Exploring Reverse Knowledge Transfer and Asset Augmentation Strategy by Developed Country MNEs: Case Study Evidence from the Indian Pharmaceutical Industry

Abstract

Using an in-depth qualitative longitudinal case study approach, we examine strategic asset and knowledge augmentation strategies of an advanced economy multinational enterprise (MNE). Our study is unique as it is contextualized in the knowledge-intensive pharmaceutical industry within the changing institutional landscape in India. And, in contrast to previous studies, it focuses on RKT from a newly acquired subsidiary where the protocol for knowledge transfer and relationship between MNE headquarters (HQ) and subsidiary does not exist. We contribute to the evolving literature on reverse knowledge transfer (RKT) which assumes that MNEs extract knowledge from their existing subsidiaries to strengthen their competitive advantages. We also reveal that MNEs design an architecture, that is reflected in the mechanism, governance structure, and timing, for efficient transfer and effective absorption of the knowledge and assets acquired. We introduce a novel concept of 'reverse asset augmentation' (RAA) to capture the MNE's behavior of strategic asset seeking from emerging economies. RAA is parallel to and entwined with RKT conceptualization as knowledge is embedded within certain physical assets, other assets, such as brand name/image, may not embody knowledge. Thematic and processual analysis of interview data, collected in three phases, suggests that RAA complements RKT and that both concepts together capture the unconventional strategies of advanced economy MNEs acquiring emerging economy MNEs in search of strategic assets and knowledge.

Keywords: Asset Augmentation; Institutions; Indian Pharmaceutical Industry; Knowledge Transfer; Organizational Architecture; Qualitative Research

1. Introduction

The extant literature on reverse knowledge transfer (RKT) examines the behavior of advanced economy multinational enterprises (MNEs) when it comes to extracting knowledge from its foreign subsidiaries (Ambos, Ambos, & Schlegelmilch, 2006; Eden, 2009; Frost & Zhou, 2005; Mudambi, Piscitello, & Rabbiosi, 2014; Najafi-Tavani et al., 2014; Rabbiosi & Santangelo, 2013; Yang, Mudambi, & Meyer, 2008). The research agenda within this stream of literature has been pushed by MNEs' increasing focus on emerging economies to augment knowledge and strategic assets through locating subsidiaries there. Scholars (e.g., Govindarajan & Ramamurti, 2011; Govindarajan & Trimble, 2013; Sarkar, 2011; Zedtwitz, Corsi, Søberg, & Frega, 2015) using this additional analytical lens (location of subsidiary) argue that seeking knowledge intensive resources by establishing subsidiaries and R&D units in emerging economies informs innovation strategy of MNEs from advanced economies. It allows MNEs to absorb and further develop knowledge uniquely situated in emerging economies (Demirbag & Glaister, 2010; Khanna & Palepu, 2010; Mudambi & Venzin, 2010; Wan, Williamson, & Yin, 2015) to enhance their competitive advantages.

This evolving literature has two important facets. *First*, it conforms to the knowledge-based view (KBV) which suggests that the foundational cause for MNEs existence, and its relative superiority over domestic firms, is its ability to amass and share knowledge within its hierarchy more easily, in comparison to the market (Grant, 1996; Kogut & Zander, 1993). *Second*, it presents a contrast to the literature on accelerated internationalization of MNEs from emerging markets (e.g., Cuervo-Cazurra, 2012; Luo & Rui, 2009; Luo & Tung, 2007; Madhok & Keyhani, 2012), suggesting that the practice of seeking strategic assets and knowledge abroad to foster competitive advantages and growth is not exclusive to MNEs from emerging markets. It is thus argued that MNEs from advanced economies seek strategic assets and knowledge in developing countries too. Sometimes seeking assets and knowledge from emerging economies, usually deemed as deficient to their home countries, could lead to fundamental transformation of the MNE (Mudmabi, 2011).

In this paper, we argue that unlike the routine case of RKT, where the MNE routinely extracts knowledge through established routines from an existing subsidiary, knowledge obtained from a recently acquired subsidiary is actually less straightforward. We identify that it is in this situation that the MNE headquarters, from the outset do not have any influence on the strategic assets and knowledge developed by the acquired subsidiary from the emerging

economy. Thus, it makes the novelty and gain potentially greater on one hand, but possibly also more complex and difficult to undertake, on the other hand. To appreciate the RKT of 'tacit' knowledge from a subsidiary it is imperative to have a deeper and more critical understanding of the 'explicit' knowledge embedded in a subsidiary's technology assets, such as the production line and R&D. This is generally the case when RKT takes place with existing subsidiaries (Mudambi et al., 2014; Najafi-Tavani, Giroud, & Andersson, 2014). However, it this may not be true when the subsidiary is newly acquired and located in an emerging market.

We argue that to tackle the arduous process of reverse knowledge transfer from a newly acquired subsidiary located in an emerging economy, the MNE has to undertake due diligence and design an 'architecture' of knowledge transfer. This can also maximize the potential gains arising from the acquisition of newly acquired subsidiaries in emerging economies. Given the novelty of this field of enquiry and the uniqueness of an emerging market context, we posit our study provides significant contribution to the literature. Prior research has mainly explained the '*what*', i.e., kind of knowledge transferred, the '*why*', i.e., the motivation, the '*how*', i.e., the process, and the 'effects' of RKT on the MNE (Ambos et al., 2006; Mudambi et al., 2014; Najafi-Tavani, Giroud, & Andersson, 2014; Nair, Demirbag, Mellahi, & Pillai, 2018; Rabbiosi, Elia, & Bertoni, 2012; Rabbiosi, 2011; Rabbiosi & Santangelo, 2013; Yang et al., 2008). However, there is hardly any study examining the holistic 'architecture', i.e. an overall, collective design for knowledge transfer. An 'architecture' reveals the MNE's overall plan, i.e. the blueprint, to seek strategic assets and knowledge through different stages in the operationalization of such plan. It also unbundles and captures the MNE's motivation, the process, and the logistical set up formulated for transferring the knowledge and strategic assets. We therefore contribute to the extant literature by introducing the novel term 'architecture' and its significance in the process of knowledge transfer and asset augmentation.

We develop this notion of architecture through an in-depth longitudinal case-study that is deeply embedded in faceted local context, where Daiichi Sankyo, an advanced economy Japanese MNE, acquired Ranbaxy, an Indian MNE, wherein Ranbaxy then became a subsidiary. This longitudinal case (Pettigrew, 1990), observed over a period of 3 years provides a unique and rich opportunity to study the strategy, motivation, and organizational design, behind the reverse transfer of knowledge from an emerging economy subsidiary to the headquarters (HQ) of an advanced economy MNE. The case is one of the most debated as it was one of the largest acquisitions within the pharmaceutical industry. For example, post-acquisition, Ranbaxy was held guilty by the US department of Justice in 2013 (and it pleaded

so) for three felonies and it had to pay US$ 500 million in fines. Thus, this case provides a unique setting for studying the RKT practices in a knowledge intensive industry in the light of advanced and emerging economies relationship context. The industry and country context thus generate further insights into the RKT strategies followed by Daiichi Sankyo in the evolving institutional environment within India.

Whilst contributing to the literature through our investigation into the 'architecture' of this case, we also introduce an entwined term called 'Reverse Asset Augmentation' (RAA) which we define as 'an act of seeking strategic assets by the MNE HQ from its subsidiaries'. We conceptualize and argue that the novel phenomenon of RAA operates and plays out in parallel to RKT because there are several assets, such as brand name/image, physical assets, product portfolio that may not embody knowledge (see Grant, 1991, 1996 for details). Like knowledge, these strategic assets are (equally) important for the HQ to enhance the MNE's competitiveness. We posit that RAA and RKT are unique but complementary theoretical constructs. Collectively, RAA and RKT inform the MNE's 'strategy for acquisition' in emerging markets for seeking knowledge and strategic assets. We further posit that RAA and RKT do not compete but actually have a point of intersection because sometimes knowledge is embodied within certain assets, such as patents and designs. Hence, at time RAA and RKT may not be properly delineated unless these are thoroughly studied through an in-depth case study which is deeply embedded in the local context and exemplifies theoretical concepts and constructs to be examined.

Overall, our research captures the complex and holistic picture of this case of acquisition and answers three related research questions. *First*, what is the acquisition strategy of Daiichi Sankyo? This question delves deeper to investigate why highly competitive, globally known players from advanced economies, in research-intensive industries, acquire firms in emerging economies, i.e., what strategic assets and knowledge were extracted from the acquisition of Ranbaxy? *Second*, what was the 'architecture', developed by Daiichi Sankyo, to support an efficient transfer and effective absorption of knowledge and strategic assets from Ranbaxy? This question explores the MNE's overall planning and logistical arrangements formed for the purpose of knowledge transfer. *Third*, how did the institutional evolution in India influence the 'acquisition strategy' and the 'architecture' followed by Daiichi Sankyo during the acquisition of Ranbaxy. This question reflects on the external institutional development in India as it had a significant impact on both the aspects of acquisition, that are being investigated through the first two research questions.

Our case analysis is rich as it not only highlights the evolution of the MNE's strategies in the form of an 'architecture' for RAA and RKT (internal factors), but it also shows how this architecture is shaped by the changing institutional landscape of the host country (external factors). Our analysis addresses Cantwell, Dunning, and Lundan (2010) and Meyer, Estrin, Bhaumik, and Peng (2009) critique that the impact of the macro institutional environment on the MNE's international activity has remained underexplored. Institutions have been treated as mere 'background' even though the 'scope' and 'creativity' of MNE's international activities co-evolve with the institutional environment. Finally, our study presents a contrast to the literature on catch-up strategies by MNEs from emerging economies (Awate, Larsen, & Mudambi, 2012; Duysters, Jacob, Lemmens, & Jintian, 2009; Kumaraswamy, Mudambi, Saranga, & Tripathy, 2012; Luo & Tung, 2007; Mathews, 2002; Young, Huang, & McDermott, 1996), revealing a contrasting pattern, where an incumbent MNE from advanced economy restructured its operations and strategy as a direct result of the knowledge and assets absorbed from an emerging economy firm.

In the next section, we review the relevant literature defining the key terms. We illustrate and develop our analysis to portray the entwinement of knowledge and assets that lead to a conceptual framework based on both reverse knowledge transfer and asset augmentation. Subsequently, research methods, findings and analysis, and discussion follow. We conclude with contributions, limitations and managerial implications.

2. Literature Review and Conceptual Framework

The knowledge-based view (KBV) of the firm recognizes the importance of amassing knowledge to achieve competitive advantage and growth (Grant, 1991, 1996; Kogut & Zander, 1992). The proponents of the KBV suggest that the firm is an institution for integrating knowledge. They associate variation in the firm's competitive advantages to the heterogeneity in its knowledge base, and stresses that an efficient transmission and utilization of knowledge within the horizontal and vertical boundaries of the firm is a primary cause for its growth and survival. It is argued that there are various ways in which multinational enterprises (MNEs) build their knowledge base, ranging from an in-house development to accessing knowledge from outside *via* strategic alliances or taking over firms having proprietary ownership of knowledge required by the MNE (Andersson, Johanson, & Vahlne, 1997).

Acquisition is often preferred because it provides a quick access to valuable knowledge (Vermeulen & Barkema, 2001; Ahuja & Katila, 2001) tied with other firms which may not be otherwise available in the market (Gubbi, Aulakh, Ray, Sarkar, & Chittoor, 2009). However, the acquirer firm have to conduct robust due diligence before making acquisition. This process can be very time consuming and costly. Nevertheless, due diligence is necessary for a successful acquisition. A properly and robustly conducted due diligence can assist in the post-acquisition integration of the target firm (Howson, 2003). Globally, firms employ professional managers and advisers to facilitate the process because it can prevent the firm from making wrong decision and save loss of investment made in acquiring the target firm (Angwin, 2001). Thus, incumbent MNEs needs extra careful planning and effective due diligence to make successful acquisitions in emerging economies. Opportunities in these economies comes with a variety of challenges that ranges from country level institutional void and policy issues (Khanna and Palepu, 1998) to firm level corporate governance issues (Armitage, Hou, Sarkar, & Talaulicar, 2017) to individual (employee/customer) level cultural issues (Walumbwa & Lawler, 2003).

Conceptually, due diligence is the starting point for an 'acquisition strategy', but its scanner ranges from planning until the final integration of target firm. Among other aspects, it covers economic rationale of the motivation for which the acquisition is made. In our case, the primary aim of the MNE is to augment strategic assets and knowledge from acquisition for which MNEs from advanced economies actively search for suitable targets in emerging economies (Yang et al., 2008). Our next section elaborates on these motivations and argue for a separate conceptualization for reverse asset augmentation which runs parallel to reverse knowledge transfer and constitutes the MNE's strategy for acquisition.

2.1. Reverse Asset Augmentation and Reverse Knowledge Transfer

There are subtle differences between endowment of natural and non-natural resources available in emerging economies (Chung & Yeaple, 2008). For instance, local talent and expertise in emerging economies have significantly grown and is accessible at a relatively cheaper cost (Zhao, 2006), while there is a severe shortage of skilled human capital, talent and resources in advanced economies (Lewin, Massini, & Peeters, 2009). It's been argued that these differences in resources can significantly contribute to the MNE's competitiveness. Moreover,

the ways in which firms in emerging economies create knowledge may help MNEs to broaden their knowledge base (Yayavaram et al., 2018).

Notably, there have been significant developments in research and development activities, infrastructure, and institutional environment providing an increasing respect for intellectual property rights in emerging economies (Park & Lippoldt, 2008), all of these are quintessential for the development and protection of knowledge intensive resources. Immelt, Govindarajan, & Trimble (2009) argues leveraging knowledge and assets from emerging economies help the MNE in achieving and sustaining global competitiveness. Mudambi (2011) echo's the above stated idea. He suggests that incumbent MNEs from advanced economies may undergo a fundamental transformation with a 'Janus-faced form' by integrating knowledge-based capabilities from both advanced and emerging economies. It can also inform the incumbent's strategy for reverse innovation (Govindarajan & Ramamurti, 2011; Govindarajan & Trimble, 2013).

Despite the widespread acknowledgement of the importance of acquiring firm in emerging economies among IB scholars (Lahiri, Elango & Kundu, 2014), it is surprising that there has not been much development on the theoretical front on how to capture this rising phenomenon. Although, the existing idea of RKT captures knowledge seeking part, but when an acquisition takes place several assets are acquired along with the knowledge. Thus, using RKT alone to comprehend acquisition made to seek both strategic assets and knowledge (c.f. Luo & Tung, 2007; Madhok & Keyhani, 2012) is difficult. Moreover, some assets embody knowledge and some assets do not embody knowledge (Spender and Grant, 1996). Grant (1991, 1996) argues that certain assets, such as human resource, embody knowledge and the fact that these assets embody knowledge makes them useful or valuable for the MNE. Thus, recognition of assets augmentation along with knowledge transfer is critical.

In view of this established academic understanding about entwinement of assets and knowledge, we advocate that the scholarship in the field of IB and strategy needs a conceptualization of RAA to complement the existing concept of RKT. Reverse Asset Augmentation refers to 'the activities through which the MNE HQ seek strategic assets from its subsidiaries'. This include all tangible assets, such as production facilities, buildings and product portfolio, and intangible assets, such as brand name and corporate image (Grant, 1991, 1996). We conceptualize the novel phenomenon of RAA in parallel to RKT because neither RKT nor RAA alone can explain the incumbent MNE's behaviour of undertaking acquisition

in emerging markets but together RKT and RAA explain MNE's 'acquisition strategy' made for seeking strategic assets and knowledge to enhance its competitiveness.

2.2. Architecture for Reverse Transfer of Assets and Knowledge

Prior research suggests that absorption of knowledge and assets embedded in another organization/unit is generally an arduous process. It requires a careful planning and designing of a structure for absorption. The firm's decision to deploy existing structure or build a new one from scratch, is affected by the nature of asset and knowledge being transferred, richness of transmission channels, and also the complexity of relationship between HQ and subsidiary and their motivational dispositions (Gupta and Govindrajan, 2000). Such process is facilitated when the sender and target have a prior relation and they have overlapping knowledge (Lane & Lubatkin, 1998; Szulanski, 1996). This prior relation, particularly in the case of a green field established subsidiary, logically binds the two together in terms of technology and administrative systems, which makes the new knowledge firmly attached to what the MNE as a whole already possesses. We argue that when it comes to the case of a newly acquired subsidiary, at least in the early days, this is not the case, and consequently the difficulty and challenges mounts in terms of the process of transfer.

We therefore argue that to benefit from consequent acquired knowledge and assets of a newly planned acquired subsidiary, the MNE should prepare a blueprint, laying down the overall design and mechanism. However, most of the prior research on knowledge transfer, has overlooked the importance of 'architecture' for an effective transfer and efficient absorption of knowledge. This is particularly surprising because even though early works, notably by White and Poynter (1984), Bartlett and Ghoshal (1987) and Hedlund (1986), discuss how MNEs organizes their operations by creating 'heterarchy' and 'matrix structure' like designs, scholars have failed to develop this strand of literature and provide enough attention on the structure MNEs' create for transferring knowledge and resources within their hierarchy. Consequently, a clear understanding of the architecture employed by MNEs when it comes to transfer and absorption of knowledge and assets needed to progress research agenda on this subject, has remained incomplete.

The closest ally can be found in a recent conceptualization of 'Boundaryless Organizations'. Inspired by the transformation of General Electric under the leadership of Jack

Welch, scholars (Ashkenas, Ulrich, Jick, & Kerr[1], 2015) have proposed the idea of boundaryless organizations. They posit 21st century MNEs follow four principles of organizational design/structure: virtual organisations (independence), modular organisations (split core and non-core activities), network organisations (coordination) and learning organisations (continuous learning to adopt, change, innovate and stay competitive). A careful structuring of organisation is deemed crucial for firms in increasing knowledge- and experience- based economy (Yoo, Boland & Lyytinen, 2006). Although, scrupulous designing of organisation requires huge investment of managerial time and efforts, but it can eventually trade off costs with better realisation of intended benefits (Harris & Raviv, 2002). Inspired with these academic wisdoms and drawing insights from such previous works, we define 'architecture of knowledge transfer' as an overall organizational design, revealing the 'mechanism', 'governance structure' and 'timing', for an efficient transfer and absorption of knowledge and other strategic assets from affiliate firms. In essence 'architecture' reflects the overall organizational capability and a 'precondition' for effective knowledge management (Gold, Malhotra, and Segars, 2001).

We further posit and argue that 'architecture' is part of the firm's deliberate strategy for knowledge transfer, as the MNE employs certain mechanisms, which form the foundation of architecture, for an efficient and effective transfer of knowledge and resources. Such mechanisms include processes, channels and modes used for transferring knowledge, along with instructions written in the form of procedures, routines, manuals and guidelines for knowledge transfer (Ambos and Ambos, 2009). Additionally, governance structure explains the firm's approach towards controlling the process of knowledge transfer. Scholars (Andersson, Buckley and Dellestrand, 2015) have also argued that a formal approach towards managing is complementary when it comes to 'set routines' and 'predefined procedures' for transfer. An alternate argument is that the firm can adopt an informal approach wherein the social mechanisms, such as casual interpersonal interactions are used for knowledge transfer and at the same time to build trust, cohesiveness, and a sense of shared identify among the actors exchanging knowledge (Gupta and Govindarajan, 2000; Bjorkman et al., 2004, Grogaard and Colman, 2016). The final temporal dimension emphasizes on the importance of the role of time in connection with knowledge transfer. Szulanski (1996, 2003) suggests that knowledge

[1] Kerr worked with Jack Welch in GE and provided a first-hand account of his experience with him. For details see, Spreitzer, G. M., & Vance, C. M. (2002). Editor's introduction: Larry Greiner," Steve Kerr and his years with Jack Welch at GE". Journal of Management Inquiry, 11(4), 341.

transfer requires time. The key argument here being that if enough time is not devoted, knowledge transfer is unlikely to be complete. In addition, knowledge transfer should take place in right time i.e., timing is important, as a premature or delayed transfer of knowledge is unlikely to be effective (Szulanski, Ringov, & Jensen, 2016).

In addition, we postulate (related to our third research question) that the architecture designed by the MNE for transfer of knowledge is influenced by the external institutional environment. The local institutional environment sets the "rules of the game" suggesting what can and what cannot be done by the firm (North, 1992, p.5). Thus, the firm organizes its plan of action in conformity with the external institutional environment (Ang & Cummings, 1997; DiMaggio & Powell, 1983). Cantwell, Dunning and Lundan (2010) suggest that the MNE's and their nodes' activities co-evolve with the institutional environment, for instance the MNE derives more decentralized form and structure of its corporate network with the evolution of local institutions. This paves the way for competence creating nodes to transfer resources and knowledge to the MNE's HQ. Institutional development is likely to promote locally bounded 'knowledge actors' and 'centres', such as universities' and research institutes/ organizations, which in turn influence the MNE's location choice and the strategy to extract knowledge from local actors (Almond, 2011; Hudson, 2003), which may be very useful in helping the MNE in increasing its knowledge base by forming closer links with the local 'knowledge actors' (see e.g., Clark & Beaney, 1993; Morgan, 1997). Thus, the quality and evolution of institutions in a country sets the tone and may become the driving force of the MNE's economic activity (Kasper & Streit, 1998). Scholars (c.f. Khanna, Palepu, & Sinha, 2005) further suggest that the quality of institutions in emerging economies often provides soil for gaining competitive advantages and growth. This is particularly important given that institutions in emerging economies are constantly evolving and improving over time; for instance, the New Patent Act of 2005 and National Intellectual Protection Rights Policy 2016 in India is proving to be positive for pharmaceutical firms. Prior research (see for example, Athreye, Kale, & Ramani, 2009; Athreye & Godley, 2009; Chittoor, Sarkar, Ray, & Aulakh, 2009) suggests that the evolving institutional regime in India is resulting in an increase in MNEs based in India, especially to undertake greater knowledge related to R&D work.

Based on our above discussion and arguments, Figure 1 presents our conceptual framework and illustrates the reverse flow of knowledge and strategic assets. It also shows an outer layer around RAA and RKT which can be seen as the 'architecture' used, reflecting the

fact that the MNE creates an overall design for an efficient transfer and effective absorption of assets and knowledge acquired from the target firm.

Insert Figure 1 about here

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3. Research Method

As mentioned above, this paper follows an in-depth qualitative longitudinal case-study approach, as a great deal of rich information can be collected through this method (Dyer & Wilkins, 1991; Welch, Piekkari, Plakoyiannaki, & Paavilainen-Mäntymäki, 2010). An in-depth qualitative case study design facilitated us to untangle multifaceted conceptual grid within which the case is embedded and thereby allowed for a richer description of phenomenon [RAA and architecture] under study (Scholz and Tietje, 2002). The longitudinal case study design (Pettigrew, 1990) allowed us to generate rich empirical data in three longitudinal phases spread over three years from 2010 to 2013.

The chosen case of Daiichi Sankyo's acquisition of Ranbaxy is an influential and unique one (Siggelkow, 2007) that meets the goals of our study and generates required information that would be difficult to obtain from a study utilizing a large number of cases (Seawright & Gerring, 2008). As our case is deeply embedded in the local context an in-depth qualitative analysis was preferred. This approach can generate rich insights for theory enlargement and enrichment (Dyer & Wilkins, 1991; Jensen, 2012) especially when: a) triangulation occurs within data or theories (Snow & Anderson, 1991), and b) unique theoretical concepts [such as RAA and Architecture] are deeply embedded in the context and cannot be properly delineated without a great deal of simultaneous examination of the context and theoretical constructs. Eisenhardt (1989) asserts within case analysis with multiple sources of data, such as archival, interview, and observations, allows for theorization from case studies. This can help researchers to "create theoretical constructs, propositions, and/or midrange theory from case-based empirical evidences" (Eisenhardt and Garebner, 2007, p. 25). In line with these recommendations, we use primary and secondary data, and the triangulation between data and theory to enrich and extend the literature on RKT by introducing the notion of RAA and architecture for transfer of knowledge and assets.

Moreover, scholars (such as Birkinshaw, Brannen, & Tung, 2011) have suggested that in order to understand "the complexities of emergent and evolving concepts [such as RAA and

architecture of assets and knowledge transfer] which are, scattered over distance, and differentiated contexts typical to many topics under investigation in IB [international business], it is often inappropriate to engage in large-scale, cross-sectional studies or reductionist methods in the absence of well-developed theory" (p. 573). These scholars further suggest that exploratory research and an in-depth case analysis that are deeply embedded in the local context more suitable for studies leading to theory building and theory extension. Thus, at this point in time, when the MNE's strategies for exploiting assets and knowledge situated in emerging economies are still evolving, we pursued an in-depth case study approach instead of a study based on large secondary datasets that may not be able to capture the concept of RAA and architecture, we have identified in this study.

A longitudinal case study design is used to articulate 'theoretical advancements' through our conceptual framework and research questions. It helped us to operationalize the case study by going back and forth between theory and data over different phases to distil what is being studied and what is to be learned. To put this argument more specifically, visiting and revisiting theory and data in three phases over three years helped us in extending the RKT phenomenon by conceptualizing the entwined phenomenon of RAA, while studying the architecture used by Daiichi Sankyo for transferring assets and knowledge from Ranbaxy. Hence, our research design was a logical plan for getting from here to there, i.e. "from specifying the research questions to reaching closure" (Eisenhardt, 1989, p. 532). Longitudinal studies, although are time and resource intensive, but these can, as in this case for example, clarify organizational practices and their meanings, thus providing a "deeper understanding of the processes of organizational change" (Luthans & Slocum, 2011, p.405).

3.1 Case Selection

We chose the case of Ranbaxy's acquisition by Daiichi Sankyo (DS) because it is one of the most popular and well debated case and to date one of the largest acquisition deal in the knowledge intensive industries in any emerging economy (involving a purchase price of US$ 4.6 billion), undertaken by an advanced country MNE. This made the acquisition a unique case warranting an in-depth analysis. It is also a prominent case involving two leading pharmaceutical MNEs, one from India and the other from Japan. Daiichi Sankyo is one of the world's leading pharmaceutical MNEs involved in discovering new drugs, and Ranbaxy was then India's largest pharmaceutical MNE with operations in more than 150 countries.

Furthermore, it is an interesting case to report as it reflects upon the strategies of Daiichi Sankyo to seek strategic assets and knowledge in the context of the evolving institutional landscape in India. Through the introduction of the New Patents Act in 2005, India showed its commitment to protecting intellectual property rights by strengthening its law. Consequently, India has become one of the top choices among various offshoring destinations for western client firms (Lahiri, Kedia, & Mukherjee, 2012; Luo, Zheng, & Jayaraman, 2010; Zaheer, Lamin, & Subramani, 2009) and has been attracting large volumes of inward foreign direct investment (FDI). The stock of FDI in knowledge-intensive industries has crossed over US$ 100 billion, with the pharmaceutical industry alone attracting around 15 percent of it (DIPP, 2015). Moreover, India-based industries have evolved from low value-added services to high value-added knowledge-based activity. Finally, as one of the world's largest and most dynamic economies, India-based studies add value to the overall understanding of the global business environment.

3.2 Case Background

Daiichi Sankyo (DS) originally started as Sankyo Shoten in 1899 in Japan. The corporate history section on the company website shows that right from its inception the company possessed strong research capabilities; for example, in 1910, DS was the first to discover the vitamin B1, which established the basis for the theory of vitamins.

The internationalization of the firm took place in 1961 with the establishment of a wholly owned subsidiary in New York; and, in 1963, another subsidiary was established in Basel, Switzerland. Thus, the internationalization of DS started in the early 1960s alongside the internationalization of major US firms. To date, DS is the third largest Japanese drug manufacturer, with about 16,500 employees and a turnover of US$ 9 billion. Its R&D spending equals 20.7% of its sales, making DS one of the largest in the world in terms of R&D intensity (DaiichiSankyo, 2015).

Daiichi Sankyo’s official entry into India began with the establishment of a greenfield wholly owned subsidiary (WOS), Daiichi Sankyo India (DSIN), in March 2007. This allowed DS to set up its base in India and facilitated the acquisition of Ranbaxy that look place in June 2008. DS’s entry in India had multifaceted dimensions, showing the architecture built for acquiring knowledge and strategic asset. This includes timing, mechanism and governance structure. At the same time, exploiting institutional environment and growing market base have implications on performance and sustainability for Daiichi Sankyo. This case, in particular in

the pharmaceutical industry, and in general, is a leading case of a developed country MNE seeking assets, knowledge and skills in an emerging market.

Ranbaxy was the then the largest pharmaceutical firm in India and had a very good reputation around the world. It had the highest R&D spending of Indian pharmaceutical companies, along with a well-known pool of around 1,100 R&D personnel, of which over 75 percent are qualified scientists. It was also among the top global generic pharmaceutical firms and had internationalized extensively, with sales in about 150 countries and an annual turnover of over US$ 1.65 billion (Ranabxy, 2008). Prior to the acquisition, Ranbaxy specialized in generic drugs, a different field of pharmaceutical production and development to that of Daiichi Sankyo, which mainly focused on new drug development. The acquisition of Ranbaxy not only provided Daiichi Sankyo with entry into an emerging market but also added value in terms of synergies and plans for sustainable growth. At the time of acquisition Mr. Takashi Shoda, President and CEO of Daiichi Sankyo said the following suggesting that firms seek partners in similar knowledge domains to deepen and broaden their knowledge (Yayavaram et al., 2018).

> *The proposed transaction is in line with our goal to be a global pharmaceutical innovator… with a new, strong presence in the fast-growing business of non-proprietary pharmaceuticals… While both companies will closely cooperate to explore how to fully optimize our growth opportunities, we will respect Ranbaxy's autonomy as a standalone company as well* (quoted in Knowledge@Wharton, 2008).

3.3 Data Collection and Validity

The data for analyzing the case was personally collected by the authors from both primary and secondary data sources. The primary data was obtained by interviewing six respondents (four managers, and two scientists) from Daiichi Sankyo and Ranbaxy, in three phases over a period of 3 years. The first phase ran from February 2010 to January 2011; the second from February 2011 to January 2012; and the third from February 2012 to March 2013. The managers are in charge of new drug developments in India, and the scientists are responsible for drug designing and R&D. Inclusion of both managerial and technical staff, with rich experience and expertise, directly responsible for knowledge intensive processes strengthen the validity and reliability of our data. Table 1 presents details of these respondents. Given the sensitivity of the data collected, the identity of these managers and scientists are kept anonymous. We would like to emphasize that the managers and scientists were identified and approached through the authors' extended networks, including LinkedIn. We argue using social

networking sites in accessing managers for collecting primary data is a methodological contribution of our study as it allows identification and a relatively easy access to managers. The further advantage of this methodology is the existence of 'confidence', 'trust' and 'commitment', due to pre-existing relationship on social networking site, critical in collecting primary data.

Insert Table 1 about here

Data were largely collected through telephone interviews (Anderson, 2009). The interviews were semi-structured to allow respondents to explain the dynamics of the industry and institutions (King, 2004; Kvale & Brinkmann, 2008). Recording was not permitted by the respondents who were otherwise unwilling to participate and divulge necessary details. However, notes were taken during the interview. The authors had permission to go back to respondents for clarifications. To maintain ethical integrity and to protect the interest of participants, quotes are disguised. During the research there was a continuous interchange between empirical data and theories (Snow & Anderson, 1991). The first phase in 2010 comprised of *'exploratory'* interview questions (King, 2004; Kvale & Brinkmann, 2008) where interactions with managers and scientists in charge of new drug development gave us initial insights for early pattern recognition, such as motivation of acquisition and series of activities carried out by DS. The second phase in 2011 included more *'probing'* questions. This phase also allowed additional pattern recognition about the initial planning, timing of acquisitions, and mechanisms DS was employing to transfer of assets and knowledge from Ranbaxy into DSIN. The third phase in 2012 concentrated on being *'reflective'* (Crabtree & Miller, 1999).

3.4 Data Analysis

For the purpose of analyzing the collected interview data we adopted the 'processual analysis' approach from the organizational behavior field (Pettigrew, 1997). In line with previous research on knowledge transfer (e.g. Duanmua, and Fai, 2007), processual analysis can help in explaining "the what, why and how of the links between context, processes and outcome" (Pettigrew, 1997, p. 340) and abstracting theory from narratives (Pentland, 1999). We integrated processual analysis with thematic analysis to make sense by identifying patterns and commonalities in the data collected to answer our research questions (Braun and Clarke, 2006). The analysis involved reading and rereading of notes, re-confirming interpretations with

the respondents, and matching the quotes with the description of the RAA and the architecture of transferring assets and knowledge in the evolving institutional setup of India. Patterns within the data were identified by developing codes in two stages – first order codes and second order codes – which are aggregated into final theoretical categories (Gioia, Corley, & Hamilton, 2013). The codes were independently developed by two authors as a way to check their validity. If any quote resulted in different interpretation, we confirmed our understanding with the respective respondent. Shared understanding with the respondents indicates the validity of our analysis (Easterby-Smith, Thorpe, & Jackson, 2012). Since our data analysis integrates thematic analysis with processual analysis, we duly considered the longitudinal feature of our data and identified patterns over different phases of data collection and interpretation. In addition, we paid attention to the cumulative exchange among the agents (DS, DSIN and Ranbaxy) and their context over time, while making interpretations. This process of analyzing data assisted us in orderly arranging the codes into "categories, types, and relationships of meaning" (Guest et al., 2012, p. 52). Figure 2 shows an overview of our data structure, the codes and integrated theoretical categories. Finally, the process was completed with the identification of thirty-nine first-order codes and twelve second-order codes culminating into three theoretical constructs, explained in the next section on findings.

Identification of the codes followed a "careful reading and re-reading" (Rice & Ezzy, 1999: 258, p.258), thereby recognizing patterns within the data. As described in figure 3, the analysis process was undertaken by employing cycles of both induction and deduction (Pettigrew, 1997, p.343), reflecting a continuous interplay between "academic pre-conceptualization…[based on a comprehensive literature review and conceptualization of RAA and architecture of knowledge transfer]…and detailed empirical descriptions of emerging themes and topics" (Dawson, 1997, p.390), from which theoretical constructs were refined and interpretations developed. In doing so, it keeps the spirit of Pettigrew's (1997, p.344) central tenet that "it is in this constantly iterating cycle of deduction and induction that the real creative process of the research takes place."

Insert Figures 2 and 3 about here

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4. Findings

The findings are explained under the three theoretical constructs identified in figure 3. The first set of findings covered under, 'assets and knowledge augmentation', focuses on which assets and knowledge were acquired by Daiichi Sankyo, revealing the motivations behind the acquisition. It also indicates that assets and knowledge are entwined. The second set of findings explicates the 'architecture for transfer and absorption of assets and knowledge', revealing the overall plan for the efficient transfer and effective absorption of assets and knowledge. The third set of findings illustrates the 'institutional influence', reflecting how regulative and cognitive institutions have facilitated the Daiichi Sankyo's strategy for asset augmentation and knowledge transfer.

4.1 Assets and Knowledge Augmentation

Our finding suggests that Daiichi Sankyo accessed valuable tangible and intangible assets by acquiring Ranbaxy. Analyzing several quotes gathered from interviewing managers of Ranbaxy and Daiichi Sankyo, reveal that Daiichi Sankyo's strategy was to augment following assets and knowledge from Ranbaxy: a) human resource; b) R&D centers; c) brands and corporate image; and d) distribution network. The findings further show the entwinement of assets and knowledge as knowledge is embedded in certain assets (Grant, 1991, 1996), such as human capital, R&D centers, and distribution centers.

Firstly, Daiichi Sankyo acquired an army of skilled human resources, such as scientists and chemists, from Ranbaxy. This workforce has wealth of knowledge and experience that would enhance its capabilities to conduct research. A senior manager initially reported:

> Quote 1[2]: *Ranbaxy is India's largest pharmaceutical company. Ranbaxy has been successfully around for over 50 years in India with a worldwide presence and a strong dedicated skilled workforce of over 14,000 employees. –MR #1 (phase #1)*

On probing the same manager in phase 2 of our study, he further stated that Ranbaxy has very strong R&D bases throughout India.

> Quote 2: *With the help of the strong workforce, we (Ranbaxy) established 3 research and development centers in India by 2005 and also obtained India's first US FDA approval. Through all these achievements Ranbaxy established itself in the Novel Drug Development Segment (NDDS) in the industry.-MR #1 (phase #2)*

A manager at Daiichi Sankyo further acknowledged the importance of human resource, especially the diversity and the tacit knowledge embedded within the large human resources

[2] Quotes are numbered in order so that the reader may more easily refer back from Table 2.

Ranbaxy possessed. A Daiichi Sankyo manager confirmed that the global skill sets of people in Ranbaxy were seen to be an asset.

> Quote 10: *Ranbaxy has a great international pool of human resource coming from 50 different nationalities. The tacit knowledge embedded within Ranbaxy's human resources is a great capacity enhancement for us. This will enable us to strengthen our research capabilities… MDS#1 (phase #2)*

The above two quotes show that knowledge is embedded in R&D labs and human capital. Daiichi Sankyo has valued both of these assets and the knowledge embedded within them, as it is likely to enhance its research capabilities.

Our interview data further highlight that Daiichi Sankyo also targeted Ranbaxy's marketing assets, such as brand and distribution network. A manager from Ranbaxy confirmed that:

> Quote 6: *Ranbaxy has a strong competitive position in India with some very strong brands in the market. About 20 of them are widely known and available in the market. Ranbaxy brands are prescribed by most of the doctors and pharmacists such as Mox [a widely used antibiotic]; Zanocin; and Cifran. Most of the over the counter drugs such as Voloni [a type of diclofenac] and lifestyle drugs such as Revital are very popular among consumers. Normally consumers in India know these brands and demand them by name from the chemist shops. –MR #2 (phase #2)*

> Quote 7: *Ranbaxy has one of the largest drug distribution networks in India. It has more than two and a half thousand medical representatives in the field promoting Ranbaxy brands –MR #2 (phase #3)*

Brand and distribution network are vital intangible assets for the firm. They play a critical role in building the firm's competitive advantage and enhancing market performance (Dyer & Singh, 1998). Through the acquisition, Daiichi Sankyo inherited a very large distribution network staffed by skilled army of medical representatives and several famous international brands (for instance, Mox, Revital, and Voloni) which are popular and widely available in many countries in Africa, Latin America and South Asia. It is worth noting from the above quotes that these brands are widely distributed and promoted by an army of medical representatives. In emerging markets like India, personal selling is very important. Doctors and pharmacists suggest a particular brand of medicine because they are approached by medical representatives promoting that brand. Thus, the marketing knowledge and skills of medical representative underlies the strength of Ranbaxy's brand and distribution network, which shows that these assets are based on certain knowledge and skills of the human resource.

The following quote nicely summarizes the fact that these assets and knowledge of Ranbaxy are valuable resources for Daiichi Sankyo as both firms are in the same business, indicating that there are likely to be complementarities between resources and with cooperative relationships the inter organizational competitive advantages of Daiichi Sankyo and Ranbaxy are likely to grow.

> Quote 8: *Ranbaxy's workforce, brand and distribution network are great resources for Daiichi Sankyo, since we are both are in the same business. –MR #2 (phase #3)*

Besides, Ranbaxy's pharmaceutical brands and distribution channels, the acquisition has allowed Daiichi Sankyo a strong foothold in emerging market. Managers of both the firms reiterated that there is a plethora of business propositions for Daiichi Sankyo in India. The following quotes reflect:

> Quote 4: *The Indian market has immense potential for growth, as the per capita consumption of drugs in India is one of the lowest in the world at about US$ 3 per annum. Similar figures in developed countries are far higher [for instance] in Japan it is US$ 412 per annum; in the USA, it is US$ 191 per annum; in Germany it is US$ 222 per annum. Going forward with development, it is natural that India's per capita consumption will go up. –MDS #1 (phase #1)*

> Quote 3: *…another business proposition for Daiichi Sankyo is to grab Ranbaxy's market share in the emerging Indian market. The industry is growing at 10 to 11% annually…-MR #1 (phase #3)*

> Quote 5: *Ranbaxy's brand and marketing will help us…With one of the largest populations in the world in India, even a smaller change will be big in absolute terms.-MDS #1 (phase #2)*

> Quote 9: *… we have got a strong foothold in the emerging market and acquired marketing and human resources that we can add on to our own. -MDS #1 (phase #3)*

In summary, Daiichi Sankyo acknowledged that it was also targeting the growth potential in India for which acquisition served the purpose. It provided access to key marketing resources, such as brand and distribution network, required to gain quick market share. A survey conducted by 'AC Nielsen ORG-Marg', an independent marketing research company, found that Ranbaxy brands have the most spontaneous awareness among medical and non-medical respondents in India (D'Silva, 2004).

Archival documents on the Ranbaxy's website also suggest that that Ranbaxy places greater emphasis on "*…Knowledge Management and Medico-marketing initiatives, such as Advisory Board Meetings, Post Marketing Surveillance Studies and Continuous Medical Education (CME) programs. These have resulted in an excellent human resource and customer relationship with the medical fraternity. More than 2000 interface programs, such as Symposia*

and, CME's (sic), are conducted and about 20 Clinical Papers published annually" (Ranbaxy, 2012). This corroborates our analysis that the marketing, technological and human resources of Ranbaxy embody specialized knowledge, reflecting that assets and knowledge are entwined.

4.2 Architecture for transfer and absorption of assets and knowledge

Following the first finding, our second finding reveals the architecture used by Daiichi Sankyo to efficiently transfer and effectively absorb the assets and knowledge acquired from Ranbaxy. The narratives below show that a set of related things were planned by Daiichi Sankyo to make up the architecture. First of all, Daiichi Sankyo's established a Greenfield wholly owned subsidiary known as Daiichi Sankyo India (DSIN) in March 2007. DSIN was the launch pad for DS in India. It is interesting to note that the DSIN was established in Gurgaon – a popular city located in the national capital region of India – where Ranbaxy was located. DSIN served as a base for receiving and absorbing knowledge and assets from Ranbaxy. A manager suggested that setting up Daiichi Sankyo India in Gurgaon was on purpose, as it facilitated the movement of staff and new drug discovery research projects from Ranbaxy to DSIN.

> *Quote 26: …having both offices in the same city is quite convenient…setting up Daiichi Sankyo India in Gurgaon was quite purposeful…an intelligent decision…-MR #2 (phase #3)*

Subsequent to the acquisition, Daiichi Sankyo reorganized Ranbaxy's operations by intelligently fine slicing (Buckley, 2009) its new drug discovery business from other businesses, that is contract manufacturing, bulk drug production and production and marketing of generic drugs. Thus, new drug discovery research projects were relocated from Ranbaxy into DSIN and Ranbaxy was steered to focus only on generic, contract and bulk drugs business.

> Quote 14: *Ranbaxy [will] focus more on the generic drug market and Daiichi Sankyo India [will] focus more on (New Drug Discovery Research) NDDR…- MDS #1 (phase #3)*

> Quote 15: *Daiichi Sankyo has split the business between Daiichi Sankyo India and Ranbaxy. Daiichi Sankyo India is undertaking discovery of new drugs while Ranbaxy is to concentrate on the generic drug business. This reorganization is sustainable and has performance implications. – SDS #1 (phase #3)*

Simultaneously, all staff employed in Ranbaxy's new drug discovery projects was moved to Daiichi Sankyo India, as evident in the following quote by a scientist at Daiichi Sankyo. This step facilitated the acquisition of tacit knowledge in a most efficient manner as the NDDR projects and the staff members working on those projects were jointly absorbed into

DSIN. A scientist acknowledged that these transfers strengthen the global R&D base of Daiichi Sankyo.

> Quote 16: *We have moved (Ranbaxy) staff in new drug discovery research to Daiichi Sankyo India…we initially underestimated them… [This will] strengthen the global research and development structure of the Daiichi Sankyo Group. –SDS #1 (phase #3)*

As the above quote further signifies that initially, there was some natural resistance. The scientific staff at Daiichi Sankyo underestimated the usefulness of the knowledge and resources received from Ranbaxy. This can be attributed to cognitive resistance - a major challenge in the process of knowledge transfers (Bovey & Hede, 2001; Piderit, 2000). In our case, cognitive resistance means less acceptability and underestimation of strategic assets and knowledge flowing from a less advanced source to a more advanced source.

The same scientist further suggested that the changes in the intellectual property law in India has excited Daiichi Sankyo which has prompted offshore of new drug discovery projects from Japan to India.

> Quote 13: *Following the changes in the Indian regulatory environment, we are now ambitious of [enthusiastic about] operating in India…… We have recently transferred 6 drug discovery projects to India… [a few more] will be transferred in the very near future. This has strong cost advantages and performance implications. – SDS #1 (phase #2)*

This reflects that DSIN was at the center of the overall architecture. It served as an offshore R&D subsidiary as it received the NDDR projects from Japan while at the same time it provided the base for the absorption of the NDDR projects from Ranbaxy. Moreover, since, the DSIN acted the base point of absorption it was set up in Gurgaon within the geographical proximity to Ranbaxy.

> Quote 16: *Daiichi Sankyo has very strategically divided the business between Ranbaxy and Daiichi Sankyo India… Daiichi Sankyo India took over the new drug discovery business and core research and development arm of Ranbaxy…units of Ranbaxy engaged in research and development of new drugs were transferred to Daiichi Sanyo India. Ranbaxy is concentrating only on contract manufacturing and generic drugs…Ranbaxy has a competitive advantage and market recognition in that area, therefore it makes sense…On the other hand, Daiichi Sankyo is known in the world for new discovery and research…Daiichi Sankyo India can leverage Daiichi Sankyo's worldwide reputation.- MDS #1 (phase #3)*

In summary, this data revealed the architecture established by Daiichi Sankyo for an efficient transfer and effective absorption of strategic assets and knowledge from Ranbaxy. In continuation with the first finding, it divulged the fact that Daiichi Sankyo was looking for advantages through Ranbaxy's R&D assets and knowledge base. It has stripped off the drug

discovery units of Ranbaxy and reorganized Ranbaxy's operations globally. All NDDR projects were transferred into DSIN, which was purposefully established, almost a year before the acquisition, in geographical proximity to Ranbaxy, so that it can prepare a base where Ranbaxy's NDDR and staff employed can be absorbed.

In addition, DSIN is used as an offshore center for the Japanese NDDR projects, which shows that DSIN acted as a platform where both Indian and Japanese projects can be integrated, and possible synergies can be exploited with the view of strengthening Daiichi Sankyo's global competitiveness. The extant literature suggest that knowledge transfer is hammered by geographic (Ambos & Ambos, 2009), cultural and institutional distances (Easterby-Smith, Lyles, & Tsang, 2008; Sun & Scott, 2005; Simonin, 1999). By establishing DSIN in Gurgaon closer to Ranbaxy, and employing local Indian managers and scientists, Daiichi Sankyo implicitly mitigated these distances. This indeed helped Daiichi Sankyo's in building its global competitiveness. This fact is also reflected in the testimonial by Takashi Shoda, the president and chief executive officer of Daiichi Sankyo. He stated that Ranbaxy's acquisition is in line with their "goal to be a global pharmaceutical innovator" and it complements with the Daiichi Sankyo's global operations (Knowledge@Wharton, 2008).

4.3 Institutional Influence

Daiichi Sankyo's strategy to acquire Ranbaxy should be seen within the changing institutional landscape in India, which has significantly changed since the introduction of the New Patents Act in 2005 (Athreye et al., 2009; Athreye & Godley, 2009; Chittoor et al., 2009). The New Patent Act introduced product patenting in place of process patenting. This is seen as a promising shift in the Indian institutional environment, a step towards respecting intellectual property rights, as it banned the prevailing practices of processes patenting used by the pharmaceutical firms in India in reverse engineering drugs discovered by other firms, mainly foreign multinationals. Foreign pharmaceutical MNEs have exploited this institutional change by increasing the number of patented drugs launched in India. The following quotes further illustrate this:

> Quote 22: *India is already a good location for contract manufacturing of bulk drugs, and in the New Patents regime foreign pharmaceutical firms are not only looking for contract manufacturing in India, but are also diversifying in research and development.- SR #2 (phase #2)*

> Quote 23: *The Indian pharmaceutical industry has become strong through the introduction of the Patents Act in 2005. The new regime has made it compulsory for Indian firms to be innovative and invest in R&D…This has a spill-over effect on foreign*

pharmaceutical firms such as ours. We have found innovative R&D centers already established in India...the whole environment of intellectual property, which was a challenge in India, is no longer a concern for firms like Daiichi Sankyo, which can now do new drug development in India. – MDS #1 (phase #3)

Many other reforms have also been introduced in India, such as allowing 100% FDI in the pharmaceutical industry, providing tax incentives for R&D, and the setting up of special economic zones (SEZs). The Indian government's "Pharma Vision 2020" program aims to make India one of the leading destinations for drug discovery and innovation hubs, with the target of "every five out of ten drugs discovered worldwide by 2020 originating from India" (DoP, 2014). Evidence from our interview data has also reveals that the recent policies and laws have a positive impact on the industry. A Ranbaxy manager confirms this:

Quote 17: *India has a great infrastructure required for testing the new drugs. India has the largest number of FDA approved laboratories outside the USA. Most of these laboratories have multiple approvals from the UK, Germany, Canada, and Australia. – MR #1 (phase #2)*

Quote 18: *The Indian Government has allowed 100% FDI in the pharmaceutical sector. This is an important step for a company like Daiichi Sankyo who wishes to undertake research and development in captive units in India. This is extremely important for protection of intellectual property. –MR #2 (Phase #1)*

However, the management at Daiichi Sankyo was not very excited. One manager suggested that bureaucratic hurdles are still prevalent.

Quote 19: *We have some unclear issues on 100% FDI. Is it automatic or do we need to get approval? The department of pharmaceuticals and the Department of Industrial Planning (sic)* [Policy] *and Promotion's view is not clear…bureaucracy here is complex and slow. MDS #1 (Phase #2)*

That said, overall, the pharmaceutical industry in India has always seen favorable conditions prevail in comparison to other industries as seen in the following two quotes by managers from Ranbaxy:

Quote 20: *Industrial licenses are not required for most of the drugs and pharmaceutical products produced in India. All drugs approved by the Drug Control Authority of India can be produced freely by the pharmaceutical companies in India –MR #1 (Phase #3)*

Quote 21: *India has special economic zones (SEZ) exclusive for pharma sectors in every corner of the world (sic), such as Jawaharlal Nehru Pharma City in Andhra Pradesh [South Eastern State]; PHARMEZ and PHAEZ Park in Gujarat [Western Indian State]; Mohali SEZ [North India] –MR #2 (Phase #3)*

Besides exploiting the regulative institutional environment, Daiichi Sankyo also leveraged from other institutional setups in India. Here the most important is the Indian

educational institutions, which produces a large number of skilled human resources. The quote below illustrates importance of the Indian educational institution and cost advantages foreign MNEs obtain by exploiting the skilled human resource in India.

> Quote 24: *India has pertinent technological skills. Every year lots of graduates including chemists and scientists come out of the universities and technical institutes of India. This skilled workforce is available in abundance and at relatively low wages. The cost of production in FDA approved plants is about one-third that of in Japan or in the USA. – SR #1 (Phase #2)*

This confirms to the latest research that suggest that complementarity between host government policy and local informal institutional enhance the positive impact of knowledge and strategic assets acquired from overseas (Liu, Xia, Jiangyong and Lin, 2018). Another informal institutional benefit for Daiichi Sankyo is associated with the Indian culture, which is generally perceived as accommodative. The quote below evidences that the Indian workforce adapt to the Japanese working culture. A study by Budhwar (2012) also found that Indian workers were highly adaptive to the organizational culture of foreign MNE.

> Quote 25: *Indian workers are quite adaptable to our ways of working. They normally respect and obey our organizational practices rather than challenging them. –SDS #1 (Phase #2)*

In summary, Daiichi Sankyo has exploited both formal and informal institutions in India. The key benefits emerge not only from the regulative institutions, such as new patent act, 100% FDI in pharmaceutical sector and free industrial licensing; but also, from the availability of special economic zones and educational institutions. The new regulations protect knowledge, and encourage inward FDI, while the other institutional factors have provided infrastructure and the most critical skilled human resources.

5. Discussion

We now distil the above findings in relation to our three research questions. Our first question enquired about the acquisition strategy of Daiichi Sankyo, i.e., why highly competitive, globally known players from advanced economies in research-intensive industries acquire firms in emerging economies; and, what strategic assets and knowledge were extracted from Ranbaxy's acquisition?

Our findings suggest that there is evidence that advanced economy MNEs, like Daiichi Sankyo, operating within highly knowledge-intensive industries enter emerging economies in order to strengthen their innovative competitiveness. Ranbaxy and Daiichi Sankyo both shared

their knowledge domain with some differences in their ways of creating knowledge. For instance, while Daiichi Sankyo would indulge into new product development with focus on pure R&D; Ranbaxy was a leading firm in generic drug production, process engineering with initial steps into R&D for new drug discovery programs. The similarity in knowledge domain helps the firm (Daiichi Sankyo) to deepen their knowledge base, and the dissimilarity in the methodology of generating knowledge resources helps in broadening their knowledge base (Yayavaram, Srivastava, & Sarkar, 2018).

Moreover, in this case, Daiichi Sankyo acquired marketing, technological, and human resources from Ranbaxy reflecting the RAA and RKT strategies of Daiichi Sankyo. Table 2 maps the resources gained by Daiichi Sankyo, emanating from the findings discussed above, against the types of resources identified by Grant (1991, 1996).

Insert Table 2 about here

By acquiring these resources Daiichi Sankyo gained a strong foothold in a promising emerging market and strong image that has worked both in the context of the product market as well as in the labor market. In the product market, Ranbaxy's brands are well known when it comes to 'over the counter' drugs and in the labor market Ranbaxy is seen as an 'employer of choice', among both existing and aspiring workers. This is reflected in the fact that Ranbaxy has a global marketing team of medical representatives and distributors. Moreover, Ranbaxy's products are available throughout India and are sold across 150 countries. The global distribution is strengthened through a strong Indian diaspora community working for Ranbaxy in its various global operations. The global marketing and distribution teams, in particular, were considered one of the most valuable resources that Daiichi Sankyo acquired.

Nonetheless, opportunities for seeking strategic assets and market in emerging economies comes with challenges unique to those economies (Meyer, Estrin, Bhaumik, & Peng, 2009; Munjal and Pereira, 2015). While it is well acknowledged that the acquisition was made primarily to acquire strategic assets, but examination of archival data on this case reveals that Daiichi Sankyo were faced with several setbacks. Soon after the acquisition Daiichi Sankyo realized that the manufacturing facilities of Ranbaxy were short of quality standards (Business Today, 2013), as the company was under scrutiny by the US FDA, who issued several notices for the lapses found in the production facilities and slapped fines to the tune of

US$ 500, which Daiichi Sankyo had to settle (See US FDA, 2017 for details). It has also been argued that Daiichi Sankyo rushed the acquisition and consequently failed to conduct due diligence (Business Today, 2015). On close examination of the archival data pertaining to the US FDA (years 2002, 2006, 2009), we found that at least two warning letters (dated 10/11/2002 and 06/15/2006) were issued to Ranbaxy. However, Daiichi Sankyo took cognizance of this only after the third warning letter (dated 12/21/2009) was issued. Indeed, by this time almost one and a half year (18 months) had lapsed as the acquisition was made in June 2008, thus portraying how Daiichi Sankyo failed to conduct robust due diligence before making the acquisition.

The evidence from our findings also shows that RAA and RKT are entwined. The approach to acquire strategic assets is closely associated with the knowledge transfer strategies. In fact, knowledge transfer followed asset augmentation. The entwinement and the need to maintain proprietary control over strategic assets and knowledge leads towards answering of our second research questions on the architecture that was put in place for the efficient transfer and effective absorption of strategic assets and knowledge from Ranbaxy. Overall, our findings suggest that a blueprint with logistical planning in terms of the mechanisms of transferring knowledge and assets and a formal governance structure (Ambos and Ambos, 2009, Andersson et al., 2015) along with timing (Szulanski, Ringov, & Jensen, 2016) was carefully undertaken by Daiichi Sankyo by setting up the greenfield WOS in the form of DSIN.

As the findings suggest, asset and knowledge transfer took place through the reorganization of Ranbaxy's operations and the joint movement of both NDDR projects and scientific workforce working on these projects from Ranbaxy into DSIN. This reflects the mechanisms used for RAA and RKT. Following this, Ranbaxy was directed to work exclusively in the area of generics, contract manufacturing, and bulk drug production. From a control perspective, setting up DSIN as a greenfield WOS within the geographic proximity of Ranbaxy and reorganization of operations represented the governance structure for the architecture designed by Daiichi Sankyo. From an organizational design perspective, this shows how modern MNEs form 'modular organizations' by splitting business domains into core and non-core and facilitate organizational learning *via* keeping geographic proximity between different units (Ashkenas, Ulrich, Jick, & Kerr, 2015). Indeed, DSIN as a dedicated base of absorption near to the target firm facilitated the mechanism of knowledge transfer and the joint movement of projects and staff. Finally, temporal planning, an essential aspect of knowledge transfer (Szulanski, 1996, 2003) is reflected in the time of establishing DSIN in

March 2017, i.e., almost 15 months before the acquisition of Ranbaxy. Thus, following the temporal planning, governance structure (in terms of proximity and control) and mechanism for transferring strategic assets and knowledge DSIN facilitated the overall process of RAA and RKT.

Our third research question on the institutional influence reveals the role of institutions on the acquisition. Our case shows that the evolving regulative institutional setup in India (Athreye & Godley, 2009) which supports innovative activities by offering protection of intellectual property rights and allows entry of foreign MNEs by undertaking 100% FDI, had a strong influence on the architecture of asset and knowledge augmentation strategies of Daiichi Sankyo. Not only was research and innovation capacity existing in India (Contractor, Kumar, Kundu, & Pedersen, 2010) in the form of availability of skilled human resources with relatively lower wage rates, the excellent infrastructure, such as the wide availability of US FDA approved labs, and complementary informal institutions (Liu et al. 2018) provided multiple opportunities to Daiichi Sankyo for setting up its offshore drug discovery programs in India.

6. Conclusions

This paper examined the role of an acquired subsidiary in an emerging economy as a knowledge and resource provider to the developed country parent MNE. With the evolving institutional landscape in emerging countries, MNEs from developed countries in technologically intensive industries are finding it viable (both technologically and economically) to expand into emerging economies. In this process, they move a step onwards offshoring, and acquiring strategic assets and knowledge of local firms, in emerging economies. However, MNEs need to be mindful of challenges as institutional, cultural and industry factors affect their decision of ownership choices (Contractor, Lahiri, Elango, & Kundu, 2014).

This paper contributes to the literature in following ways. First, it builds the concept of architecture into the literature on knowledge transfer. It specifically shows how some structures facilitates the transfer of knowledge based assets and 'non-knowledge' based assets, post-acquisition, via some mechanism and in a time efficient manner. The three elements/constituent parts (i.e. structure, mechanism and timing) form the architecture which captures the content, process and timing of strategic assets and knowledge transfer. Second, it also introduces the entwined concept of RAA with RKT. In contrast to the evolving literature on catch-up

strategies of MNEs from emerging markets, it shows that MNEs from advanced economy also explore knowledge and strategic assets from emerging economies and this exploration may result in a fundamental transformation of the MNE (Mudambi, 2011; Pereira, Munjal and Nandakumar 2016). Third, using the acquisitions as a unit of analysis, it shows that acquisitions act as conduit though which the reverse transfers of knowledge and assets takes place. The transfer of assets and knowledge in such cases is entwined as knowledge is often embedded in tangible resources transferred from the target firm. Finally, it provided empirical evidences that illustrate how institutional evolution influences the scope and creativity of the MNE's international activities.

In terms of limitations and future research, this paper has presented a single case study, albeit a unique 'talking pig' case (Siggelkow, 2007). In the future, it would be worth investigating similar cases using the conceptual framework that evolved through this study. This will help shed more light on institutional changes in emerging countries and add to further knowledge in terms of the motivations and expectations of MNEs from advanced economies entering emerging economies. This paper could not extend the analysis to the recent sell off of Ranbaxy to Sun Pharma (another Indian MNE) in 2015 for US$ 4 billion as the scope for the study is limited to providing evidence of benefits accrued to Daiichi Sankyo in the form of RAA and the architecture employed for the reverse transfer of assets and knowledge. Future studies can analyze the reselling of Ranbaxy. The analysis in this study was conducted through qualitative research methods. Empirical evidence from quantitative analysis of the financial statements may validate or challenge our findings. Of course, there are other cases within the Indian pharmaceutical industry, such as the acquisition of Piramal by Abbott, which can also be used for future research.

Additionally, future research comparing acquisitions of Chinese or Brazilian pharmaceutical companies would also be useful in developing confirmatory evidence. There are enough comparable cases e.g., in China, GSK's purchase of Nanjin Melrul, Sanofi of Mingsheng Pharma, Novartis' acquisition of Zhejiang Tianyuan, Merck KGaA's buyout of Beijing Skywing, and Immuno Biology's agreement with Sinopharm. Similarly, in Brazil, Pfizer's takeover attempt of Neiquimica, Sanofi's acquisition of Medley and CVS taking over Onofre could be examined to research the existence of RAA and RKT and explore the architecture used by MNEs to facilitate the reverse transfer of assets and knowledge. Further, examining the extensive literature on the competitive advantages of emerging market multinationals (Williamson, Ramamurti, Fleury, & Fleury, 2013) to assess whether new

terminology such as RAA is needed, and relevant, would seem to be a necessary step, in future. Lastly, alternatives to acquisitions, e.g., joint ventures and licensing to access assets and knowledge, are also worth considering. Abbott, while purchasing Piramal, also licensed over 20 different drugs from Zydus Cadila for commercialization outside India.

The RAA and RKT conceptualizations can help in enhancing the academic understanding of the incumbent MNE's strategy for reverse innovation (Govindarajan & Ramamurti, 2011; Govindarajan & Trimble, 2013), which has risen significantly over the last decade. Scholars can also examine the RAA and RKT as antecedents of reverse innovation. It can be postulated that the MNE involved in RAA and RKT may engage in innovation that may be initially targeted at emerging economies and later trickled up to advanced economies.

Finally, our study guides managers to evaluate emerging countries not only on production costs, but also on strategic asset availability. Managers need to realize that emerging economies are suitable locations not only for low value-adding activities but also for undertaking high value-adding knowledge-intensive activities. In this respect, the configuration of the Indian economy provides multiple benefits – that of availability of skills at lower costs alongside the protection of intellectual property – to MNEs entering India. It further portrays that predominant western theories may or may not wholly be applicable and acceptable in an emerging market, such as the Indian context.

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Figure 1: Conceptual Framework (A New Figure 1 below is designed to replace this old one)

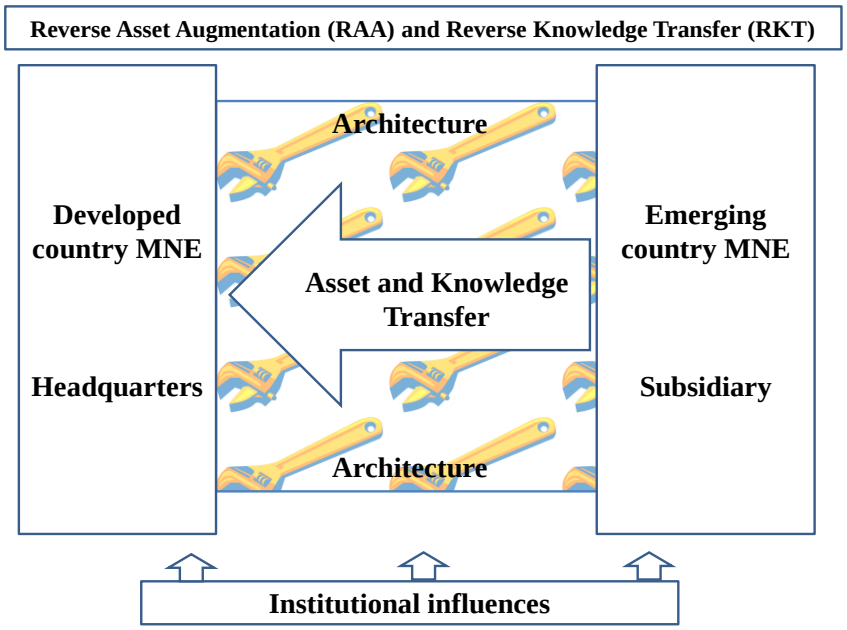


Figure 1: New Conceptual Model

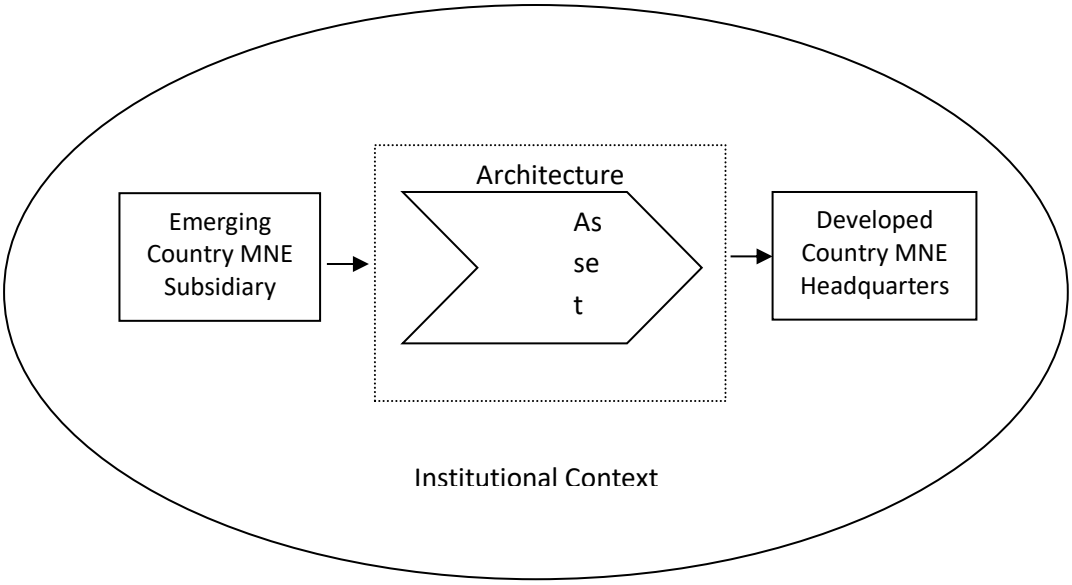


Figure 2: Overview of data structure depicting the codes and theoretical constructs

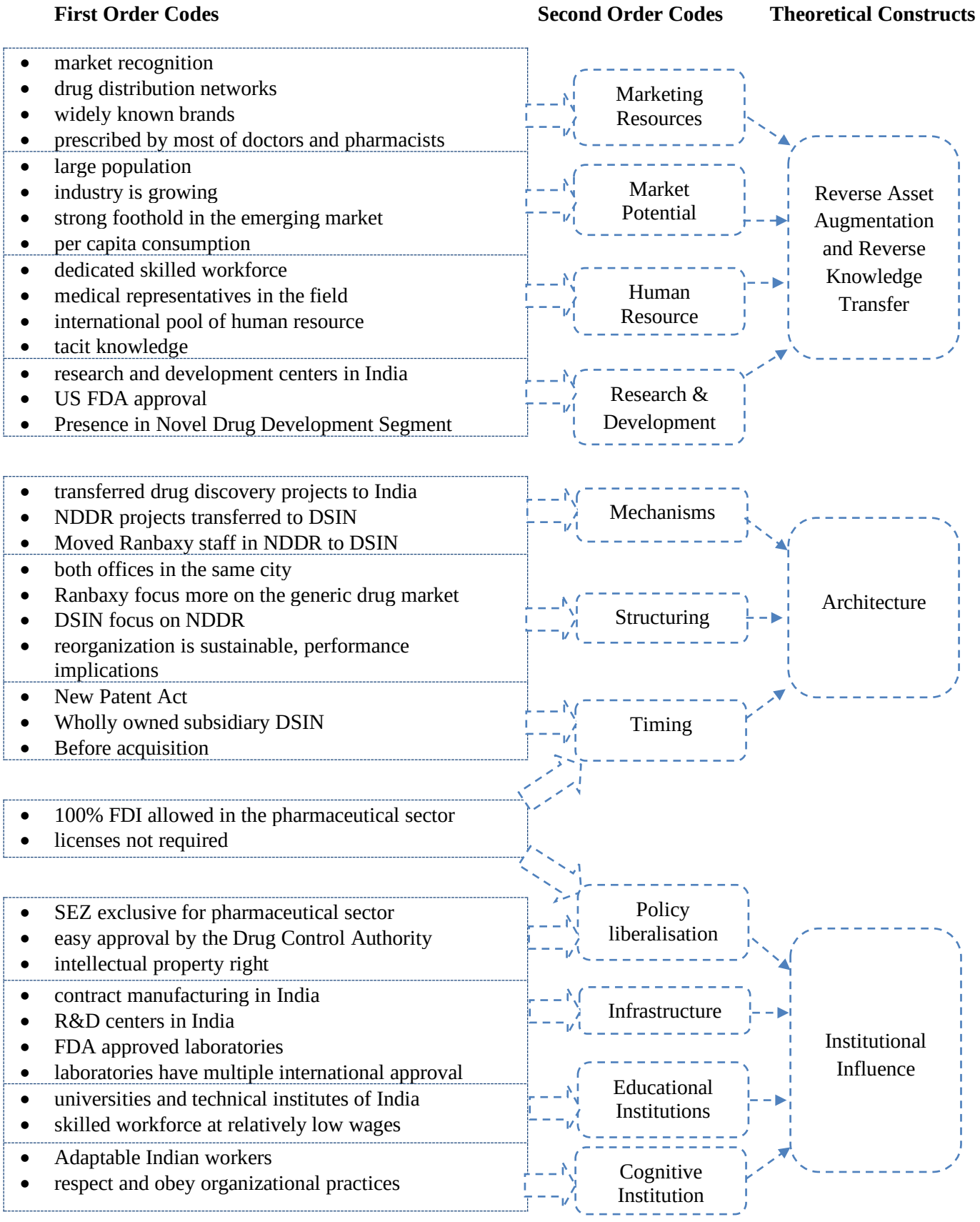
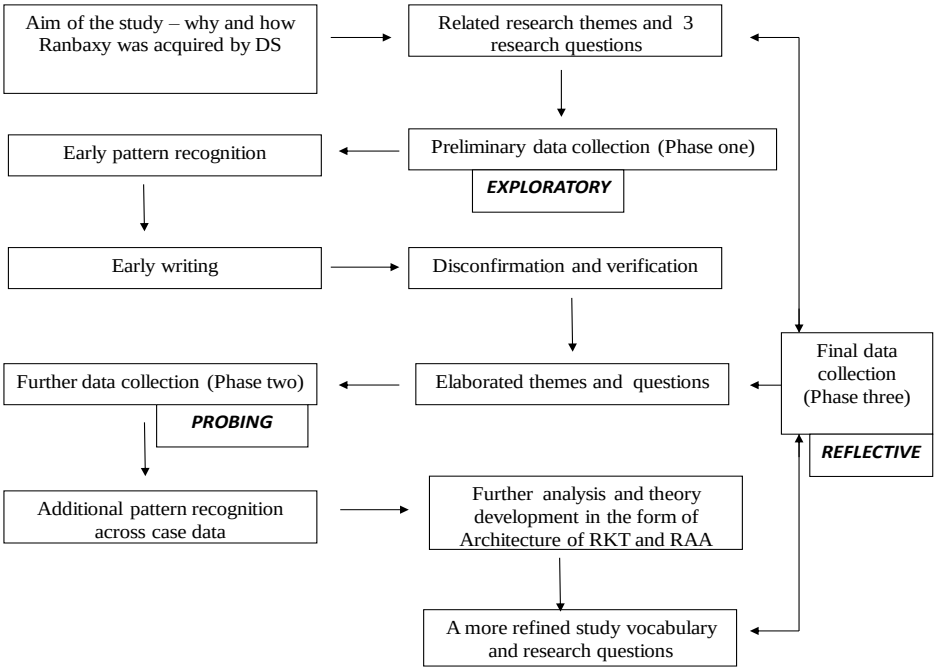


Figure 3: Processual analysis model depicting the three research phases including inductive and deductive approaches



Source: based on Pettigrew (1997)

Table 1: Key studies on mechanisms, structure and timing of knowledge transfer

Authors	Context of Knowledge Transfer	Methodology	Main Arguments
Gupta and Govindarajan, (2004)	Knowledge transfer in marketing, distribution, packaging design/technology, product design, process design, purchasing know-how, and management system and practices	Quantitative analysis of survey and secondary data collected from 374 subsidiaries belonging to 75 major MNEs from the U.S., Europe and Japan	Besides absorptive capacity of subsidiaries and their motivational dispositions, richness of transmission channels affects knowledge transfer
Bjorkman et al., 2004	Knowledge transfer in general management, manufacturing, marketing and sales, service, and R&D	Quantitative analysis of survey data collected from 134 Finnish and Chinese Subsidiaries	MNEs influence inter-unit knowledge transfer by specifying the objectives of the subsidiary and by utilising corporate socialisation mechanisms such as international task forces, committees, training programmmes and visits across units
Fang, Yang &, Hsu 2013		Conceptual paper	Knowledge transfer is affected by ambiguity in the content and context. For an effective inter-organizational knowledge transfer, participants require governance mechanisms. The authors identify four dimensions of governance mechanisms: trust based, market based, norm based, and reciprocity based, and argue for a fit between governance mechanism and barriers of knowledge transfer.
Cao and Xiang 2012	Knowledge transfer in intra-MNE innovation projects	Quantitative analysis of survey data for	Makes a distinction between formal and informal governance structure and argues that governance structure has a direct positive impact on knowledge transfer and the effect is mediated by inter-firm network
Andersson et al., 2015	Knowledge transfer in intra-MNE innovation projects	Quantitative analysis of survey data collected for 169 projects from 63 subsidiaries affiliated	Formal hierarchical governance forms have a negative impact on the effectiveness of knowledge transfer. However, relational governance on the

		with 23 MNEs headquartered in the U.S. and Europe	basis of cooperative norms and collaborative activities has a positive impact.
Gooderham, Minbaeva, & Pedersen (2011)	Knowledge transfer among the R&D, production, marketing, and sales departments	Quantitative analysis of survey data collected from 2 Danish MNEs and their subsidiaries in France, the U.S. and Denmark	Authors identifies three types of governance mechanisms: market based, hierarchical, and social for the development of social capital which affects knowledge transfer. They argue social governance mechanisms promotes social capital and thereby knowledge transfer, but hierarchical governance mechanisms constrain its development. The application of market-based governance mechanisms has no significant effect.
Minbaeva, 2007	Knowledge transfer in marketing, distribution, packaging design/technology, product design, process design, purchasing know-how, and management system and practices	Quantitative analysis of survey data of 92 subsidiaries of Danish MNEs operating in the U.S., Europe, Russia and China	The higher the degree of involvement of the focal subsidiary in network relations with other MNC units, the higher the degree of knowledge transfer to the subsidiary.
Ambos and Ambos, 2009	Knowledge transfer in	Quantitative analysis of survey data collected from 38 European MNEs and their subsidiaries spread across the globe	Personal and technology based coordination mechanisms facilitates knowledge transfer but their positive effect is negatively moderated by geographical, cultural and linguistic distance.
Bresman, Birkinshaw and Nobel, 1999 and 2010	Knowledge transfer in R&D operations between the MNEs and its acquired subsidiary	Mix-method approach with quantitative analysis of survey data collected from 15 large Swedish MNEs and 3 qualitative case studies	Transfer of technological know-how is facilitated by communication, visits & meetings. Moreover, knowledge transfer increases as time elapsed since acquisition. The immediate post-acquisition period is usually characterized by one-way transfers from the HQ to subsidiary and later years characterize reverse flow of knowledge from subsidiary to HQ.
Szulanski, Ringov, & Jensen, 2016	Knowledge transfer in 38 different types of technical and administrative practices	Quantitative analysis of survey data collected from 8 large MNEs from the U.S. and Europe	Knowledge transfer can be facilitated through the judicious timing of transfer methods. Timing is important, as a premature or delayed transfer of

			knowledge is unlikely to be effective. Good timing of knowledge transfer can mitigate challenges of knowledge transfer arising due to casual ambiguity of knowledge to be transferred and arduous relationship between units involved in sharing.
Szulanski, 2003	Knowledge transfer in 38 different types of technical and administrative practices	Quantitative analysis of survey data collected from 8 large MNEs from the U.S. and Europe	Knowledge transfer is a function of time. As time passes, a shared history of jointly utilizing the knowledge being transferred is created.

Table 2: List of Informants from Daiichi Sankyo and Ranbaxy

Serial Number	Position held	Original organization	Allocated code	**6 interviews in each of 3 phases** February 2010 – March 2013 **Total: 18 interviews**
1	Manager	Daiichi Sankyo	MDS1	
2	Manager	Ranbaxy	MR1	
3	Manager	Ranbaxy	MR2	
4	Scientist	Daiichi Sankyo	SDS1	
5	Scientist	Ranbaxy	SR1	
6	Scientist	Ranbaxy	SR2	

Table 3: Key benefits emanating from the data (evidence)

Resources Acquired	Types of Resource	Stage	Theme	Quote Reference
Dedicated skilled workforce, Strong global HR, local chemists and scientists at low wages	Human Resource	**1,2,3**	**RAA**	**1,10,11,24**
R&D base	Technological resource	**2**	**RAA**	**2**
Pharmaceutical brands	Reputation	**2,3**	**RAA**	**5,6,8,10**
Distribution channels	Organizational resource	**3**	**RAA**	**7,8,9,10**
R&D units	Physical/ technological resources	**2,3**	**RAA, RKT**	**12,14,15,21,23**
Market potential and market share	Reputation, financial resources	**1,2,3**	**RAA**	**3,4,5,6,8,9**
Embedded tacit knowledge	Technological/ Human Resource	**2**	**RAA, RKT**	**11**
Diaspora	Human Resource	**2**	**RAA**	**11**
Cultural adaptation	Organizational resource	**2**	**Institution**	**25**
FDA approved labs	Physical/ Technological resources	**2**	**Institution**	**13**
New Patents Act, license, SEZ, 100% FDI, Geographic Proximity	Physical/ institutional resource	**1,2,3**	**RKT, Institution**	**7, 17,18,19, 22,26**

Notes: Types of resources are mapped with Grant (1991, 1996). Stage indicates data collection stage where 1=Exploratory, 2=Reflective, 3=Probing. Quote references indicates quote numbers provided in the findings section.