

# Lyons' Share

**Commercial computing in Britain has its beginnings in a rather unexpected place**

### Electronic Office

Unlike all previous computers, which were designed for scientific or military applications, the LEO 1 was designed to perform only simple arithmetic operations, but on thousands of items or transactions per day



In 1947 a pioneering decision was taken to attempt to build a computer that could be used to automate clerical office work. This was to be the world's first commercial business computer. The imaginative decision came from a rather surprising source: J Lyons, the corner house teashop company. Lyons' business involved a large number of small transactions, and in order to make such a business operation profitable it was necessary to keep the paperwork under strict control. Even after the devastation of the Second World War the company employed more than 1,000 clerks for sorting out the receipts from the teashops.

Because of these considerations Lyons had a long tradition of innovation in business methods:

### Electronic Teashop

The traditional Lyons teashop seems an unlikely venue for the first major commercial application of computers, but it was precisely this kind of business, with its considerable number of small transactions, which lent itself to computerised methods

they introduced calculating machines into their teashops as early as 1896 and by the 1930's they were experimenting with microfilm records of transactions. At the same time they set up the first business research centre to study operating methods.

Every few years Lyons would send representatives abroad to investigate new developments that might be useful to them, and in 1947 two employees were sent to the United States to look into the new 'electronic brains'. The most useful discovery they made was that a computer was being built much nearer home, in Cambridge.

Lyons' board of directors commissioned a feasibility study to consider the possible development of the company's own computer. The estimate suggested that a computer could be constructed for £100,000 and that it would save £50,000 a year. Consequently, in October 1947 Lyons began work on the project. The enterprise was all the more daring because at that time the Cambridge computer was only at the design stage. Lyons gave a grant of £3,000 to Cambridge University to help build what became known as EDSAC (Electronic Delay Storage Automatic Computer). The grant was used to buy up government surplus valves. In 1949, EDSAC successfully completed its first job — to calculate a table of prime numbers.

Lyons analysed the problems their computer would have to solve, sketching out the routines that it would need. These studies became the blueprints for the first programs and helped determine the design of the hardware. But it soon became apparent that a business computer was fundamentally different from a university research machine. Whereas EDSAC was designed to execute long and complicated mathematical operations on an input consisting of just a few numbers, the business computer had to solve the opposite kind of problem. Mathematical operations were minimal — just adding and multiplying — but the amount of data processed was enormous.

LEO (the Lyons Electronic Office) became operational on 9 February 1954, and was used to calculate the weekly payroll for 1,700 members of staff. It performed in one and a half seconds an operation that had previously taken a clerk eight minutes.

LEO was a great success for Lyons, and they soon realised they needed more than one machine. Other companies expressed an interest and Lyons set up a company to use the skills they had learnt in manufacturing and marketing computers. Leo Computers was highly successful and went on to produce a series of improved versions of LEO that were used by industry, government and business. The company was bought up in 1963 by the English Electric Company.

