficiency, safety and soundness of its clearing and settlement systems and take into account the interests of users." Depending on one's interpretation of the section, it was possible to say that the CPA's role in the payments system had been expanded—or just clarified. (The story of the *second* two decades of the CPA may someday provide a conclusive answer.)

The new act expanded the types of financial institution eligible to join the CPA, adding three new classes: life insurance companies, securities dealers, and money market mutual funds. The greater breadth of Association membership held the potential for increased competition, better service to the users of payment services, and enhanced innovation. At the same time, the increased heterogeneity worked in the direction of more complex risk control. The act provided careful definitions of each of the three new types of members, and the subsequent regulations established particular requirements that applicants from the mutual funds and the securities dealers classes would have to fulfill. Moreover, an additional distinction was made in this area—the difference between access to CPA membership, on the one hand, and eligibility for direct clearer status in the ACSS, on the other. As a matter of government policy, neither life insurance companies nor money market mutual funds were allowed to function in the ACSS as direct clearers.[1]

The Canadian Payments Act also changed the composition of the CPA's Board of Directors. The new Board would consist of a Chairperson appointed by the Bank of Canada; 12 directors to be elected to represent the seven classes of institution (banks, centrals, trust and loan companies, qualified corporations and trusts associated with money market mutual funds, securities dealers, life insurance companies, and "other" members), and three directors appointed by the Minister of Finance. Six seats were allocated to the bank class and six were assigned to the other classes of financial institution. In total, the new Board had 16 members, as opposed to

1. Canada, Department of Finance, *Reforming Canada's Financial Services Sector, A Framework for the Future* (Ottawa: Department of Finance Distribution Centre, 1999), 41.

11 on the Board that was established in 1980. The increased diversity was expected to noticeably multiply the points of view expressed at meetings of both the Board and its various standing committees.

The third major change in the legislation, which informed the future work of the Association, was the altered oversight structure. In addition to the oversight of the LVTS by the Bank of Canada pursuant to the Payment Clearing and Settlement Act, the Minister of Finance gained the authority to disallow, in whole or in part, any new rule or amended rule of the Association within 30 days following its submission. Moreover, the Minister could, after consultation with the Board and any interested party, issue a written directive to the Association "to make, amend or repeal a by-law, rule or standard." Such a power of directive was expected to be very rarely used, if ever. On the other hand, the practical and ongoing implications for the Association of the requirement to interact with the Department of Finance whenever the CPA Board approved new or revised rules (of which there were dozens every year for largely operational reasons) raised concerns on the part of some observers about the ability of the Association to act sufficiently quickly in a future that was expected to involve rapid technical change.

Observed Trends at the Start of the Millennium

Three broad and continuing trends relevant for any national payments system were evident as the new millennium began: (1) globalization, (2) financial consolidation, and (3) technological developments. The following paragraphs explore each trend in turn, noting how events during the first 20 years of the CPA illustrated the importance of these broad phenomena for the evolving world of money and payments.

Globalization, in this context, is the movement by deposit-taking institutions towards a comprehensive cross-border orientation of their strategies, management, and operations with respect to payments services. National arrangements are gradually being linked in the context of new and broader structures. A clear illustration of this trend was the introduction, in 2002, of Continuous Linked Settlement, which was expected to reroute about one-quarter of the daily value flow of large-value payments in Canada (and indeed globally) through a new cross-border facility operated by the CLS Bank. The CPA had to respond to this development and will probably have to do so again in the context of further cross-border arrangements, particularly those in North America.

Consolidation among the global institutions that focus on financial services, particularly in the context of transaction processing, had been well documented.[2] The trend was expected to continue, largely a result of the drive for even greater economies of scale and scope. Canadian institutions were (for reasons of public policy) less likely to engage in mergers than was the case elsewhere. Instead, Canadian banks were reaching out to similar partners in other countries and to specialized companies both at home and abroad that provided services such as the processing of cheques and card transactions. The new mandate of the Association to "facilitate the interaction of its clearing and settlement systems and related arrangements with other systems or arrangements involved in the exchange, clearing or settlement of payments" was, thus, quite appropriate.

Lastly, there was ongoing pressure to take advantage of evident *technological advances*. At the start of the millennium, the one advance that stood out as being of particular importance to the CPA was the Internet. The Internet had entered peoples' lives and work environments in the late 1990s in such a pervasive, inexpensive, and user-friendly manner that both personal and professional patterns of communication were substantially transformed. The implications for the national payments system—for the medium of exchange—were judged by the CPA Board to be fundamental. Accordingly, the CPA spent over $4 million during 2001 and 2002 to create a cryptographic infrastructure to facilitate the development of secure payment methods using Internet technology. While not viewed by the Board as "planning the evolution of the national payments system," this initiative was a conscious effort to enhance the nature, and to accelerate the pace, of that evolution.

2. See Group of Ten, *Report on Consolidation in the Financial Sector* (Basel: BIS, 2001). Chapter 6 covers the effects of consolidation on payment and settlement systems.

Appendix
CPA Directors and Alternate Directors

Board Member	Class	Institution	Years of Service	
			From	To
Vachon, S.	B of C	Bank of Canada	1981	2000
Dingle, J.F.	B of C	Bank of Canada	1981	2003
Cosier, J.	B of C	Bank of Canada	2001	present*
O'Reilly, B.	B of C	Bank of Canada	2003	present*
Farrish, M.	Banks	Banca Commerciale Italiana	1998	2000
McEachern, P.N.	Banks	Bank of BC	1981	1984
Franklin, W.A.	Banks	Bank of BC	1986	1987
Oquet, G.	Banks	Banque Nationale de Paris	1990	1997
Harker, W.C.	Banks	BMO	1981	1983
Barrett, M.W.	Banks	BMO	1984	1987
McNally, A.G.	Banks	BMO	1987	1989
Darlington, L.F.	Banks	BMO	1989	1997
Tetley, R.	Banks	BMO	1997	2001
Kinsley, M.	Banks	BMO	2001	present*
Hare, G.E.	Banks	BNS	1981	1985
Wahbe, A.E.	Banks	BNS	1985	1990
Marcotte, D.J.	Banks	BNS	1990	1996
Brown, D.	Banks	BNS	1996	1997
Gill, D.K.	Banks	BNS	1997	2000
Mulligan, P.	Banks	BNS	2000	2002
Brown, D.	Banks	BNS	2002	2002
Smith, D.	Banks	BNS	2003	present*
Tapping, B.W.	Banks	Canadian Commercial Bank	1984	1985
Bond, W.	Banks	Canadian Commercial Bank	1985	1986
McPherson, A.	Banks	Canadian Western Bank	2002	present*
MacIntosh, R.M.	Banks	CBA	1981	1989
Sinclair, H.K.	Banks	CBA	1989	1996
Protti, R.	Banks	CBA	1996	2000
Shaughnessy, K.	Banks	CBA	2000	2002
White, R.J.	Banks	CIBC	1981	1983
Chard, R.D.	Banks	CIBC	1983	1989
Hare, G.E.	Banks	CIBC	1989	1990
Tullett, J.L.	Banks	CIBC	1990	1991
Kelly, R.M.	Banks	CIBC	1991	2003
Delaney, C.	Banks	CIBC	2003	present*
Pitt, E.J.	Banks	Citibank	1986	1988
Lindwall, E.J.	Banks	Continental Bank	1981	1981
Smuk, W.	Banks	Continental Bank	1983	1989
Rennie, C.P.	Banks	HSBC Bank	1987	1990
Ranaldi, J.	Banks	HSBC Bank	1990	1991
Muth, R.H.	Banks	HSBC Bank	1991	1993
Bretwyn, C.	Banks	HSBC Bank	1993	1993

* as at the date of publication

Board Member	Class	Institution	Years of Service	
			From	To
Carruthers, D.	Banks	HSBC Bank	1993	1995
Morgan, R.	Banks	HSBC Bank	1995	2001
Lashua, C.	Banks	HSBC Bank	2001	present*
MacDonald, H.	Banks	ING Bank	2002	present*
Monette, A.	Banks	Laurentian Bank	1988	1989
Godbout, G.	Banks	Laurentian Bank	1989	1993
Calvé, J.-G.	Banks	Laurentian Bank	1993	1999
Bourassa, L.	Banks	Laurentian Bank	2000	present*
Tapscott, R.	Banks	Lloyds Bank	1989	1990
Fedchyshyn, J.R.	Banks	Manulife Bank	2002	present*
Sondergaard, J.	Banks	MBNA Canada Bank	2002	present*
Crawford, B.	Banks	McCarthy & McCarthy	1981	1981
Hughes, C.	Banks	Mercantile Bank	1984	1985
Preston, J.	Banks	Mercantile Bank	1985	1986
Mercure, G.	Banks	National Bank	1981	1982
Morin, B.	Banks	National Bank	1982	1986
Baribault, T.J.	Banks	National Bank	1986	1988
Paquette, P.	Banks	National Bank	1988	1990
Charron, G.	Banks	National Bank	1990	1995
Dupuis, S.	Banks	National Bank	1995	1995
Gagné, J.	Banks	National Bank	1996	1998
Grandmaison, J.	Banks	National Bank	1998	1999
Carter, R.	Banks	National Bank	1999	2000
Petitclerc, J.-C.	Banks	National Bank	2000	2003
Lozeau, M.	Banks	National Bank	2003	present*
MacDonald, F.G.	Banks	Royal Bank	1981	1986
MacDonald, W.A.R.	Banks	Royal Bank	1986	1988
Feeney, G.L.	Banks	Royal Bank	1988	1990
Gorman, W.J.	Banks	Royal Bank	1990	1992
Baptista, M.C.S.	Banks	Royal Bank	1992	1994
Berardinucci, D.	Banks	Royal Bank	1994	1997
Aylward, R.H.	Banks	Royal Bank	1997	2001
Austin, S.J.	Banks	Royal Bank	2001	2003
Mutto, A.	Banks	Royal Bank	2003	present*
Simpson, R.E.	Banks	TD Bank	1981	1981
McMorran, S.R.	Banks	TD Bank	1981	1993
Martin, A.	Banks	TD Bank	1993	1994
Gibson, J.D.	Banks	TD Bank	1994	1996
Mosur, S.	Banks	TD Bank	1996	2000
Gesner, S.	Banks	TD Bank	2000	2002
Shirreff, B.	Banks	TD Bank	2003	present*
Croteau, R.	Centrals	Caisse Desjardins	1981	1984
Morin, A.	Centrals	Caisse Desjardins	1981	1987
Riverin, B.	Centrals	Caisse Desjardins	1984	1987
Limoges, S.	Centrals	Caisse Desjardins	1987	1990
Langelier, J.-G.	Centrals	Caisse Desjardins	1987	1994
McLeod, J.	Centrals	Caisse Desjardins	1991	1995
Luys, J.	Centrals	Caisse Desjardins	1994	1997
Jourdain, M.	Centrals	Caisse Desjardins	1995	2001
Nguyen, H.T.	Centrals	Caisse Desjardins	1997	present*
Lapierre, G.	Centrals	Caisse Desjardins	2001	present*
Tadman, H.L.	Centrals	CCCS	1981	1985
Tuters, O.J.	Centrals	CCCS	1985	1986
Downey, B.F.	Centrals	CCCS	1986	1995
Bromberger, N.A.	Centrals	CUC of Sask.	1981	1993
Nygren, W.A.	Centrals	CUCBC	1993	present*
Stratton, J.J.	Centrals	CUCC	1995	1995
Knight, W.G.	Centrals	CUCC	1995	2001

* as at the date of publication

Board Member	Class	Institution	Years of Service	
			From	To
De Laurentiis, J.	Centrals	CUCC	2001	present*
Ogilvie, M.	Ministerial Appt.	Carleton Univ.	2002	present*
Matthews, R.	Ministerial Appt.	Imperial Oil	2002	present*
Chant, J.	Ministerial Appt.	Simon Fraser Univ.	2002	present*
Douglas, R.B.	Others	ATB	1981	1982
Reed, R.H.	Others	ATB	1982	1984
Bellan, L.R.	Others	ATB	1984	1986
Leahy, E.S.	Others	ATB	1986	1994
Callaghan, J.L.	Others	ATB	1994	1997
Casey, K.H.	Others	ATB	1997	present*
Hood, J.	Others	ATB	2002	present*
Antaki, C.	Others	Banque d'Épargne	1981	1984
Marcoux, Y.	Others	Banque d'Épargne	1984	1986
Lefebvre, R.	Others	Banque d'Épargne	1986	1987
Gedge, P.A.	Others	Banque d'Épargne	1987	1987
Mach, J.	Others	Communication Technologies CU	2002	present*
Fitzgerald, R.G.E.	Others	CS Coop	1987	1997
Seveny, G.M.	Others	CS Coop	1997	present*
Gallant, J.	Others	CS Coop	2002	present*
Dragan, R.	Trusts	Canadian Permanent Trust	1981	1986
Miller, E.D.L.	Trusts	Canada Trust	1981	1983
Lindores, J.T.	Trusts	Canada Trust	1983	1985
Speake, J.H.	Trusts	Canada Trust	1985	1988
Kelman, B.	Trusts	Canada Trust	1988	1995
Stringer, C.J.	Trusts	Canada Trust	1993	2000
Dolman, D.	Trusts	Canada Trust	1995	1998
Riggall, C.	Trusts	Canada Trust	1999	2000
Fricker, E.A.	Trusts	Guaranty Trust	1981	1981
Dickson, H.	Trusts	Guaranty Trust	1986	1987
Hodges, R.C.	Trusts	Guaranty Trust	1989	1992
Wright, W.T.	Trusts	Investors Group Trust Co.	2000	present*
Leclaire, S.	Trusts	Montreal Trust	1992	1994
Yashan, G.	Trusts	MRS Trust	2002	present*
Ferguson, G.I.	Trusts	Municipal Trust	1994	1996
Gassien, R.G.	Trusts	National Trust	1984	1995
Wright, E.B.	Trusts	National Trust	1996	1997
Strelioff, S.J.	Trusts	National Trust	1997	1997
Sneddon, I.D.	Trusts	Royal Trust	1981	1981
Sneddon, I.D.	Trusts	Royal Trust	1984	1985
Cooper, D.R.	Trusts	Royal Trust	1985	1990
Burt, D.E.	Trusts	Royal Trust	1990	1993
Corsi, G.	Trusts	Sun Life Trust	1997	2002
Harker, W.C.	Trusts	Trimark Trust	1997	2001

* as at the date of publication

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