

**INNOVATION AND FLEXIBILITY IN ENTERPRISE SYSTEMS:
A STUDY OF SELECT ORGANIZATIONS IN
INDIAN AUTOMOTIVE SECTOR**

by

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CERTIFICATE

This is to certify that the thesis titled '**Innovation and Flexibility in Enterprise Systems: A Study of Select Organizations in Indian Automotive Sector**' being submitted by **Ms. Pratibha Malaviya** to the Indian Institute of Technology Delhi for the award of the degree of **Doctor of Philosophy (Ph.D.)**, is a record of bona fide research work carried out by her. She has worked under our guidance and supervision and has fulfilled the requirements for the submission of the 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

Globalization has led to major changes in the environment in which an industry operates. Global competition and global customers have created an environment wherein the company is required to be big enough in operation to compete with other big companies, while simultaneously being small enough to ensure fast and time-bound decisions. Companies need to respond with agility and speed to market pressures and competitor's innovations, and at the same time keep costs under control. Therefore, current competitive pressures demand both efficiency and effectiveness.

Review of literature suggests that companies have used many different ways to sustain superior performance - focus on building teams and learning organizations, strategy and structural changes, leadership, management styles, innovation and change, and the like. Some recent studies have offered solutions by suggesting an integrative approach, and have tried to understand how an organization works as a whole. Following this configuration approach, the present study sets out one of its objectives to identify drivers of innovation and flexibility at the organizational level. It also aims to examine the role of enterprise flexibility, innovation management, alignment, and execution in the enterprise system's domains of strategy, structure, leadership, environment and values, employee skills, and motivation. Finally, it seeks out to suggest a framework for managing innovation and flexibility in the organization with external focus - customers, competitors, collaborators, and context.

The study was conducted in select organizations in the Indian manufacturing industry in the automotive sector covering a major part of the value chain. The group company under study stands out as a leader in its field of operation; it has reported sustained superior performance, with a consistent growth in revenue and profit after tax of about thirty percent on a year-on-year basis for the last five years, with a history of having an intensely loyal customer base. A conceptual framework for studying innovation management and flexibility in the enterprise system was developed.

The study was conducted in two parts, the opinion survey study and the action research study. The opinion survey study was done to understand innovation management and enterprise flexibility in relation to enterprise systems: alignment - direction, leadership, environment and values; and execution - accountability, coordination and control, capability, and motivation.

In the action research study, first the opinions of some of the executive cadre employees and the top management in the three organizations were obtained using one-to-one semi-structured interviews. The organization diagnostic was done. Inferring from these interviews, planned actions encompassing enterprise wide systems were initiated and implemented spreading over a two-year period in three companies covering a major part of the value chain. In the first stage, the interventions were related to organizational dimensions in the enterprise such as structure, leadership, management practices, systems - policies and procedures, and work unit environment. Subsequently in the second stage, interventions were made to influence employee adaptability with task requirement, skills/abilities/needs and values. Actions were initiated to create awareness, behaviour, and cultivate the habit of personal excellence in the employees. The impact of these interventions was captured through the employees' perception of the organization's state through a structured questionnaire. Dynamic SAP-LAP analysis was used and conclusions have been drawn.

Findings from the opinion survey study and the action research study were synthesized. The conceptual framework of the study was validated. The study provides an insight into a disciplined approach to implanting and promoting innovation in an enterprise through business transformation management focusing on enterprise flexibility towards customers, competitors, collaborators, and context. A number of important findings are reported: execution is vital to enterprise flexibility; innovation is the enabler whereas alignment of business systems plays an important role as the driver. Implications for the industry are presented. Limitations of the study are pointed out, and future areas of work are suggested.

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