

Evolution and organization of global innovation network in multinational enterprises (MNE)

Abstract

The world of multinational enterprises (MNEs) has dramatically changed in the twenty first century, and so have their research and development (R&D) strategies. Rapid rise of emerging countries, multiple learning environments and advances in Information and Communication Technology have changed the dynamics of product and factor markets, challenging the validity of previously rationalized structures of innovation and creating platforms for new technology development strategies. The central concern of this thesis is to examine the evolution and organization of R&D among developed country MNEs in this dynamic, challenging environment. To this end, it addresses a series of research questions on this topic. The first essay takes a broad view of the MNE R&D, addressing the question - How does the MNE R&D network evolve over time? Taking into account the recent developments in the global R&D landscape, the study synthesizes multiple streams of literature to advance a conceptual framework of MNE R&D evolution. Leveraging the dual lens of Institutional economics (North, 1990) and resource dependence theory (Pfeffer and Salancik, 1978), the study develops propositions to predict the onset of R&D mandate in a subsidiary, the scope of the mandate and its impact on subsidiary position and the overall network structure. The framework fills a theoretical void in the MNE R&D literature. The second essay zooms in to take a subsidiary level view of R&D evolution in an increasingly important context (an emerging country context) and addresses the question – How are MNE R&D centers in emerging countries evolving? The question is investigated in the Indian context, a large emerging market, using an inductive logic based on multiple case studies. The study uncovers unique trajectories of R&D evolution, quite distinct from how R&D units in developed countries have been found to evolve. The investigation also finds that existing R&D typologies do not capture the variety of R&D roles in emerging markets. A new typology of R&D subsidiary roles that captures the MNE R&D landscape more comprehensively is proposed, extending the R&D role and evolution literature. The third essay builds on the findings from the second essay, which indicated that MNE R&D subsidiaries in emerging markets are beginning to innovate for emerging markets. However, received view on MNEs innovating for emerging markets leans heavily towards a top down model of innovation, spearheaded by the headquarters. Therefore, the study explores in detail, the subsidiary role in innovating for emerging markets and the associated structures and processes by asking - What are the facilitating organizational structures and processes for subsidiary driven innovation for emerging markets? Based on an in-depth case study of Cisco's ASR 901, a product completely conceptualized and developed from Cisco's India R&D center, the study finds an alternate, decentralized model of facilitating innovation for emerging markets. The model, called 'Subsidiary bootstrapping', is associated with structures and processes distinct from the topdown model and advances our understanding of how MNEs innovate for emerging markets.