Chapter 1

Introduction

1.1. Research background

A major problem area in current IR research is how to conduct an experiment that will show, under realistic conditions, whether particular techniques will produce a genuine improvement over existing methods. There are now several candidate techniques which have been well researched under laboratory conditions, but have yet to prove themselves in a realistic environment.

One method that has been proposed is to develop a "front-end" to an existing conventional retrieval system, which would have the effect of making the system appear, to the user, as a non-conventional one. Clearly not all of the IR techniques currently being researched could be implemented in this way, but there are several that apparently could (probabilistic methods for example).

Attempts to develop such a front-end have already been made. In a project funded by BLRDD, Jamieson and Oddy (Jamieson, 1979) have been trying to construct such a device in the form of an intelligent terminal. Jamieson's terminal was to be developed from scratch, using three microprocessors and various peripherals. Unfortunately it ran into difficulties, and never reached the stage at which it could be tested in a realistic environment.

Morrissey and van Rijsbergen (Morrissey, 1981) are developing a software version of the front-end, on a main-frame. Their system is apparently working, but has not been extensively tested, and certainly has some remaining problems (particularly in dealing with bad telephone lines).

1.2. Overview of the present project

The central idea behind the present project is to develop a front-end system as envisaged by Jamieson or Morrissey, but within the following framework:

(a) to use a 16-bit machine supporting Unix, so as to allow ample computing power and the use of off-the-shelf software as much as possible;

(b) to connect directly into the packet-switched network so as to ensure relatively high telecommunications channel capacity and good quality.

The plan was to use the Department's LSI 11/23, connected via the University of London Computer Centre to PSS.

The objectives of the project were stated in the original proposal

as:

1. To establish the necessary hardware and software facilities for communicating between the Department's LSI 11/23 system and an on-line retrieval host.

2. To implement a simple weighted-retrieval-with-relevance-feedback system using the mechanisms of 1.

3. To develop the complete package to the stage of being sufficiently foolproof to be usable by an on-line searcher (intermediary) without much knowledge of the mechanisms of the system.

4. To perform some initial investigations of the possible limitations of such a system, e.g. whether the channel capacity is a critical factor.