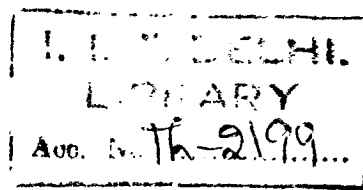


**INFORMATION TECHNOLOGY AND ORGANISATIONAL
EFFECTIVENESS: A DIAGNOSTIC STUDY
IN THE INDIAN ENVIRONMENT**

BY

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**THESIS SUBMITTED TO THE INDIAN INSTITUTE OF TECHNOLOGY,
NEW DELHI IN FULFILLMENT OF THE REQUIREMENTS FOR THE
AWARD OF THE DEGREE OF DOCTOR OF PHILOSOPHY**

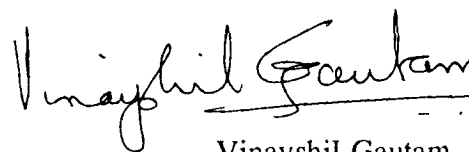


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INDIAN INSTITUTE OF TECHNOLOGY
NEW DELHI, INDIA**

AUGUST, 1994

CERTIFICATE

This is to certify that the thesis "Information Technology and Organisational Effectiveness : A Diagnostic Study in the Indian Environment", being submitted by Mr. Surinder Kumar Batra for the award of Doctor of Philosophy by the Indian Institute of Technology, New Delhi, is a bonafide record of research work done under my guidance and supervision. The results obtained in this thesis have not been submitted to any other University for award of any degree or diploma.



Vinayshil Gautam

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(Surinder Kumar Batra)

ABSTRACT

This research study is primarily aimed at examining the nature and extent of the impact of information technology (IT) on organizational effectiveness. The scope of the study is limited to select organizations in the services sector in the Indian environment. The literature on the subject encompasses a debate on whether IT promotes centralization or decentralization; various perspectives and theories of the impact of IT; emerging forms of IT facilitated organization structures; strategic relevance of IT; and results of empirical studies. However, it does not provide a sufficiently integrated view of the impact of IT on organizational effectiveness.

Based on the available theoretical perspectives and through application of consensus methodologies, a conceptual framework has been developed. This framework analyses the impact of IT on various organizational variables, categorized into process, structural, performance and effectiveness variables. Organizational effectiveness has been conceived to comprise of three effectiveness variables, namely, ability to meet current organizational objectives, adaptability to external environment and ability to match organizational objectives with personal objectives of employees. From this conceptual framework, a set of hypotheses about the impact of IT on individual organizational variables and inter-dependence amongst various categories of organizational variables has been generated.

Several considerations governed the choice of methodology for empirical validation of the hypothesis. It was recognized that, in view of difficulties in direct measurement of IT's impact on different variables, it would be necessary to assess the impact by obtaining and evaluating the perceptions of selected respondents from one or more organizations on an ordinal scale. Further, a need was felt to adopt a mix of qualitative and quantitative methods, to obtain a fairly comprehensive analysis of the issues

involved. The main criteria for selecting the organizations for this research were that the organizations should have made a substantial investment in IT applications and should be open to research investigations.

A preliminary survey was first conducted amongst a larger set of organizations, which helped in identifying four organizations. One of these was a large private sector company engaged in providing IT related services to its clients, which was amenable to conduct of a questionnaire based perceptual study and statistical analysis of the responses. The other three organizations were a multi-national travel related services company, a public sector bank and the central marketing organization of a public sector steel manufacturing company, all amenable to conduct of semi-structured interviews with key personnel. However, statistical analysis of the responses was not considered feasible in these organizations owing to a very small number of interviewees in each case. The study indicated that, in all the organizations covered, IT has a positive impact on most process variables and a mixed impact on structural variables, typically manifested through a dominant impact on one variable. IT is also perceived to have a high degree of impact on two performance variables, namely, enhancing customer services and providing competitive advantage. There is also a positive impact on the effectiveness variables, though the degree of impact on each of them varies. The perceived impact on overall organizational effectiveness has ranged from fair to substantially positive.

The study has validated many hypothesis of inter-dependence amongst organizational variables and has revealed additional linkages amongst them. It has helped identify factors contributing to the success of IT in enhancing organizational effectiveness and has highlighted situational factors, to which the variations in the impact of IT on different organizational variables can be attributed. Lastly, it has led to development of recommendations for planning and managing IT in organizations.

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