FLEXIBILITY WITH USER INVOLVEMENT IN PLANNING FOR MIS SUCCESS : A STUDY IN INDIAN CONTEXT

by

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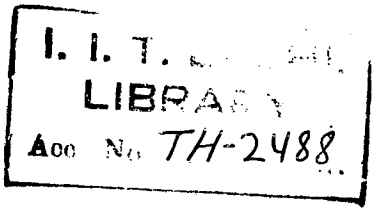

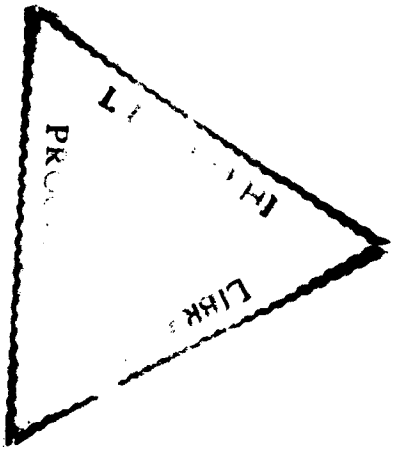

CERTIFICATE

The thesis entitled "**FLEXIBILITY WITH USER INVOLVEMENT IN PLANNING FOR MIS SUCCESS: A STUDY IN INDIAN CONTEXT**", being submitted by **Mr. P.RAMARAJ** to the Indian Institute of Technology, Delhi, for the award of the degree of **DOCTOR OF PHILOSOPHY**, is a record of bonafide research work carried out by him. He has worked under my guidance and supervision, and has fulfilled the requirements for the submission of this thesis which has attained the standard required for a Ph.D. degree of the Institute. The results presented in this thesis have not been submitted elsewhere for the award of any degree or diploma.

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ABSTRACT

Interview discussions with the MIS users from both academics and the field disclosed that irrelevant information has been produced from their MIS for the decision making. This triggered the concept of 'information waste', which became the origin of this study.

A pilot study on 'MIS user participation and information waste' was carried out with a questionnaire survey followed by interviews. 103 questionnaire responses from 18 public and private sector organizations were obtained. The results indicated that information waste which hamper the decision making performance can be reduced if users are involved in MIS planning stage itself. The outcomes of interviews emphasized the issue of flexibility in information systems.

The main study on user involvement in MIS planning for flexibility in information systems to achieve MIS success has been conducted. Meta level hypotheses were formulated and micro level hypotheses are derived out. For this study the data has been collected from three sources viz. questionnaire, interviews, and workshops. Forty interviews with senior level users unearthed the issue on when and how the user should be involved? Nine workshops were conducted in different organizations to find out how to incorporate flexibility in information systems.

276 questionnaire responses were obtained from MIS users in 43 organizations covering eight sectors. The relevance of the respondents were ensured. The sample size was dynamically decided based on variance in the obtained responses. A set of scale tables on involvement, flexibility, MIS success, and MIS context were used for obtaining the responses. The scale tables and the items in the questionnaire were constructed by idea engineering exercise.

The univariate results in the optimistic, most likely, and pessimistic scenarios

are presented. The values in the dimensions of a variable are given to gain more insight. Discriminating variables between public and private sectors, large and small, and service and nonservice organizations are reported.

The results of statistical testing on the research hypotheses are shown. The significant regressors for flexibility and MIS success variables are shown. The collected research data have been slimmed down to meaningful factors using factor analysis. To validate the structural models based on hypotheses, path analysis was used and significant causal links were identified. The empirically validated causal links were used to form the causal loop diagram and simulated for 10 years assuming 1996 as the base year. The graphs indicating the trends of MIS success variables are shown. The scenarios are projected based on the extreme values of user involvement in MIS strategic planning, and MIS flexibility.

The relationships among the qualitative values of the cause and effect in each link of the causal loop diagram are shown in the form of fuzzy rules. These relationship matrices can be used by the manager to get the solution, and to analyse various values of environmental flexibility, user involvement in MIS strategic planning, organization culture, and MIS maturity in the organization. MIS planning methodology was developed in SAP-LAP paradigm and an illustrative case study is given.

The summary of research findings and conclusions from the study are reported. The major outcomes of pilot study, and the summary results of the main study including the findings from the interviews and workshops are given. The summary of deductions from system dynamics simulation and fuzzy intelligence system design are provided. The key actions, given as the management intervention points, are reported. The significant research contributions with the limitations of this study are catalogued. Finally, suggestions are given pursuing further research in this area.

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CHAPTER VIII HYPOTHESES TESTING AND MULTIVARIATE ANALYSIS