

**A STUDY OF INFORMATION TECHNOLOGY
USE IN SELECT GOVERNMENT
ORGANIZATIONS IN INDIA**

By

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Submitted
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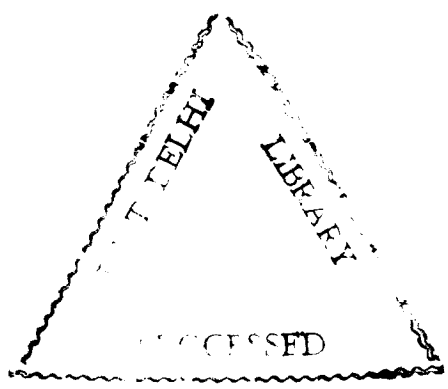
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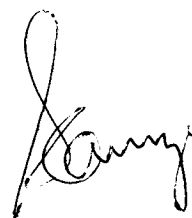
This thesis entitled “ **A STUDY OF INFORMATION TECHNOLOGY USE IN SELECT GOVERNMENT ORGANIZATIONS IN INDIA**”, being submitted by **RAJESH KUMAR** to the Indian Institute of Technology, Delhi, for the award of the degree of **DOCTOR OF PHILOSOPHY**, is a record of bona-fide research work carried out by him. He has worked under our 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 result presented in this thesis has not been submitted elsewhere for the award of any degree or diploma.



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ABSTRACT

This report presents a research work that was undertaken to study the effectiveness of information technology (IT) use in government organizations in India. The study specifically examines the effects of IT use, user satisfaction, organizational culture, top management, and IT- management on the effectiveness of Information Technology (IT). Select case studies were developed in order to understand the role of information systems in increasing the efficiency, accuracy, and productivity of the government organization in India.

The information technology is recognized now an important tool in achieving higher performance in most of the government organizations in India. However the users are largely found dissatisfied with their Information System (IS). This study examines the effects of IT, users attitude and the role of management on the level of IT use. Further the enablers for IT use are identified that enhances the organization's performance.

Both quantitative and qualitative techniques are used to carry out this study. The questionnaire survey and interviews of the users are used for the collection of data. The data was collected from Indian government organization situated in Delhi and surrounding areas. The empirical analysis of the data was completed using SPSS techniques. The quantitative data has been analyzed with descriptive and inferential statistics analysis. Qualitative data were used to carry out Interpretive Structural Modelling (ISM) and develop case studies of select government organizations. SAP-LAP methodology was selected for case analysis being systematic, innovative and a holistic approach. The results of descriptive and inferential statistics lead a conclusion that user satisfaction is the indicator of system success and the users like a friendly system. The users are influenced more by the IS staff in comparison to non-IS staff. Top management involvement is found relatively high in IT related problems resulting in higher budget for IT, which in turn plays a positive role in increasing the satisfaction of users. However, the initiatives to motivate IS staff are not enough and the computer training given to the users fails to take care of the latest needs. The users are required to be familiar with latest technology and therefore be given the latest training for better IT use. The difficulty in effective IT uses is, also due to some resistance experienced from the employees of the organizations. This is further compounded due to the existence workers union problems.

A correlation and regression analysis reveals that the independent variables (viz. IT use, user satisfaction, top management, IT- management, and organizational culture) have significant positive effect on the dependent variable i.e. IT effectiveness. Further, leadership, managerial awareness of costs and benefits, centrality of IT business strategy, top management support, higher position of IS manager, easy accessibility to computer, enhanced connectivity capability, favorable cost performance trends, vendor push, and competitive pressure were found to be the IT enablers. ISM is used to develop an intent structure of the indicators of IT effectiveness in government organizations in India. The intent structure signifies 'improve decision making' as the main goal of IT.

Case studies were developed to gain better insight into the above issues. Three major government organizations were chosen to develop the cases using SAP-LAP methodology. These are DIT, DGET and RGI. It was found that the organization, large in size, carry out strategic IT planning. The technical support within DIT and RGI was medium, while in DGET, the support was little. It was also found that environment and culture was favorable in DIT and RGI, but not in DGET. Synthesis of survey and case study led to identification a large number of suggestions. These suggestions were further analyzed with the help of desirability and feasibility methodology in order to identify the recommendations, which are not only highly desirable but also feasible to implement. These are clustered using option field methodology, to form the major recommendations of this research. Major recommendations include -User satisfaction should be an indicator of the IT success. User expectations should be considered when assessing user satisfaction. It has been seen that the IS staff influenced the users more than the non-IS staff. The IT increases the creditability, if security measures are taken properly. Providing computer training increase user confidence and users will use the system frequently. This will enhance IT usage. Top management should use IT in decision-making process. Top management should encourage and motivate the employees to appreciate and adopt IT for their betterment. Organization should envision Information Technology (IT) to achieve the development of an integrated MIS. This will increase inter-departmental communications flow. The management's decisions play important role in formulating IT strategy. IT-management should update the IS applications, its documentation, procedure manuals regularly and properly. IT-management should create the spirit of teamwork among the IS staff, and review the work done by IS staff during implementation. IT projects should be approved as a whole, not in parts, and the responsibility of the projects and its subsequent clearance should be given to IT- management. There should be some emergency financial powers for IT- management.

This study suggests the future work for research. The area of research can be extended to all government organizations of India. The data in this study collected from only IS user of the government organization. This can be extended for non IS users also. This study covers only government organizations. This can be extended for private sector and public sector (government undertakings).

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CURRICULAM VITAE