

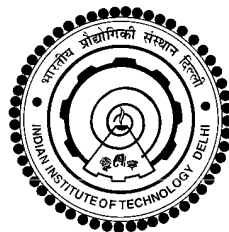
**A STUDY OF ICT ADOPTION IN SMALL AND  
MEDIUM ENTERPRISES IN INDIA**

by

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**In fulfillment of the requirements of the degree of**  
**DOCTOR OF PHILOSOPHY**

to the



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## **CERTIFICATE**

This is to certify that the thesis entitled “**A Study of ICT Adoption in Small and Medium Enterprises in India**” submitted by **Manmohan Singh Rehsi** to the Indian Institute of Technology, Delhi for the award of the degree of **Doctor of Philosophy** is a bonafide record of original research work carried out by him. He has worked under our guidance and supervision, and has fulfilled the requirements for the submission of the thesis which has reached the requisite standard.

The results contained in this thesis have not been submitted in part or full to any other University or Institute for the award of any degree or diploma.

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## **ABSTRACT**

The study aims to develop a framework for Adoption of Information and Communication Technologies (ICTs) in Small and Medium Enterprises (SMEs) in India. SMEs are vital for the growth of Indian economy. In the 21<sup>st</sup> century, competitiveness implies delivering value to the customer and being responsive and proactive to the needs of the customer. Information and Communication Technology (ICT) is a major technological tool available to SMEs to innovate and increase their competitiveness. The global economy is increasingly becoming dependent on ICT to receive process and send information. However Indian SMEs have yet to reap the immense benefits of this technology. In view of the above, study of factors responsible for ICT adoption in SMEs is an important subject.

The study is based on manufacturing SMEs in India. It is unique in the sense that heterogeneity of SMEs is considered and ICT adoption factors are analyzed for small and medium enterprises separately. Inter sectoral difference in adoption factors is examined and for this purpose three vital industry sectors namely Electrical & Electronics, Auto components and Textile sectors are studied. Relationship of perceived impact of adoption on business performance parameters is empirically studied.

A framework consisting of qualitative and quantitative tools have been used in the study. A questionnaire is developed to determine the adoption factors and the same has been administered to 430 Chief executive officers (CEOs) /owner-manager of SMEs across the country. Interpretive Structural Modeling (ISM) methodology has been used to establish a hierarchy of enablers and inhibitors of ICT adoption.

Qualitative approach is based on case studies of three companies belonging to Electrical & Electronics, Auto components and Textile sectors and located in and around New Delhi. Firms belonging to Auto components and Textile sectors are medium size businesses whereas the firm belonging to Electrical & Electronics is a small business. The framework used for the case studies is based on Situation-Actor-Process (SAP) and Learning-Action-Performance (LAP) methodology.

The learnings from the quantitative analysis and case studies are synthesized and a conceptual model for ICT adoption is developed. It is seen that adoption of ICT proceeds in stages starting from a simple web presence to adoption of functional ICTs like Enterprise Resource Planning. Recommendations and interventions for accelerating the pace of ICT adoption are discussed. The study concludes with significant contributions and limitations of the study including scope for future research.

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