

STRATEGIC MANAGEMENT OF INNOVATION THROUGH CONFLUENCE OF CONTINUITY AND CHANGE

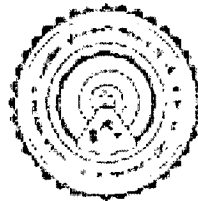
By

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Submitted in fulfillment of the requirements of the degree of

Doctor of Philosophy

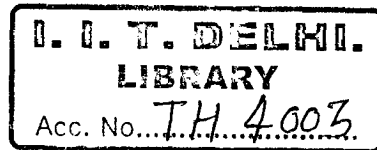
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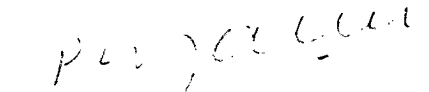
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CERTIFICATE

This is to certify that the thesis titled '**Strategic Management of Innovation through Confluence of Continuity and Change**', which is being submitted by Ms. Jyoti S. A. Bhat 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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Dated:

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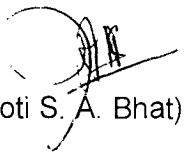
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New Delhi



(Jyoti S. A. Bhat)

ABSTRACT

Innovation is generally understood to refer to the capacity to apply new knowledge or to recombine existing knowledge in order to improve or create new knowledge. Innovation management is a complex process that involves not only the innovative individual or firm, but also a system of interactions and interdependencies between that individual or firm and other people, as well as organizations and institutions. There is need to have a strategy in place to manage innovation that can cope with both continuity and change, leading *inter-alia* to enhanced performance.

The main objective of the research is to suggest what should be an effective innovation strategy for a firm in the face of having to handle the confluence of continuity and change.

The literature survey indicated that managing innovation in a firm is focused on managing different continuity and change dimensions involving its *technology, organization, learning, managerial and networking processes*. Only one or other of these several dimensions have been the major focus of work undertaken thus far, providing scope for a comprehensive study covering all these aspects put together.

The study has been undertaken in five phases. The first phase laid the broad framework for the subsequent phases. Secondary data collection and study of literature in the area of research justified the need for this research study leading to an explicit specification of the problem and delineation of the components of the research.

During the second phase, extensive review of research work was taken up in the area of innovation and its management and specific relevant aspects were culled out. Key research variables were identified and corroborated with inputs from experts in academia and senior industry executives. The initial research framework was redefined to specifically address these research variables. Hypotheses were defined to address the research propositions.

During the third phase, opinion survey was taken up, using a questionnaire tested through pilot survey. *Purposive sampling* was used to identify target firms in the manufacturing industry, fulfilling specific financial performance criteria. Face validity, criterion related validity, construct validity, and reliability of the instrument were established using well-accepted test methods. The data collected were analyzed for testing the hypotheses, using suitable statistical procedures. SPSS Version 17 was the software package used. This resulted in identification of the significant continuity and change forces influencing innovation performance and firm performance in firms and derivation of the first stage models.

Subsequently, during the fourth phase, case research was undertaken. Two cases in the Indian auto manufacturing (private) sector, viz., Bharat Motor Industries (note: all company names are fictitious) and Bharat Auto Enterprises, besides two more from the general engineering (private) sector, viz., Bharat Precision Industries and Bharat Computer Accessories and Peripherals, were identified for case research. The case analysis involved interviews with the top management and discussions with experts in the industry, government, research and academic institutions. Company literature and scanning of public databases supplemented these inputs. Flowing stream strategy framework was used for analysis, leading to further crystallization of the relationships among the variables.

In the final (i.e. fifth) phase, a comparative analysis of the research results of the opinion survey and case research led to a synthesized set of findings, thus generating the final validated models for innovation performance and firm performance.

This research has highlighted the vital importance of aspects relating to managerial continuity covering *inter-alia* dovetailing between innovation and business strategies, external environment trend tracking, top management commitment, deployment of adequate strategic tools, clear communication of innovation road-map and knowledge of core competence; on innovation performance. These have multiple influences on all facets of innovation

performance. Technology continuity aspects such as flexible operations, innovation project management capabilities abetted by effective idea sourcing and a company-wide integrated approach; play a key role in influencing innovation performance as well as firm performance.

Validated models for innovation performance and firm performance, four comprehensive case studies, a better understanding of innovation management processes, an interpretation of the relationships among the related factors and a set of policy guidelines in the form of an execution framework are among the significant contributions of this research. Implications to various users, some limitations and suggestions for further research have been highlighted.

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