
This version is available at https://strathprints.strath.ac.uk/53444/

Strathprints is designed to allow users to access the research output of the University of Strathclyde. Unless otherwise explicitly stated on the manuscript, Copyright © and Moral Rights for the papers on this site are retained by the individual authors and/or other copyright owners. Please check the manuscript for details of any other licences that may have been applied. You may not engage in further distribution of the material for any profitmaking activities or any commercial gain. You may freely distribute both the url (https://strathprints.strath.ac.uk/) and the content of this paper for research or private study, educational, or not-for-profit purposes without prior permission or charge.

Any correspondence concerning this service should be sent to the Strathprints administrator: strathprints@strath.ac.uk

The Strathprints institutional repository (https://strathprints.strath.ac.uk) is a digital archive of University of Strathclyde research outputs. It has been developed to disseminate open access research outputs, expose data about those outputs, and enable the management and persistent access to Strathclyde's intellectual output.
Open Innovation for New Drug Research in Indian Pharmaceutical Sector

Bhawani Bhatnagar, Dr. Jillian Macbryde1, Dr. Viktor Dörfler2
1Reader, Department of Management Science and Vice-Dean for Knowledge Exchange
2Senior Lecturer, Department of Management Science
University of Strathclyde,199, Cathedral Street, Glasgow, G4 0QU, UK

Introduction
The national environment in India for the pharmaceutical sector recently underwent changes with The Patents (Amendment) Act 2005, to comply with the TRIPS agreement leading to product patent protection. This has led to Government initiatives to support R&D and promote interlinkages between industry and academia. Globally, innovation ecosystem in recent years has morphed and seen a paradigm shift from a closed innovation in-house R&D model to more open approaches. In this context, the study aspires to gain an understanding of how the institutional and regulatory factors influence adoption of open innovation strategies at firm level and enables formation of innovation networks between universities, public research labs and firms in India.

Conceptual Overview
The study aspires to have a national context to understand the nuances affecting the formation of the innovation networks in the light of the theory of national innovation system (NIS) (Christopher Freeman, 1992; Lundvall, 1992; David C Mowery, 1992; Nelson Richard, 1993).

The major underpinning of the open innovation concept is that the in-house R&D structure is slowly getting replaced by network-based R&D firms specifically those engaged in new drug research. It would be interesting to know whether open or closed approach is predominant in Indian pharmaceutical firms undertaking open innovation strategies at firm level and enables formation of innovation networks between universities, public research labs and firms in India.

Proposed Framework of Study

Methodological Approach: Multiple Case Study Design

1. How does the institutional environment affect formation of networks between innovating institutions?
2. How does the patent regime affect the formation of innovation networks?
3. Is there an effect of patent regime in adoption of open innovation strategies?

Emergent Themes from Pilot Case Analysis
12 semi structured interviews were conducted with employees from incumbent pharmaceutical firms, universities and public research labs and government departments. Selection of pilot cases was based on convenience, access and geographic proximity. Qualitative analysis of interview transcripts revealed several emergent themes which need to be probed further:

Preliminary findings reveal low intensity of collaboration between firms-universities-public research labs

References