

**This month LOLA (London On-Line Local Authorities) becomes fully fledged, a computer consortium of four London boroughs – Hackney, Haringey, Hillingdon and Tower Hamlets. On the eve of nationwide local government reorganisation it could well become a model for the rest of the country. Derek Schartau describes how.**

<sup>1</sup>In January 1969 the London Boroughs Management Services Unit published an 118-page book entitled *Report on the initial study: London borough<sup>2</sup> of Haringey long term computer project*. At the time it received much more attention in the computer technical press than in the local government press. Nevertheless, the word quickly got around and a gratifying number of copies was sold both in the UK (to most major authorities and nearly all management consultants) and also abroad, mostly in Europe.

The basic concepts propounded were: the requirement for an organisation 'data base' which would be consistent with the departmental 'data base' and which would be of equal utility to all the legitimate interests concerned; and the general need for increasing emphasis on information as a resource in itself. This implied a large computer equipped with mass storage devices and linked to all major departments through a telecommunications network.

Stored on the central computer would be enough information to fulfil the centralising function – basically the common items of information relevant to the work of more than one department, and cross-references to more extensive files of information maintained in each department.

Furthermore, these records would have to be capable of being updated on-line and the system not restricted merely to providing facilities for inquiry. These ideas are summarised in the illustration overleaf.

## The system

The complete system was seen as providing:

- (1) a data collection and up-dating system – capturing data as near as possible to the point of origin;
- (2) a data retrieval system – permitting (at long last!) the successful implementation of 'management by exception' systems, since the ad hoc retrieval facilities would provide access to normal cases omitted from the routine reports;
- (3) a communications system – allowing different interests, in different locations, to obtain the same level of knowledge about the state of activities in which they had a mutual interest,

The advantages can be summarised as follows:

- (a) standardisation of recording and referencing in the most critical and public areas of information, namely people and property, within a logical framework and with proper cross-indexing;
- (b) a similar logical framework for internal records, in order to extend the scope of integrated data processing;
- (c) better communications and co-operation between departments thus providing a more efficient and humane service to the public;
- (d) less effort in acquiring, transmitting, copying, reorganising, extracting and analysing information;
- (e) laying the foundations of a progressive system of reporting on operational functions for managerial and strategic requirements (or what we have begun to call an Operational Management Information System).

## Size of consortium

These concepts, which can no longer have the force of novelty (in their exposition, that is, although unfortunately not yet in the implementation), were readily acceptable to Haringey's chief officers and members<sup>3</sup>.

The difficulty was that even in 1969 it was clear that the scale of investment was well beyond the means of one London borough. It was estimated that the computer hardware would cost about £1 million<sup>4</sup> and that the system development work, for what were then identified as the basic 'nucleus' computer applications, would involve at least 80 man-years.

However, the original terms of reference for the study had included determination of the optimum size for a consortium of London boroughs, and there already existed a possible basis for this, in that Haringey had joined in 1966 a consortium set up by Hackney and Tower Hamlets to cope with the short-term requirements arising from the Greater London reorganisation.

This consortium, the North-East London Computer Scheme, had made rapid progress using a LEO III installed in a converted factory in Hackney and standardised programs developed by the London Boroughs Management Services Unit for the London Boroughs Joint Computer Committee (Bexley, Greenwich and Southwark).

Follow-up studies at Tower Hamlets and Hackney revealed the same characteristics as those which had given rise to the Haringey recommendations, i.e. extremely complex organisations, in scattered offices inherited for the old metropolitan boroughs, with data-

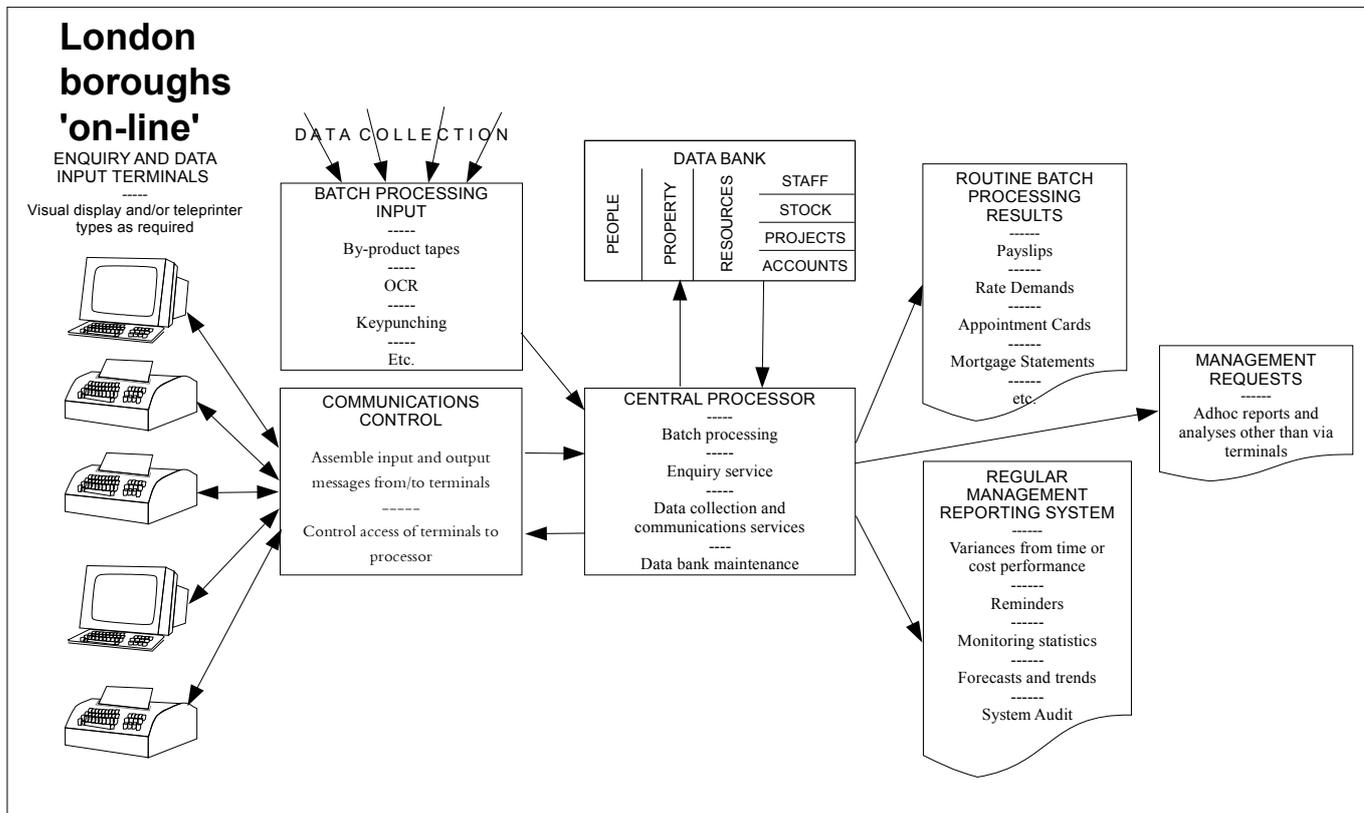
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<sup>1</sup> This document was scanned from a contemporary photocopy, OCR'ed, proofed and formatted similar to the original style, plus additional footnotes, in November 2016 by Alan E Cooper.

<sup>2</sup> A borough is a town or district which is a council administrative unit (aka authority) with elected representatives. In 1969 there were 32 boroughs within London [2016 note].

<sup>3</sup> Members are elected councillors [2016 note].

<sup>4</sup> £1m in 1969 is about £15m (US \$21m) in 2015 [2016 note].



processing, information retrieval and analysis needs which were quite beyond the capacity of existing procedures, both manual and computer.

Unfortunately three authorities were still not really enough: at this stage it was simply not possible to show a clear-cut cost justification of the new proposals. This was particularly so because of the extremely modest level of existing costs for the LEO III of a second-hand central processor and had no development element.

## Cost justification

Cost justification is always a difficult question – even for a single application – if a completely new systems approach is envisaged. In this instance a revolutionary new overall systems approach was being proposed, with the component sub-systems defined only in outline, and so the financial arguments were even more difficult to present.

The component applications could obviously not be defined in details until:

- (1) the number of authorities willing to form such a consortium had been determined;
- (2) the hardware and specialised software to be used were known, together with the key performance factors relating to the new data base and teleprocessing technology involved;
- (3) the objectives, order of priorities and time scale for the development programme had been agreed;
- (4) the staff of the consortium members had

time to assimilate the new computer concepts involved and to appreciate their full potential;

- (5) both individual borough and joint borough working parties – in conjunction with computer systems analysts – had studied each application area.

Thus until such a consortium had been formed and considerable progress made, there could be no cost justification. Some chicken! Some egg! Obviously a more practical approach was required, to separate the policy decision of forming a new consortium and agreeing a basic strategy from the essentially lower-level task of justifying the component applications.

## Formation of LOLA

Further progress became possible when, early in 1970, Hillingdon expressed an interest in joining any consortium formed to pursue the objectives expressed in the original Haringey report.

The four boroughs agreed that, if future strategy continued to be based essentially on batch processing, there could be little opportunity for further major developments of the basic financial and administrative procedures. On the technical and non-financial fronts, however, there were still a number of batch processing opportunities to be exploited. On this basis, but with the proviso that in future high-level programming languages would be used, it was easy to show that the capital cost for each authority's own computer equipment would be

**An Operational Management Information System for local government.**

between £250,000 and £350,000<sup>5</sup>

. This in itself gives some idea of the sophistication of the LEO III systems. Furthermore, a reasonable complement of professional staff (excluding management) for each single authority was assessed to be at least four systems analysts, eight development programmers – compared with a proposed staffing of 13 software programmers, 20 systems analysts/programmers and seven maintenance programmers for the proposed consortium, ie 56



*Video-display unit in operation at Haringey rates office.*

staff for four separate installations compared with 40 staff for the consortium. Subsequent computer developments in London have largely demonstrated the validity of these estimates.

The decision to form the London On-Line Local Authorities (LOLA) consortium was taken in March 1970. After further extensive hardware and software evaluation an order was placed in July 1971 with IBM for delivery of a 360/50 computer with 512K bytes of main store and two 9-drive disk units (each of 236 million bytes nominal capacity). A major factor influencing this decision was the proven ability of IBM's advanced data base and telecommunications package – Information Management System (IMS).

### Getting Operational

It proved impossible to find suitable site for a new computer centre in any of the member boroughs, and the high cost of office accommodation nearer the heart of London stimulated a search over an ever wider area, until finally a large modern office block was found at Enfield. This offered 18,500sq.ft.<sup>6</sup> of space; and, as it had been left completely unfitted, it offered full scope for layout design. The usual building delays postponed machine delivery, and it was not until August 1971 that the 360/50 was commissioned.

*The staff then comprising the computer division of the LBMSU moved over en bloc from Victoria on 1 October 1971 and were formally transferred to the employment of the new joint committee one year later.*

The extensive testing requirements of the new system soon required more than single shift working, and two shifts were established from early January 1972. The first application was an

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<sup>5</sup> £35m-48m (US\$ 44m-60m ) in 2015 prices [2016 note].

<sup>6</sup> 18,500sq.ft is approx. 1,700sqm [2016 note].

on-line rating system<sup>7</sup> with full conversational on-line up-dating capability, using video terminals for all aspects except rate receipts (which continues to be captured using by-product paper tapes associated with the cash registers). In its new context this was, of course, very much more than rates accounting scheme, being the foundation of the new property and people data bases.

The first implementation was scheduled for April 1972 at Haringey. The power problems of February, arising from the miner's strike, could not have come at a worse time and affected both the final program testing and user training arrangements. Nevertheless, at the expense of many lost week-ends and the Easter holiday, the system went live on time. Hackney and Tower Hamlets followed in October and Hillingdon this month [December 1972]. There is now a total network 36 video terminals, each with 2,000 character screens and supported by teletypewriters.

The LEO III, which has been running since December 1966, is expected to close down by the end of the next financial year (1973/74). This will be achieved by using a forthcoming IBM package to translate the present wide range of LEO programs as an interim measure until their complete supersession by the on-line facilities.

Perhaps the best way to complete this brief survey of LOLA's formation and achievements is to quote some statistics (see table).

## The next phase

The next on-line application will provide the foundation for the 'resources' component of the overall data bank and introduce to all departments the concept of 'cost centres', i.e. arrangements for sub-dividing the expenditure accounts in such a way that the separate cost heads so derived pertain directly to the responsibility of one manager; these will incorporate extremely powerful new budgetary control arrangements allowing for a variety of expenditure patterns and the aggregation of yardsticks and measures of performance.

Before this phase is implemented (starting once more in Haringey), the present computer equipment will be replaced in August 1973 by the new IBM (370/158 with one megabyte of main storage and the large-scale 3330 disc storage units).

This represents a major vote of confidence by the authorities in the validity of the new concept and techniques and will greatly facilitate an uninterrupted programme of major developments over the next seven years.

Boroughs' resources			
	Gross revenue Expenditure £	Capital debt outstanding (1 April 1971) £	Number of staff
Hackney	12,500,000	81,150,118	3,651
Haringey	22,100,000	72,069,700	9,243
Hillingdon	20,400,000	57,846,514	9,129
Tower Hamlets	13,400,000	45,873,718	5,313
<b>Total</b>	<b>68,400,000</b>	<b>256,940,050</b>	<b>27,336</b>

Boroughs' characteristics					
	Number of	Area (acres) [2]	Rateable (1 April 1971)	Population 30 June 1970	Number of
Hackney	3	4,815	15,048,551	233,490	72,000
Haringey	3	7,490	13,816,991	238,410	85,000
Hillingdon	4	27,258	18,512,633	235,780	90,000
Tower Hamlets	3	4,994	14,970,633	188,080	63,000
<b>Total</b>	<b>13</b>	<b>44,557</b>	<b>62,348,808</b>	<b>895,760</b>	<b>310,000</b>
				1972/73	1973/74
				£	£
Total LOLA budget for both computer centres				861,886	1,019,190

### 2016 Notes

- Following the London Government Act 1963, with changes taking effect in 1964. This Act introduced one county council, 32 boroughs, and left the City of London untouched.
- 44,557 acres is 18,000 hectares or 180 sq km and is 11.5% of the Greater London area.
- Rateable Value (RV) is the assessed rental value of a property and is set every 5 years. Council taxes are levied by multiplying RV by a factor determined for each financial year.
- To convert 1971 values into 2015 values multiply by factor 140.
- The population of Greater London in 1970 was circa 7.5m so LOLA covered about 12%.



The IBM 360/50 computer installed at Enfield

<sup>7</sup> Rates is the local government tax on properties. [2016 note].