

Manuscript of the Month
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Photograph of computer room at 37 Fleet Street, July 1977



I have now read Mr Smith's report on the Books and Cashier's Department...Mr Smith still favours installation of a computer for subjective reasons, and I agree that it would overcome some of your peaks of work. However, a computer brings problems of its own including equipment obsolescence and the need for specialist staff. Savings in clerks and equipment would not cover the costs of an installation and there would be no great improvement in customer service. (Letter to Messrs Hoare from Urwick Diebold Ltd, 8 Aug 1968)

By the 1950s, the business world was taking its first tentative steps towards computerisation. And the financial sector was no exception. In 1955, the Committee of London Clearing Banks formed an Electronics Sub-Committee to look at newly emerging electronic data processing techniques and decide how to make the best use of them. The Committee's interest was fuelled by what it termed *the spread of the banking habit*, a corresponding rise in the number of cheques in circulation (9M p.a. by 1960) and the introduction of the Credit Transfer Scheme. Over the course of the next decade, the Clearing Banks developed a system of automated clearing for cheques, Bank Giro Credits and Direct Debits that relied on MICR (Magnetic Ink Character Recognition) programmes and necessitated the standardisation of cheque size, paper and layout across the entire banking sector.

For Hoare's Bank there was no escape from this march of progress. In November 1960, a few weeks after Bertram Hoare's visit to the Business Efficiency Exhibition at Olympia, the bank purchased an Adrema machine, enabling it to produce the new-style cheques required by automated clearing. But more drastic changes were also necessary. The number of transactions that had to be processed had risen steadily, from 707,000 p.a. in 1952 to 917,000 p.a. by 1961, which in turn placed an enormous strain on the bank's staff, particularly around the quarter and annual balance days. As a result, paid overtime was introduced in June 1961. At the same time the bank engaged a firm of consultants to scrutinise every aspect of the Books Department's procedures and recommend improvements. While anxious to move with the times, the bank's partners were keen to retain the age-old customs of manually posting all ledgers and issuing handwritten customer statements with full narrative, which they believed not only gave their clerks a thorough knowledge of the bank's customers but also generated valuable publicity. After a twelve week investigation, however, the consultants' conclusion was blunt: *It is our opinion that, from all points of view, mechanisation offers the best practicable solution.*

The arguments for mechanisation were several-fold. The volume of transactions was certain to increase year on year for the foreseeable future. Mechanisation, therefore, would not only

immediately relieve the Books Department's over-burdened staff, but allow the bank to absorb any additional growth in business without having to dramatically increase staff numbers. More importantly, however, the consultants recognised that any refusal to adopt mechanisation would merely delay the inevitable, as across the wider banking sector the shift towards technology was relentless. Finally, the consultants warned that as mechanisation became commonplace Hoare's would find it difficult to recruit and retain suitable staff: *We cannot believe young men of the right calibre will readily settle into a career which may appear to be confined to a high top desk and the continuous writing of ledgers. It should be simpler to standardise your work by using female [machine] operators who would not ordinarily aspire to special posts.* Even the bank's predilection for handwritten customer statements should not deter it from mechanisation, they argued, since mechanised statements could be copied out by hand if required. Besides, not only were Messrs Hoare Trustees already issuing machine generated statements, thus setting a precedent, but back in 1946 the bank had intended to introduce typewritten statements for all its customers. Only a shortage of copy-typists had prevented it from doing so at that time.

As a result of this report, the decision was made to mechanise the Books Department and in February 1962 an order was placed with the National Cash Register Co for ten NCR 32-0-7 accounting machines at a total cost of £19,030 (c.£320K today). Each machine boasted a full figure keyboard with automatic ciphers, spacing and punctuation; a recording and accumulating capacity ranging from 1d to £9,999,999.19s.11d; six adding registers, all with direct subtraction; automatic control of balances (debit and credit) and an electric typewriter keyboard for narrative description. Experiments carried out during the previous winter suggested that a clerk should be able to post three heavy ledgers per day instead of the two they were accustomed to posting under the manual system. Inevitably too, there was a marked reduction in the number of arithmetical errors, while much of the subsidiary work and duplication associated with manual posting was done away with.

The cost of mechanisation, however, did not end with the acquisition of the accounting machines. A whole host of ancillary equipment was also required: a microfilm machine and reader, as well as cabinets to hold microfilm spools, new desks to replace the high ones currently in use, chairs, trolleys and lighting. The bank's stationery too had to change. New statement forms were designed and an initial order for 30,000 placed with the printers, while yet more money was spent on guide cards, audit roll sheets, control cards, insertion tabs, binders and rubber stamps. Another priority was staff training. Fifteen of the Books Department's thirty three staff were each given eight hours training, four on borrowed machines at the bank and another four at NCR's City showroom. The aim was to have the new system up and running well ahead of 1 July, annual balance day. In the end, Monday 21 May was fixed upon as changeover day. On the preceding Friday, each and every ledger was balanced. The balances were then transferred onto pre-prepared statement sheets during the course of Saturday and any remaining work was dealt with on the Sunday. Finally, on Monday morning, the new system was put into action.

Apart from concerns over the noise generated by the machines, which was considerable, the mechanisation of the Books Department passed off without a hitch. But just five years later the bank was forced to commission a second review of its procedures. The ever increasing number of accounts, along with a fluctuating Bank Rate (the financial year 1967-68 alone saw five rate changes), the introduction of both Capital Gains Tax (30%) and Corporation Tax (40%) in 1965 and the growing popularity of Hire Purchase, meant that more and more staff time was being spent calculating and posting interest on Loans and Deposits. At the same time the NCR machines purchased back in 1962 were beginning to suffer periodic breakdowns. Was it time, the partners wondered, to invest in a computer?

While the report generated by this second review generally encouraged the idea of computerisation, it cautioned against too precipitate a leap into the technological age. At about £75K (c.£1M today), the cost of buying or renting a computer would be considerable, while the bank's current processing costs did not exceed £55K p.a., thanks largely to what the report described as: *the efficient use of staff and machines in the Bank's Books Department, coupled with a very rough and ready method of interest calculation*. Such an investment would only pay if the bank was prepared to computerise a significant amount of other work, including current accounts, statements, interest calculations on overdrafts, the preparation and posting of standing order vouchers, credits for dividends on Bearer bonds and other securities, statistical returns for the Bank of England and daily liquidity figures for money market purposes. Nor could any of this be accomplished without considerable upheaval. A large room would be required to house the computer, one with effective air conditioning as most computers could only withstand a variation in temperature of 1°F. Computer-literate staff would also have to be recruited or trained. In his 1967 guide, 'Choosing a Computer', David Shirley reckoned that: *To attract an experienced programmer it is necessary to offer a salary of at least £1,500 a year...and any worthwhile computer manager will earn at least £2,000*. Once the right staff had been appointed, a detailed systems analysis would need to be carried out and the relevant computer programmes written. The bank's stationery would have to be redesigned yet again and account numbers allocated to all Loan, Deposit and Current accounts before being incorporated into personalised cheque books.

As a short term solution to the bank's most pressing problems, the report recommended outsourcing all Loan and Deposit accounts to a computer bureau. This would not only relieve the hard-pressed Books Department, but also give staff valuable experience in handling computer in-put and out-put. Any fears about customer-bank confidentiality would be overcome by the use of account numbers. After looking at several bureaux, Hoare's agreed in June 1967 to rent space on another bank's computer for its Deposit accounts. In practice this meant that once the debits and credits had been posted to the various accounts, the transfer vouchers had to be bundled up and taken to the other bank for processing overnight before being returned in the morning with daily statements.

Over the next few years, Hoare's began laying the groundwork for its own computer system. Several staff were dispatched to a Woolwich college for instruction in one of the most commonly used computer programming languages of the day, Dartmouth BASIC (Beginner's All Purpose Symbolic Instruction Code), while additional more experienced staff were recruited from outside. In 1969-70, an Organisation & Method (O&M) Department was set up to oversee the necessary preparatory work: the numbering of accounts, the personalisation of cheque books, the design and ordering of stationery and the writing of suitable programmes. By 1974 the bank had its own fully-fledged Computer Department, with several Programmers, Operators, Analysts and a shorthand typist, all under the watchful eye of the Computer Services Manager. During the next year, nearly £600K was spent installing the new computer system. The model chosen, Digital Equipment Co's PDP 11/45 16 bit minicomputer, was popular within the financial community as it could handle data entry, word processing and spreadsheets, was relatively easy to programme and boasted a memory of 256KB. By 1976, however, the project had run into trouble and there were doubts that the new system would be ready in time to take over from the NCR machines. In June that year, development work ceased. A year later Hoare's spent another £100K replacing its ageing NCR machines with eighteen Olivetti A6 electronic accounting machines. The computer was effectively side-lined, although its cost was partially recouped by hiring out spare capacity to other firms. In early 1978 the Computer Department was disbanded and most of its staff requested to leave *on a mutually convenient date*.

Of course, such a step back could only be temporary. By the early 1980s Hoare's was once again in the throes of developing a new computer system, one that would carry it through to the Millennium and beyond. Today, Information Technology permeates every aspect of life at the bank, as highly trained staff and ever more complex technology combine to ensure that Hoare's keeps pace with the demands of modern life. For as the report commissioned by the bank nearly half a century earlier stated: *a business house of the standing and repute of Messrs Hoare & Co must not only look to the present but plan for the future, taking into account the changing pattern in the commercial world.*