ABSTRACT

There is increasing recognition among academics and practitioners that Expert Systems have the potential to substantially improve managerial decision making and effect significant improvements in productivity. Expert Systems seem to have grown out of the need for Decision Support on the one hand and the desire to create intelligent systems on the other. Thus these systems are viewed to be capable of performing not only storage, retrieval, computational and analytical tasks, but inferencing tasks as well.

Expert Systems for Corporate Financial Decision, such as Credit Rating, are likely to differ from conventional expert systems. The expert system should be designed around an efficient database where all the relevant data can be stored and rules can automatically be applied to the relevant sets of data. Again, the data intensive nature of the financial expert system also imposes constraints on the type of expert system tools that are most suited. Since only a Bolen decision, credit worthy or not credit worthy, is involved in the present study of credit rating, an appropriate dedicated shell is designed.
The dedicated shell for Credit Analysis and the design of such dedicated shell are the core of the thesis, described in chapter three and four of the thesis. The fuzzy knowledge base is described in the fifth chapter which adds to the important concepts of fuzziness in credit rating. An appropriate membership function is also suggested for analyzing credit rating problems.

The knowledge base design of chapter six is novel and original in concept. Its methodology, design and development are fully discussed and presented. Empirical investigations carried out, taking data from a sample of Indian Banks is explained in Chapter 7. Important conclusions of the research efforts of this thesis are cited in the last chapter eight with a clear indication for fruitful areas of research that can be taken up further. The References section consists of the most pertinent and useful references to the Literature, on the subject of Credit Rating and Expert Systems in general as also Expert Systems specifically developed for Banking applications.