# Chapter 2

## Progress of the project

The technical requirements for the project were somewhat complex. The following had to be arranged:

(a) Purchase of the necessary equipment to connect our LSI 11/23 to a packet-switched network, and acquisition of the associated software.

(b) Installation of a cable connection between the University Computer Unit and the Information Science Department.

(c) Installation, by the City University Computer Unit and the University of London Computer Centre, of appropriate packet-switching equipment at either end of the connecting link (previously used for remote job entry).

(d) Installation, by ULCC, of a gateway to PSS.

It was clear before we started that we were likely to come across unforeseen technical and administrative problems, and therefore some provision was made for such events in the programme of the project. In the event, the programmed time was not quite sufficient, but a re-allocation of funds enabled a short extension. Given this extension, the project can be judged reasonably successful, although we did not do quite as much as we had hoped on Objective 4, and the user-friendliness of the system (which is perhaps required by Objective 3) could certainly be improved.

The following is an account of the various technical and administrative problems that arose.

### 2.1. Connecting links

The development of the ULCC-TCU link to packet-switching operation had been planned before and independently of the present project, and went ahead not too far behind schedule.

The installation of a cable connection within TCU also went ahead with only a short delay. This connection required line drivers which were constructed by Computer Unit staff. A problem arose with these line drivers, as discussed below.

### 2.2. PSS gateway

The development of a PSS gateway at ULCC, which had also been planned independently, was placed in cold storage just before this project started. ULCC already possessed an experimental gateway, but were reluctant to make it available to us (one problem was the lack of accounting facilities). Eventually this problem was resolved in a

somewhat ad-hoc fashion; a follow-up to this project will require a more formal arrangement with ULCC (see Chapter 8).

## 2.3. Hardware and software in the Department

The necessary interfacing equipment was installed as planned, and the software obtained from York University. (This system is known, somewhat confusingly from our point of view, as a Front End Processor - that is, it resides in front of the system from the viewpoint of the network!)

The FEP is a small LSI 11/03 system running York software. Additional York software resides in the main system - the Department's LSI 11/23. This software was still under development when we obtained it, and presented some problems in the course of the project. These problems were resolved with the help of the York staff.

## 2.4. Noise on the line

It was apparent early on in the project that the system was having problems with occasional bursts of bad data received from the network. Normally, a packet switched system should be relatively immune to bad lines (indeed, that was one of the reasons we chose this kind of configuration). Two approaches to this problem were necessary: we had to find out why so much noise was occurring, and why the York software was letting it through. The first turned out to be a problem with the design of the line drivers, and York solved the second.

## 2.5. York software

As indicated above, some delays to the project were occasioned by the fact that we had a pre-release version of the York software; but in the end it worked well. There remain some problems of compatibility between the York software and that at ULCC. These problems are minor in the sense that they do not arise very often; nevertheless, they should be dealt with. It is understood that York and ULCC are collaborating on this problem.

## 2.6. Future developments

In August 1983, a demonstration of the system was held for members of BLR&DD and the University of London CIS. Informal opinion at this demonstration was that while the user-friendliness of the system could be improved, it would form a suitable basis for the kind of evaluation project originally envisaged for the Jamieson system. Some considerations relating to this idea are discussed in section 8.