# Development of Decision Support Systems in Libraries: Current Practices and Lessons from Business and Industry

By

## F. P. Abifarin

**Abstract:** *The article reviews the developments in the field of Decision Support Systems (DSS) and compares its applications in various environments. It was observed that DSS applications were more successful in business than in non-business environments. In academic libraries, operational DSS were non-existent. It was consequently concluded that developers of DSS in libraries have a lot to learn from its successful implementation in the business world. The success factors involved were highlighted with a view to guiding successful development in libraries.*

**Key words:** Decision Support Systems, Libraries and Information Centres

## INTRODUCTION

The term, "Decision Support Systems" (DSS) is relatively new in the vocabulary of Information and Management Sciences. While decision-making and its processes have been long and widely documented, (Sodt, 1980, Browne, 1993)."Decision Support Systems" probably entered the vocabulary of Business Management in the middle of the 1970s (Carlson et. al. 1977). The term did not however, get into the literature of Library and Information Science until the early 1980s as indicated by a search through Library and Information Science Abstracts. We note that the DSS field is highly inter-disciplinary, consequently, research and practice have drawn upon the techniques and theories of the following disciplines:

(i) Artificial intelligence - pattern recognition, theorem proving, state space analysis

(ii) Cognitive Science--perception processes, decision behaviour, human-machine interaction, study of creativity.

(iii) Data Management -- data access methods, file management techniques, database management models.

(iv) Linguistics -- formal and natural language processing, syntax, semantics

(v) Management Science -- construction and validation of models, theories of rational choice

(vi) Mathematics -- formal logic, mathematical modeling, computer science.

The involvement of experts in these diverse disciplines points to the complex nature of providing information system support for decision-making, problem-solving and planning. Research and practice in DSS therefore, displays the characteristics of inter-disciplinarity which can be expected to yield the desired results if well co-ordinated.

## FORMALISM FOR UNDERSTANDING DSS

A large volume of the literature on DSS is understandably devoted to concepts, frameworks and formalisms. This is because DSS is barely 50 years in existence and efforts are being directed towards sharpening the research focus and enriching its theoretical base.

### Characteristics of Decision Support Systems

Various writers have defined (Bonczek et al., 1984; Taylor, 1986; Gray, 1993) explained (Bommer and Chorba, 1982; McClure, 1984; Donnelly et al., 1990) or described "Decision Support Systems" in the literature. A sample of such definitions, explanations and